

Iowa Department of Administrative Services – Human Resources Enterprise  
Job Classification Description

## Transportation Engineer Specialist

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### Definition

Performs professional engineering work in recognized engineering discipline(s) in the coordination and direction of transportation programs; provides consultation to field engineers, contractors, or consultants; performs related work as required.

*The work examples and competencies listed below are for illustrative purposes only and not intended to be the primary basis for position classification decisions.*

### Work Examples

Provides technical engineering assistance in construction and maintenance techniques, procedures, and processes in areas of roadways, structures, and related transportation areas to department field engineers, city and county engineers, and consultants.

Coordinates planning and compliance with state guidelines for programs administered by the department for highway prelocation, and transportation, environmental, and safety improvements.

Presents technical information, program plans, and proposals to higher-level management, other agencies/jurisdictions, and groups to obtain cooperation or acceptance; oversees and administers federal and state funded programs for local governments; prepares agreements with cities, counties, and other states on grant programs, joint projects, or transfers of jurisdictions.

Oversee all materials inspection, sampling, and testing activities within a transportation district.

Reviews engineering policies and publications and develops or modifies guidelines and procedures to adapt county and city projects to state and federal requirements.

Develops, reviews, interprets, and initiates changes in project plans, concepts, design, contracts, or specifications; investigates materials, work methods, and construction problems; investigates and resolves immediate engineering and related engineering problems; develops single or alternative plans, policies, programs, and recommendations; assesses risk of liability and makes recommendations for improvements; identifies, investigates, and analyzes information for tort litigation.

Designs and evaluates research of materials; coordinates assignments to staff; evaluates and develops new/unique materials, equipment, and test methods; develops performance criteria, test and inspection methods, and related data for the application of standards to specific products and services; reviews and monitors production from approved sources of highway materials.

Develops and monitors automated programs and systems to enable and enhance administrative functions connected with highway construction, design, contracting and various estimations/projections; works with department staff, other jurisdictions, and consultants to coordinate updates and ensure integrity of systems.

Coordinates the preparation and processing of contract lettings; determines and develops innovative contracting techniques for critical projects with high visibility and substantial public impact.

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## Competencies Required

### Knowledge:

- Engineering and Technology – Practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- Design – Design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- Transportation – Principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.
- Building and Construction – Materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
- Mathematics – Arithmetic, algebra, geometry, calculus, statistics, and applications.
- Customer Service – Principles and processes for providing customer services, including customer needs assessment, meeting quality standards for services, and evaluating customer satisfaction.

### Abilities:

- Deductive Reasoning – Apply general rules to specific problems to produce answers that make sense.
- Information Ordering – Arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- Oral Comprehension – Listen to and understand information and ideas presented through spoken words and sentences.
- Problem Sensitivity – Tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- Written Comprehension – Read and understand information and ideas presented in writing.
- Mathematical Reasoning – Choose the right mathematical methods or formulas to solve a problem.

### Skills:

- Complex Problem Solving – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Critical Thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
- Speaking – Talking to others to convey information effectively.
- Judgment and Decision Making – Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Operations Analysis – Analyzing needs and product requirements to create a design.
- Reading Comprehension – Understanding written sentences and paragraphs in work-related documents.

- Coordination – Adjusting actions in relation to others' actions.
- Mathematics – Using mathematics to solve problems.
- Systems Analysis – Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

### **Minimum Qualification Requirements**

Applicants must meet at least one of the following minimum requirements to qualify for positions in this job classification:

- 1) All of the following (a and b):
  - a. Licensure as a professional engineer; and
  - b. Two years of full-time professional work experience in transportation engineering or civil engineering.
- 2) All of the following (a, b, and c):
  - a. Licensure as a professional engineer; and
  - b. One year of full-time professional work experience in transportation engineering or civil engineering; and
  - c. Graduation from an accredited college or university with a master's degree in chemical, civil, construction, environmental, materials, structural, or transportation engineering; engineering management; or a field closely related to transportation engineering.
- 3) Current, continuous experience in the state executive branch that includes one year of full-time work as a Transportation Engineer.

### **Notes**

Prior to appointment, applicants must possess active licensure as a professional engineer by the Iowa Engineering & Land Surveying Examining Board.

*Effective date: 09/20 SA*