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FLSA: EXEMPT
Bargaining Unit: MA
JCN: 3136

~~County of El Dorado November 1994~~
~~Revised July 1999~~

GEOGRAPHIC INFORMATION SYSTEMS MANAGER ~~OF GIS~~

DEFINITION

~~Under direction, researches, plans, designs, develops, implements, manages and operates a computer-based Geographic Information System (GIS); directs and supervises GIS staff, data conversion, applications production and maintenance activities.~~

~~DISTINGUISHING CHARACTERISTICS~~

~~This single position class has management level responsibility for the County's Geographic Information System unit. The incumbent is responsible for providing technical expertise and supervision for the day-to-day implementation and operation of the Land Management Information System (LMIS) and the County's GIS, including coordinating GIS activities, supervising GIS staff, and managing GIS vendor contracts. This position is also responsible for planning and organizing system development activities and other GIS project management activities, including determination of appropriateness and priority of programming of diversified functions, training coordination and development for GIS users and staff.~~

~~**EXAMPLE OF DUTIES** (Illustrative Only)~~

- ~~Oversees all GIS operations; supervises activity associated with implementation, operation, and enhancement of the GIS and Land Management Database.~~
- ~~Plans, coordinates and directs GIS data acquisition and maintenance projects in support of the Countywide GIS program.~~
- ~~Represents the County at public meetings, conferences, hearings and related activities with public and private groups.~~

~~Plans, organizes, reviews~~Under general direction, plans, coordinates, and oversees the Countywide geographic information system (GIS) function; evaluates and personally participates in the creation, maintenance, and use of the GIS databases and applications; applies advanced knowledge of GIS and the principles of geography, cartography, and geospatial analysis to provide staff, external agencies, and the public with access to computerized information; ensures the expansion and maximization of GIS technology; and performs related duties as assigned.

SUPERVISION RECEIVED AND EXERCISED

Receives general direction from the County Surveyor. Exercises direct and general supervision over assigned staff.

CLASS CHARACTERISTICS

This is a management classification responsible for managing the GIS function, as well as providing expert support for GIS services within various other County departments, external agencies, and the general public. Successful performance of the work requires thorough knowledge and extensive experience with various technologies related to GIS, web- and cloud-based application development, remote sensing, and spatial database management systems, as well as skill in coordinating the work of the assigned function with other departments. Responsibilities include developing and implementing policies and procedures for assigned programs, budget administration and reporting, and program evaluation. Incumbents serve as a professional-level resource for organizational, managerial, and operational analyses and studies. Performance of the work requires the use of considerable independence, initiative, and discretion within established guidelines.

EXAMPLES OF TYPICAL JOB FUNCTIONS (Illustrative Only)

- Plans, organizes, assigns, coordinates, and reviews all activities of the County's GIS program, including coordinating with County departments, external agencies, and the public to identify, develop, and plan GIS projects and staffing needs.
- Plans, coordinates, and leads the implementation and usage of GIS technology and spatially-relatable data throughout the county, external agencies, and by the public; oversees and manages data maintenance and updating, data storage and distribution, and access to all users.
- Leads the development and implementation of goals, objectives, policies, and priorities for GIS including GIS data collection, storage, access, distribution policies, integration, and standard operating procedures; identifies resource needs.
- Plans, organizes, reviews, and evaluates the activities of assigned staff; recommends and implements disciplinary action as necessary; assists in the selection of staff and provides for their training and professional development.
- ~~Acts as primary interface for all LMIS/GIS data conversion and maintenance activities; coordinates resolution of LMIS/GIS system problems.~~
- ~~Organizes application and other development activities; coordinates with affected County departments and other agencies.~~
- ~~Oversees the preparation of written specifications for the development of software and the acquisition of hardware and communications devices.~~
- ~~Designs and develops computer applications to support division data acquisition activities; coordinates acceptance testing on new components.~~
- ~~Coordinates design and enforcement of GIS standards and operating procedures.~~
- ~~Develops GIS project schedules and work programs to support Countywide GIS operations.~~
- ~~Formulates project plans to ensure the effective and timely completion of assigned tasks.~~

