



## Engineer I/ Engineer II/Associate Engineer

### DEFINITION

Under general supervision (Engineer I/II) or direction (Associate Engineer), performs a variety of professional civil, electrical, mechanical and/or environmental engineering work in connection with the engineering design and operations support for a variety of facilities, infrastructure, programs, and processes; assists other engineering disciplines on assigned projects; provides administrative support to District projects and programs; may exercise technical and functional oversight over engineering support staff and provides technical review of the work of others; may function as engineer in charge of a project or program; makes presentations to governing boards, civic groups, and other organizations; and performs related work as required.

### DISTINGUISHING CHARACTERISTICS

**Engineer I is the entry-level class** in the professional engineering series. Under close to general supervision, within a framework of established policies and procedures, incumbents learn and perform a variety of less complex and more routine engineering and administrative tasks. As experience and proficiency are gained, assignments become more varied and complex, and the level of independent action increases within established guidelines. Assignments are given in specific terms and are subject to frequent review while in progress and upon completion, except where tasks are well-defined by established standards, policies, and procedures. There is limited latitude for independent judgment.

This classification is distinguished from the intermediate-level Engineer II, in that the latter is an experienced classification and performs a broader range of work assignments of greater complexity with less oversight required.

**Engineer II is the experienced, intermediate-level class** in the professional engineering series. Under direction, within a framework of established policies and procedures, incumbents perform a wide range of the more complex engineering assignments. In most cases, incumbents are responsible for managing multiple projects and/or administrative assignments concurrently. Assignments are given in general terms and are subject to periodic review while in progress and upon completion. Incumbents are not expected to perform with the same independence of direction and judgment on matters allocated to the journey level. There is considerable latitude for independent judgment and action in well-defined areas of work.

This classification is distinguished from the experienced, journey-level Associate Engineer class in that the latter performs highly difficult and complex work with greater independence of direction and judgment, may be assigned program lead responsibilities, and possesses a California State Registration as a Professional Engineer.

**Associate Engineer is the licensed, experienced, journey-level class** in the professional engineering series and performs the highest difficulty and complexity engineering work. Under direction, within a framework of established policies and procedures, incumbents perform the full range of engineering and administrative tasks. Assignments are given in general to conceptual terms and are subject to periodic to infrequent review while in progress and upon completion. Incumbents are responsible to successfully managing multiple complex projects and/or

administrative assignments concurrently and may also be assigned program lead responsibilities. There is considerable latitude for independent judgment and action in well-defined areas of work.

This classification is distinguished from the Senior Engineer, which includes the formal responsibility to provide technical supervision and technical and administrative support, and guidance to other engineers while also performing engineering and administrative work of the highest complexity and difficulty. This classification is further distinguished from the Engineering Supervisor, which is a working supervisory classification that performs the most challenging and complex work in all engineering functions and performs the full range of supervisory responsibilities including planning and assignment of work, performance management, budgeting and expense management, and other related duties, and serves as a member of the District's management team.

The Engineer I, Engineer II, and Associate Engineer classifications are flexibly staffed. Upon recommendation of the immediate supervisor and approval by the department manager, incumbents in this class may advance to the next higher classification after the requisite experience has been achieved and the incumbent has demonstrated proficiency to meet the job requirements of the higher classification.

## **TYPICAL DUTIES**

### **TYPICAL EXAMPLES OF DUTIES MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:**

#### When assigned to any Department:

- Performs a variety of professional engineering work in connection with the engineering design and operations support for a variety of facilities, infrastructure, programs, and processes.
- Assists higher level engineers on large and complex projects or acts as a project management engineer on assigned projects; administers project from inception to completion including design, review, public meetings, bidding and construction; develops scope of work; serves as liaison to District staff, developers, engineers, consultants, the general public and external agencies on proposed projects; develops project timelines and sets priorities.
- Prepares and reviews a variety of engineering reports, contracts, agreements, deeds, RFP's, and other correspondence; prepares statements of costs, quantities, and work performed on projects.
- Reviews engineering and development design drawing for compliance with regulations; provides input during design process to ensure capital and development projects meet operational needs.
- Inspects the construction of engineering facilities and materials for conformity with plans and specifications; maintains records from which essential data is compiled.
- Compiles and computes engineering data and statistics and uses appropriate assumptions, methods and formulae to prepare detailed plans and engineering specifications.

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- Conducts hydraulic and water quality modeling of the water system using District computer programs to assess consumer impacts and system needs.
- Evaluates the need for consultants and special services; conducts advertising, bidding, and award of contract; manages consultant and contractor contracts; oversees and manages project schedules and budget to ensure project alignment with plans and District initiatives.
- Prepares and reviews environmental and permit-related documentation.
- Participates in the administration and management of the grant application process, including providing input and review of project scope, schedule, and cost; negotiates revisions to agreements and/or revises District contract documents for consistency with grant terms; tracks, prepares, and submits grant reimbursable costs and prepares supporting documentation and financial information as required by the grant terms.
- Responds to questions and inquiries from the general public, developers, contractors, engineering professionals, and District staff regarding engineering projects.
- Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of civil, electrical, mechanical, and/or environmental engineering.
- Performs other related work as required.

