

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 Management Engineer **Position Number:** 50021

Location: Helena

Department: Transportation

Division and Bureau: Engineering Division/Bridge Bureau

Section and Unit: Bridge Management Section

Job Overview: This position serves as the Bridge Management Engineer and Section Supervisor and is responsible for administering all aspects of the Bridge Inspection and Operations programs for over 5000 bridges and other transportation structures in-service statewide. This includes bridge and tunnel safety and condition inspection, load rating, load posting, documentation of critical findings, local agency notifications, bridge scour evaluation, overweight vehicle permitting, and bridge maintenance. This position is responsible for ensuring program compliance with FHWA's National Bridge Inspection Standards (NBIS), maintaining structure inventory records, and submitting bridge condition 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 for bridge inspection and operations; 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):

NBIS Program Management—20%

This position serves as the lead program manager responsible for coordinating the NBIS policies and procedures through 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 the 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 Management Section Administration and Operation 50%

This position is responsible for planning, organizing and directing activities of the Bridge Management Section and the distinct Units in the section related to Bridge Inspection and Bridge Operations 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 inspections and operations are safe, efficient, effective and establishes practices to ensure quality, consistency, and compliance with NBI standards. Regularly evaluates section performance and modifies practices to meet objectives.
- Provides oversight and direction to the Bridge Management Section using professional judgement and thorough knowledge of the concepts, theories, and practices of structural engineering and bridge inspection 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.
- Develops, maintains and distributes all pertinent bridge inspection 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 agency bridge owners (counties, municipalities, etc.) to keep them informed of bridge conditions and needs. The Bridge Management Engineer has the responsibility to advise local agency bridge owners to restrict or close bridges due to unsafe conditions, which requires 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.
- Oversees the selection and operation of statewide specialized inspection consultant contracts including NBI Inspections, Underwater Diving Inspections, Specialized Access (Climbing) Inspections, Fracture Critical Inspection, Bridge Scour Evaluations, 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 assess necessary changes to MDT bridge programs, policies, and staff training.

Structure Management System Oversight—15%

This position is responsible 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 bridge condition data. The system is required for meeting Federal NBI 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 are 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 Management Section. This involves coordinating the establishment of selection committees, providing input on selection criteria, and reviewing hiring recommendations in conjunction with the Bureau Chief.
- Establish objective, measurable, and observable performance standards for Bridge Management 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: 4.

The position number for each supervised employee is: Bridge Operations Engineer/Engineering Manager 50010, Bridge Inspection Engineer/Engineering Manager 50059, Bridge Program Specialist 50017, Engineering Analyst 50056

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., ropes, hardhats, etc.).
- Work near 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.
- Operate a personal computer, laptop, and small handheld electronic devices.
- Perform complex engineering analysis.
- Communicate complex engineering ideas and concepts to staff, local agencies, and the public with varying levels of knowledge and education
- Manage stress from the responsibility of making decisions that affect public health and safety.
- Concentrate to perform complex arithmetic operations and analysis.
- Interpret complicated and complex technical papers, manuals, laws, and publications.
- Multi-task and meet inflexible deadlines.
- Meet demands for accuracy in all aspects of work.

Knowledge, Skills and Abilities (Behaviors):

KNOWLEDGE

- 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.

SKILLS

- 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.

ABILITIES

- **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 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 will be evaluated on a case-by-case basis.
- 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 of bridge related load rating, condition inspection, engineering analysis and design, or bridge construction experience.
- This position requires a minimum of 4 years of supervision or team lead experience.
- Proof of successful completion (minimum 70% passing score) of a Federal Highway Administration (FHWA) approved comprehensive bridge inspection training course, or successful completion within 6 months of hire.
- Alternative qualifications include: Any combination of additional related work experience and education equivalent to the minimum qualifications.

Special Requirements:

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|--------------------------|-------------------|-------------------------------------|-------------------------|
| <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.

Immediate Supervisor	Title	Date
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Administrative Review	Title	Date
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My signature below indicates that I have read this job description.

Employee	Title	Date
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Human Resources Review

Job Code Title: Engineer Supervisor Job Code Number: D2502M

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

Human Resources:

Signature	Title	Date
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