- ~~Assists in providing technical and managerial direction, control, and assistance in the development of short- and long-range plans for the LMIS/GIS.~~
- ~~Trains, directs, supervises and evaluates subordinate staff in the operation of the GIS and the performance of other mapping functions.~~
- ~~Prepares or supervises the preparation of systems documentation for new systems and updating of documentation of existing systems.~~
- ~~Assists in the development of training programs for a variety of staff training needs.~~
- ~~Participates in development and implementation of policies and procedures for training GIS users.~~
- ~~Coordinates the implementation of new systems, databases, applications, and system modification and ensures that key users are thoroughly familiar with all aspects of the work.~~
- ~~Consults with users and conducts studies to determine needs; recommends objectives and priorities.~~
- ~~Develops plans, procedures and standards for conversion of existing geographic data to other automated systems.~~
- ~~Prepares the annual budget for GIS operations, capital expenditures, and professional services.~~
- ~~Estimates costs of user requested jobs, maintains records of such costs and accumulates said costs to be submitted for billing purposes.~~
- ~~Recommends acquisition, installation, and modifications of existing GIS hardware.~~

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~~**EXAMPLE OF DUTIES** (Illustrative Only)~~

- ~~Coordinates contracts with GIS hardware, software, data conversion, and other providers of GIS products and services.~~
- ~~Participates in contract monitoring functions; performs other administrative tasks as assigned.~~
- ~~Develops and implements policies and procedures for the management, security, operation and functions of the LMIS/GIS.~~
- ~~Attendance and punctuality that is observant of scheduled hours on a regular basis.~~
- Manages and participates in the development and administration of the office's annual budget; provides a forecast of additional funds needed for staffing, equipment, materials, and supplies; monitors and approves expenditures; implements adjustments as necessary.
- Monitors operations and activities of the GIS program and changes in GIS technology and applications; recommends improvements and modifications; implements changes after approval.
- Works with elected officials and executive-level staff in the formulation of management policies concerning the compilation of information and the integration of data through the County's GIS function; coordinates and oversees the implementation of such policies.
- Plans, coordinates, and directs GIS data acquisition and maintenance projects in support of the County-wide GIS program.
- Researches, plans, and prepares County-wide and department GIS function plans, including researching and determining equipment and technology costs, reviewing GIS and related technology for implementation, reviewing industry GIS implementations and projects for comparison and possible integration into a County GIS plan, and acting as County representative in various County and regional GIS coordinating meetings.
- 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; plans and coordinates the development of desktop and mobile spatial applications for internal and external users; oversees the documentation 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 office 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.
- Attends meetings, conferences, workshops, and training sessions to become and remain current on principles, practices, and new developments related to GIS.
- Maintains accurate records and files related to the GIS function.
- Performs ~~other~~related duties as ~~assigned~~required.

~~**QUALIFICATION**~~
QUALIFICATIONS

Knowledge of:

- ~~Supervisory~~Administrative principles and practices ~~including work planning and evaluation and employee training and discipline.~~
- ~~Program management principles and methods including planning,~~, including goal setting,

program development, implementation, and ~~monitoring.~~

- ~~o~~ ~~Methods and techniques of data gathering, appraisal and implementation.~~ evaluation.
- Principles~~,~~ and practices of employee supervision, including work planning and assignment, performance evaluation, and training.
- ~~o~~ Advacned principles, theories, and methods of ~~systems development and~~ GIS technology, programming ~~techniques.~~ , and data management.
- ~~o Principles,~~ Advacned principles and practices ~~and methods~~ of ~~geographic information~~the design, analysis, testing, and implementation of relational database management systems ~~and data development.~~
- ~~o~~ ~~Public administration, finance~~, geo-databases, and ~~budgeting. Methods and techniques of automated mapping and spatial information processing.~~ open source databases.
- ~~o Capabilities of automated mapping and geographic information processing systems.~~
- ~~o Business computer applications related to the work.~~

