



# Systems and Mapping Coordinator

Agency/Department: Planning and Engineering

Supervisors: Planning and Engineering Manager

Approved by:

Date Approved:

Date of Last Revision:

**JOB SUMMARY:** Under the general direction of the Planning and Engineering Manager, this position will coordinate all aspects of the District's data acquisition, control and mapping systems including Supervisory Control and Data Acquisition (SCADA), drafting, and Geographic Information Systems (GIS). This position will participate and assist in the planning, design, procurement, installation, operation, maintenance, repair, integration, training and modification of the District's Systems. This position will administer projects and contracts for the Planning and Engineering Department relating to the District's Systems and will provide District staff with training and support on the District Systems. This position will also oversee mapping projects and prepare maps, construction drawings, exhibits and displays as needed.

**DISTINGUISHING CHARACTERISTICS:** Responsible for overseeing all District systems, including, but not limited to: SCADA, telemetry, instrumentation, motor control centers, process control systems, electronic and paper drawings and GIS. Responsible for managing all projects and contracts associated with District Systems, including reports, budgets, schedules, close-out, and coordination between departments and agencies. Performs configuration, programming and special assignments relating to the operation and maintenance of District Systems. Works closely with District staff to maintain an in-depth awareness and understanding of District's issues, philosophies, and objectives. Performs special calculations requiring the application of higher level engineering skills. Performs routine technical, sub-professional engineering-related work. Provide support to staff, management, contractors and consultants. Duties may require the direction of other District staff, contractors and consultants.

## EXAMPLES OF ESSENTIAL FUNCTIONS:

1. Participate in short and long term planning associated with the District's Systems and the Capital Improvement Program (CIP). Work with District operations and engineering staff and consultants to evaluate the future needs for hardware, software and instrumentation. Assist in developing master plans and annual budgets for District Systems.
2. Participate in the identification of hardware, software and instrumentation best suited to meet the needs of the District. Manage and coordinate the acquisition and implementation of these systems.
3. Prepares specifications, related contract documents and Requests for Proposals, evaluates and selects consultants and contractors, performs project management including developing budgets and schedules.
4. Administer contracts, bidding, and close-out (for the Planning and Engineering Department) for projects relating to the District's Systems. Serve as the liaison between the District and consultants and/or contractors. Oversees the day to day progress of consultants and contractors. Prepares monthly progress payments, contract change orders; interpretation of project plans and specifications and coordinates final inspection(s).

5. Performs and coordinates training and or training event for all levels of System users.
6. Oversee the day to day operations and administration of the District Systems.
7. Serve as the liaison between the Operations and the Planning and Engineering Departments for projects involving District Systems.
8. Develop required inventory for replacement parts as part of overall asset management system.
9. Prepare preliminary cost estimates for improvements. Prepare comprehensive budget documents.
10. Perform and/or oversee selection and installation of software, software upgrades and new hardware components.
11. Troubleshoots, repairs, programs, configures, tests and performs maintenance on Systems.
12. Database development, support and maintenance, and system reports.
13. Perform and/or oversee programming changes to System software. Develop and maintain software and control system logic.
14. Maintain System documentation. Organize existing documentation, develop required documentation and update as needed.
15. Programmable Logic Controller (PLC) programming and maintenance, PLC wiring and interconnection to control components.
16. HMI software development and maintenance.
17. Control system logic development. HMI graphics.
18. Researches and evaluates new developments in the fields of SCADA systems, GIS and related technologies.
19. Maintain and update District utility mapping and map filing systems. Oversees mapping projects and approves work upon completion.
20. Updates existing maps with as-built information. Coordinates with various operating groups in the District to gain necessary information to update maps and records. Prepares charts, graphs, layouts, maps and visual aids.
21. Consult with and utilize data from specialized consultants.
22. Act as technical advisor to other departments on matters related to District Systems.
23. Performs related work as required.

