



# CAREERS IN PUBLIC WORKS

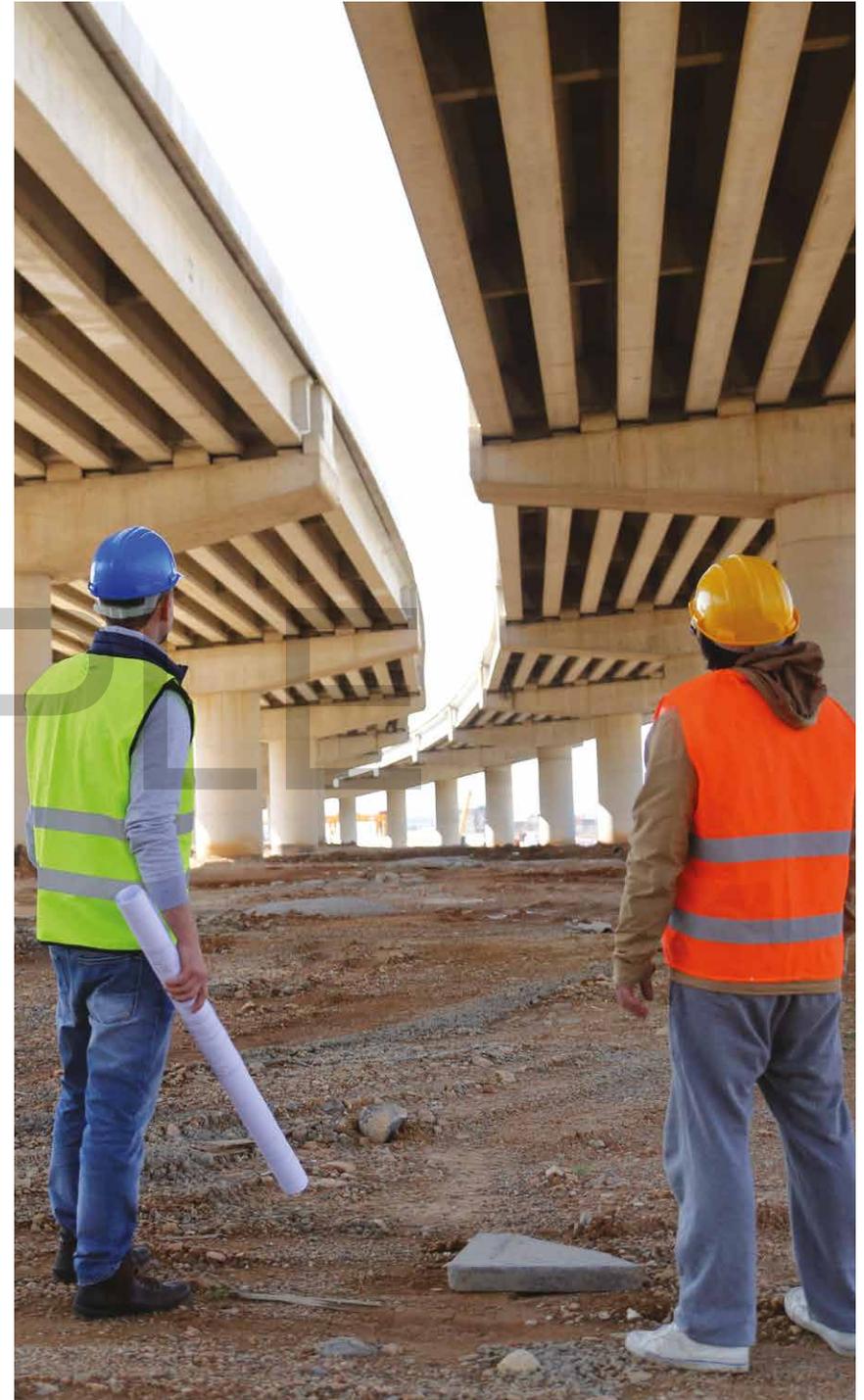
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# INTRODUCTION



Do you have a passion for improving your local community? Jobs in public works keep our communities safe, functional, and thriving. Public or municipal works are government services that directly impact the daily lives of residents, such as maintaining roads, managing water and sewage systems, overseeing waste management, and preserving public spaces. Pursuing a career in this sector will give you the opportunity to make a tangible, positive difference in the lives of your fellow citizens and contribute to the long-term sustainability and well-being of your community.

