

# 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: Bridge Load Rating Program Management Engineer Position Number: 50021**

**Location: Helena**

**Department: Transportation**

**Operations Area: Project Development and Delivery/Bridge Bureau**

**Section and Unit: Bridge Load Rating Section**

**Job Overview:** This position is an experienced and licensed professional structural engineer that serves as the Bridge Load Rating Program Management Engineer and Section Supervisor and is responsible for administering all aspects of the Bridge Load Rating and Overweight Vehicle Permitting programs for over 5000 bridges and other transportation structures in-service statewide. This includes bridge closure notifications, bridge load rating, load posting, local agency notifications, bridge scour stability evaluation, overweight vehicle permitting, and meeting all MDT and FHWA documentation and communication requirements. This position works in seamless cooperation with the Bridge Inspection Program Manager as a co-program manager responsible for ensuring program compliance with FHWA's Specifications for the National Bridge Inventory (SNBI), maintaining structure inventory records, and submitting SNBI bridge data to FHWA annually. This position is responsible for ensuring public safety; maintaining program compliance with State and Federal laws, policies and guidelines; developing and maintaining Department standards, guidelines and policies; developing program budgets and monitoring program expenditures; supervising staff work and quality; and promoting efficient and cost-effective use of Department resources and funds. This work directly affects public safety and commerce, and an advanced level of professional engineering experience and judgement is needed to meet program requirements. This position reports to the Bridge Engineer.

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

### **SNBI CO-Program Management 35%**

This position serves as the co-program manager responsible for coordinating the SNBI policies and procedures throughout the State. This position is responsible for ensuring program compliance with FHWA National Bridge Inspection Standards Regulation as defined in the Code of Federal Regulations 23 CFR 650 to ensure the safety of the traveling public. This work involves identifying current and proposed regulations that affect the program, evaluating regulations to understand the effect on the agency, and implementing program changes to comply with current regulations and requirements. It also includes regular coordination with FHWA to support Montana's National Bridge Inspection Program (NBIP) compliance review, an annual risk-based program oversight process. This may involve significant research, coordination with FHWA Division Bridge Engineers and other FHWA staff throughout the annual cycle, comparing and reporting program performance to current NBIP performance metrics, developing plans and implementing program changes to address deficiencies identified during the reviews, and providing regular progress updates to FHWA. This position is responsible for implementing and administering Quality Control and Quality Assurance measures to maintain and verify the quality level of the bridge inspection and load rating program.

### **Bridge Load Rating Section Administration and Operation 40%**

This position is responsible for planning, organizing and directing activities of the Bridge Load Rating Section in order to ensure safe operation of Montana's public bridges and tunnels. This requires substantial knowledge of the theories, principles and practices of structural engineering, bridge inspection, and administrative practices.

- Establishes policies and procedures to meet Bureau and Department goals and objectives. Ensures that bridge load ratings, load postings, and approved overweight vehicle permits are safe, efficient, effective and establishes practices to ensure quality, consistency, and compliance with CFR 23, the SNBI, and MDT standards. Regularly evaluates section performance and modifies practices to meet objectives.
- Provides oversight and direction to the Bridge Load Rating Section using professional judgement and thorough knowledge of the concepts, theories, and practices of structural engineering to ensure work is completed in accordance with accepted practice and current specifications, are in compliance with applicable federal, state and local laws and regulations, and that this work ensures the safety of the public, and the safety, performance, durability and functionality of bridges and structures.
- Develops annual program budgets, estimates, tracks and manages expenditures for program operations, and anticipates and manages program overruns in seamless cooperation with the Bridge Inspection Program Management Engineer as co-program managers.
- Develops, maintains and distributes all pertinent bridge load rating criteria, standards, documents, programs, policy and procedure manuals, and other appropriate information to

