



Engineering
is an exciting
profession that
makes a difference
in our world.

Engineers play a critical role in providing clean, safe water to sustain life and support our economy. This includes planning, design and construction of new facilities as well as maintenance of existing ones. Engineering jobs in the water and wastewater industry provide the opportunity to earn a good living for yourself and your family while serving your community and protecting the environment.

7.5 million
Bay Area
residents use an
average of 70 gallons
of water per person,
per day, equating to
525 million gallons.

Drinking water is provided by over 50 agencies in the Bay Area. Wastewater is managed and treated by over 60 agencies in the Bay Area.

BAYWORK
www.baywork.org

Additional Resources

BAYWORK
www.baywork.org
American Academy of Environmental Engineers
www.aeee.net
American Society of Civil Engineers (ASCE)
www.asce.org
American Society of Mechanical Engineers (ASME)
www.asme.org
State of California Employment Development Department
www.labormarketinfo.edd.ca.gov
Work for Water
www.workforwater.org

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BAYWORK, this brochure
features engineers from
the following Bay Area water/
wastewater agencies: City of San Jose,
East Bay Municipal Utility District,
San Jose Water Company, Santa Clara Valley
Water District, San Francisco Public Utilities
Commission, and Union Sanitary District.



EXPLORE
YOUR CAREER
IN THE WATER/
WASTEWATER
INDUSTRY

**BE AN
ENGINEER**



WHAT CIVIL ENGINEERS DO

Civil engineers design, build, and maintain the systems necessary to provide safe, clean drinking water and then take it away again for treatment.

Their contribution is essential to safe, reliable, and efficient functioning of facilities such as dams, pipelines, tanks, reservoirs, pumping stations and treatment plants. Areas of specialization within civil engineering include structural engineering and environmental engineering. Structural engineers are specialists in design, construction and repair; they are concerned with all aspects of a structure and its stability. Environmental engineers work to ensure water quality and protect natural ecosystems from damage caused by human activities, projects and processes.

WHAT MECHANICAL ENGINEERS DO

Mechanical engineers design and help maintain systems for plumbing, pipes, air conditioning and heating, and heavy machinery.

Within the water/wastewater industry, their skills are critical in design, support, construction, and maintenance of the facilities used to collect, store, treat, and distribute both potable water and wastewater. They plan and design tools, engines and machines to perform specialized functions such as delivering a steady flow of chemicals at a certain rate into the water supply at a treatment plant.

WHAT ELECTRICAL ENGINEERS DO

Electrical engineers design and help maintain large and small systems that use electricity, ranging in size from power generators to semiconductors.

Most aspects of water and wastewater collection, storage, treatment, and distribution require use of electrical equipment; many utilities also generate electricity using hydropower. Electrical engineers design, test, install, and support the maintenance of electrical systems and electronic components, ranging from huge turbines to microcomputers.

WHAT I & C ENGINEERS DO

Instrumentation and control (I&C) engineers or supervisory control and data acquisition (SCADA) engineers will design and support SCADA and PLC (programmable logic controller) systems, including the commissioning and integration of new I&C/SCADA projects.

I&C/SCADA engineers work on projects that involve multiple applications including SCADA, plant controls, telecommunications networks, and related systems. They prepare P&IDs (piping and instrumentation diagrams), process control narratives, instrument lists and I/O (input/output) lists as part of project design and ongoing maintenance.

EDUCATION & EXPERIENCE

A bachelor's degree in engineering is generally the minimum educational level required.

Most engineering programs involve a concentration of study in an engineering specialty, along with courses in design, mathematics, physical and life sciences, and hands-on laboratory classes. An Engineer-In-Training Certificate is also highly recommended.

Many utilities require at least four years of experience in engineering and a professional engineering (PE) license in order to advance within their organization.

The salary range for engineers varies from utility to utility. Salaries shown here reflect a region-wide compensation survey conducted by BAYWORK signatories during 2014.

MONTHLY INCOME

