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: Civil Engineering Specialist Position Number: 36045 Location: Helena

Department: MDT Division and Bureau: Highways & Engineering – Traffic and Safety

Section and Unit: Traffic Operations Section

Job Overview: This position performs professional Traffic Engineering studies in both urban and rural roadway environments. This position identifies traffic control needs for roadways, intersection, and/or freeway interchanges. This position also provides technical traffic engineering assistance to other offices both in the headquarters and the districts as well as local government and the general public.

Essential Functions (Major Duties or Responsibilities):

Entry level: Applies prescribed engineering techniques and engineering procedures in accordance with established criteria to perform assigned tasks. The work is routine and technical therefore does not require previous experience. Collects data, gathers information or documents, performs standard computations or analysis and prepares drawings and visual aids. Possesses basic oral and written communication skills and interacts with other staff. The employee acquires an understanding of professional and ethical responsibilities and develops basic skills.

Mid-level: Acquires basic engineering knowledge and develops skills in a specific assigned work area. Applies standard engineering techniques, procedures, and criteria to perform assigned tasks as part of a wide-ranging assignment. Exercises limited judgment on details of work and in application of standard methods for conventional work. Performs basic engineering design tasks and aids other tasks such as preparation of permit applications, drawings, and computer-aided design (CAD) work. Receives close supervision on unusual or difficult problems, and general review of all aspects of work and interacts with staff, public, officials, and contractors.

Top level: Performs routine engineering tasks in the assigned area with little or no supervision. Acquired engineering competence in a specific work area should reasonably transfer to other work areas at the same level.

Traffic Engineering Urban and Rural Roadway studies – 35%

- Performs Traffic Engineering studies in both urban and rural roadway environments.
- Review the existing facilities and compare the existing functional capabilities of these facilities to the present functional demands placed on them.
- Identify the capability of the existing facility to accommodate anticipated increases and or changes in functional demand.

- Determine appropriate action plans to address the inadequacies of the facilities under review.
- Develop designs required to carry out the action plans identified.
- Performs traffic control assessment (warning, regulatory, informational, and traffic signals), roadway functional class assessment, planning review, accident analysis, capacity analysis, pedestrian studies, and geometric analysis.
- Develops the action plan through comprehensive interpretation of the results of the above studies related to the proposed goals of the assigned project using current transportation and traffic engineering practices.
- Prepares the action plan results and reports to district personal, internal staff, upper management and the Transportation Commission efficiently and effectively both in writing, graphically, and through oral presentation. Conducts studies in response to requests from design offices, such as road design and consultant design, as well as directed at planning related needs for the department's administrative staff, district offices, planning division, local planning staffs, and government officials.

Traffic Control Needs – 35%

- Identify traffic control needs such as, justification, the type of control, and roadway lane use coordination for a wide variety of roadways, intersections, and/or freeway interchanges. This includes.
- Identify the scope of the level of delineation and verbal communication the motorists will need to make appropriate decisions within a highway corridor.
- Responds to requests regarding Traffic Control needs such as design project, operations activities, maintenance activities and individual requests from the public and local officials.

Technical Traffic Engineering Assistance – 30%

- Provide technical traffic engineering assistance to other offices both in headquarters and the districts as well as local government and the general public using formal written reports, oral presentations at public hearings and/or meetings, and individualized conversations both in person and by telephone.

Supervision: The number of employees supervised is- NA

Physical and Environmental Demands:

- Work is performed in an office setting and in the field depending upon work task assignments.
- Travel is required and can vary from a few times per year, with one or more overnight stays and may occur on short notice, weekends and holidays (rarely) and working outdoors in all types of weather.
- The exterior work environment can involve harsh or caustic fumes, dust, extreme temperatures, wind, rain and snow.
- Must be able to lift 50lbs as the data collection units are approximately this heavy.

Knowledge, Skills and Abilities (Behaviors):

- Extensive knowledge of Civil Engineering practices with specific emphasis on traffic engineering, operations.
- Knowledge of codes concerning traffic control, signage, pavement delineation, accident analysis, statistics, dynamics of vehicular motion, highway geometrics, signal design.
- General knowledge and understanding of the logic behind various types of traffic control, intersection layout, study techniques for the analysis of problems and needs for existing and future conditions on a facility.
- Considerable knowledge of the functions of traffic control equipment.
- Working knowledge of standards, techniques, and engineering alternatives outlined in the Manual on Uniform Traffic Control Devices, AASHTO policies, and the Highway Capacity Manual.
- Knowledge of engineering mathematics.
- Skills in the use of engineering instruments in the field (Diamond automated speed counters, MioVision Cameras) and in the office (hand drafting tools and computers).
- Skill in the use of computer software programs (MicroStation-CADD, Microsoft Word, Excel, Highway Capacity software, SIDRA, Synchro, etc.).

Minimum Qualifications (Education and Experience):

Entry Level – Civil Engineering Specialist level 1:
The required knowledge and skills are typically acquired through a combination of education and experience equivalent to bachelor's degree in civil engineering, Civil Engineering Technology, or a closely related field of study. Related degrees may include Environmental Engineering, Geologic/Geotechnical Engineering, Materials Engineer, Mechanical Engineering, or Engineering Science.

Prior work experience is **not required** for entry level.

Mid-Level – Civil Engineering Specialist level 2:
Bachelor's degree in civil engineering, Civil Engineering Technology, or a closely related field of study. Related degrees may include Environmental Engineering, Geologic/Geotechnical Engineering, Materials Engineer, Mechanical Engineering, or Engineering Science.

This position also requires a minimum of 6 months to 2 years of engineering or directly related work experience.

Certifications, licensure, or other credentials include Proof of passage of the Fundamental Engineering Exam (FE).

Top Level – Civil Engineering Specialist level 3:
Bachelor's degree in civil engineering, Civil Engineering Technology, or a closely related field of study. Related degrees may include Environmental Engineering, Geologic/Geotechnical Engineering, Materials Engineer, Mechanical Engineering, or Engineering Science.

This position also requires a minimum of 2 years 1 month to 4 years of engineering or directly related work experience.

Certifications, licensure, or other credentials include: Proof of passage of the Fundamental Engineering Exam (FE), Engineering Intern Certification (EIT), or licensed Professional Engineer.

Special Requirements:

☐ Fingerprint check	☐ Valid driver's license
☐ Background check	☐ Other; Describe
035-MFPE 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**

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 **Job Code Number: D25011**

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**