SOUTH COAST WATER DISTRICT

SENIOR CIVIL ENGINEER
(Desalination)

DEFINITION

This position is located in the Engineering Department and will serve as the lead civil engineer assigned to desalination projects. The incumbent performs the most complex and difficult professional field and office civil engineering work related to the planning, design, construction and maintenance of District capital improvement projects and infrastructure concentrating on the District’s Desalination project, and supervising the processing and approval of land development projects; confers with developers, contractors and representatives of other agencies regarding facility and infrastructure development; administers professional services and construction contracts; provides professional assistance to the Chief Engineer; performs a variety of studies and prepares and presents staff reports; signs drawings, submits reports and performs similar work within state guidelines; and performs related work as required.

SUPERVISION RECEIVED AND EXERCISED

This position reports to the Chief Engineer.

CLASS CHARACTERISTICS

This is the highest-level class in the professional engineering series with supervisory responsibility for an entire function of the engineering division (Desalination), including capital improvement design, land development projects, or engineering program responsibilities. Incumbent perform the most complex professional and technical work in the preparation of plans, specifications, designs, estimates, schedules, inspections and project management activities for construction or maintenance programs. This class is distinguished from the Chief Engineer in that the latter has overall responsibility for the Engineering Department in addition to handling the most complex and sensitive engineering projects.

The incumbent ensures that her/his activities are aligned with and support the South Coast Water District’s policies, mission, vision, core values, core strategies, and annual action items as well as performance measures.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS

Duties may include, but are not limited to, the following:

- Performing process engineering design for water treatment projects as well as membrane performance projection and normalization calculations.
- Develop Microfiltration/Ultrafiltration/Nanofiltration/Reverse Osmosis treatment plant specifications and drawings, research and develop/maintain process engineering expertise in advanced membrane treatment technologies.
- Participate in advanced water treatment project implementation and support the desalination project development and delivery.
- Drafts and finalizes scopes of work, manages the engineering aspects of award of consultant contracts, and serves as project manager for contracts from conceptual, environmental, economic, and feasibility studies, design, through construction of the District’s Desalination project.
- Manages, develops, and completes a wide variety of engineering projects and programs involving grading, sanitary sewer and water systems.
- Participates in District long- and short-range capital improvement and preventive maintenance activities.
Examines public and private engineering plans, subdivision maps, specifications, designs, cost estimates and legal descriptions for a variety of construction and maintenance and/or private development projects to ensure compliance with engineering standards and specifications.

Overssees the Engineering Department’s review, processing, and approval of land development projects and applications, including preparation of engineering conditions of approval, plan checking, preparation of development agreements, computation and collection of fees, and coordination of developer reimbursements.

Performs engineering work for the more complex designs for construction projects.

Performs the more complex construction inspections to confirm contractual compliance with engineering and construction standards.

Supervises revisions and updates of all water, sewer and recycled water maps utilizing record drawings on new projects and other sources.

Performs project management and administration of consultant and in-house capital improvement and other special projects; meets and confers with contractors, engineers, developers, architects, a variety of outside agencies, and the general public on development issues and acquiring information; ensures contractor compliance with District standards and specifications, time and budget estimates; analyzes and resolves complex problems that may arise; recommends and approves field changes.

Prepares punch lists and accurate “record drawings;” inspects the need for, prepares, and submits supportive data for change orders and progress payments with supervisor approval.

Assists in the development and implementation of goals, objectives, policies, standards and priorities within the Engineering Department.

Confers with property owners, developers, engineers, contractors, architects, and the general public concerning interpretation and application Engineering Department rules and procedures.

Makes presentations to the public, Board of Directors and various other commissions.

Supervises the preparation and maintenance of Engineering Department records, plans, maps, files and related materials.

Interprets and administers applicable ordinances relating to project requirements, prepares engineering reports, legal descriptions and project related correspondence, acts as project engineer when dealing with other departments, other jurisdictions and agencies and responds personally or in writing to questions related to projects and engineering policy.

Prepares contract specifications and requests for proposals for capital improvement projects; submits projects for competitive bids; analyzes bids and makes recommendations for acceptance.

Represents the Engineering Department at various City, County, and State commissions, boards, committees, and organizations on engineering matters, as directed.

Assists with the preparation of grant applications, and other special funding sources, and the implementation and administration of said grants, as directed.

Maintains and directs the maintenance of working and departmental automated and manual files.

Monitors changes in laws, regulations and technology that may affect departmental operations; implements policy and procedural changes after approval.