Public works jobs vary from city to town to county depending on how each government has structured its public works programs. No matter how they are structured, they offer career paths in areas like construction, emergency management, water resources, buildings and grounds, recycling, sanitation, road maintenance and repairs, snow removal and street cleaning, sewers, transportation, and parks and recreation. Because of the wide range of career paths, a job in public works could require working in the field, in an office, and/or at a plant. These jobs may require a high school diploma, technical training, or a relevant college degree or advanced degree. In many cases, training can be done on the job, providing a path for career advancement. A career in public works combines a path to build an impactful career and the opportunity for meaningful interactions within your local community.



# TRANSPORTATION

Roads and highways are the connective tissue of any community. They are how the post office gets mail to our door and how we get to school, work, the grocery store, and most everywhere we need to go. Employees in transportation services work to help us get around our communities, remedy hazards to protect our cars and trucks from damage, and keep traffic signals functioning so roads are safer.

## ROAD MAINTENANCE



The road maintenance department in a municipal government is responsible for the upkeep and repair of the city's road infrastructure, promoting safe and efficient transportation for residents and visitors alike. This includes tasks such as pothole repair, road resurfacing, snow and ice removal, street sweeping, and maintenance of traffic signs and signals. The department works closely with other city departments, such as engineering and planning, to develop and implement long-term strategies for road improvement projects. Career opportunities for road workers in a municipal public works department are diverse, ranging from entry-level labor and equipment operation to work as skilled technicians, engineers, and managers. These professionals work together to maintain and enhance the city's transportation network, providing a vital service to the community. They have numerous opportunities for career growth and advancement.

## COMMUNITY TRANSPORTATION



Public transportation can take several forms, including buses, trains, trams, and subways. Some towns and counties also offer community transportation to assist people with disabilities and older adults. This role helps people receive meals and with door-to-door transportation to medical appointments, places of employment, shopping venues, and recreational activities. Community transportation will not always be under the purview of DPWs.

