

Position Description
Geographical Information System (GIS) Technician

Department: Engineering Services Classification: Hourly
Section/Group: UAW Local 867 Grade:
Date: January 2018
Reports to (Title): Engineering Services Supervisor
Directly Supervises (Titles): N/A
Schedule: 7:00 a.m. – 4:00 p.m., Monday-Friday

General Purpose

Under the general guidance and direction of the Engineering Services Supervisor, responsible for developing, operating, and maintaining the GIS system for the water, natural gas, fiber optic and electric utilities. Responsible for GIS program planning, coordination, GIS mapping, database management, and application development. Performs drawing, recording and filing of engineering documentation, required in-field location of buried utilities, routine and complex technical engineering related work in the areas of water, natural gas, electric and fiber optics lines, distribution system components and utility facilities in the office and in the field.

Essential Duties and Responsibilities

Actively supports Austin Utilities' mission, goals, objectives, and strategies, and promotes them within the utility. Exhibits personal and professional integrity at all times, consistent with the organization's mission, vision and values.

Develop plans and procedures for the use of GIS to meet the needs of the Utility.

Implement, operate, and maintain a GIS system for the water, natural gas, fiber optic and electric utilities.

Perform planning, development, and administration of GIS data sets; to include development of databases and applications for record, database management, manipulation and data entry.

Work with other utility departments and governmental offices in developing and maintaining GIS databases and maps.

Responds to inquiries and requests for information about department infrastructure.

Assist in recommending, operating, and maintaining software and hardware systems for use in the GIS system or coordinated applications.

Provide training and technical support with respect to GIS for internal customers and users.

Troubleshoot system problems as they arise.

Performs routine and complex technical engineering related work in the planning and recording of water, natural gas, fiber optic and electric utility infrastructure.

Prepares and updates engineering drawings and schematics using computer aided design (CAD) equipment and software, and paper and pencil as required.

Prepares field drawings and as-built plans; prepares maps of underground facilities based on in-field placement.

Knowledgeable in safety rules and regulations, engineering standards, construction specifications, and applicable codes.

Inspect construction sites on new installation and maintenance projects to confirm and record the project in accordance with plans and specifications.

Assists in the staking and surveying of land to obtain and analyze topographical details of sites for proposed utility projects.

Takes measurements for the installation and arrangement of utilities.

Performs retrieval, maintenance, storage and organization necessary on maps and other engineering data. Typical engineering data include location of electric and natural gas lines, sewer stubs, water mains and services, hydrants, and special property assessments.

Drafts detailed dimensional drawings such as those needed for water, natural gas, electric, and fiber optic lines and other utility plans, systems and projects.

Calculates dimensions, profile specifications, and quantities of materials for buried utilities such as pipe, duct, concrete, and asphalt.

Assists in the preparation of engineering plans and specifications.

Performs a variety of office related functions, including preparing permits, correspondence, maps, presentation materials, brochures, reducing field notes, printing materials, answering phones and responding to inquiries from contractors, developers, property owners, staff, and the general public.

Compile data and assist in completing reports for various governmental agencies including U.S. Pipeline and Hazardous Materials Safety Administration.

Assists in the preparation of sanitary sewer, water, natural gas, electric, fiber optic, storm drainage, and street system maps, databases, and comprehensive plans.

Assists in preparing, obtaining, filing, and researching utility easements.

May assist with required in-field location of buried utilities as dictated by the Gopher State One-Call Laws (MN Statute 216D) to protect them from damage by outside forces such as contractors, excavators, surveyors, customers, and other utility operators .

Ability to operate in-field location equipment necessary to mark gas, water, electric and fiber optic buried utilities.

May perform cathodic protection readings, troubleshooting, installation, maintenance and recordkeeping necessary for Federal DOT Compliance on gas distribution lines.

Demonstrates the ability to adapt to change in procedures and workload and able to maintain composure when confronted with stressful situations.

Follows established departmental policies and procedures

Maintains good attendance and punctuality

Listens and communicates in an alert, positive, respectful and supportive manner with customers, co-workers, supervisors and other departments.