Performs related duties as assigned.

QUALIFICATIONS

Knowledge of:

- Principles, practices, procedures, and standards of civil engineering design and construction related to District projects and infrastructure development and maintenance with significant background in the use of membrane treatment systems.
- Familiarity with Ocean Water Desalination principles, practices, and standards related to design and construction.
- Desalination industry knowledge and technology trends.
- Identify and develop innovative technical proposal development and solutions.
- General design principles and construction techniques for the design and construction of various utilities projects, such as sewer, water, drainage, and traffic control devices.
Various municipal and engineering codes, manuals, and standards as well as Federal and State laws and programs related to the areas of work assignments.

Principles and practices of project management and evaluation, including goal setting and the development of objectives, work planning and organization.

Principles and practices of capital improvement cost estimation and contract administration.

Basic supervisory principles and practices.

Computer applications related to the work, including computer-aided drafting concepts and applications.

Recent developments, current literature and informational resources regarding municipal development and capital improvement projects.

Basic budgetary principles and practices.

Practices of researching engineering and design issues, evaluating alternatives, making sound recommendations and preparing and presenting effective staff reports.

Techniques for effectively representing the District in contacts with governmental agencies, community groups, various business, professional, educational and regulatory organizations and with property owners, developers, contractors and the public.

Techniques for dealing effectively with the public, vendors, contractors and District staff, in person and over the telephone.

Techniques for providing a high level of customer service to public and District staff, in person, and over the telephone.

Ability to:

Make complex engineering computations and check, design and supervise the construction of a wide variety of utility projects.

Research, design, prepare and evaluate plans, subdivision maps and specifications for accuracy and conformance with accepted engineering standards, compliance with appropriate laws, codes, regulations, and community needs.

Examine public and private engineering plans, specifications, designs, cost estimates and legal descriptions for a variety of construction and maintenance projects.

Develop and administer contracts for professional services and construction in a public agency setting.

Conduct complex civil engineering research projects, evaluate alternatives, make sound recommendations and prepare effective technical staff reports.

Manage capital improvement projects, contracts for services and environmental studies.

Interpret, apply, and explain complex laws, codes, regulations and ordinances.

Effectively represent the department and the District in meetings with governmental agencies, community groups, various business, professional, and regulatory organizations and individuals.

Direct and review the work of support staff on a project or day-to-day basis.

Instruct staff in work procedures.

Prepare clear and concise reports, correspondence, policies, procedures and other written materials.

Make effective public presentations and conduct meetings.

Maintain accurate records and files.

Operate modern office equipment including computer equipment and specialized software applications programs.

Use English effectively to communicate in person, over the telephone, and in writing.

Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.

Establish and maintain effective working relationships with those contacted in the course of the work.
EXPERIENCE, EDUCATION AND TRAINING GUIDELINES

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

Experience:

Eight (8) years of professional experience in design and construction and management of civil engineering projects, including some supervisory experience. A significant portion of that experienced should be in membrane treatment processes.

Education:

A Bachelor’s of Science degree in civil, mechanical, electrical or chemical engineering, or a related field.

License or Certificate:

- Valid California class C driver’s license with satisfactory driving record.
- Valid registration as a Professional Engineer in the State of California.

PREFERENCES

Two (2) or more years of experience in the conceptualization, CEQA process, design, and/or construction of a Desalination facility.

A Master’s degree in civil, mechanical, electrical or chemical engineering, or a related field.

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer; to inspect District development sites, to operate a motor vehicle and to visit various District and meeting sites; vision to read printed materials and a computer screen; and hearing and speech to communicate in person, before groups and over the telephone. This is partially a sedentary office classification; the job also involves field inspection work requiring frequent walking at inspection site areas to monitor performance and to identify problems or hazards; standing in work areas and walking between work areas may be required. Finger dexterity is needed to access, enter and retrieve data using a computer keyboard, typewriter keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, push and pull drawers open and closed to retrieve information. Employees must possess the ability to lift, carry, push, and pull materials and objects weighing up to 25 pounds.

ENVIRONMENTAL ELEMENTS

Employees partially work in an office environment with moderate noise levels and controlled temperature conditions, and partially in the field and may occasionally be exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, confining workspace, chemicals, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

The specific statements shown in each section of this classification description are not intended to be all-inclusive. They represent the essential functions and minimum qualifications necessary to successfully perform the assigned functions. Management reserves the right to add, modify, change or rescind the work assignments of different positions and to make reasonable accommodations so that qualified employees can perform the essential functions of the job.