



Wastewater Engineer

Job Description

Wastewater engineers design systems that safely treat wastewater to remove any harmful substances and return it to the ecosystem. They lay out the specifications for pumping and lifting systems that bring wastewater to the treatment plants. Their duties include the design and operation of the machines, systems, and equipment that receive, clean, and distribute water.

Salary

Entry — \$64,000
Middle — \$97,000
Top — \$135,000+

Core Tasks

- Provide technical support on water resource or treatment issues to government agencies
- Develop plans for new water efficiency programs
- Design water distribution systems
- Review and critique proposals related to wastewater treatment systems
- Conduct water quality studies to identify and characterize water pollutant sources

Workplace / Environment

- **Work hours**
Approx. 40 hours/week
(At key milestones overtime work may be required to meet deadlines)
- **Environment**
Telephone and group conversation occur **daily in the office** with **occasional outdoor work** taking up some time
- **Travel**
Most engineers work in **office buildings, laboratories, or industrial plants**. Some travel to **worksites** both local and out of state is usually required

Education / Prerequisites

Education Level

Bachelor's degree in environmental engineering or a related field, such as civil or chemical engineering

Licensing

Varies by state and employer. Specified if required

Pre-Job Preparation

Cooperative engineering programs that provide practical experience and improve real-world skills. Engineering related clubs and mathematical courses are valuable

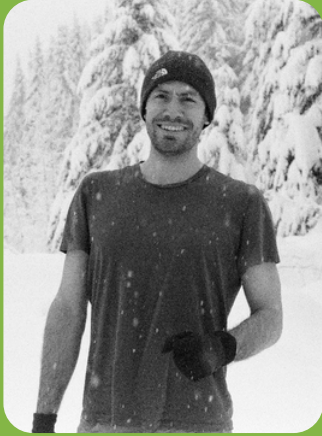
Experience

Soft Skills

- Coordination
- Communication
- Project Management
- Analytical Skills

Technical Skills

- Systems Analysis
- Operation Monitoring
- Quality Control Analysis
- Technology Design



Career Path: Homero Flores

About Me

Wastewater Engineer at King County
Department of Natural Resources and Parks

Bachelors in Civil Engineering, Masters in Civil
and Environmental Engineering, PhD in Hydrology

High School Life

"When I was in elementary school and high school, **math and geometry** were easy for me and I liked them, so that's why I tried to do engineering. My drive since I was in high school was to do something for the environment. When I was growing up, some **creeks near me became sewer lines**. It was sad to see how we were just expanding cities and towns everywhere, and the natural areas were shrinking. I wanted to have an impact in the way societies change the land so that's why I studied **hydrology, geomorphology** and **engineering**."



College Choices



"I was in academia for more than 10 years doing my **Masters, PhD**, and a lot of **research**. I liked being in grad school, doing research, taking classes, and being in that environment. One of the things that I liked about academia was that I was always **exploring new things**, but my work life and personal life soon got blended together."

Into the Real World

"I started to talk with people outside of academia in the civil engineering community and I tried to understand how consulting worked. Then, I saw a job posting for this **government position**. I really didn't know much about it. I got this job, **I tried it, and I liked it**. It wasn't something that I was looking for specifically, but I used the **modeling and solving skills** that I developed in my academic career."

"My job revolves around doing **calculations to plan our future facilities** in the King County Wastewater Division, which is where we collect water from all of the cities around Lake Washington, **clean it**, and then put it back into the Puget Sound. This way we keep the lakes and the rivers clean."

About My Job

"I wanted to have an impact in the way societies change the land"

Pros

- "I like the people that I work with and I get to talk to a very **diverse group** of people like project managers and planners."
- "Working for the government means you follow through on projects from the **beginning to the end.**"
- "Government work looks at the **bigger picture** while consultants are hired to work on the smaller pieces."
- "Government jobs in general tend to be **less stressful** than consulting jobs because you are the person contracting them. In the consulting world, you need to be looking for your next job most of the time."

Fieldwork

- "I work with people in the **field.**"
- "I sometimes **travel** to facilities and **collect data outside.**"
- "I was doing a lot of computer work and later had the **flexibility** to try project management. I had the opportunity to spend more time **outside.**"

Cons

- "I spend **a lot of time inside** the office, but sometimes I like to be outside."

Office Work

- "Managers or supervisors strive to keep **employees happy.**"
- "I do a lot of **Computer programming and engineering drawing analysis** that is used to simulate the water system."
- "Sometimes when you have too much work you can **ask your friends** from work to help."

Skills

- "It's important to work with **team members** to pull lots of data together to help in the planning of structural improvement or to maintain the system."
- "**Communication** will help you work towards projects you enjoy participating in."
- "I use the **modeling and solving skills** that I developed in my academic career."

Education/Experience

- "You can do so much with **programming skills** and it opens a lot of doors. It's a tool that you can use for **almost anything** like if you're going to finance, engineering, environmental science, astrology, or many other things."
- "The **American Geophysical Union** looks at the physics of everything that happens on the planet and in the universe. It's a really cool organization. They have a monthly magazine with cool articles."

The Future of **Wastewater Engineering**

"There will still be a lot of demand for jobs like mine"

"Computers are changing the way we do things very fast, and taking some of our jobs. In spite of this, there will still be **a lot of demand** for jobs like mine. I think that there will always be a need to keep an eye out on human activities in order to make sure they are **happy and thriving** on a healthy planet. "

"Working with Planners, Project Managers, field crews, as an Engineer, on our wastewater system, is like when a team of healthcare professionals work on the human body — you have eyes, a heart, a stomach, lungs, and all these organs are working together and you have different specialist looking at each part. We try to **work with everyone** to finally look at the wastewater system as a whole."