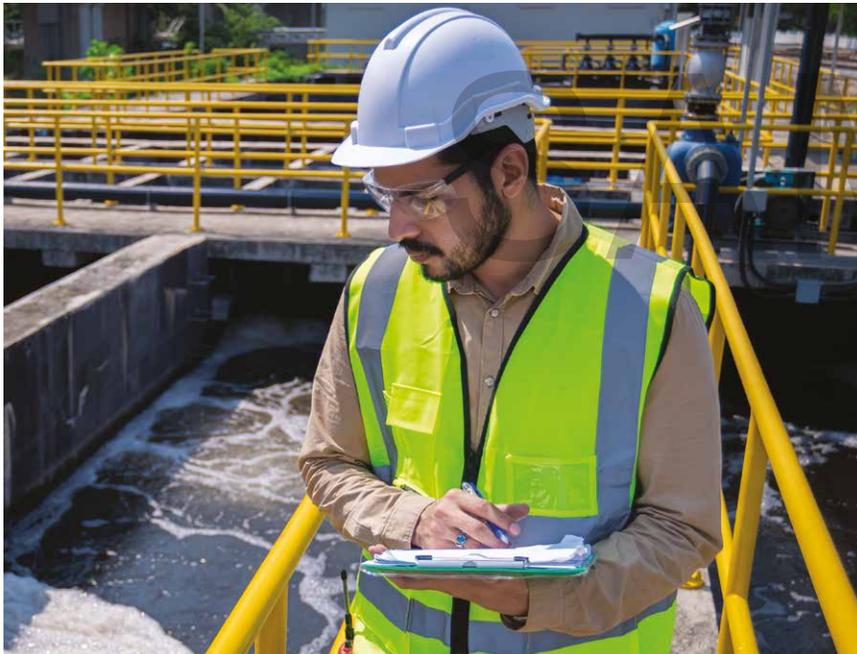
## ADDITIONAL OPPORTUNITIES

- **Transportation planner:** Is responsible for developing and implementing transportation plans, policies, and projects to meet the mobility needs of the community while supporting environmental sustainability and efficient land use.
- **Traffic engineer:** Focuses on the design, operation, and management of traffic control systems to improve safety, mobility, and efficiency on roadways.
- **Public transit manager:** Oversees the operation, maintenance, and expansion of public transportation services, such as bus, tram, and subway systems, to provide reliable, accessible, and sustainable transit options for the community.
- **Fleet manager:** Manages the procurement, maintenance, and replacement of vehicles and equipment used by various municipal departments, including public transit, public works, and emergency services.
- **Bicycle and pedestrian coordinator:** Develops and promotes infrastructure and programs to encourage walking and cycling as safe and accessible transportation options and works on pedestrian safety initiatives.
- **Parking enforcement officer:** Monitors and enforces parking regulations to encourage efficient use of parking spaces and maintain the flow of traffic in the city.
- **Traffic signal technician:** Installs, maintains, and repairs traffic signals, signs, and other traffic control devices to ensure the safe and efficient movement of vehicles and pedestrians.
- **Transit operator:** Drives buses, trams, or subway trains, providing reliable and courteous public transportation services to passengers.
- **Transportation analyst:** Gathers and analyzes data on transportation systems, usage patterns, and trends to inform planning, policy development, and decision-making processes.

# WATER

When we turn on the faucet to get a glass of water, we don't usually stop to think about the professionals in the water industry who keep us and our environment safe. Without technicians, operators, scientists, engineers, pipefitters, and other specialists, there would be no one to ensure that our water is clean, distributed properly, and handled safely once it goes back down the drain. This field is crucial not only to society but also to the ecosystem. It's because of these dedicated workers that we can swim in a lake or fish in a river. It's because of them that we have clean water to drink at home and at work. If you're looking for a career that's stable, in demand, and recession proof, the water industry might be for you!

## WATER TREATMENT PLANT WORKER



This entry-level position is in the operation and preventative maintenance of equipment relating to water reclamation plants. These employees work closely with supervisors to learn and become proficient in tasks such as monitoring and operating treatment processing equipment (meters, gauges, control panels), recording routine and out-of-the-ordinary readings, performing inspections, and maintaining equipment. After thorough training, people in this role will be able to work independently to do all daily tasks. They are also responsible for helping out during emergency situations, and they are essential to the functionality of the town.

## WASTEWATER MANAGER



This role helps to promote public health in our communities by ensuring that wastewater flows through treatment plants properly. These workers manage all tasks relating to maintaining water treatment systems (piping, pumps, valves, tanks), taking field and facility samples, and preparing chemical treatments. They work with a team of plumbers, technicians, and skilled construction workers to maintain optimal functionality. Additionally, it is necessary for them to record observations, report issues, and maintain best practices throughout each process. This is an example of a role that requires time indoors and outdoors and working during severe weather, such as heavy snowfall and flooding.

## ADDITIONAL OPPORTUNITIES

- **Water quality analyst:** Monitors and tests water quality to ensure compliance with local, state, and federal regulations and standards.
- **Pump station operator:** Operates and maintains municipal water and wastewater pump stations, ensuring the efficient transport of water and sewage.
- **Stormwater management specialist:** Develops and implements strategies for managing stormwater runoff, mitigating flooding, and protecting water quality.
- **Water conservation specialist:** Promotes water conservation and efficiency through education, outreach, and the implementation of water-saving technologies and practices.
- **Cross-connection control technician:** Inspects and maintains backflow-prevention devices to protect drinking water supplies from potential contamination.
- **Water resources engineer:** Designs, plans, and manages municipal water and wastewater infrastructure projects to support the long-term sustainability and reliability of water systems.

