GIS ADMINISTRATOR

DEFINITION

Under general direction, builds, maintains, and manages the Authority's geographic information system (GIS) databases; performs spatial analysis, software development, cartography, remote sensing, and field surveys in support of open space planning, land acquisition, and land management programs and projects; serves as subject matter expert on GIS in coordinated activities across the agency in service of strategic mission objectives; participates in short- and long-term planning activities to implement vision for a modern GIS program; and performs related work as required.

SUPERVISION RECEIVED AND EXERCISED

Receives general direction from the Planning Manager. Exercises direct supervision over assigned internal staff. Supervises and administers contracts with consultants.

CLASS CHARACTERISTICS

This is a single position classification responsible for implementing the Authority's GIS program and performing complex technical assignments within the GIS program. Successful performance of the work includes the use of initiative, resourcefulness, and independent judgment. This also requires skill in defining procedures and proactively evaluating the GIS program based needs of the agency to meet program and project goals and objectives. Position works independently, exercises judgment and initiative, receives only occasional instruction or assistance as new or unusual situations arise, and is fully aware of the operating procedures and policies of the program.

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 that qualified employees can perform the typical job functions.

➢ Designs, builds, and maintains the Authority's GIS databases, and web-based and mobile applications. Participates in the development and implementation of GIS program goals, objectives, policies and priorities; recommends and administers policies and procedures regarding the GIS program.
➢ Serves as subject matter expert to the Authority regarding geospatial data systems, maps, and other activities related to geographic data.
➢ Consults with other Authority staff regarding GIS needs and requirements, including identifying, designing, and developing GIS applications, strategies, and procedures for integrating GIS data and analyses to support Authority programs; work product examples include introducing automation and workflows to routine tasks and new processes.
➢ Develops and documents operational and database standards, scripts, guidelines, and usage procedures; works with project managers and/or technical experts to setup and implement IT systems and database across multiple platforms, ensuring data integrity and compatibility.

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- Conducts spatial analyses and ecological modeling in support of open space planning, natural resource planning, land management operations, and land acquisition activities.
- Performs advanced database queries and develops reports using SQL.
- Develops applications to extract, transform, and report data used for business process analysis and decision-making.
- Maintains relational data models as new information and table structures are added.
- Maintains data library for internal desktop GIS users, and provides desktop support for staff using GIS software.
- Maintains a healthy database environment for testing and quality assurance purposes.
- Writes and maintains user and technical operating instructions and documentation; provides training to users and other technical staff and advises on best practices.
- Serves as a technical resource to all departments, including providing assistance and training in the proper use of GIS data and systems, and recommending, troubleshooting, and providing support for GIS software, databases, and other related applications.
- Conducts GIS user trainings on applications, workflows, and processes. Explains technical information to non-technical system users, including assisting them in accessing and interpreting GIS information; develops quality control procedures.
- Develops and maintains the Authority's Global Positioning System (GPS) Equipment, including developing custom applications to streamline and standardize GPS field collection and train staff of the proper use of related equipment.
- Configures hardware for field-collection, conducts field surveys and integrates Global Positioning System (GPS) data into GIS format.
- Develops software to facilitate field-based data collection, including for apps deployed on mobile phones and tablets.
- Oversees management of contracts for services related to the GIS program; initiates solicitations to provide materials and services; facilitates pre-proposal meetings; coordinates and participates in the evaluation of submittals; works within the Authority's contracting processes to drafts and reviews scope of agreements; oversees review of documents, reports, and other work products prepared by consultants and provides feedback and corrections; assists assigned staff with analysis and problem resolution for consultant issues that may arise.
- Participates in the annual budget preparation related to the GIS program; prepares detailed cost estimates; monitors and controls supplies and equipment; orders supplies and tools as necessary; prepares documents for equipment procurement.
- Coordinates the purchase and maintenance of equipment, software, and supplies used to support GIS services; administers software licensing for GIS desktop and field users.
- Represents the Authority in inter-agency coordination activities related to GIS. Attends and participates in professional group meetings; stays abreast of new trends and innovations in GIS and conservation programs; researches emerging products and enhancements and their applicability to Authority needs.
- Maintain relationships with external partners, identifies, acquires, and integrates data from other agencies and organizations into the Authority's data library; maintains and updates the Authority's data catalogue to reflect the agency's land holdings, natural resources, built infrastructure, and other critical data sets; creates and maintains government-compliant metadata; and develops procedures to share appropriate data.
- Performs other duties as assigned.