~~**Skill in:**~~

- ~~Planning, directing~~Various procedures/commands related to Relational Database Management System (RDBMS) design, analysis, and programming.
- Advanced data management theory, principles, and practices and their application to a wide variety of services and programs.
- ~~o~~ The function and role of developing and coordinating ~~the work of subordinate staff and team members from other~~a broad-based GIS program with applications for County departments~~.~~
- ~~o Training, directing, supervising, and evaluating subordinate staff.~~
- ~~o~~ ~~Planning, developing, implementing, maintaining~~, public agencies, private clients, and ~~utilizing a variety of computer systems, software~~the general public including ethical concerns related to the distribution and ~~equipment.~~access of geospatial data.
- ~~o Ensuring the timely and scientifically sound completion of necessary projects, reports and studies as required.~~
- ~~o Translating technical concepts and terminology in terms understandable to those contacted in the course of the work.~~
- ~~o Evaluating progress or success of computerized projects and systems.~~
- ~~Requesting, coordinating and~~ Advanced principles and practices of spatial technology, including geo-databases, feature classes, raster and image processing, remote sensing, LIDAR, and UAS/URV intergration.
- Advacned principles and practices of cartography, including scale, projection, and coordinate systems.
- Advanced principles and practices of Global Positioning System (GPS) and Global Navigation Satellite System field location and collection systems.
- ~~o~~ Principles and practices of managing ~~an Aerial, Photogrammetric, CPS, or other survey~~and interpreting big data for problem project~~.~~ analysis.
- ~~Effective~~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 integrating GIS-based services with other enterprise applications and systems.
- Principles and practices of developing field and mobile data collection applications.
- Principles and practices of providing, consuming, and securing cloud and internet-based services.
- Technology, hardware and software, and current applications related to GIS systems, including database management, implementation, access, security, mapping, report generation, and desktop publishing systems.
- Principles and practices of identifying technology needs and issues, researching and evaluating technology and applications, and implementing solutions.

- Applicable federal, state, and local laws, regulatory codes, ordinances, and procedures including the California Public Records Act.
- Principles and practices of public agency budget control and contract administration.
- Recordkeeping principles and procedures; particularly, the requirements of technical reporting associated with planning programs.
- 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, 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:

- Develop, implement, and interpret office goals, objectives, policies, procedures, and work standards.
- Supervise, train, assign, and review the work of staff.
- Organize, implement, and direct GIS programs; determine work priorities and effectively coordinate and schedule resources and staff to perform activities and projects.
- Analyze, understand, interpret, apply, and ensure compliance with applicable federal, state, and local policies, procedures, laws, and regulations.
- Identify problems, research and analyze relevant information, and develop and present recommendations and justification for solution.
- Perform complex modeling, mapping, database maintenance, and other GIS professional-level tasks.
- Interpret and understand data in various forms, including GIS files, Autocad drawing files, database files, event signals, images and associated metadata, as well as printed maps of various types and sources.
- Prepare clear and concise reports, correspondence, procedures, and other written material.
- Establish and maintain a variety of manual and computerized reports, logs, records, and files of work performed.
- 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.
- ~~o~~ Communicate clearly and concisely, both orally and in writing, using ~~technical language~~ appropriate ~~to the level of audience being addressed.~~ English grammar and syntax.
- ~~Establishing and maintaining effective~~ Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.
- ~~o~~ 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 a ~~four-year~~bachelor's degree from an accredited four-year college or university with major coursework in ~~management~~geographic information systems, computer science, geography, ~~planning, engineering~~public or business administration, or a closely related field~~, and three (3;~~

AND

Two (2) years of ~~experience in managing an information systems development team, preferably GIS related, or three (3) years~~ increasingly responsible experience at a level equivalent to the ~~County's~~County's class of ~~GIS~~Sr. Geographic Information Systems Analyst~~ II, at least one year,~~ including including two (2) years of ~~which included responsibility as a project~~lead or ~~team leader~~supervisory experience.

~~**NOTE:** The level~~**Licenses and** ~~scope~~**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; vision to read printed materials and a computer screen; and hearing and speech to communicate in person, before groups, and over the ~~knowledge and skills listed above are related to~~ 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. 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 ~~job duties defined~~public or with staff under ~~Distinguishing Characteristics.~~emotionally stressful conditions while interpreting and enforcing departmental policies and procedures.