

Summary of Duties : Performs responsible professional engineering work in supervising the planning, construction, maintenance, and operation of waterworks facilities and structures and the preparation of specifications, designs, plans, estimates, environmental and water quality control studies and reports, and the conducting of hydrologic surveys; or performs difficult and responsible technical engineering work in supervising the planning, design, construction, maintenance, and operation of waterworks facilities and structures; directs the work of an important section in the Water System; may act as technical and administrative assistant to the head of the Water System or of a major division; and does related work. Directs the coordinating, analysis, investigation, and preparation of reports regarding legislative matters of interest to the Department.

Distinguishing Features : Employees in these classes are mainly involved in the field of civil engineering as applied to the planning, design, construction, operation, and maintenance of a large municipal water distribution and treatment system. Although the work of these classes may involve the coordination of electrical, mechanical, and civil engineering it is mainly involved in waterworks structures. These classes are, therefore, distinguished from other engineering classes at the same level by the emphasis on water engineering and the high degree of expertise required in that field.

The class of Waterworks Engineer is distinguished from that of a Civil Engineering Associate in that it involves highly technical engineering problems and generally includes supervision of Civil and Sanitary Engineering Associates acting as squad leaders, or other supervisory, technical or field personnel. A Waterworks Engineer may supervise a section in the absence of the Section Head. Assignments are in general terms, and supervision is through conferences with Senior or Principal Waterworks Engineers, who determine the fundamental characteristics of a project, leaving the Waterworks Engineer to complete its various phases.

The class of Senior Waterworks Engineer is distinguished from the class of a Waterworks Engineer in that it includes considerable administrative responsibility, as well as more difficult professional engineering duties. While supervision is exercised chiefly over subordinate engineers, it may extend over operating, construction, and maintenance personnel as well. An employee of this class may take the division head's place when the latter is absent. Senior Waterworks Engineers usually discuss assignments outside the scope of the normal work routine with the division head, but they assign, supervise, and review the work after basic decisions are made.

Examples of Duties : Waterworks Engineer : Supervises the preparation of designs, plans, specifications, environmental studies and estimates for waterworks projects such as pipe lines, tunnels, dams, reservoirs,

roads, potable water treatment plants water distribution systems, and appurtenant structures; personally performs the more complex engineering and design work; supervises engineering studies and the preparation of technical reports, graphs, charts and maps relating to waterworks facilities, construction and operating costs, water consumption, population growth, and the purchase or sale of property; interacts with other governmental agencies and City departments in plans, construction and agreements in the operation and development of waterworks facilities; directs the preparation and drafting of topographic, water service, trunk line, and distribution system maps, the keeping of distribution system records, plans, and gate books;

Supervises topographic and geologic surveys and other field investigations related to the construction or alteration of large waterworks structures and facilities; supervises the taking of field samples for physical, biological and chemical analyses of seepage and reservoir water and soil tests; supervises a major hydrologic unit engaged in gathering, recording, analyzing, and reporting hydrologic and meteorological data pertinent to water supply and distribution, water quality, water rights and use, water storage and spreading, ground water development and control, and litigation; supervises field and office engineering hydrographic and survey activities pertaining to water supply, land and facility use and the construction, inspection, and modification of facilities; supervises the preparation of system operational plans for variable system demands and for repairs, shutdowns and installation of new facilities; coordinates District Operations relative to the installation, maintenance, repair and operation of mains, service, and water storage, regulation, and pumping facilities;

Supervises construction projects of considerable magnitude, deciding upon construction methods and controlling technical and cost reporting; supervises the inspection of contract and force account work on waterworks facilities and structures; has general supervision of all survey work in a large area;

Supervises the preparation of plans and specifications for construction contracts and for materials used in waterworks construction, maintenance, and operation; establishes standards of quality and reviews the results of tests of material; personally prepares the more technical and complex specifications; arranges for special tests of materials and new products; supervises an engineering testing laboratory making field and laboratory tests and inspections of materials used in waterworks construction, soil tests, and electrolysis and soil corrosion surveys; designs special testing equipment; prepares technical reports; and supervises engineering, laboratory, and field personnel engaged in testing and treating water, making surveys to determine necessary preventative measures, and recommending measures to prevent water pollution; supervises engineering associates who are equal leaders; and may supervise a section in the absence of a Section Head.

Senior Waterworks Engineer : Plans, directs, and reviews the work of engineering, construction, maintenance, operating, and clerical employees; directs the preparation of reports and correspondence; assists in budget preparation; interacts with governmental offices and public agencies; acts as technical and administrative assistant to the head of the Water System or the assistant division head of a major division; assists in formulating policies and developing procedures;

Directs and coordinates several engineering groups in making engineering, hydraulic, environmental, and economic studies, planning major projects, and preparing designs and recommendations for a master plan of the water system; in directing preparation of right-of-way and geodetic studies, land descriptions and maps; designing water treatment and distribution facilities; in preparing and maintaining maps and records; reviews and approves specifications, cost estimates, authorizations and reports; coordinates subsection activities with other Department organizations; coordinates the processing of city, state, and federal legislative matters of interest to the Department; directs the examination and analysis of proposed legislation to identify possible effects upon the Department; directs the arrangement of meetings of legislators and government officials with Department representative to discuss proposed and pending legislation. Directs the preparation of reports to inform management and the Board of attitudes, purposes and actions of governmental authorities and agencies;

