CITY OF BELLINGHAM

JOB DESCRIPTION

JOB TITLE: **Public Works GIS Analyst I-II** **UNION:231**
SG:4/6
DEPARTMENT: **Public Works** **CS:N**
FLSA:N
EEO4/SOCCODE:PR/17-3026

JOB SUMMARY:

Performs geospatial analysis and reporting to support the planning, management, and execution of departmental, inter-departmental, and interagency projects through the application of Geographic Information Systems (GIS) technology. Collects, analyzes, and interprets spatial data. Designs and maintains asset and work management system reports, dashboards and web applications to provide insights and enhance decision-making processes within the Public Works department. Develops quality control measures on departmental GIS datasets by maintaining spatial integrity, attribute consistency, and integration with business systems. Collaborates with various stakeholders, including engineers, planners, work crews, and other departmental GIS staff to optimize infrastructure development and maintenance using GIS tools.

SUPERVISORY RELATIONSHIPS:

Reports to the Public Works Department Asset Manager. Works under general supervision and the guidance of City and Departmental policies, procedures, protocols, and technical standards. Receives technical direction and priorities from the Information Technology Department GIS Manager and keeps the GIS Manager informed of importance or far-reaching implications of their work. Maintains close working relationships with Division Superintendents, other departments and City staff. Provides leadership and direction to lower-level GIS staff.

ESSENTIAL FUNCTIONS:

GIS Analyst I:

1. Performs geospatial analysis and reporting to support decision-making processes within the Public Works department and other departments when needed. Utilizes GIS tools and techniques to analyze, interpret and present geospatial data, providing insights for infrastructure planning, maintenance, and business optimization. Ensures spatial data is accurately and appropriately portrayed for intended audiences and uses. Provides customized presentations, reports, and exhibits in paper and digital forms. Effectively applies City cartographic design principles in the production of multi-media, digital, and hardcopy work products.

2. Maintains the asset and work management system, ensuring accurate and up-to-date records of infrastructure assets, maintenance activities, and work orders. Performs system configuration to manage workflows, activities, user rights and system standards.

Uses established Python scripts, reads and debugs existing scripts to support system automation and data integrity. Implements improvements and updates to enhance the system's functionality and usability for end-users.

3. Designs and maintains asset management system reports, dashboards and web applications using established GIS databases for department business operations. Performs constant evaluation of workflows for innovative enhancements, resolving hardware/software issues, and coordinating problem resolutions among divisions, staff, technical support, and the asset management system.

4. Develops and applies quality control measures on departmental GIS datasets. Ensures spatial integrity, attribute consistency, and proper integration between GIS data and other business systems. Follows City GIS standards for the development and publication of datasets into the enterprise GIS database. Works in collaboration with other departments that use the same data. May use SQL and scripting languages to automate quality control and create tasks.

5. Receives GIS data deliverables from vendors and reviews for complete metadata, standardized attribute naming, domains, correct map projections.

GIS Analyst II:

1. Conducts complex geospatial analysis, modeling and reporting using advanced analytical techniques such as network and hotspot analysis to guide strategic decisions across the Public Works department. Designs complex analysis tools using ModelBuilder, Python dashboards, or ArcGIS Online/Portal tools to streamline workflows, enhance data visualization, and improve decision-making processes.

2. Develops and maintains web mapping applications with multiple databases to support broad utilization of geospatial data, tools and processes. Designs and implements department-specific web mapping applications to facilitate efficient data collection, visualization, and analysis for internal staff and stakeholders. Tests new features in new applications, such as Power Automate or integration with PowerBI displays, to enhance functionality and user experience. Collaborates with cross-functional teams to understand user requirements and ensure web applications meet the needs of various divisions within Public Works and throughout the city. Serves as the primary administrator for all Public Works GIS-based applications.

3. Serves as the primary administrator of the asset management system, ensuring compliance with department policies across various divisions. Provides support to internal customers and troubleshoots issues to maintain optimal functionality and usability.

4. Provides detailed consultation and technical guidance for department studies, reports and analysis that involves GIS data, processes or workflows. Reviews and evaluates the scope of work and deliverables from consultants to ensure compliance with established processes, workflows and data quality standards. Identifies discrepancies or issues and recommends necessary improvements or adjustments.

5. May develop python scripts in collaboration with IT GIS staff for automating data maintenance tasks that run in a scheduled maintenance window.

6. Performs all functions of the Public Works GIS Analyst I.

ADDITIONAL WORK PERFORMED:

1. May direct lower-level GIS staff including training, prioritizing, and reviewing work in a collaborative and team-building environment. Performs quality assurance review in GIS mapping performed by directed staff.

2. May perform technical duties related to GIS applications, including infrastructure mapping, query, data transfer, map creation and input of data to ensure uniformity and compatibility in the city GIS mapping system. May coordinate and perform research, data collection and data entry for the creation and maintenance of GIS data.