# PLANNING AND MANAGEMENT

Management and planning departments play pivotal roles in shaping the physical, social, and economic landscapes of cities and towns. Planning departments are responsible for setting the groundwork for development, balancing the needs of various stakeholders, and ultimately creating vibrant, livable communities for all citizens. Management ensures that the day-to-day maintenance and activities of government function so the locale can thrive.

## MUNICIPAL, OR CIVIL, ENGINEER



Engineers work within public works to research, design, and implement city infrastructure plans that will work for residents and city and state officials. These professionals are responsible for projects such as roads, bridges, tunnels, sewers, airports, and dams. Civil engineers use computer-aided design software to develop projects and create renderings. They must also ensure that all public works operations are running smoothly, and they are responsible for preparing regulatory documents concerning safety issues, timelines, estimations, and budgets. Part of their time is spent participating in surveying and analyzing construction sites.

## DPW SUPERVISOR/FOREPERSON



The public works foreperson holds all the various branches of public works together through strong leadership. This role is responsible for upholding all the policies and practices of the organization, managing staff, and creating and implementing plans. Knowledge of all the workings of public works is necessary for this role. A successful foreperson will have great time management and negotiation skills, understand how every role fits into public works, and be decisive. For a person in this role, it is crucial to understand the needs of the community and know how to support staff in meeting those needs.

## ADDITIONAL OPPORTUNITIES

- **Surveyors:** Define boundary lines and map out construction sites for public works projects.
- **GIS managers:** Work with a team to use geographic information systems to support every aspect of DPW and city infrastructure.
- **Budget analysts:** Are responsible for creating, implementing, and evaluating budgets.
- **Code enforcement officers:** Supervise and participate in inspection of municipal buildings.
- **Zoning managers:** Enforce and evaluate regulations.
- **Capital improvement managers:** Look to improve and control costs on projects.
- **Contract specialists:** Execute and administer contracts for the procurement of supplies, services, construction, or research and development.
- **Resiliency officers:** Work with the community, city officials, and department heads to create and implement plans to mitigate risks.
- **Bridge inspectors:** Assess the condition of bridges to ensure they are structurally sound and safe.

# PARKS AND RECREATION

By providing well-maintained parks, recreational spaces, and diverse programs for citizens of all ages and abilities, the Parks and Recreation Department plays a vital role in enhancing the quality of life in communities. Parks and recreation departments not only encourage active lifestyles and healthy living but also offer opportunities for residents to engage in cultural, educational, and social activities, thus nurturing a strong sense of community and belonging. Furthermore, they preserve and maintain natural habitats for the overall ecological health of the region, benefiting both wildlife and residents.

## MUNICIPAL ARBORIST



Arborists are responsible for creating and implementing plans for parks and playgrounds. They may work in an office and out in the field to supervise tree-care operations such as planting, trimming, and insect and disease control. This role requires a working knowledge of arboriculture and local tree/plant species and the ability to perform physical labor with assorted tools to get the job done.

## PARKS AND RECREATION DIRECTOR



People in this position provide recreational programs and special activities for our communities. They are responsible for the overall maintenance of parks and park buildings and for preparing an annual budget to present to the city council and working within the budget, overseeing marketing and publicity tied to the city recreation program, fundraising, developing and/or implementing public policies, and properly staffing their department. They often must collaborate with other department heads in city hall and in public works. And they open communication with citizens to maximize their overall enjoyment of parks and recreation programs by fielding questions, comments, and concerns.

