Midpeninsula Regional Open Space District

GEOGRAPHIC INFORMATION SYSTEM ANALYST I/II

DEFINITION

Under general supervision (GIS Analyst I) to direction (GIS Analyst II) provides analysis and strategic support for the District's Geographic Information Systems (GIS) operations; maintains enterprise databases and data, develops automation tools, configures and maintains enterprise and cloud-hosted web mapping applications and data services, and supports organizational projects through technical expertise, mapping, and training; and performs related duties, as assigned.

SUPERVISION RECEIVED AND EXERCISED

Receives general supervision (GIS Analyst I) to direction (GIS Analyst II) from the Geographic Information System Program Manager. Exercises no direct supervision over staff.

CLASS CHARACTERISTICS

GIS Analyst I: This is the entry-level classification in the GIS Analyst series. Initially under close supervision, incumbents learn and perform routine GIS analysis and support, while learning District policies and procedures. As experience is gained, assignments become more varied, complex, and difficult; close supervision and frequent review of work lessen as an incumbent demonstrates skill to perform the work independently. Positions at this level usually perform most of the duties required of the positions at the GIS Analyst II-level but are not expected to function at the same skill level and usually exercise less independent discretion and judgment in matters related to work procedures and methods. Work is usually supervised while in progress and fits an established structure or pattern. Exceptions or changes in procedures are explained in detail as they arise.

GIS Analyst II: This is the journey-level classification in the GIS Analyst series. Positions at this level are distinguished from the GIS Analyst I-level by the performance of the full range of duties as assigned, working independently, and exercising judgment and initiative. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise and are fully aware of the operating procedures and policies of the work unit. This class is distinguished from the Senior GIS Analyst in that the latter performs the more complex work assigned to the series and provides technical and functional direction over lower-level staff.

Positions in the GIS Analyst class series are flexibly staffed; positions at the II-level are normally filled by advancement from the I-level; progression to the II-level is dependent on (i) management affirmation that the position is performing the full range of duties assigned to the classification; (ii) satisfactory work performance; (iii) the incumbent meeting the minimum qualifications for the classification including any licenses and certifications; and (iv) management approval for progression to the II-level.

EXAMPLES OF TYPICAL JOB FUNCTIONS (Illustrative Only)

Management reserves the right to add, modify, change, or rescind the work assignments of different positions and to make reasonable accommodations so qualified employees can perform the essential functions of the job.

Positions at the GIS Analyst I-level may perform some of these duties and responsibilities in a learning capacity.

- Develops and maintains scripts to automate data processing and improve efficiency, including designing Extract Transform Load (ETL) pipelines for integrating external data and troubleshooting code and schema issues.
- Designs, builds, and maintains enterprise databases and datasets; plans and executes schema changes; synchronizes development and production environments; and applies standardized metadata to ensure data quality and compliance.
- Validates, digitizes, manipulates, and standardizes spatial and tabular data; performs routine data loading and refreshes to maintain accuracy and reliability.
- Publishes and manages web data services, troubleshoots service performance issues, and enforces standards for reliability and consistency.
- Plans, configures, customizes, deploys, and maintains web maps, dashboards, and applications to support operations and decision-making; uses appropriate programming languages and tools to enhance user experience and support offline data collection workflows.
- Creates and maintains technical documentation, including standard operating procedures, user guides, tutorials, and system diagrams; applies cartographic principles to map products, data visualizations, and applications.
- Supports service request workflows by producing presentation-quality maps and exhibits for meetings and public engagement and fulfilling data and analysis requests of varying complexity.
- Provides project consulting by clarifying needs, recommending tools and methodologies, evaluating new software, and developing custom maps, data models, and web applications while enforcing data standards.
- Delivers technical support and training on data analysis and mapping tools; develops instructional materials and conducts group and individual training sessions to enable adoption and self-service; plans and executes change management activities for new, enhanced, and upgraded tools.
- Stays current with emerging technologies, industry standards, and software platform updates; applies these insights to improve reliability, performance, and maintainability.
- Troubleshoots and resolves issues for GIS databases, applications, services, software and tools; diagnoses root causes spanning software bugs, data integrity, user errors, or cross-system conflicts; communicates solutions clearly to non-technical users.
- Manages programs involving large georeferenced maps for operational, recreational, and emergency use, coordinating updates, quality control, and outreach to ensure adoption and effective use.
- Serves as liaison for data and mapping user groups, facilitating communication between technical teams and end users regarding system updates, data policies, and new application features.
- Observes and complies with all District and mandated safety rules, regulations, and protocols.
- Performs other duties as assigned.

