

SENIOR TRANSPORTATION ENGINEER

JOB DESCRIPTION

Classification Responsibilities: Under general supervision, performs responsible professional engineering work within the Traffic Engineering section of the Transportation Department. This class performs related work as required.

Distinguishing Features: Employees in this class perform the full range of professional engineering assignments within the Transportation Department. Work involves the application of skilled engineering knowledge to a variety of difficult traffic engineering problems as well as frequent professional contacts with the public. In addition, a Senior Transportation Engineer may direct and review the work performed by lower level professional, paraprofessional, and technical staff. Assignments are broad in scope and require the use of independent, professional judgment and initiative in making technical decisions of considerable difficulty. A Senior Transportation Engineer is responsible for conducting all types of traffic engineering studies, traffic signal timing and traffic management, ITS design, ITS system configuration and maintenance, creating policies and design standards, reviewing roadway design plans and, reviewing commercial development and subdivision plans, preparing or checking signing and striping plans for the City street system, and acting as the City's technical expert in these areas. Work is reviewed by the Traffic Engineer, Traffic Studies Supervisor, or ITS Engineer through conferences, inspections, and results achieved. This class is distinguished from the Transportation Engineer class by the required registration as a Civil Engineer and by performing more difficult and varied professional engineering work assignments with minimal direct supervision. City employees may progress to this class by noncompetitive promotion upon meeting the specific criteria-based promotion requirements of performance and professional registration. This class is FLSA exempt-professional.

QUALIFICATIONS

Minimum Qualification(s) Required. Graduation from an accredited college or university with a major in Traffic Engineering, Civil Engineering, or related field. Registration as a Professional Civil Engineer. Registration as a Professional Civil Engineer in the State of Arizona is required within six months of hire.

Special Requirement(s). Must possess a valid Arizona Driver's License by hire date.

Substance Abuse Testing. Due to the safety and/or security sensitive nature of this classification, individuals shall be subject to pre-employment or pre-placement alcohol, drug and/or controlled substance testing as outlined in City policy and procedures.

Preferred/Desirable Qualification(s). At least three years of municipal traffic or transportation engineering experience preferred. Two years of supervisory experience preferred. Experience using AutoCAD is highly desirable.

ESSENTIAL FUNCTIONS

One position may not include all of the essential functions, knowledge and abilities listed, nor do the listed examples include all the knowledge and abilities which may be found in positions of this classification.

Communication: Communicates with the general public, other City employees, vendors, management and contractors in order to respond to complaints and questions regarding traffic engineering matters and report the status of work in progress. Prepares written documents such as letters, memos and technical reports with clearly organized thoughts and using proper sentence construction, punctuation, and grammar to explain City policies and make recommendations for traffic control changes.

Manual/Physical: Reviews the work products of others to ensure compliance with standard operating procedures and state regulations including the Manual on Uniform Traffic Control Devices (MUTCD). Detects traffic sounds when working near moving traffic. Operates a vehicle requiring a standard Arizona Driver's License to respond to traffic problems and inspect work completed in the field. Uses common hand tools such as a hammer, steel tape measure, rolling tape measure or in-vehicle distance measuring device to collect data for pavement striping and designs and determine and mark appropriate locations of signs. Operates a variety of standard office equipment. Enters data or information into a personal computer to operate the Advanced Traffic Management System, design various ITS devices or traffic control features, maintain databases, log in work requests, prepare reports, letters, memos, and assist in preparing the budget. Prepares maps, graphs, or similar charts to be used in written reports or as part of fieldwork requests. Sets up and removes traffic cones to maintain a safe working environment during studies. Works in a variety of weather conditions while performing traffic-engineering work. Meets scheduling and attendance requirements.