### ADDITIONAL OPPORTUNITIES

- **Park maintenance:** Ensures the cleanliness, safety, and overall upkeep of parks and green spaces for the enjoyment of residents and visitors.
- **Recreational programming:** Offers a wide range of recreational activities, classes, and events catering to diverse age groups, interests, and skill levels.
- **Sports facility management:** Operates and maintains sports facilities, such as soccer fields, basketball courts, and swimming pools, for organized leagues and casual play.
- **Community center operations:** Provides accessible spaces for residents to participate in various social, cultural, and educational programs and events.
- **Playground development:** Designs and maintains safe, age-appropriate, and engaging playgrounds for children to promote physical activity and social interaction.
- **Trail management:** Creates and maintains trail networks for walking, hiking, and biking, encouraging outdoor exploration and fitness.
- **Natural resource conservation:** Preserves and enhances natural habitats, ecosystems, and wildlife within park boundaries to support biodiversity and ecological health.
- **Park planning and development:** Strategically plans for the creation and improvement of parks and recreational spaces to meet the needs of growing and changing communities.
- **Community engagement and partnerships:** Collaborates with local organizations, residents, and businesses to create a sense of ownership and shared responsibility for the success of parks and recreation initiatives.

# FLEET MANAGEMENT & HEAVY MACHINERY

Fleet management and heavy machinery play crucial roles in the efficient operation and maintenance of municipal infrastructure and services. These assets, which include vehicles and equipment such as garbage trucks, snowplows, street sweepers, and construction machinery, are vital to the smooth functioning of a city or town. Effective fleet management entails the procurement, maintenance, and replacement of these assets, as well as the training and management of operators. By optimizing the use and performance of municipal fleets and heavy machinery, local governments can minimize operational costs, reduce environmental impacts, and ensure the timely delivery of essential services to residents. In essence, fleet management and heavy machinery are indispensable components of a well-run municipal government, contributing to the overall quality of life and sustainability of urban communities.

## FLEET MANAGER



Fleet management is crucial to the functionality of all public works. The fleet manager is responsible for ensuring that all vehicles are ready to go when they are needed, whether for day-to-day use or emergency situations such as heavy snowfall. This means working with mechanics on a schedule for all repairs and preventative maintenance of municipal vehicles, including heavy trucks, snowplows, garbage trucks, utility vehicles, and vehicles used by the police and fire departments. Routine inspections of all vehicles must be performed in a timely manner. Communication with drivers and the DPW foreperson is crucial to stay on top of any issues needing attention.

## HEAVY MACHINE OPERATOR



Many public works projects will require the use of special machines, tools, and vehicles. The heavy machine operator is responsible for safely using and maintaining these tools. They will drive and control large equipment and vehicles, such as forklifts, backhoes, and dump trucks. They will also coordinate with leadership to understand expectations regarding each project's timetable. The heavy machine operator is also responsible for making sure that all other employees are working as a team and using best safety practices around heavy machinery.

## ADDITIONAL OPPORTUNITIES

- **Fleet maintenance technician:** Performs routine maintenance, repairs, and inspections of municipal vehicles and equipment to ensure their safe and efficient operation.
- **Heavy machinery mechanic:** Specializes in diagnosing, repairing, and maintaining complex mechanical systems in municipal heavy equipment and machinery.
- **Snowplow operator:** Operates snow removal equipment to clear roads and public spaces, promoting safety and accessibility during winter months.
- **Street sweeper operator:** Operates street-sweeping machinery to clean and maintain public roadways, promoting a clean and visually appealing urban environment.
- **Waste collection operator:** Drives and operates garbage trucks to collect and dispose of solid waste from residential and commercial properties.
- **Fleet training coordinator:** Develops and implements training programs for municipal fleet operators, ensuring they have the necessary skills and knowledge to safely and efficiently operate vehicles and heavy machinery.

# SOLID WASTE AND RECYCLING

The Solid Waste and Recycling Department is responsible for the efficient collection, disposal, and management of waste generated in the community. This department plays a vital role in ensuring public health and safety, maintaining a clean and aesthetically pleasing urban environment, and promoting environmental sustainability. By implementing waste reduction, recycling, and composting programs, the Solid Waste and Recycling Department not only minimizes the volume of waste sent to landfills but also encourages resource conservation and the circular economy. Furthermore, the department's efforts to educate and engage residents in waste management practices help to foster a sense of responsibility and stewardship among community members. The Solid Waste and Recycling Department addresses both immediate and long-term waste management challenges and is essential to the overall well-being and sustainability of a city or town.

