

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

## Transportation Engineer Senior

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### Definition

Performs advanced professional engineering and administrative work in a staff capacity for division director or designee; plans, monitors and coordinates the development of projects, programs, and activities on a regional, division-wide, or department-wide basis; 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

Assists an administrator or an executive in maintaining continuity of operations; works with managers and staff in attaining performance objectives, engineering achievements and effectiveness; may serve as member of division management team.

Coordinates and directs project development activities having critical long-term impacts and involving highly complex engineering and extreme public/political sensitivity; communicates as the department's representative, with counties, cities, and other state and federal agencies, general public, public officials, and news media.

Reviews and interprets project plans and specifications; writes specifications or design procedures; provides technical and administrative assistance in the specification development process; analyzes industry standards and assures department compliance in practices and procedures; serves as technical resource in the interpretation of engineering specification language, particularly for complex and unique structures.

Coordinates and administers federal and state assistance to cities and counties; works with department staff in the interpretation, application, and compliance with objectives and criteria for several diverse funding programs.

Performs research; plans and coordinates program development in engineering and technology transfer; manages research projects requiring specialized experience and skills; investigates, conducts, and coordinates technical analysis and evaluation of research by department staff and other organizations; provides training and orientation on research and results.

### 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.

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- 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. Four 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. Three years 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 18 months of full-time work as a Transportation Engineer Specialist or Transportation Engineer Manager.

**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*