

ENGINEER PROFILE

Name: Bessie Tam

Organization: San Francisco Public Utilities Commission / Project Management Bureau

Engineering Discipline (Check one below):

- Civil
- Mechanical
- Electrical
- Environmental (including Process)
- Structural
- Information Technology
- SCADA
- Other

1. Please describe the work you do:

I am a Project Manager at San Francisco Water, Sewer, Power (services for the San Francisco Public Utilities Commission). Currently, I am managing \$200M worth of projects under the Sewer System Improvement Program and completed co-managing a \$360M Capital Improvement Program. As a Project Manager, I work with engineers, operation & maintenance staff, and management to identify improvement needs and define projects together. Then, I manage the scope, schedule and budget of these projects from the planning, design to construction phases. Each project ranges from \$1M to \$60M in project costs and have differing levels of complexity. On a day-to-day basis, I work closely with other engineers, construction management staff, contractors/consultants, real estate staff, and deputy city attorneys. I spend a lot of time working with others either through meetings, over the phone, or via emails.

2. What combination of education, experience, and skill was required in order for you to obtain your job?

A bachelor's degree in Civil Engineer, being a licensed Professional Engineer, and having at least 6-years of experience working as an engineer were the minimum requirements to obtain my job. Although it is not a requirement for my job, I am also a LEED accredited professional and I am certified as a Project Management Professional with PMI. I pursue continued education opportunities through in-house brownbags, formal courses, webinars and industry conferences (such as WEFTEC, CWEA, ASCE and others).

The skills required to succeed in my job include good communication (both verbal & written), ability to problem-solve, ability to prepare and conduct presentation, interpersonal communications skills, good organization, and ability to work well with others. As a project manager, we are the leader and manager of a project - this requires wearing different hats, from leading to coaching to rallying others to work towards the same project goals and objectives.

3. What do you like best about your job?

I like the continuous learning, the variety of work I perform in my job, and the positive impact the projects have on the residents & businesses in San Francisco. In addition, I like the people I work with and have made many friends and mentors through work. It is very rewarding to work with a group of professionals to complete a construction project after years of planning and design.

4. Please tell us about the water or wastewater engineering project you enjoyed working on the most, and what made it rewarding.

This is a tough question – there are so many! I have been fortunate to work on projects in progressive complexity over the years and each project is so unique – with both its challenges and rewards. Currently, I'm working on a project that involves building a sewer force main (pressurized pipe) in downtown San Francisco. It is the project that I spend the most time on because it requires a lot of coordination with other city agencies, private utilities, and local businesses.

The most rewarding part of civil engineering projects is how tangible it is. You can see and visit the construction site of the project you are working on and see how it is built. It's fun to see a 10-foot diameter pipe delivered to a city street and installed in the ground.

5. What qualities and capabilities are needed in order for an engineer to be successful in the water/wastewater industry?

A solid understanding of engineering principles, ability/willingness to keep learning, a positive attitude/open-mindedness, ability to work with others, and good communication skills (both verbal & written) are needed for an engineer to be successful.

Since you can't learn everything in school, it's important to keep learning AFTER formal schooling to gain capabilities specific to your job. In addition, ability to complete multiple projects while meeting deadlines requires good organization and interpersonal skills (since all projects are done in teams).

6. Do you have any advice for an individual who is considering pursuing a career as an engineer in the water/wastewater industry?

We provide essential services to the public. As such, we never hear "thanks, I turned on the tap or flushed the toilet and it worked...", but this does **not** diminish the importance of the work.

If you are interested in this important work, intern at an engineering firm or with a local agency, watch the videos on Baywork.org, get an engineering degree and go from there. When you see your project being built in the street, it is very rewarding.