## RECYCLING COORDINATOR



The recycling coordinator manages all aspects of the recycling program, ensuring the proper retrieval of materials and handling documentation and recordkeeping. Often, they are responsible for outreach to the public, including residents, schools, and businesses, to make sure people know what is recyclable and when it will be collected. As recycling practices evolve, it is important for new strategies to be implemented. Ideally, this position comes up with methods to streamline efforts to make recycling as easy as possible to promote compliance with regulations and avoid the need to report violations. Finally, the recycling coordinator will communicate with department heads to make sure drivers and collectors are informed and supported in their tasks.

## MUNICIPAL SANITATION WORKER



A municipal sanitation worker plays a crucial role in maintaining the cleanliness, health, and overall well-being of a community. Their primary responsibility is to collect and dispose of solid waste from residential, commercial, and public properties in a timely and efficient manner. By ensuring proper waste collection, sanitation workers contribute to the prevention of health hazards, such as the spread of diseases, vermin infestations, and environmental pollution. Additionally, they may be involved in waste separation, recycling, and composting efforts, supporting the community's commitment to sustainability and resource conservation. Often working in challenging conditions and facing risks, municipal sanitation workers form an indispensable part of the urban maintenance ecosystem, providing essential services that contribute to a clean and safe living environment for all residents.

## ADDITIONAL OPPORTUNITIES

- **Waste management engineer:** Designs and implements waste management systems, including landfills, recycling facilities, and transfer stations, to optimize waste processing and disposal.
- **Hazardous waste specialist:** Manages the collection, transportation, and disposal of hazardous waste materials, ensuring compliance with environmental regulations and public safety.
- **Waste collection driver:** Operates garbage trucks and other waste collection vehicles, navigating municipal routes to efficiently collect solid waste.
- **Composting program manager:** Develops and manages community composting programs, promoting organic waste diversion and contributing to local sustainability efforts.
- **Landfill supervisor:** Oversees landfill operations, including waste disposal, landfill gas management, and site maintenance, while ensuring environmental compliance.
- **Waste reduction educator:** Designs waste reduction and recycling education programs and delivers them to schools, businesses, and community organizations.
- **Material recovery facility operator:** Operates and maintains equipment at recycling and material recovery facilities, sorting and processing recyclable materials for market.
- **Environmental compliance inspector:** Monitors waste management facilities and operations to ensure compliance with local, state, and federal environmental regulations and best practices.

# CONSTRUCTION

The Construction Department in a municipal government plays a critical role in shaping and maintaining the built environment of a city or town. Responsible for overseeing and managing a wide range of public infrastructure projects, such as roads, bridges, public buildings, and utility systems, the Construction Department ensures the safe, efficient, and timely delivery of these essential facilities and services. By adhering to strict quality standards, building codes, and safety regulations, the department contributes to the overall health, well-being, and resilience of a community. Moreover, the Construction Department works in close collaboration with other municipal departments, such as planning, transportation, and utilities, to coordinate and integrate various projects and initiatives. The Construction Department is a vital component of municipal government, driving economic growth, enhancing quality of life, and ensuring the long-term sustainability of communities.

## CONSTRUCTION MANAGER



Construction managers oversee all building and infrastructure projects by scheduling and coordinating construction projects to match all design specifications. This might include working both in an office and on construction sites to manage and supervise all relevant activities. They make sure each construction site complies with legal requirements and safety and building codes and obtains proper permits and licenses. And they order materials and equipment within the allotted budget.