Coordinates the processing of city, state, and federal legislative matters of interest to the Department; directs the examination and analysis of proposed legislation to identify possible effects upon the Department; directs the arrangement of meetings of legislators and government officials with Department representative to discuss proposed and pending legislation. Directs the preparation of reports to inform management and the Board of attitudes, purposes and actions of governmental authorities and agencies;

Directs and coordinates, through subordinate supervisors, several engineering groups engaged in the design, inspection, and preparation of plans for construction, repair, and modification of major waterworks facilities; directs engineering and site investigation surveys and the inspection and testing of construction materials; reviews and approves cost estimates, authorizations, engineering studies and reports; directs the administration of contracts; and coordinates activities with other divisions of the Department;

Directs, through subordinate supervisors, the functions of a district of the Aqueduct Division including engineering, clerical, and personnel activities involved in the operation and maintenance of the aqueduct system; checks and directs the daily regulation of a water supply system including the dispatching of system flow and storage change orders;

Directs district or section operations involved in the installation,

maintenance, repair, and operation of mains, services, wells and water storage, regulation, and pumping facilities; directs a construction and maintenance section responsible for electrical, mechanical sanitary and civil engineering projects;

As staff engineer, makes long range forecasts of needs for water and availability of supply, advises operating divisions and recommends conservation programs; serves as an expert witness in hearings and court actions on water rights and the use of water; prepares reports on matters affecting the Los Angeles water supply; and directs engineering, laboratory, and field personnel engaged in testing and treating water and making surveys to determine necessary preventative measures to prevent water pollution and confers with public health officials regarding development of consistent backflow and cross-connection procedures.

Both Classes : Fulfills supervisory affirmative action responsibilities as set forth in the City's Affirmative Action program and may occasionally be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications :

<u>Knowledges</u> :	<u>Waterworks Engineer</u>	<u>Senior Waterworks Engineer</u>
Hydraulics as applied to the flow of water through orifices, over weirs, and in closed and open conduits;	Good	Good
Engineering mechanics and mechanics of materials;	Good	Good
Equipment, chemicals and processes of collection and treatment of domestic water supply;	Working	Working
Interpretation of laboratory data for water quality control.	Working	Working
Preparation of designs, plans, estimates and specifications for the construction and maintenance of waterworks structures;	Good	Good

Qualifications:

<u>Knowledges:</u>	<u>Waterworks Engineer</u>	<u>Senior Waterworks Engineer</u>
Principles of civil, sanitary, and environmental engineering as applied to the construction, main-		

tenance and operation of a large water system;	Good	Good
Charter provisions, rules practices, and policies affecting the Water System;	Good	Good
Organization, practices and policies of the Water System concerning design and construction, sanitation, and water treatment;	Working	Good
Water supply, conservation and water quality.	Working	Working
Personnel, organization, budgeting and administrative problems encountered in large-scale engineering and design work;	Working	Good
Administrative principles;	Working	Good
Safety principles and practices;	Good	Good
Provisions of Memoranda of Understanding as applied to subordinate personnel;	Working	Working
Laws and regulations related to equal employment opportunity and affirmative action;	Working	Working
City and Water and Power Personnel rules, policies and procedures; and	Working	Working
Legislative proposals and litigation support activities affecting the Water System.	Good	Good

Waterworks
Engineer

Senior Waterworks
Engineer

Abilities:

Plan, coordinate, direct, and review the work of a group of engineers and other technical and clerical employees;

X

X

Analyze and evaluate alternate engineering design proposals for

technical and economic feasibility, and to make sound recommendations;	X	X
Prepare clear and comprehensive plans and reports;	X	X
Represent the City in conferences, hearings, and meetings;	X	X
Deal tactfully and effectively with government officials, employees, tenants, and the public;	X	X

Two years of full-time paid professional engineering experience at the level of Civil Engineering Associate and registration as a Professional Engineer with the California State Board of Registration for Professional Engineers are required for Waterworks Engineer.

Two years of full-time paid experience at the full Engineer level performing professional engineering work in the design, construction, operation, and maintenance of water utility systems and facilities and registration as a Professional Engineer with the California State Board of Registration for Professional Engineers are required for Senior Waterworks Engineer.

License : Both Classes : A valid California driver's license and a good driving record may be required.

Physical Requirements : Strength to perform average lifting of less than 5 pounds and occasionally over 15 pounds; good speaking and hearing ability; and good eyesight.

Persons with medical limitations may, with reasonable accommodations, be capable of performing the duties of some of the positions in this class. Such determination must be made on an individual basis in light of the person's limitations, the requirements of the position, and the appointing authority's ability to effect reasonable accommodations to the person's limitations.

As provided in Civil Service Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what the duties and responsibilities of any position shall be.