Mental: Plans, organizes, and directs the activities of staff. Supervises and evaluates the work of staff including: traffic signal timing and ITS network configuration, ITS design, legal requests, technical reports, customer contacts, striping and signing field work requests, policy preparation, and plan review. Prioritizes own work and prioritizes and assigns work to others. Instructs and trains staff in the proper use of the AutoCAD-based TRANSLAND application. Modifies the application to improve efficiency. Trouble-shoots the application, checks data for adherence to standards, maintains the integrity of the data, and performs regular back-ups of the data. Creates ArcView shape files. Develops policies and procedures for the Traffic Studies group or the ITS group. Conducts research and analyzes a variety of data including traffic counts, traffic speed, traffic accidents, and striping and signing measurements to make recommendations to resolve traffic problems. Performs mathematical calculations and statistical computations to develop traffic signal timing plans or to determine sight distance, warning sign locations or striping tapers. Prepares cost estimates and submits justifications for budget items for studies. Comprehends and makes inferences from written material to prepare signing and striping diagrams for traffic control changes. Understands and interprets blueprints to prepare signing and striping diagrams. Learns job related material through on-the-job training regarding City and Transportation policies. Maintains TMC systems and ITS communications network, works collaboratively with ITS field operations on installation or modification of traffic signals and ITS devices, and planning, designing, and operating various ITS devices. Plans and prioritizes own work, work of others, and assigns work to personnel. Resolves procedural, operational and other work-related problems by gathering information, evaluating, and making a decision. Coordinates work activities with other City departments and agencies. Assists in the preparation of short- and long-range plans, estimates, budgets, and staffing projections. Comprehends and make inferences from technical user's

manual or specifications to understand controller operations and equipment tolerances. Reads, understands and interprets complex specifications, schematic drawings, manuals, and engineering plans to construct and inspect ITS equipment. Estimates labor and material costs from blueprints and verbal description of work required.

Knowledge and Abilities:

Knowledge of:

the principles and practices of traffic engineering;
the operation, application, and limitations of electrical traffic signal controllers and peripheral equipment;
traffic laws and regulations pertaining to traffic control;
traffic surveying techniques and practices;
terminology, methods, practices and techniques used in technical traffic engineering report preparation;
principles and practices of employee supervision and training;
current modes of ground transportation including street and traffic operations, bicycle systems, and pedestrian requirements;
operation and timing of signal control devices;
coordination of traffic signals;
planning and implementation of ITS projects;
directing maintenance of ITS systems and associated communications network;
evaluation of performance of ITS applications, and National ITS architecture, standards and trends;
the planning, implementation, and operation of communications systems for voice, video and data transmission over twisted pair, fiber optic, microwave, radio, Ethernet, multiplexing, etc.; and
operation and maintenance procedures and policies for a traffic management center and communications systems.

Ability to:

supervise, train, and develop employees effectively;
resolve operational and procedural problems related to the TRANSLAND application by improving techniques and isolating errors;
supervise a staff of professional, paraprofessional and technical personnel including but not limited to: completing performance evaluations, approving time sheets and leave of absence requests and setting work schedules;
participate in the selection of staff, provide or coordinate staff training, work with employees to correct deficiencies and implement discipline procedures;
prepare cost estimates and submit justifications for budget items;
prepare traffic studies including parking studies, accident analyses, signal studies, left-turn signal studies, high accident location studies, and studies concerning traffic conditions in neighborhoods and around schools;
participate in transportation planning activities including reviewing detailed traffic impact studies of major developments and providing input to community development on area master plans, circulation requirements, access requirements and basic vertical and horizontal curve requirements;
develop new policies, procedures, and ordinances for adoption on traffic related issues (i.e., speed limits, parking, etc.);
determine traffic control measures for implementation in response to complaints or emergency

situations;
evaluate technical information and statistics;
effectively communicate both verbally and in writing;
present recommendations effectively both verbally and in writing;
determine adherence to traffic engineering specifications;
communicate with, and respond pleasantly to a demanding and diverse public in answering questions, explaining City policies, and handling complaints;
research and evaluate newly developed materials and engineering methods for local use;
examine reports prepared by subordinates by considering aspects such as style, factual accuracy and completeness and soundness of reasoning in order to ensure that recommendations represent the division well and are clear and complete;
review and coordinate new and planned developments regarding geometrics, traffic controls, and traffic impact;
effectively investigate, analyze, evaluate and resolve operational, procedural, and personnel problems;
assess and assign priorities to problems and work assignments when confronted with several pressing demands at one time;
review projects of subordinates to ensure conformance with established plans, specifications and goals;
effectively supervise employees and work with individuals and groups to promote a harmonious and efficient operation; and
operate a computerized data system.

The duties listed above are intended only as general illustrations of the various types of work that may be performed. Specific statements of duties not included does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Job descriptions are subject to change by the City as the needs of the City and requirements of the job change.

Revised 8/15

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CS5053.DOCX

EEO-Prof

NDOT SAFETY-Yes

NDOT RANDOM-No

DOT SAFETY-No

RESP-No

JOB FCTN-ENG

INCREMENTS 62-200

PAY GRADE: 55

SECURITY-No

CDL-No

IND-9410

SWORN-No