

MICHIGAN CIVIL SERVICE COMMISSION
JOB SPECIFICATION

TRANSPORTATION ENGINEER

JOB DESCRIPTION

Employees in this job complete and oversee a variety of professional engineering assignments in one or more areas of transportation systems and programs.

Position Code Title - Transportation Engineer-E

Transportation Engineer 9

This is the entry level. The employee performs a range of professional Transportation Engineer assignments while learning the methods of the work.

Transportation Engineer 10

This is the intermediate level. The employee performs an expanding range of professional Transportation Engineer assignments in a developing capacity.

Transportation Engineer P11

This is the experienced level. The employee performs a full range of professional Transportation Engineer assignments. Considerable independent judgement is used to make decisions in carrying out assignments that have significant impact on services or programs. Guidelines may be available but require adaptation or interpretation to determine appropriate courses of action.

Position Code Title - Transportation Engineer-A

Transportation Engineer 12

This is the advanced level. The employee functions as a lead worker overseeing the work of lower-level Transportation Engineers and performing experienced-level Transportation Engineer assignments; or as a senior worker performing the most complex professional assignments.

NOTE: Employees can progress to the experienced level based on satisfactory performance and possessing required experience.

JOB DUTIES

NOTE: Listed job duties are typical examples of work of positions in this classification. Not all duties assigned to every position are included, nor will all positions be assigned every duty. The general description of job duties does not authorize performance contrary to any state or federal licensing or certification requirements.

Researches, plans, and designs technology, materials, construction, soil, hydraulics, traffic safety, traffic operations, and maintenance of highways, bridges, airports, railways, and related structures and technological devices and applications.

Prepares and checks detail plans, design calculations, cost estimates, and recommendations.

Compiles and analyzes engineering data and prepares conclusions and recommendations.

Designs and prepares preliminary and final plans.

Provides input for the development and maintenance of traffic policies and procedures.

Monitors traffic flow and conditions.

Discusses plans, specifications, and work schedules with stakeholders.

Evaluates operational improvements that maintain and restore performance of the existing transportation system.

Conducts or oversees the survey, staking, layout, and inspection of construction projects.

Participates in studies to determine sufficiency of existing highway systems and structures and programming of future construction.

Plans and coordinates the development and deployment of Connected and Automated Vehicles technologies.

Estimates cost of projects and writes contracts and specifications.

Develops preliminary engineering treatments to determine construction feasibility and estimated costs.

Investigates traffic trends and crash histories and recommends methods to improve traffic flow and safety.

Meets with stakeholders to discuss proposed highway construction activity.

Interprets contracts, specifications, and plans for stakeholders.

Develops subsurface investigation plans and recommends construction methods best suited to soil types.

Plots and interprets soil stratigraphy from soil boring logs.

Interprets laboratory test results.

Prepares final layout drawings and stress calculations.

Prepares studies and completes designs of highway structures.

Determines the validity and reliability of testing methods and procedures.

Performs geotechnical and hydrologic/hydraulic analysis.

Analyzes and reviews storm sewer networks, existing culverts, and determines size of proposed culverts.

Maintains records, prepares reports, and composes correspondence related to the work.

Performs related work and other tasks as assigned.

Additional Job Duties

Transportation Engineer 12 (Lead Worker)

Oversees the work of lower-level Transportation Engineers by assigning and reviewing work, establishing priorities, coordinating activities, and resolving related work problems.

Reviews job performance by observing and critiquing work techniques and completed assignments.

Instructs and trains in proper work methods and processes.

Transportation Engineer 12 (Senior Worker)

Regularly performs the most complex and difficult assignments in the work area.

JOB QUALIFICATIONS

Knowledge, Skills, and Abilities

NOTE: Some knowledge is required at the entry level, developing knowledge is required at the intermediate level, considerable knowledge is required at the experienced level, and thorough knowledge is required at the advanced level.

Knowledge of principles and practices of transportation engineering.

Knowledge of laws, codes, standards, and specifications pertaining to highway engineering and costs.

Knowledge of materials, methods, and techniques used in the design, construction, and maintenance of highways, bridges, and related structures.

Knowledge of the procedures and practices applied in the inspection and testing of materials.

Knowledge of intelligent transportation and traffic management systems technology and applications.

Knowledge of traffic operations theory and practice.

Knowledge of soil properties for foundation analysis purposes.

Knowledge of hydraulics.

Knowledge of construction contracts.

Ability to make mathematical computations and design engineering projects.

Ability to use engineering instruments and tools.

Ability to interpret engineering plans, specifications, and technical reports.

Ability to maintain records and prepare reports and correspondence.

Ability to communicate effectively.

Ability to maintain favorable public relations.

Additional Knowledge, Skills, and Abilities

Transportation Engineer 12 (Lead Worker)

Ability to prioritize, organize, and coordinate the work.

Ability to train and assign work to other professionals.

Transportation Engineer 12 (Senior Worker)

Ability to perform the most complex Transportation Engineer assignments.

Working Conditions

The job requires an employee to be exposed to hazards associated with the work.

The job requires an employee to work on high structures.

Some jobs require an employee to be exposed to inclement weather conditions.

Some jobs require an employee to be assigned to work any day of the week or on any shift.

Physical Requirements

The job duties may require an employee to bend, reach, stoop, stand and/or walk for extended periods.

The job duties may require an employee to climb ladders and high structures.

The job duties may require an employee to work in confined spaces.

Education

Possession of a bachelor's degree in a field of engineering.

Experience

Transportation Engineer 9

No specific type or amount is required.

Transportation Engineer 10

One year of professional engineering experience involved in transportation systems and programs equivalent to a Transportation Engineer 9.

Transportation Engineer P11

Two years of professional engineering experience involved in transportation systems and programs equivalent to a Transportation Engineer, including one year equivalent to a Transportation Engineer 10.

Transportation Engineer 12

Three years of professional engineering experience involved in transportation systems and programs equivalent to a Transportation Engineer, including one year equivalent to a Transportation Engineer P11.

Alternate Education and Experience

Transportation Engineer 9 - 12

Possession of a Michigan Professional Engineer License may be substituted for 6 months of Transportation Engineer experience. This substitution may only be used once for any employee for qualification of appointment or early reclassification.

NOTE: Civil Service can individually evaluate equivalent combinations of education and experience providing required knowledge, skills, and abilities to qualify.

Special Requirements, Licenses, and Certifications

See individual position descriptions.

JOB CODE, POSITION TITLES AND CODES, AND COMPENSATION INFORMATION

Job Code

TRANSENG

Job Code Description

TRANSPORTATION ENGINEER

Position Title

Transportation Engineer-E

Transportation Engineer-A

Position Code

TRAENGE

TRAENGA

Pay Schedule

H21-039

H21-041

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05/24/2026