### When assigned to Engineering & Technology Services:

- Manages projects of moderate to highest difficulty, complexity, and size from initial planning and design through construction and startup; responsibilities include: interagency and intra-agency coordination and communication; developing and coordinating project plans and charters; planning and developing Basis of Design reports and budgets; performing engineering economic analyses and alternatives analyses; development of scopes of work and evaluation criteria for selection and procurement of professional services; performing design; preparation of design drawings; coordinating directly with permitting authorities and securing permits; developing environmental documentation; and, managing consultants.
- Develops and oversees the development of complex construction drawings and work plans for facilities replacement and upgrade projects.
- Prepares or assists with the preparation of economic comparisons between alternatives and comprehensive reports that include text, charts, maps, diagrams, and sketches on engineering subjects of moderate to substantial difficulty and complexity.
- Performs construction management work including coordinating and maintaining communication with stakeholders, administering construction contracts and professional services contracts, developing and maintaining detailed schedules and monitoring contract expenditures, reviewing submittals, preparing status reports, managing correspondence and negotiations, managing claims, preparing change orders and staff reports, reviewing contractor progress payments, and performing occasional field work and inspection as necessary.

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- Develops, implements, and coordinates commissioning plans and activities, including witnessed factory acceptance testing, field acceptance testing, functional testing, control system functional testing, and startup testing.
- Coordinates and performs all necessary project closeout activities, including formally transferring projects to other departments for operations and maintenance.
- Conducts studies and investigations of moderate to substantial difficulty and complexity related to hydraulic and water quality modeling, water usage and future water requirements, planning studies of distribution systems, and analysis of performance of hydraulic structures and systems.
- Develops, manages, and uses computer models and databases related to the area of assignment; participates in the planning, management, and maintenance of such models and databases and provides training and support to others.
- Collaborates with Public Affairs staff to plan and perform public outreach activities prior to the start of projects, and during project implementation to ensure public awareness and respond to questions and concerns from the public.
- Assists in the development of the division budget, projecting and forecasting projects costs and other expenditures for all Departments; develops CIP cost estimates and performs annual review of CIP budgets to ensure sufficient funds for projects and programs.
- Reviews and designs District infrastructure improvements utilizing District standard specifications and drawings.
- Coordinates with developers, contractors, consultants, engineers, and other staff; provides information on District policies and procedures related to engineering.
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- Manages and oversees property right acquisitions, including review and approval of easement and quitclaim deeds and review of tentative and final tract maps.
- Reviews and approves technical engineering work, including reviews of customer job order applications, deposit letters, CAD files/drawings, material lists, and estimates.
- Reviews civil utility improvement plans submittals for new water systems or developments.

### When assigned to Operations & Maintenance:

- Assembles and analyzes water quality data, prepares routine monitoring reports, and writes letters relative to results and water quality studies and engineering projects.
- Performs research applicable to improving analytical methods and treatment and distribution practices; assists in the review and analysis of operating records to help identify improvement needs.

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- Assists in the development of standard procedures for watershed, treatment, and distribution operations personnel.
- Monitors water quality legislation and assists in the preparation of staff reports providing periodic updates and impact on District operations.
- Performs field testing in critical facilities to ensure equipment is functioning properly; provides construction support and support start-up tests as needed.
- Develops construction drawings and work plans for facilities replacement and upgrade projects.
- Assists in the development of design standards and operational performance criteria related to projects involving the planning, design, construction, and start-up of new or improved treatment and distribution facilities.
- Implements environmental compliance programs, policies, and procedures to ensure the District's compliant with all applicable federal, state, and local regulations pertaining to wastewater, recycled water, potable water, hazardous waste/materials, biosolids, and air quality.
- Conducts internal inspections and participates in compliance audits; evaluates, determines, and reports on compliance status; investigates mitigation options and prepares reports and recommendations on actions required in response to compliance audits.

When assigned to Water Resources:

- Interprets field and laboratory data compiled from chemical and physical tests made on soil and groundwater.
- Assists in determining the location of suitable sites for facilities, studying groundwater level patterns, and performing investigations of groundwater quality.
- Oversees investigation and cleanup at Leaking Underground Fuel Tank (LUFT) and Spills, Leaks, Investigation, and Cleanup (SLIC) sites in conformance with local, regional, and state guidelines.
- Prepares letters to other agencies and owners of LUFT and SLIC sites outlining recommendations for hydrogeologic investigation and remediation of contaminated soil and groundwater.
- Coordinates investigation and cleanup oversight and District project activities with other federal, state, and local agencies.
- Provides field consultation and oversight related to soil and groundwater remediation, groundwater monitoring, and well construction.
- Reviews civil utility improvement plans submittals for new water systems or developments.