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QUALIFICATIONS

Knowledge of:

➢ Principles and practices for developing and coordinating a broad-based GIS program with other utilized applications; advanced principles, practices, and technologies of computer based mapping and geographic related data systems.
➢ Data management theory, principles, and practices and their application to a wide variety of services
➢ and programs. Project management principles and practices, including goal setting, work plan development, implementation, and evaluation.
➢ Principles and techniques of cartography and publication-quality map production using GIS software.
➢ Database design and integration as it relates to spatial database development and integration with enterprise business systems.
➢ Theories and techniques of GIS applications and web mapping technology system/program.
➢ Principles of remote sensing and incorporating data collected for analysis.
➢ Applicable federal, state, and local laws, codes, and regulations concerning the operation of the assigned function.
➢ Principles and procedures of record keeping and reporting.
➢ Principles and techniques for working with groups and fostering effective team interaction to ensure teamwork is conducted smoothly.
➢ Techniques for providing a high level of customer service by effectively interacting with staff, representatives of outside organizations, and members of the public, including individuals of diverse socioeconomic, ethnic, religious, and cultural backgrounds, physical ability, and sexual orientation.
➢ 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 GIS programs, projects, and task coordination including servers, personal computers, global positioning system, tablets, plotters, printers, and related software.
➢ Computers and software programs (e.g., Microsoft software packages) to conduct, compile, and/or generate documentation.

Ability to:

➢ Develop and implement goals, objectives, practices, policies, procedures, and work standards.
➢ Administer complex, technical, and sensitive GIS related projects in an independent and cooperative manner.
➢ Coordinate a broad-based GIS program that includes effective database development, management, and accessibility.
➢ Implement a GIS program that includes effective database development, management, accessibility,
➢ and systems integration.
➢ Author ETLs (Extract Translate Load) processes for integrating external datasets.
➢ Write Python geo-processing scripts.
➢ Develop and deploy services for ArcGIS Online.
➢ Compile, integrate and analyze data from a variety of sources, including aerial photography, terrain, topographic, hydrologic, and time-sequenced event data into clear maps and graphics.
➢ Perform complex modeling, mapping, database maintenance, and other GIS professional-level tasks.

- Develop, design, and implement scripts and workflows to automate tasks and bring efficiency and accuracy to processes.
- Interpret and explain GIS projects and programs to the general public; identify and respond to issues and concerns from the public, Authority staff, Board of Directors, and other boards and commissions.
- Establish and maintain a variety of filing, record keeping, and tracking systems.
- Read, interpret, apply, and explain technical written material and complex Federal, State, and local policies, procedures, laws, regulations, ordinances, and Authority planning policies and procedures.
- Organize and prioritize a variety of projects and multiple tasks in an effective and timely manner; organize own work, set priorities, and meet critical time deadlines.
- Demonstrate sensitivity to and understanding of the diverse socioeconomic, cultural, physical ability, and ethnic backgrounds of individuals encountered in the execution of Authority services and mission.
- Effectively use computer systems, software applications, 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.
- Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.
- 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:

Equivalent to a Bachelor's degree from an accredited college or university with major coursework in GIS, Computer Science, Geography, Urban Planning, or related field; and four (4) years of increasingly responsible experience in the management and administration of a Geographic Information System. Knowledge of or education in environmental science or resource management is desirable.

Licenses and Certifications:

- Possession of, or ability to obtain, a valid California Driver's License.
- Possession of, or ability to obtain, a GIS Certificate

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer, to inspect Authority development sites, including traversing uneven terrain, to operate a motor vehicle, and to visit various Authority and meeting sites; vision to read printed materials and a computer screen; and hearing and speech to communicate in person, before groups, and over the telephone. This is primarily a sedentary office classification although standing 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 weighing up to 25 pounds.

ENVIRONMENTAL ELEMENTS

Employees work in an office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances. Employees may work in the field and may occasionally be exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, mechanical and/or electrical hazards, and/or hazardous physical substances and fumes. Employees may interact with staff and/or public and private representatives on sensitive matters and in interpreting and enforcing Authority policies and procedures.

EFFECTIVE: November 2023
REVISED: N/A
FLSA: Exempt
FORM 700:   No