3. Performs other related work of a similar nature or level.

PERFORMANCE REQUIREMENTS (Knowledge, Skills, and Abilities):

Knowledge of:

- Working knowledge of the functions of City departments, office operations and interdepartmental working relationships.
- Departmental policies and procedures.
- Thorough knowledge of computer systems, software, and operation of related hardware for GIS and asset management solutions.
- Project management principles and City policies and procedures related to technology systems.
- Systems analysis techniques and practices.
- Working knowledge of advanced GIS concepts, geoprocessing functions and techniques, and spatial database management procedures. Comprehensive working knowledge of database concepts.
- Demonstrated knowledge of scripting languages such as Python.
- Operating systems, products and concepts involved in the operation of desktop computers.
- Structure Query Language (SQL) and its applications with GIS analysis and data/system integration.
- Demonstrated knowledge of GIS database design (geodatabase).
- Development, configuration, and optimization of web mapping services (ESRI Enterprise).
- Ability and willingness to develop a comprehensive knowledge of software application packages supported by Public Works.
- Working knowledge of principles and procedures of project coordination.
- Lead and respond effectively in emergency, hazardous, or other high stress circumstances.
- Willingness and ability to respond to evening and weekend callouts for system emergencies.

- Willingness to maintain absolute confidentiality of all information contained in files and documents processed, stored, and/or maintained by the department or ITSD, regardless of the level of dissemination of such information by user departments.

Skill in:

- Excellent oral and written communications skills and interpersonal skills for developing and maintaining effective working relationships with employees, other department and City personnel, citizens, and vendors.
- Working both as a member of a team and as a project leader.
- Writing in clear concise language to produce technical reports and other required documentation.
- Good oral communication skills, including good listening skills, to communicate with technical and non-technical audiences.
- Demonstrated skill in operating, installing, and maintaining GIS hardware, software, and related peripheral equipment as required to accomplish assigned duties.
- Utilizing ESRI GIS software including desktop enterprise and online platforms for analysis and mapping.
- Demonstrated skill in producing quality graphic designs, infographics, maps and other production-level reports for presentation.
- Good planning, organizing, decision making and time management skills, including the ability to appropriately prioritize assignments.
- Working independently under pressure and with minimal supervision to solve problems and meet deadlines.

Ability to:

- Demonstrated ability at combining knowledge of GIS databases and software with common sense and insight in solving problems and making decisions.
- Systematically identify and analyze the important dimensions of a problem, determining potential causes, obtaining relevant information, and specifying alternate solutions, then carrying out solutions or referring to the appropriate authority.
- Plan, implement, and evaluate appropriate technology services within the parameters of budget and staff resources.
- Ability and willingness to develop technical skills and knowledge of the system environment as well as an understanding of the needs and requirements of client business processes and functions.
- Participate as an effective team member with Department staff and other City employees.
- Read and comprehend technical manuals and apply their contents to solving software and hardware problems.
- Ability and willingness to demonstrate the Public Service Competencies of Service Orientation, Results Orientation, and Teamwork and Cooperation.
- Maintain consistent and punctual attendance.
- Plan and work independently with minimal supervision.
- Physical ability to perform essential functions of the job including:
    - Hearing adequate to communicate in person and by telephone;
    - Frequently operate a computer and other office machinery such as a keyboard, mouse, phone, and fax machine;
    - Manual dexterity, correctable vision and color perception sufficient to operate a computer and design and produce graphics;

- Ability to occasionally lift light weight (10-15 lbs).

WORKING ENVIRONMENT:

Work is performed in an office setting at a computer workstation with long periods of sitting or standing. Work environment includes a normal range of noise and other distractions with low everyday risks working around standard office equipment.

EXPERIENCE AND TRAINING REQUIREMENTS:

This job description documents the full range of duties for Public Works GIS Analyst I-II at the City of Bellingham. Positions will be filled at the appropriate level based on required experience and training.

Incumbents in the Public Works GIS Analyst I position may receive a non-competitive promotion when they meet minimum experience, training and certification requirements for the next level and demonstrate capability to perform the full range of functions independently under general supervision and guidance, provided adequate work and funding is available.

GIS Analyst I:

- Bachelor's degree with coursework in cartography, computer science, civil engineering, geography, GIS, or related field.
- Two (2) years of GIS experience utilizing professional geo-processing software and web applications to independently analyze data and design reports and dashboards.
- Experience in a comparable industry, utility, or Public Works information systems environment utilizing and/or supporting maintenance management and GIS systems is preferred.
- An equivalent combination of education and experience sufficient to provide the applicant with the knowledge, skills and ability to successfully perform the essential functions of the job will be considered.

GIS Analyst II:

- Bachelor's degree with coursework in cartography, computer science, civil engineering, geography, GIS, or related field.
- Four (4) years of progressively responsible GIS experience in a complex enterprise setting, with at least 2 years at the analyst level utilizing professional geo-processing software and web applications to independently analyze data and design reports and dashboards.
- At least two (2) years of experience supporting GIS/business process integration within a Public Works environment or performing equivalent work.
- An equivalent combination of education and experience sufficient to provide the applicant with the knowledge, skills and ability to successfully perform the essential functions of the job will be considered.

NECESSARY SPECIAL REQUIREMENTS:

- Employment contingent upon passing a criminal background check.
- Willingness and ability to work extra hours or change hours as needed to perform systems work outside of normal business hours.

GIS Analyst II:
- GIS Professional (GISP) Certification required at hire or promotion.
- Failure to maintain a GIS Professional (GISP) certification will result in demotion to the lower class for which qualified.

PREPARED BY: D. Burdick
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04/25

REVIEWED BY: _____
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