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FLSA: NON-EXEMPT
Bargaining Unit: PL
JCN: 3183

SR. GEOGRAPHIC INFORMATION SYSTEMS ANALYST

DEFINITION

Under general direction, leads, trains, oversees, sets priorities, and directs the work of staff on a day-to-day basis; performs the most complex and varied technical tasks related to the integration of the County's geographic information systems (GIS) across enterprise systems. Duties include application design, modification, programming, scripting, database management, and user support; evaluates and personally participates in the functions necessary to implement and sustain the creation, maintenance, and use of the GIS databases and applications across the enterprise and beyond; and performs related duties as assigned.

SUPERVISION RECEIVED AND EXERCISED

Receives general direction from the Geographic Information Systems Manager. Exercises lead direction and provides training to GIS professional and technical staff.

CLASS CHARACTERISTICS

This is the advanced/lead-level professional classification in the GIS series that is responsible for the intake of client requests and prioritizes or assigns these requests as necessary. Incumbents also provide lead direction to clerical, technical, and professional staff. Incumbents exercise a high level of discretion and independent judgment in providing professional oversight for projects and perform work requiring a high level of technical knowledge in specific area(s) and/or ability to integrate at a high level the knowledge of several areas.

This classification is distinguished from the GIS Manager in that the latter has overall management responsibility of the GIS function in the Surveyor's Office.

EXAMPLES OF TYPICAL JOB FUNCTIONS (Illustrative Only)

- Provides lead direction to GIS staff; reviews and controls quality of work.
- Plans, schedules, prioritizes, and assigns work; inspects assigned equipment, systems, and infrastructure for maintenance, repair, and upgrade needs, and recommends appropriate actions; assists in developing work plans, procedures, and schedules.
- Inspects and evaluates work in progress and upon completion to ensure activities are performed in accordance with department standards and specifications; provides input on annual employee performance evaluations.
- Serves as lead for assigned projects, including developing project budgets and allocating resources, gathering user and systems requirements; working with vendors, contractors, project managers, and other project staff; installing, configuring, testing, and providing general technical support; and developing technical and user documentation.
- Consults with County departments and the Information Technologies Department regarding GIS needs and requirements, including identifying, designing, and developing GIS applications, strategies, and procedures for the display, access, and integration of geospatial data, services, and functions.
- Performs complex GIS database and graphical user interface research, design, analysis, and programming for desktop, web, and mobile applications.
- Gathers and analyzes information regarding GIS user and systems requirements and develops and/or modifies automated systems to fulfill these needs.

- Assists in the development and enforcement of GIS standards and operating procedures.
- Develops spatially enabled applications using application templates, widgets, scripting languages, and development kits as appropriate
- Develops and designs standards and technical specifications for County-wide GIS systems; coordinates with other GIS and information technology staff to develop information system solutions; designs technical GIS and data structures; programs automated applications for GIS users; oversees the documentation created by GIS staff to ensure record of proper use and limitations of data or products.
- Serves as a technical resource to all County 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; receives and responds to inquiries, requests for assistance, and complaints regarding projects, policies, and procedures.
- Confers with and provides professional assistance to other agencies on GIS related matters; utilizes and leverages existing data from other agencies; receives and responds to data requests from other agencies and individuals.
- Performs a variety of professional-level work, including modeling applications, spatial analytics, site selection, constraint modeling, maps, graphics, and related material for internal and external clients in a variety of computing environments including desktop, cloud, and mobile.
- Performs database administration duties related to system backup, file maintenance, and user access.
- Installs, tests, and implements vendor supplied modifications to existing software; functions as a liaison with software vendors on user issues.
- Develops new applications and queries to create and update maps and services, and to facilitate analysis.
- Analyzes and maintains the GIS database, including gathering and incorporating data and creating tables or layers, standard data definitions, data dictionary, physical database design, security and privacy, and recovery.
- Utilizes GIS to analyze and provide data on a variety of resources and issues for the County and other agencies and organizations.
- Designs and programs web-based applications for use by in-house County staff as well as internet applications for County and public GIS users; creates and maintains webpages.
- Implements policies, procedures, and standards to ensure County-wide consistency and carry-over of applications for multiple users.
- Provides technical direction to GIS analysts, technicians and GIS-users on a project or day-to-day basis.
- Prepares a variety of written correspondence, reports, procedures, documentation, instructions, and other materials.
- Maintains accurate records and files related to the GIS function; tracks and evaluates projects and system progress.
- Monitors changes in GIS system utilization, technology, and applications; recommends improvements and upgrades, and implements changes after approval.
- Attends meetings, conferences, workshops, and training sessions; reviews publications and audio-visual materials to become and remain current on principles, practices, and new developments pertinent to GIS and the County.
- Performs related duties as assigned.