- ensure current and accurate information is available for inspection and operation activities. Keeps the Bureau Chief informed of concerns, status, updates, section needs, and issues.
- Coordinates and engages with other Department staff including Motor Carrier Services, District Administrators and District Maintenance personnel, to ensure public safety, comply with State and Federal laws, rules and regulations, and promote program objectives.
- Coordinates and engages with other bridge owners (counties, municipalities, etc.) to keep them informed of bridge conditions and needs. The Bridge Load Rating Program Management Engineer has the responsibility to advise MDT Districts, and local agency bridge owners to restrict or close bridges due to unsafe conditions, which require advanced professional knowledge and skilled communication to ensure compliance and public safety.
- Performs analysis on bridge data to predict future bridge and system performance and estimate funding needs, identifies projects to the Bridge Bureau Chief for reconstruction, rehabilitation and preservation, and develops reports and studies to be used by a variety of Department staff for planning, budgeting and program justification to the Legislature.
- Oversee the selection and operation of statewide specialized, load posting sign contracts and load rating consultant contracts. Also supports the Bridge Inspection Program Management Engineer in the oversight, selection, and operation of statewide specialized consultant contracts including NBI Inspections, Underwater Diving Inspections, Specialized Access (Climbing) Inspections, Fracture Critical Inspection, Bridge Scour Evaluations, traffic control contracts, railroad flagging contracts and others.
- Determines and fulfills equipment, computing and software procurement needs of the Section including responsibility for developing specifications, ensuring compliance with Department procurement practices, developing budget justifications and submitting requests, and integrating equipment into Section practices to ensure maximum utilization of resources.
- Provides technical consultation and department representation for national uniform specifications and methods for inspecting and evaluating highway structures (e.g., the AASHTO Subcommittee on Bridges and Structures) to ensure that the state's interests are represented, and assesses necessary changes to MDT bridge programs, policies, and staff training.

### **Structure Management System Oversight 10%**

This position is responsible as a co-program manager in seamless cooperation with the Bridge Inspection Program Management Engineer for the operation and enhancement of MDT's Structure Management System database and user interface, which is used to inventory, manage, document, retrieve, archive and report load rating data, bridge condition data, and other bridge data. The system is required for meeting Federal SNBI standards, annual data reporting to FHWA, documenting current bridge conditions, informing operational and safety decisions, supporting program funding requests and project selection. This system and data is available to a wide array of customers including MDT, FHWA, local agencies, legislators, law enforcement, commercial trucking industries,

and the public. The position is responsible for evaluating system performance, recommending and implementing upgrades and enhancements, and ensuring end user training is timely and effective.

## **Staff Supervision and Management 10%**

- Establish and revise overall work plans, priorities, and procedures, and monitor progress through meetings and consultations. Conduct Section staff meetings, disseminate data, and promote information exchange for support and advancement of section goals.
- Develop and recommend overall responsibilities and allocation of positions supervised. Identify staffing needs and recommend allocation of human resources. Recommend and justify requests for additional personnel if needed.
- Coordinate recruitment and selection activities for the Bridge Load Rating Section. This involves coordinating the establishment of selection committees, writing and updating job descriptions, providing input on selection criteria, and reviewing hiring recommendations in conjunction with the Bridge Bureau Chief.
- Establish objective, measurable, and observable performance standards for Bridge Load Rating Section positions. Monitor and manage the performance of all positions directly supervised and complete performance appraisals. Implement and monitor corrective action including discipline and termination. Ensure all subordinates comply with State and departmental personnel rules, regulations, and policies.
- Assess staff training requirements and coordinate training activities for engineers and technicians.

## **Other Duties 5%**

Perform a variety of other engineering and public relations activities as assigned by the Bureau Chief in support of the MDT mission and division objectives. This includes representing the department at conferences and meetings, participating in interdepartmental task forces, directing special projects, and attending on-going education and training as directed.

## **Supervision**

The number of employees supervised is: 6

The position number for each supervised employee is: Load Rating QA Engineer 50029, Load Rating Engineer 50009, Load Rating Engineer 50074, Permitting Engineer 50006, CE Specialist 50017, Program Coordinator 50023.

## **Physical and Environmental Demands:**

- Light lifting (less than 20lbs)

- Walk over uneven terrain, or in water, walk on structures spanning significant heights (i.e., 100+ feet), and use safety equipment (e.g., fall harness, ropes, hardhats, etc.)
- Work in close proximity to others in field and office situations
- Travel within the state to project locations (less than 500 miles per month), and out-of-state travel by airline to national conferences and meetings.
- Remain seated for extended periods of time, with occasional walking, standing and bending.

