



# MARIN MUNICIPAL WATER DISTRICT

## SENIOR ENGINEERING TECHNICIAN-GIS

### **DEFINITION**

Under direction, performs difficult and complex technical assignments; provides technical or functional supervision to other staff engaged in sub-professional engineering work; performs other related work as required.

### **DISTINGUISHING CHARACTERISTICS**

This is the advanced journey level of the Engineering Technician series. The incumbent has a working knowledge of all GIS functions and serves as a resource providing a wide range of technical and administrative support; and trains and reviews the work of others. The Senior Engineering Technician-GIS is distinguished from the Engineering Technician by virtue of the responsibility for more complex assignments, training other staff, and coordinating and reviewing the work of others.

### **EXAMPLES OF DUTIES**

- Reviews and corrects engineering records created and maintained in CAD and GIS (drawings, ties, maps, schematics), produced by Records & Drafting staff;
- utilizes CAD and GIS to create, update, and prepare maps, plans, profiles and detailed drawings from various notes and sketches;
- provides users with technical assistance, training, and support relating to the operation of the GIS and CAD systems to ensure accuracy and maintain quality standards and assists staff in resolving daily operational and technical problems;
- coordinates and prioritizes mapping projects and prepares the layout and design of a variety of maps for presentation to the Board of Directors, fire departments and other public agencies;
- performs GIS application programming;
- establishes and maintains reports utilizing the District's application database;
- develops and maintains system and user documentation and procedures;
- maintains records of all problems, solutions, and resources used;
- analyzes user requirements, designs, and develops solutions;
- performs software upgrade testing such as patch testing of GIS/SAP interface;
- enters and retrieves data from computer information systems; determines which geographic data are necessary to create water facility maps and related documents;
- consults with staff who use GIS to determine the scope of their needs; designs and executes projects that best serve these needs within the department resources;
- responds to GIS data requests for various departments and public and private agencies;
- assists the public in person, by telephone, and through email, with map related inquiries;
- gathers information required for field location of District facilities; makes field measurements and sketches; performs routine calculations and analysis, and maintains and updates a variety of water supply and water distribution system records, charts and maps;
- locates and marks underground pipes and facilities;
- prepares clear and concise records, reports and correspondence;
- develops and maintains quality standards to ensure quality and consistency in work products;
- evaluates and recommends products and determines compatibility with existing systems;
- integrates current and planned computer systems;
- follows applicable safety rules and regulations.

**QUALIFICATIONS FOR EMPLOYMENT**

Knowledge of:

- Methods and techniques used in troubleshooting and maintenance of Geographic Information Systems software;
- principles and practices used in Geographic Information Systems operations;
- Geographic Information Systems (GIS); GIS software, such as ArcInfo and ArcView;
- Principles and techniques of computer aided drafting using AutoCAD software;
- principles and practices of digitizing, data conversion, data management and cartography;
- Basic engineering design and construction practices.
- Principles and uses of algebra, geometry, trigonometry.
- Theories and applications of computer science;
- PC hardware and software components;
- computer system technology and vocabulary;
- Records management practices and procedures, organizing and maintaining accurate files and records (including computer data storage and retrieval);
- commonly used word processing, spreadsheet and database computer applications such as Microsoft Office.
- networked personal computer operations.
- proper spelling, grammar, punctuation and writing practices.
- safety procedures.

Ability to:

- Effectively prepare maps using the commonly accepted practices of cartography;
- understand and use Geographic Information System (GIS) software;
- provide lead direction and training to staff; coordinate projects; prioritize work;
- use computer-aided drafting and geographic information systems (GIS) software to prepare neat and accurate maps, drawings and layouts from notes and sketches.
- understand and conceptualize spatial data;
- update and manage computer file systems;
- test software upgrades, maintain map related records; follow oral and written directions;
- perform basic mathematics and geometric calculations;
- provide technical support for the implementation and maintenance of information systems hardware and software;
- detect, isolate, and help resolve application, operating system, database, or hardware problems;
- recommend appropriate technology to meet user needs;
- learn methods and techniques of system design, development and implementation;
- understand and carry out oral and written instructions and keep accurate records;
- communicate clearly and concisely, both orally and in writing;
- establish and maintain effective working relationships with those contacted in the course of work;
- travel to off-site work locations depending on job assignment.

Training and Experience:

Any combination of training and experience that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

- Graduation from college with a four-year degree in geography, computer science, engineering, or related field;
- and
- three years of increasingly responsible experience performing GIS and CAD functions and providing support of computer applications, databases, and end users.
- or

***Training and Experience (continued)***

- Graduation from college with a two-year degree in geography, computer science, engineering or related field; and
- four years of increasingly responsible experience performing GIS and CAD functions and providing support of computer applications and end users.

**OTHER REQUIREMENTS**

- Per California Government Code, Title 1, Division 4, Chapter 8, Section 3100 "all public employees are hereby declared to be disaster service workers subject to such disaster service activities as may be assigned to them by their superiors or by law."

**LICENSES AND/OR CERTIFICATIONS**

- Employees who drive on District business to carry out job-related duties must possess an appropriate California driver's license issued by the State Department of Motor Vehicles and a satisfactory driving record.

**PHYSICAL DEMANDS AND WORKING CONDITIONS**

During the course of performing job duties the employee will need the mobility to work in a standard office setting, operate equipment, which may include office and/or field equipment, or specialized instruments or tools requiring repetitive arm/hand movement and/or the coordinated movement of more than one limb simultaneously; enter and retrieve data from personal computers and terminals via keyboards which is often performed while sitting for extended periods of time. The employee frequently stands, walks, bends at neck and waists, twists at neck and waist, uses simple and power grasping with both hands, uses fine manipulation of both hands and fingers, and may require use of the arms above the shoulder, climb or balance; stoop, kneel or crouch. While working in the field the employee may walk on uneven or un-level ground surfaces such as hills, slopes, ditches or trenches, on or in tanks, and may work at heights up to ten to twelve feet climbing ladders or stairs. The employee is occasionally required to lift and carry short distances objects such as reams of copier paper, office supplies, files, books, printed materials and other packages or equipment weighing up to 10 to 25 pounds. This position requires that the employee demonstrate adequate hearing and speech to converse in person and over the telephone, and vision to read printed materials and use a computer screen. This position requires that the employee demonstrate adequate hearing to detect warning alarms and speech to converse in person and over the telephone, and vision to read printed materials and distinguish between color coded materials, and use a computer screen.

The noise level in the work environment is quiet to moderate noise. The employee is exposed to outdoor temperature, humidity, wetness and dust. The position may require the ability to work overtime and weekends as needed.

Employees who drive on District business to carry out job-related duties must possess a California driver's license for the class of vehicle driven and meet automobile insurability requirements of the District including review of a recent DMV history. In order to drive and depending on job assignment, individuals must be physically capable of operating the vehicles and equipment safely.

*To be successful in this job, an individual must be able to satisfactorily perform each of the listed duties. These duties are representative of the knowledge, skill and/or ability required for the position. Reasonable accommodations may be made to enable individuals with disabilities to perform the duties and functions of the position. Requests for reasonable accommodation should be directed to the Human Resources Manager.*

**Established:** September 2000  
**Revised:** May 2009  
**Approved by:** Human Resources Manager