

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: Engineering Cost Analyst Position Number: 32085 Location: Helena

Department: Transportation

Division and Bureau: Engineering/Construction Engineering Services Bureau

Section and Unit: Construction Engineering Services Bureau

Job Overview:

The incumbent plays a vital role in project delivery by promoting consistency and accuracy in MDT's construction project cost estimation and risk management practices. The incumbent provides expertise, guidance, and training to Planning, Preconstruction staff, MDT consultants, and Construction Engineering Services Bureau. The incumbent supports software applications required to develop cost estimates and manage risks. This position reports directly to the Construction Engineering Services Bureau Chief.

Essential Functions (Major Duties or Responsibilities):

Program Management - 70%

- Develop and share cost-estimating expertise across all areas of project development and delivery. Maintain a database for use with cost-based estimating methods, including data on labor costs, material costs, production rates, profit margins, and equipment rental rates specific to Montana and split by region as appropriate.
- Research national and international industry cost estimating best practices and procedures, utilizing AASHTO and other nationally recognized sources' publications and guidance. Evaluate research for compatibility with MDT business needs and provide appropriate information to staff who regularly develop cost estimates.
- Continually analyze and develop refined ways of estimating transportation projects to find and incorporate improvements and efficiencies in preconstruction design cost estimating (i.e. cost-based (equipment, materials, labor, and production rates) and parametric (statistical and historical data relationships)).
- Develop and revise guidance, procedures, and recommended policies. Provide direction to Preconstruction and District designers, Planning staff, and Construction in the use of MDT's cost estimating procedures.
- Determine training needs of MDT staff and external customers by monitoring questions and requests for assistance and by analyzing trends that indicate a need for individual, design section, and/or MDT-wide training. Develop and maintain a training plan and schedule to

meet the cost estimating training needs of MDT staff and design consultants. Maintain and update the online AASHTOWare Estimation training manual and videos as the software evolves. Provide solutions to problems raised by software users.

- Participate in various project reviews throughout project development, such as design phase reviews, final PS&E reviews, Board of Review meetings, Bid Review meetings, and Bid Award meetings.

Maintain Cost Estimate Software - 20%

- Manage AASHTOWare Estimation, the web-based estimation software used by MDT. Lead the efforts and perform customizations necessary to fit the software to MDT cost estimating practices and business needs.
- Manage external design consultants training and access in AASHTOWare.
- Develop and test upgrades, troubleshoot the software, provide input on the Bid Item Catalog, evaluate requests for new bid items, and update the estimation and typical section templates.

Other Duties - 10%

Participate in the selection process of term consultants to provide Independent Cost Estimating services. Lead the research effort on new contract time calculation methodology and evaluate its compatibility with MDT business practices and recommend implementation if appropriate. Evaluate risk management methods as related to the impact on project costs, recommend measures to mitigate risk, and provide training to staff on revised methods and tools. Other duties may be assigned as needed.

Supervision

The number of employees supervised is: zero

The position number for each supervised employee is: N/A

Physical and Environmental Demands:

- Light lifting (less than 20 lbs)
- Carry light items (papers, plan sets, books, calculator, laptop computer)
- Remaining seated for extended periods of time, with occasional walking; standing; bending
- Travel within the state to project locations and district offices, and out of state travel by airline to national conferences and meetings
- Reading technical publications, in hard copy and electronic formats
- Managing data on computers
- Communicating in writing, in person, and via remote electronic devices (email, phone, Zoom calls, etc.)

Knowledge, Skills and Abilities (Behaviors):

KNOWLEDGE: Thorough knowledge of the theory, principles, methods and techniques of civil engineering, associated mathematics, and the physical sciences;; highway economics; procurement processes and practices;. The position requires a foundational knowledge of research methods and techniques; highway construction methods and techniques;; field applications of highway

engineering and construction; environmental rules and regulations; construction methods and practices; material specifications; plan requirements; business and public administration; and a working knowledge of the functions and policies of other divisions and work units within the MDT.

This position requires advanced knowledge in the following areas:

- Cost estimating methods and practices
- Highway construction methods and practices
- Road design practices
- Economics
- Statistics
- Transportation
- Written comprehension of technical reports, papers, and manuals
- Judgment and decision making

SKILLS: This position requires skill in applying analysis and professional judgment to draw conclusions and make recommendations; program planning and management, developing and organizing procedures; implementing people skills; reading and interpreting complex plans, specifications, and contract documents; assessing construction plans and project characteristics; developing and administering a variety of diverse projects and functions; short and long-term project planning; performance assessment and monitoring; negotiation; mediation; consensus-building; developing comprehensive solutions to complex construction engineering problems; planning, organizing, and directing multiple engineering activities; assessing computer software capabilities and performing customizations. Key skills include:

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|------------------------------|---|
| • Management skills | • Analytical and critical thinking, deductive reasoning |
| • Statistical analysis | • Written and verbal communication |
| • Electronic data management | • Computer skills |
| • Complex problem solving | • Active learning |
| • Organizational skills | • Time management |
| • Resource management | • Judgement and decision making |
| • Adult training | • Mentoring |

ABILITIES: This position requires the ability to develop effective techniques and procedures to achieve goals and objectives; to provide clear directions, technical assistance, and guidance to team members; to assess complex and rapidly changing technological issues and national trends; identify root causes of problems and develop alternative solutions; confidently challenge the status quo by experimenting with new ideas; to evaluate multiple and ambiguous factors to resolve problems; to communicate effectively orally and in writing; to make presentations to the public; to demonstrate leadership by recognizing and initiating activities to accomplish objectives, motivate associates and peers, and create a positive work climate; to work effectively in a high stress and multi-task environment.

Minimum Qualifications (Education and Experience):

The required knowledge and skills are typically acquired through a combination of advanced education and experience equivalent to a Master of Science Degree in Civil Engineering and a minimum of 3 years experience in highways engineering; or

A Bachelor of Science Degree in Civil Engineering or a closely related field and a minimum of 5years directly related experience highways engineering.

Certification as an Engineer Intern (EI) is required, registration as a Professional Engineer (PE) licensed to practice in Montana is preferred.

Special Requirements:

List any other special required information for this posit

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

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

Administrative Review

Title

Date

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

Employee

Title

Date

Human Resources Review

Job Code Title: Engineering Analyst 2.2 - CE 4
Level: 2.2

Job Code Number: D25012

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

☐ FLSA Exempt

☒ FLSA Non-Exempt

☐ Telework Available

☐ Telework Not Available

☐ Classification Complete

☐ Organizational Chart attached

Human Resources:

Signature

Title

Date