<b>MINIMUM QUALIFICATIONS:</b>
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*Any Combination of education and/or experience that provides the required knowledge, skills, and abilities to perform the essential functions of the position. A typical combination includes:*

**KNOWLEDGE OF:**

- Instrumentation and control, SCADA, HMI systems, PLC, field devices and GIS software, control system wiring practices, process control theory, general engineering principles, project management principles and practices, including planning, budgeting, scheduling and control.
- Industry standard communication protocols for SCADA, telemetry and Ethernet networking, and basic network security.
- The methods, materials, and techniques commonly used in the maintenance, repair, and operation of electro/mechanical and instrumentation equipment and systems associated with industrial process control of water and wastewater treatment plants.
- Variable Frequency Drives (VFDs), motor starters, and solid state soft starts.
- A/C and DC power, control, and signal circuitry with emphasis on process measurement and instrumentation.
- Client/server application concepts and database design including SQL, VB, and Microsoft Access.
- Computer operations and the concepts of operating systems, system utilities, & applications including Microsoft Office, Microsoft Project, ERSI ArcGIS & AutoCAD.
- The occupational hazards and necessary safety precautions applicable to electro/mechanical maintenance and repair.
- The District's water distribution and sewer collection systems, practices, procedures and ordinances.

## ABILITY TO:

- Provide technical and applications support to various SCADA and GIS systems; conduct complex systems analysis studies and evaluation.
- Prepare clear and concise engineering reports, maps, plans, contracts, design drawings, specifications and documentation. Oversee and direct the work of consultants, contractors and District Staff. Communicate effectively, both orally and in writing. Establish and maintain effective working relationships with those contacted in the course of the work.
- To read, interpret, plan and lay out projects from blueprints, electrical diagrams, schematics, manufacturer instructions, directions and verbal instruction. Maintain records in the form of manuals, ladder logic, blueprints, plans and specifications for industrial electrical and instrumentation, equipment and devices.
- Perform technical research and make detailed analyses.
- Troubleshoot water and wastewater control systems, equipment and instrumentation.
- Use standard and specialized testing equipment such as voltmeters, multimeters, logic analyzers, amp meters, infrared pyrometers, digital analyzers, frequency generators, oscilloscopes and other specialized test equipment.
- Work cooperatively and effectively with the Board, the public, District Staff, State and Federal regulatory agencies, outside consultants and contractors, and local government agencies.
- Utilize standard engineering, mathematics, economics and research practices.
- Monitor and maintain schedule on individual project tasks, multiple projects, and project and departmental budgets.

## EDUCATION AND EXPERIENCE:

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

- A. A bachelor's degree with a major in engineering, computer science, or information systems from a college or university with a curriculum accredited by the Accreditation Board for Engineering and Technology, and
- B. A minimum of at least three (3) years of related experience in SCADA, control systems, GIS or a related field.

## LICENSES:

- Posses or ability to obtain CCST (Certified Control System Technician) certification.
- Posses or ability to obtain State of California Department of Public Health Water Treatment Operator certification Grade T2.
- Posses or ability to obtain State of California Department of Public Health Water Distribution Operator certification Grade D2.
- Possession of a State of California or Nevada driver's license along with a driving record acceptable to the District and the District's insurance carrier.

<b>TOOLS AND EQUIPMENT USED:</b>
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Voltmeters, multimeters, logic analyzers, amp meters, infrared pyrometers, digital analyzers, frequency generators, oscilloscopes and other specialized test equipment. Personal computer, And Microsoft Windows based software, including: word processing, spreadsheet, database software, Microsoft Project, AutoCAD and ArcGIS.

## 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 in compliance with Americans with Disabilities Act (ADA) requirements. On a case-by-case basis, reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

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

The employee must occasionally lift and/or move up to 25 pounds. Specific vision abilities required by this job include close vision 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.

The noise level in the work environment is usually quiet, but can be moderately noisy depending on specific location. The work environment can be quite hectic and requires an ability to perform multiple tasks and maintain considerable tact when dealing with others, regardless of how they treat you.

While performing the duties of this job, the employee is occasionally exposed to dust, pollens, and fumes. The employee occasionally works in outside weather conditions. The employee occasionally works around moving mechanical parts and in high, precarious places and is occasionally exposed to wet and/or freezing cold conditions, fumes or airborne particles, toxic or caustic chemicals, risk of electrical shock, and vibration.

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**FLSA Exemption status:** Non-Exempt, classified

**Employee Unit:** Recreation and Parks, Clerical, Engineering, and Accounting Unit

**Job Family:** Planning and Engineering

**Class Progression:** Systems and Mapping Coordinator

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