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

- This position requires a thorough and extensive knowledge of the theory, principles, methods and techniques of Civil Engineering and the associated mathematics and physical sciences, especially the methods and practices of bridge structural analysis.
- This position must be familiar with industry standards and specifications, bridge design and load rating standards, bridge and tunnel inspection standards, bridge and road construction methods and policies, industry guidelines and practices.
- Knowledge of the practices and regulations of personnel management and supervision; administrative and management concepts and practices.
- This position requires skill in effective team building techniques; effective written and verbal communications; organizing, directing and supervising professional and paraprofessional personnel; dealing tactfully with the public and with governmental officials; skill in project management, planning and organizing.
- This position must have demonstrated skills at performing engineering analyses and applying engineering concepts, techniques and procedures to a variety of situations and circumstances. This position must be skilled at evaluating structural problems by examining evidence, discussions with peers and inspection personnel, reviewing calculations and contract documents to determine proper course of action; and skill in drawing conclusions and making recommendations based on ambiguous or conflicting information.
- This position requires skill in applying engineering judgment when interpreting design guidelines and standards, preparing calculations, reports, and other documentation necessary to complete inspection, repair, maintenance, and design projects.
- Communication: Initiates contact and regularly consults with a variety of public agencies and private entities to develop an understanding of needs, problems, and progress; keeps in touch in order to avoid or solve problems and clarify misunderstandings. Communicates effectively in a high stress and multi-task environment.
- Leadership: Demonstrates a consistent pattern of being able to recognize and initiate activities that need to be done to accomplish an objective; motivates associates and peers; creates a positive work climate; energizes subordinates by coaching and mentoring.
- Relationship Building: Establishes and maintains effective working relationships with employees, Districts, other agencies, and the public. Develops on-going internal and external

relationships that are important for the continuation of current services and practices; obtains organizational short-term and long-term goals by negotiating with others; develops customer success and growth.

- Teamwork: Displays leadership by focusing on the desired results and work products; acknowledges and celebrates team efforts and accomplishments; identifies and pursues solutions in which all parties can benefit; supports team decisions and outcomes through actions and communication.
- Self-Starter: Recognizes opportunities and takes effective action to achieve results without being told; frequently re-examines the status quo and responds to both obstacles and opportunities; willingly accepts more responsibility or more work.
- Problem Solving: Develops ideas that are unique contributions to the Department, the Bridge Bureau and Bridge Management Section; identifies root causes of problems and thinks of alternative solutions; challenges the status quo by experimenting with new ideas.

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

- A bachelor's degree in engineering from an ABET accredited Engineering program that includes civil structural engineering courses in structural analysis, steel design, and reinforced concrete design.
- Graduate degrees with concentrations in structural analysis and design are preferred. Demonstration of advanced understanding and experience with engineering principles or extensive application of related practice and methodologies of bridge load rating, LRFD Bridge Design Specs, or MBE may also be considered as an alternative to graduate degree.
- Registration as a Professional Engineer (PE) in Montana. Incumbents with PE registration in another State that are eligible for PE registration in Montana through Comity will be considered.
- At least 8 years bridge related load rating, or bridge load rating program management experience. NBIS or SNBI bridge inspection, bridge engineering analysis, or bridge design experience may also be considered on a case-by-case basis.
- At least 2 years of supervision experience.
- Proof of successful completion (minimum 70% passing score) of a Federal Highway Administration (FHWA) approved comprehensive NBIS bridge inspection training course and certification as an NBIS Team Leader, or successful course completion and certification within 6 months of hire.
- 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*

<input type="checkbox"/> Fingerprint check	<input checked="" type="checkbox"/> Valid driver's license
<input type="checkbox"/> Background check	<input type="checkbox"/> 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.

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**Immediate Supervisor      Title      Date**

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**Administrative Review      Title      Date**

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

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**Employee      Title      Date**

**Human Resources Review**

**Job Code Title:** \_\_\_\_\_ **Job Code Number:** \_\_\_\_\_ **Pay Band:** \_\_\_\_\_

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

**Human Resources:**

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