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- Coordinates District's Well Team activities, including investigating causes of water quality issues related to a well or wellfield, conducting tests on wells and equipment, determining causes of well deterioration and making recommendations on rehabilitation, planning for future wells and wellfields, and assisting with installation and removal of pumping equipment.
- Assists and supports District compliance with the Sustainable Groundwater Management Act (SGMA).
- Performs scheduling, tracking, and accounting of water supply deliveries; models and communicates optimal production schedules based on demands, water supply availability, and production facility constraints.
- Develops and maintains hydrologic databases and develops hydrologic models.
- Assists in preparation, review, and assessment of field reports and other monitoring data to determine impacts of upstream activities on watershed lands and, where applicable, verifies these activities are in compliance with permitted conditions protective of the District's water supply operations.
- Reviews and coordinates with appropriate personnel the implementation of federal, state, and local laws and regulations pertaining to water quality and water supply operations.
- Reviews proposed regulations for impacts on the District's water supply operations; recommends changes in programs and operations to comply with new regulatory requirements; provides advice and technical assistance to District officials/staff regarding water supply operations.
- Performs data collection, interpretation, econometric and trend forecasting, regression, and other technical analysis and research in support of water resources planning, water supply development, environmental planning, and water management programs.
- Operates and maintains hydrologic and operational models to assist in planning system operations, optimizing water supply management, and anticipating impacts of proposed system configurations and construction projects.

### **REQUIREMENTS**

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

#### **Education and Experience:**

Possession of a baccalaureate degree from an accredited college or university with a major in an engineering curriculum, which is accredited by the Accreditation Board of Engineering and Technology, or a related field; and

**Engineer I:** No work experience is required.

**Engineer II:** Two (2) years of full-time practical engineering experience equivalent to that of an Engineer I within the District. An advanced degree in an accredited engineering curriculum may be substituted for one (1) year of the required experience.

**Associate Engineer:** Two (2) years of full-time practical engineering experience equivalent to that of an Engineer II within the District.

**Knowledge, Skills, and Abilities:**

Knowledge of: engineering principles, terms, practices, and technology related to basic chemistry and laboratory procedures; engineering mathematics through calculus; engineering methods, and design processes; functions, processes, and equipment within the District; statistical principles and methods of analysis; computer programs and languages and engineering applications; pertinent federal, state, and local laws, codes, and regulations; safe work practices as they relate to the position and the ability to identify workplace hazards and/or unsafe conditions and take appropriate action to correct same; modern office practices, methods, and computer equipment and applications related to the work, including word processing, database, and spreadsheet software.

Skill and Ability to: apply engineering principles and practices to the solution of routine professional engineering problems; conduct literature searches and research available sources of information; perform difficult mathematical calculations with speed and accuracy; interpret and prepare drawings, graphs, charts and compilations of numerical data; maintain accurate records and prepare a variety of memos, letters, and technical reports that are clear and concise; exercise sound judgment in decision making; provide oversight and direction to contract service providers (consultants) including review of work products; perform the essential functions of the job without causing harm to self or others; prioritize and schedule work; operate modern office equipment including computer equipment and specialized software applications programs; communicate clearly and concisely, both orally and in writing; establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

**Additional Requirements:**

- Must possess a valid California driver's license and have a satisfactory driving record.
- Possession of a California Engineer-In-Training Certificate is desirable.

**Engineer II:**

- Must possess a California Engineer-In-Training Certificate.
- Possession of a Water Distribution Operator Grade 2 certification and Water Treatment Operator Grade 2 certification, if assigned to Engineering & Technology or Operations & Maintenance Departments, is highly desirable.

**Associate Engineer:**

- Must possess California State Registration as a Professional Engineer.
- Possession of a Water Distribution Operator Grade 2 certification and Water Treatment Operator Grade 2 certification, if assigned to Engineering & Technology or Operations & Maintenance Departments, is highly desirable.

**Working Conditions/Physical Requirements:**

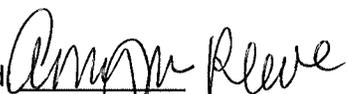
The essential functions of the job require the ability to sit for extended periods of time when performing office tasks; reach above or below shoulder height; finger dexterity to operate a

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computer and other office equipment; speak and hear in person and on the phone; see sufficiently to perform assignments; periodically drive a vehicle from site to site; walk, bend, and climb to conduct inspections under a variety of climatic and geographic conditions in a field environment with potential exposure to loud noise, chemicals, fumes, and other environmental substances: and to frequently lift items weighing up to 20 pounds and occasionally up to 55 pounds.

The essential functions of these classifications require driving due to the need for frequent travel to water treatment plants, pump stations, reservoirs, field sites, meetings, and/or other agency facilities; transportation of time-sensitive/confidential materials, equipment, or water samples; and/or the ability to respond to emergencies, and service disruptions. Alternative transportation is not suitable due to security concerns, logistical challenges, and critical response time requirements.

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Approved   
Human Resources/Risk Manager