## CONSTRUCTION INSPECTOR



Construction inspectors work with engineers to inspect construction projects to establish accuracy in alignment with blueprints and compliance with all city, state, and federal codes, ordinances, and regulations. They work on most every DPW project, such as sewers, roads, parks, and buildings. They will participate in meetings before construction begins to evaluate plans and specifications. A working knowledge of construction practices and the materials used is necessary to be successful in this role. This may be the job for those with high levels of attention to detail and organizational skills.

## ADDITIONAL OPPORTUNITIES

- **Architect:** Develops and reviews the design of public buildings, ensuring they meet aesthetic, functional, and sustainability requirements while adhering to local regulations.
- **Site supervisor:** Manages daily construction activities on-site, coordinating work crews, materials, and equipment to ensure timely project completion.
- **Cost estimator:** Prepares detailed cost estimates for municipal construction projects, helping to establish budgets and identify potential cost-saving opportunities.
- **Permit coordinator:** Manages the permit application process for construction projects, ensuring compliance with local zoning, building, and environmental regulations.
- **Construction safety officer:** Develops and enforces safety protocols on construction sites, conducting inspections and training to minimize accidents and enhance worker safety.

## OTHER ROLES IN PUBLIC WORKS

- **Mechanics** are responsible for performing repairs and preventative maintenance on all vehicles used for public works, such as garbage trucks, police vehicles, and fire trucks.
- **Drivers** are trained and certified to safely and efficiently drive larger trucks or vehicles.
- **Pickers/collectors/laborers/maintenance workers** are the people working in the field every day to make our communities run smoothly. From performing general labor or repairs to specified tasks such as collecting recycling or pouring concrete, these folks perform tasks on all projects, big or small.
- **Electricians** are used on a multitude of public works projects from the initial planning stages to installation and maintenance.
- **Equipment operators** are those who have experience or are licensed to operate heavy equipment to ensure that each job is done safely and efficiently.
- **Custodians** are responsible for keeping facilities clean and safe.
- **HVAC workers** install, repair, and maintain air conditioning and ventilation equipment.
- **Tree trimmers** perform basic maintenance on city parks and municipal grounds.
- **Lab technicians** perform tests needed to analyze soil or water.
- **Chemists** assist with water treatment and construction projects by providing and testing samples of water and soil.
- **Data entry clerks** maintain databases and keep all vendor information up to date.
- **IT specialists** are the resident experts on setting up networks, software, hardware, and security systems.
- **Landscape architects** develop thorough plans for all trees and plants for parks and municipal grounds.
- **Office managers** handle the clerical and administrative tasks necessary to DPW functionality.
- **Meter readers** support electricians and/or water treatment teams by providing information in the field.
- **GIS managers** work with a team to use geographic information systems to support every aspect of DPW and city infrastructure.
- **Carpenters** are used on a wide variety of projects within the DPW, including building and repairing structures.
- **Billing clerks** track and balance budgets and invoices.
- **Budget analysts** are responsible for creating, implementing, and evaluating budgets.
- **Code enforcement officers** supervise and participate in inspection of municipal buildings.
- **Finance managers** provide financial and budget analysis to all departments.

- **Resiliency officers** work with the community, city officials, and department heads to create and implement plans to mitigate risks.
- **Bridge inspectors** assess the condition of bridges to ensure they are structurally sound and safe.
- **Streetlight technicians** install, repair, and maintain municipal streetlights, ensuring well-lit public spaces and thereby enhancing safety.
- **Signage technicians** install, maintain, and repair municipal signage necessary for clear and accurate communication to the public.
- **Graffiti removal specialists** remove graffiti and vandalism from public spaces and properties, maintaining a clean and welcoming urban environment.
- **Drainage engineers** design and maintain municipal drainage systems to prevent flooding and protect water quality.



# RESOURCES

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***American Public Works Association***

[www.apwa.org](http://www.apwa.org)

***American Water Works Association***

[www.awwa.org](http://www.awwa.org)

***U.S. Department of Labor***

[www.dol.gov](http://www.dol.gov)

***U.S. Department of Labor O\*Net Online***

[www.onetonline.org](http://www.onetonline.org)

SAMPLE

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