

## INTELLIGENT TRANSPORTATION SYSTEMS (ITS) ENGINEER

### JOB DESCRIPTION

**Classification Responsibilities:** An Intelligent Transportation Systems (ITS) Engineer is responsible for managing and directing the functions and operations of the ITS group, which is comprised of two distinct areas (systems and field), within the Traffic Engineering Division of the Transportation Department. This class is responsible for supervising professional and technical staff both directly and through subordinate supervisors and preparing and monitoring the ITS section's budget. Duties include: managing the planning, design, operations, implementation and maintenance of the City's ITS (498 traffic signals, fiber communications network and Traffic Management Center); developing and evaluating telecommunications plans and systems, including both wired and wireless components; developing time of day traffic signal plans; managing ITS development, including database development, systems analysis, engineering analysis, testing, documentation, and communications systems operations and support; representing the City on regional and national projects, committees and workgroups; overseeing testing and acceptance of new systems; serving as project manager for ITS projects; researching and pursuing funding opportunities for ITS projects and programs; and serving as a liaison to the light rail transit project for ITS and signal/train interface issues. This class performs related duties as required.

**Distinguishing Features:** This classification has been designated as a non-classified, non-merit system, at-will position. This class can be distinguished from the Intelligent Transportation System (ITS)/Transportation Management Center (TMC) Supervisor class by its responsibility for the integration of the Advanced Traffic Management System (ATMS), TMC, Advanced Traffic Information System (ATIS), and field functions and its management responsibility for the entire ITS group. Work is performed with general instructions from the Deputy Transportation Director - Traffic Engineering who reviews work through meetings, conferences, and results achieved. This class is FLSA exempt-executive.

### QUALIFICATIONS

**Employee Values:** All employees of the City of Mesa are expected to uphold and exhibit the City's shared employee values of Knowledge, Respect, and Integrity.

**Minimum Qualifications Required.** Graduation from an accredited college or university with a Bachelor's Degree in Engineering, Mathematics, Computer Science, or a related field. Extensive (5+ years) experience in Systems Engineering, Traffic Signal Systems, or Transportation Engineering, including two years of ITS planning and implementation work. Good (1 - 3 years) supervisory experience.

**Special Requirements.** Registration as a Professional Civil, Electrical, or Mechanical Engineer. Registration in the State of Arizona is required within six months of hire. Must possess a valid Class D 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 Qualifications.** Experience interacting with and giving presentations to high-level public officials, and participation in recognized traffic engineering or public works committees or associations is highly desirable.

## **ESSENTIAL FUNCTIONS**

**Communication:** Communicates both verbally and in writing with the general public, Transportation Department staff, other City employees, vendors, management, contractors, and public officials in order to plan and promote ITS and traffic engineering concepts, and to resolve problems. Communicates technical, detailed information in verbiage that is appropriate to various audiences so that information is understood and useful. Prepares written documents, such as: specifications, recommendations, annual reports, performance evaluations, and procedural manuals with clearly organized thoughts and using proper sentence structure, punctuation, and grammar.

**Manual/Physical:** Reviews the work product of others to ensure compliance with standard operating procedures and federal and state regulations, such as Manual on Uniform Traffic Control Devices (MUTCD), Occupational Safety and Health Administration (OSHA), policy and procedure manuals, and the City Traffic Barricade manual. Enters data or information into a personal computer (PC). Moves objects weighing up to ten pounds, such as a set of plans, up to 500 feet to review in the office or out in the field. Operates a City vehicle requiring a standard Class D Arizona Driver's License to travel to job sites. Meets scheduling and attendance requirements.

**Mental:** Plans, organizes, and directs the activities of the ITS group. Manages, supervises, and evaluates the work of subordinate personnel. 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 other cities and agencies. Develops ITS policies and procedures to meet short- and long-term objectives. Conducts research of policies and procedures from other organizations. Performs mathematical calculations, statistical computations, and financial and cost analysis. Prepares ITS section budget. Comprehends and makes inferences from manuals or specifications to understand system, operations, and equipment expectations and tolerances. Ensures ITS equipment complies with prescribed operating and safety standards and regulations, such as: Institute of Transportation Engineers (ITE), Federal Highway Administration (FHWA), International Municipal Signal Association (IMSA), National Electrical Manufacturer's Association (NEMA), Arizona Department of Transportation (ADOT), and National Electrical Code (NEC). Learns job-related material through higher educational opportunities, attending conferences, and seeking training opportunities.

## **Knowledge and Abilities:**

Knowledge of:

principles, practices, and methods of transportation systems planning, engineering, operations, maintenance, and management;

principles, capabilities, and operation of telecommunications systems, including VHF/UHF radio transmission and microwave/multiplex point-to-point services;

federal, state, and local regulations relative to installation and operation of traffic control management and communications/telecommunications systems;

preventative maintenance procedures for traffic control, management, and communications equipment;

possible defects and faults of ITS equipment and effective corrective measures;  
the hazards and precautionary methods required to operate in a safe manner while engaged in operations peculiar to ITS work;  
construction, maintenance, operation, and timing practices of signal control devices; and  
principles and practices of traffic engineering, personnel management, supervision, training, and budget preparation and management.

Ability to:

manage, operate, and maintain the traffic signal computer system;  
review inventory reports and create documents;  
conduct traffic and network analyses using statistical methods;  
evaluate system problems and direct supervisors in taking corrective action;  
work cooperatively with City personnel, contractors, governmental agencies, the general public, and others to prevent, resolve, or minimize ITS related problems;  
compile and analyze data pertinent to conditions impacting ITS by considering such factors as modifications to design, changes in geometric configuration, distribution, and volume, and increased pedestrian movement;  
read, understand, and follow complex specifications, schematics, and manuals;  
schedule projects and order necessary materials and equipment;  
give instructions in work procedures, safety practices, technical aspects, department policies, and related requirements;  
supply traffic signal timing and operation information for legal purposes;  
serve as an expert witness in court;  
organize and conduct surveys;  
prepare budgets, contracts, engineering service requests, and other information for continuous delivery of services;  
compile statistical data;  
present ideas effectively, both orally and in writing;  
plan assignments and supervise professional and technical personnel;  
explain technical traffic signal and traffic engineering concepts to the public and others;  
make quick and accurate decisions under stress; and  
remain flexible while experimenting with different solutions to traffic control problems.

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.

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JOB FCTN-ADM

INCREMENTS 46-200

PAY GRADE: 59

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