QUALIFICATIONS

Knowledge of:
Positions at the GIS Analyst I-level may exercise some of these knowledge and abilities statements in a learning capacity.

- Data analysis principles, methods, and best practices for managing spatial and tabular datasets.
- Database design, schema management, and integration techniques for enterprise data systems.
- Scripting and programming languages used for data automation and application development including Python, SQL, JavaScript, HTML, CSS, and evolving web and automation technologies.
- ETL processes and data modeling concepts for integrating external data sources.

- Relational database management systems (RDBMS), SQL queries, and multiuser versioned workflows.
- Web mapping technologies, service publishing, and application deployment standards.
- Cartographic principles, spatial analysis techniques, and methods for producing high-quality map products.
- Technical documentation practices, including standard operating procedures, user guides, and system diagrams.
- Troubleshooting and debugging techniques for scripts, applications, and database systems.
- Principles and practices for training and supporting end users in data analysis and mapping tools.
- Project management concepts for planning, implementing, and maintaining technical solutions.
- Applicable federal, state, and local laws, codes, and regulations as well as industry standards and best practices pertinent to the assigned area of responsibility.
- Accessible design guidelines and standards for web and digital content, including GIS maps, graphics, and applications.
- District and mandated safety rules, regulations, and protocols.
- Techniques for providing a high level of customer service by effectively interacting with the public, vendors, contractors, and District staff.
- The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Modern equipment and communication tools used for business functions and program, project, and task coordination, including computers and software programs relevant to work performed.

Ability to:

- Analyze complex data sets and ensure accuracy, integrity, and compliance with established standards.
- Develop, test, and maintain scripts and automation tools to streamline workflows and improve efficiency.
- Design, implement, and maintain enterprise databases and schemas, including performing updates and synchronizations.
- Configure, deploy, and maintain web maps, dashboards, and applications to meet organizational needs.
- Troubleshoot and resolve technical issues related to scripts, software, applications, and database systems.
- Prepare clear and concise technical documentation, user guides, and training materials.
- Communicate technical concepts effectively to non-technical users and provide training in data analysis and mapping tools.
- Manage multiple projects and priorities, ensuring timely delivery of high-quality solutions and map products.
- Collaborate with cross-functional teams to define requirements and recommend appropriate tools and methodologies.
- Apply cartographic principles to produce accurate and visually effective maps and graphics.
- Adapt to evolving technologies and implement innovative solutions to improve data management and analysis processes.
- Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.
- Independently organize work, set priorities, meet critical deadlines, and follow-up on assignments.
- Effectively use computer systems, software applications relevant to work performed, and modern business equipment to perform a variety of work tasks.
- Communicate clearly and concisely, both orally and in writing, using appropriate English grammar and syntax.
- Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

Education and Experience:
Any combination of training and experience that would provide the required knowledge, skills, and abilities is qualifying. A typical way to obtain the required qualifications would be:

Education:

GIS Analyst I/II:
- Equivalent to a bachelor's degree from an accredited college or university with major coursework in geography, environmental science, geology, computer science, or a closely related field.

Experience:

GIS Analyst I:
- One (1) year of professional experience or two (2) years providing technical support for geographic information systems.

GIS Analyst II:
- Two (2) years of increasingly responsible experience supporting a comprehensive GIS program equivalent to the GIS Analyst I with the District.

Licenses and Certifications:

- Possession of a valid California Driver's License to be maintained throughout employment.

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer; to operate a motor vehicle and visit various district sites; vision to read printed materials and a computer screen, as well as interpret colored warning and alarm lights on computer equipment; and hearing and speech to communicate in person and over the telephone. This is primarily a sedentary office classification although standing in work areas and walking between work areas may be required. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information. Employees must possess the ability to lift, carry, push, and pull materials and objects up to 20 pounds.

ENVIRONMENTAL CONDITIONS

Employees work primarily in an office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances. Employees may be required to travel to District field sites where exposure to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, and mechanical and/or electrical hazards are possible. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing divisional policies and procedures.

EFFECTIVE: August 2016
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FLSA: Exempt