Works appropriately with persons of varied races, ages and ethical and sociological backgrounds.

Assumes personal responsibility for professional development and ongoing education to maintain proficiency. Communicates self-development and learning needs to supervisor.

Maintains a clean and safe work environment and recognizes unsafe working conditions. Ensures the proper safety practices, job briefings, and safety attitudes at the job site. Utilizes proper body mechanics and maintains ergonomically correct position in work area.

Maintains skills and knowledge in the proper and safe techniques for performing job functions.

Performs other duties as assigned by department supervisor/director.

Peripheral Duties

Serves as a member of various organizational committees and attends meetings.

The duties listed above are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to the position.

Minimum Qualifications

Education and Experience:

- A) Graduation from a high school or GED; and
- B) Working knowledge of personal computers and typical applications, and
- C) An Associates Degree from an accredited technical or community college in Geographic Information Systems (GIS) or related field such as Geography, Engineering Technology,

Civil Engineering, Computer Science with an emphasis in GIS coursework and training;
and

- D) Minimum two (2) years of full-time experience with GIS mapping and database management using ESRI ArcGIS software or its equivalent for a municipal or utility type application; or
- E) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- A) Knowledge of principles, theories, and methods of GIS as applied to designing, planning, and maintaining information files;
- B) Knowledge of engineering, locating, surveying, drafting, and flagging practices and techniques; Good knowledge of mathematics;
- C) Knowledge of gas, electric, fiber optic and water construction, corrosion control and protection;
- D) Skill in operating the listed tools and equipment;
- E) Considerable skill in database management including SqlServer, and proficient using the following software: Arc/Info, Arc/View, AutoCAD, Microsoft Office Suite;
- F) Ability to comprehend and problem-solve complex land based data systems involving interdepartmental interaction;
- G) Basic knowledge of networking and associated software
- H) Ability to accurately prepare, organize and maintain engineering field and office data, reports and systems; Ability to effectively communicate complex technical information, orally and in writing, to contractors, developers, property owners, employees, consultants, other governmental agency representatives, City officials and the general public; Ability to carry out detailed oral and/or written instructions with a minimum of supervision; Ability to establish and maintain effective working relationships with utility and other city employees, private contractors, engineers, businesses and residents.

Special Requirements:

- A) Must possess a valid Minnesota driver's license or have the ability to obtain one prior to employment;
- B) Submit to DOT required pre-employment, random, and post-accident drug testing as required under the Department of Transportation and Office of Pipeline Safety.
- C) Must be physically capable of moving about on construction work sites.
- D) Successfully complete all modules for the covered tasks required for this position under Austin Utilities Operator Qualifications Manual.

Tools and Equipment Used

Pipe locator (various styles and brands); Personal computer, including CAD/GIS, word processing, spreadsheet, and database software; copy machines, aperture card reader; plotters, surveying equipment, pipe to soil electrodes, short detectors, digital multimeters; engineering calculator; motor vehicle; phone; mobile radio.

Physical Demands

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Work is performed occasionally in outdoor settings requiring the inspection of various land use developments, construction sites, or public works facilities. Hand-eye coordination is necessary to operate drafting instruments, computers and various pieces of office equipment.

While performing the duties of this job, the employee is occasionally required to stand; walk; use hands to finger, handle, feel or operate objects, tools, or controls; and reach with hands and arms. The employee is occasionally required to sit; climb or balance; stoop, kneel, crouch, or crawl; talk or hear.

The employee must occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and the ability to adjust focus.

Work Environment

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee occasionally works in outside weather conditions. This position will be called upon in emergency situations at any time or date, based on such an emergency. The employee occasionally works near moving mechanical parts, around heavy equipment, overhead and underground construction and excavations. The employee is occasionally in precarious places and is exposed to wet and/or humid conditions, fumes or airborne particles, toxic or caustic chemicals, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate.

The job description does not constitute an employment agreement between the employer and employee and is subject to change by the employer as the needs of the employer and requirements of the job change.