



OCTOBER 2018
FLSA: NON-EXEMPT
Bargaining Unit: PL
JCN: 3183

JCN # 3183

County of El Dorado
March 2006

SENIOR GISSR. GEOGRAPHIC INFORMATION SYSTEMS ANALYST

DEFINITION

~~Under general supervision performs a variety of complex professional and analytical duties in the operation~~ 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 system (GIS); ~~coordinates, directs, and reviews the work of other professional and support GIS staff; performs related work as assigned. Incumbents in this classification will be assigned one or more of the following functions: Applications development, systems design and maintenance, (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 networking.~~

DISTINGUISHING CHARACTERISTICS

~~This is the working lead level in~~ sustain the GIS Series, providing lead direction to a staff of GIS Analysts. ~~Incumbents work with considerable independence performing the most difficult, complex, creation, maintenance, and specialized work in an assigned area of expertise. They assume~~ use of the GIS databases and ~~manage~~ 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 in-take of client requests and~~ ~~prioritize~~ ~~prioritizes~~ or ~~assign~~ ~~assigns~~ these requests as necessary. ~~Also, they will have day-to-day responsibility for an assigned technical support area and regularly~~ ~~Incumbents also~~ provide lead direction and training for other staff. This is not considered a supervisory class in that the selection and discipline of employees in not assigned to this level. This class is distinguished from the GIS Analyst in that this position is assigned the lead task of special projects, assuring the timeliness, completeness, and accuracy of the project.

EXAMPLES OF DUTIES (Illustrative Only)

- ~~Provides lead direction, training, work review and evaluation to a small staff;~~

- ~~organizes and assigns work, sets priorities and follows up to ensure coordination and completion of assigned work.~~
- ~~Provides input into selection decisions, performance evaluations and disciplinary matters.~~
- ~~Counsels staff; recommends appropriate discipline and other personnel actions.~~
- ~~Provides difficult, complex professional and/or specialized GIS work, which requires the staff. Incumbents exercise of a high level of discretion and independent judgment, the application of in providing professional skills and oversight for projects and perform work requiring a high level of technical knowledge of detailed or specialized activities related to the project to which assigned 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.~~
- ~~Gathers and analyzes information regarding GIS user systems and requirements; develops or modifies automated systems to fulfill these needs.~~
- ~~Conducts feasibility studies and develops system, time, equipment and cost requirements.~~
- ~~Develops GIS program logic and processing steps; codes programs using high level spatially enabled applications using application templates, widgets, scripting languages or fourth generation (state of the art) languages using structural programming techniques.~~
- ~~Recommends, and implements development kits as appropriate applications design; plans and develops test data to validate new or modified programs; designs input and output forms and documents.~~
- 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 macro programs, menu interfaces, data entry screen, or other high level programs as required by users; prepares ad hoc reports, maps and cartographic products as required.~~
 - ~~Performs assembler and higher language programming to support inter-database and inter-system interfaces required for effective GIS operations.~~
 - ~~Analyzes and solves hardware and software problems as needed for GIS users and other agencies.~~
 - Develops new applications and queries to create and update maps and services, and to facilitate analysis.
 - ➤ Analyzes and maintains overall design of the GIS database, including analysis of goals and objectives gathering and incorporating data and creating tables or layers, standard data definitions, data dictionary, physical database design, security and privacy, and recovery systems.
 - ~~Plans, coordinates Utilizes GIS to analyze and directs provide data acquisition on a variety of resources and maintenance in support of issues for the County's GIS program; performs layer development, spatial analysis County and data analysis projects.~~
 - ➤ Coordinates data exchange with other departments and agencies- and organizations.
 - ~~Identifies, analyzes and maintains the GIS operating environment, including search strategies, access methods, file membership, record relationships and data compression techniques.~~
 - ~~Identifies and analyzes new GIS applications on the database; advises staff and users on design strategy.~~
 - Writes program 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, user procedures and instructions;- assists user staff in implementing new or modified programs and applications;- , and other materials.
 - ➤ Maintains accurate records and files related to the GIS function; tracks and evaluates project projects and system progress.
 - ~~Maintains records and prepares periodic and special reports of work performed.~~
 - ~~Attendance and punctuality that is observant of scheduled hours on a regular basis.~~
 - Monitors changes in GIS system utilization, technology, and applications; recommends improvements and upgrades, and implements changes after approval.

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➤ 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 ~~work~~duties as assigned.

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QUALIFICATIONS

Knowledge of:

- ~~In-depth~~ Advanced knowledge of the specialized area of GIS work assigned, such as applications application development, systems design and maintenance, database management, cloud computing and services, networking, or other areas as appropriate.
- ~~Principles of work coordination, organization, and training.~~
- ~~Systems analysis, design and testing procedures and techniques.~~
- ~~Operating principles and characteristics of computer software/hardware utilized~~ 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.
- ~~Principles and Advanced principles, techniques of programming, and programming languages utilized in the County's GIS operations.~~
- ~~Job planning, prioritizing and scheduling techniques.~~
- ~~Backup, restore, restart and recovery concepts.~~
- ~~Principles and practices of technical problem solving.~~
- ~~Principles, practices and techniques of providing customer service.~~
- ~~Basic accounting, statistical, business administration and office procedures.~~
- ~~Principles and methods of computer aided design or graphic simulation.~~
- ~~Form, and document design techniques.~~
- ~~Principles and methods of~~ terminology of geography, cartography, geographic information systems, and cartographic composition techniques.
- ~~Automated mapping, Principles and geographic practices of Global Positioning System and spatial information processing methods~~ Global Navigation Satellite System field location and techniques.
- ~~Database management~~ collection systems theory, design, implementation, access and security.
- ~~Database testing concepts~~ 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.~~

Skill in:

- ~~Coordinating, organizing, and carrying out the functions of an assigned area of GIS.~~
- ~~Performing the most difficult and complex GIS work in an assigned area of specialized expertise.~~
- ~~Providing training for other staff.~~
- ~~Analyzing systems and problems, and of developing new or modified programs to meet user, department or agency needs.~~ field and mobile data collection applications.
- ~~Analyzing system requirements~~ Principles and selecting appropriate hardware practices of

- publishing, consuming, and software for system design.
- ◉ Developing logical procedures, securing cloud and coding their steps into programming instructions, internet-based services.
- ◉ Analyzing technical database requirements of GIS applications, Principles and users.
- ◉ Developing tests to analyze functioning practices of new or modified hardware, software or database structure in the County's GIS.
- ◉ Troubleshooting hardware, identifying technology needs and software problems, issues, researching and debugging programs, evaluating technology and applications.
- ◉ Coordinating activities with vendors, clients, identifying and staff.
- ◉ Reading detailed technical manuals, program upload/download, the most effective course of action, and interface procedures and programs, implementing solutions.
- Preparing clear Technology, hardware and consoles 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, user procedures, reports of.

Ability to:

- Plan, schedule, assign, and oversee activities of assigned staff.
- Inspect the work performed, and 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 written material, components.
- Translating 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.
- Instructing 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.

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- 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 established general policy, procedural, and legal guidelines.
- Using a computer and computer applications in the performance of GIS work.
- Establish, maintain, and foster positive and effective working relationships with those contacted in the course of the 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 course work/coursework in management information systems, computer science, mathematics, geographyGIS, or a closely related field and two;

AND

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

~~**NOTE:** The level and scope of the knowledge and skill listed above are related to the job duties defined under Distinguishing Characteristics. The above qualifications are a typically accepted way of obtaining the required knowledge and skills.~~
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

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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.