QUALIFICATIONS

Knowledge of:

- Advanced knowledge of the specialized area of GIS work assigned, such as application development, systems design and maintenance, database management, cloud computing and services, networking, or other areas as appropriate.

- Advanced data management theory, principles, and practices, and their application to a wide variety of services and programs.
- Advanced principles and practices of spatial technology, including geo-databases, feature classes, raster and image processing, remote sensing, LIDAR, and UAS/URV integration.
- Advanced principles and techniques in programming and programming languages used in the County's GIS operations.
- Advanced principles, techniques, methods, and terminology of geography, cartography, geographic information systems, and cartographic composition.
- Principles and practices of Global Positioning System and Global Navigation Satellite System field location and collection systems.
- Principles and practices of managing and interpreting big data for problem project analysis.
- Principles and practices of integrating disparate GIS technologies, such as aerial imagery; map, event, and feature services; open source GIS platforms; and ESRI based systems.
- Principles and practices of developing field and mobile data collection applications.
- Principles and practices of publishing, consuming, and securing cloud and internet-based services.
- Principles and practices of identifying technology needs and issues, researching and evaluating technology and applications, identifying and the most effective course of action, and implementing solutions.
- Technology, hardware and software, and current applications related to GIS systems, including database management, implementation, access, security, mapping, report generation, cloud services, mobile applications, and desktop systems.
- Mathematics used in the creation of maps, tables, and reports showing geographic and topographic information and to manipulate tabular/spatial data.
- Topological relationships and principles of geodatabase design.
- Applicable federal, state, and local laws, regulatory codes, ordinances, and procedures relevant to assigned area of responsibility; GIS-related ethical issues.
- Recordkeeping principles and procedures.
- 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 dealing with the public, vendors, external agencies, contractors, and County 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.
- Computers and software programs (e.g., Microsoft software packages) to conduct, compile, and/or generate documentation.

Ability to:

- Plan, schedule, assign, and oversee activities of assigned staff.
- Inspect the work of others and maintain established quality control standards.
- Train others in proper and safe work procedures.
- Oversee and perform complex professional support functions for assigned responsibilities; troubleshoot problems and take appropriate action or escalate to appropriate staff as needed.
- Oversee and perform complex functions in the installation, implementation, testing, and maintenance of a variety of database systems and other components.
- Perform advanced analyses of informational requirements and needs, identify problems, provide technical advice and consultation, and ensure efficient computer system utilization.
- Coordinate a broad-based GIS program that includes effective database development, management, and accessibility through internal local area network (LAN), the County's GIS website, and cloud-based facilities for a variety of County departments, external agencies, and the public.

- Assess user needs and recommend appropriate hardware, software, and systems to meet these needs; translate GIS user needs into operational programs or systems.
- Interpret and understand data in various forms, including GIS files, Autocad drawing files, database files, images, events, and associated metadata, as well as printed maps of various types and sources.
- Analyze, design, code, test, and implement GIS and related application software; implement, update, and maintain GIS hardware and related supplemental equipment.
- Understand, interpret, apply, explain, and ensure compliance with federal, state, and local policies, procedures, laws, and regulations, technical written material, and office policies and procedures.
- Instruct both technical and non-technical user staff in the operation of new or revised GIS applications, system modifications, or database structure, including explaining system concepts to non-technical users.
- Prepare clear and effective reports, correspondence, policies, procedures, and other written material, including reports of work performed and tables and/or summaries of analytical results.
- Analyze situations and identify pertinent problems/issues; collect relevant information; evaluate realistic options; and recommend/implement appropriate course of action.
- Effectively represent the office and the County in meetings with governmental agencies; community groups; various business, professional, and regulatory organizations; and in meetings with individuals.
- Independently organize work, set priorities, meet critical deadlines, and follow-up on assignments.
- 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 the required experience, education, and training that would provide the essential knowledge, skills, and abilities is qualifying.

Equivalent to graduation from an accredited four-year college or university with major coursework in management information systems, computer science, GIS, or a closely related field;

AND

Two (2) years of journey-level experience in performing systems analysis, design and maintenance, spatial database analysis and design, or application development and programming in an automated mapping environment at a level equivalent to the County's class of Geographic Information Systems Analyst II.

Licenses and Certifications:

- Possession of, or ability to obtain, a valid California Driver’s License by time of appointment and a satisfactory driving record.

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer; may need to operate a motor vehicle and visit various County 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. Reasonable accommodations will be made for individuals on a case-by-case basis.

ENVIRONMENTAL CONDITIONS

Employees work in an office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances. Employees may interact with members of the public or with staff under emotionally stressful conditions while interpreting and enforcing departmental policies and procedures.