Geographic Information Systems (GIS) Analyst

Purpose of the role:

Under general supervision, oversees and performs the more specialized, complex, integrated and varied professional work in the implementation and coordination of Geographical Information Systems (GIS) for a City department(s), including data management, workflow and processes, and computer programming; exercise judgment and initiative with only occasional instruction or assistance; performs a variety of technical tasks relative to assigned areas of responsibility; and performs related duties as required.

Distinguishing Characteristics:

This advanced level professional classification is characterized by its responsibility for creating and maintaining GIS database information, developing related software applications, and overseeing the maintenance of existing departmental GIS databases. Employees at this level are required to be fully trained in all procedures related to assigned area of responsibility in GIS, and exercise considerable independent judgment and problem-solving skills. Incumbents only receive occasional instruction or assistance as new or unusual situations arise. With experience, the work becomes progressively more diversified and requires increasing independence. The Geographic Information Systems Analyst is distinguished from the Geographic Information Systems Specialist by the complexity of the GIS designs and ability to apply it to operational areas, accountability for project management, and the level of supervision received.

Essential Duties and Responsibilities:

The following duties are typical for this classification. Incumbents may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.

- Serves as the GIS system/database administrator. Assures the most efficient use of the City's GIS database to meet City demands.

- Plans, organizes and implements GIS projects. Assists internal customers in the preparation of requests and provides essential information regarding GIS data to meet their needs.

- Provides technical assistance to GIS users; develops curriculum, training aids and manuals on GIS and related software programs; conducts training programs.

- Operates and performs professional preventive maintenance on GIS equipment, database backups and restoration, graphic output printers/plotters and other equipment related to computer mapping and GIS.

- Coordinates office and field GIS tasks with multiple divisions within a department, and with other City departments and outside agencies.

- Uses software to produce customized maps, reports, diagrams, exhibits and analyses of graphic and tabular data including the selection of map size, projections, datum, scale, shading, colors and symbology.

- Prepares a variety of special GIS-related reports, studies and project documentation; prepares routine database transfers and related database linkages.

- Evaluates system capability as it relates to graphic data entry and query and make recommendations for improvement.

- Assists in the construction of macro language files to expedite graphic design and database editing operations.

- Maintains map libraries of commonly utilized areas and data elements.

- Prepares miscellaneous illustrative materials and graphic images such as maps, graphs, charts, drawings, forms, and text files.

- Maintains current knowledge of new trends and innovations in the field of GIS; attends and participates in professional group meetings; participates in professional development activities.

- Automates and manages database needs, including process review, research, database design, database maintenance, and statistical analysis.

- Provides staff support on projects ranging from map exhibits to special GIS layers for various departments (including, but not limited to, COSCA, Community Development, Finance, Public Works).

- Performs administrative functions related to GIS, including creating structure and syncing data.

- Conducts research, prepares reports and correspondence, as needed.

- Provides support to internal and external customers including field operations and maintenance staff, the general public, contractors, engineers, and developers.

- Serves as liaison between the City staff, and outside groups and agencies; provides general and specialized information and assistance regarding assigned function that may require the use of judgment, tact, and sensitivity and the interpretation of policies, rules, and procedures as appropriate; explains programs, policies, and activities related to specific program area of assignment.

- Attends and participates in professional group meetings; stays abreast of new trends and innovations in the fields of business and public administration and issues related to field of expertise.

- Responds to public inquiries in a courteous manner; provides information within the area of assignment; resolves complaints in an efficient and timely manner.

Specific duties in Public Works may include but not limited to:

- Integration of the City's Utilities GIS and Utility Atlases with maintenance software at the Municipal Service Center (MSC); comparative analysis of City's GIS and MSC data.

- Programming and maintenance of various Public Works GIS layers, processes and databases, including Backflow Prevention Devise; various County backflow NPDES permit compliance; and, compliance and reporting to the State of California.

- Performance of a wide variety of complex and responsible administrative duties in support of staff in the Public Works Department. Independently responsible for planning and coordination of assigned administrative support functions and services including: providing assistance in resolving operational and administrative problems; and participating in developing, implementing, and evaluating plans, work processes, systems, and procedures to achieve department goals, objectives, and work standards.

- Use of computer equipment to analyze, manipulate and store a variety of land development-, utility- and traffic-related data; operation of blue print and other copying machines.

- Performance of related duties as required.

The following generally describes the knowledge and ability required to enter the job and/or be learned within a short period of time in order to successfully perform the assigned duties.

Desired Minimum Qualifications:

Knowledge of:

- Operations, services, and activities of a municipal Geographic Information System (GIS) program.
- GIS principles, techniques, terminology, methods, operation, and analysis of drafting and mapping, survey engineering concepts, and informational systems operations.
- Standard and best practices of maintaining a GIS program(s).
- Operation and maintenance of hardware and software related to GIS and computer mapping including applications and software for GIS and computer mapping.
- Preventative maintenance methods, processes and use of digitizing equipment, storage devices, graphic output printers/plotters and other equipment related to computer mapping and GIS; work team concepts.
- Principles of mathematics, algebra and trigonometry.
- Techniques for development and maintenance of data archives, database information and map libraries.
- Technical report writing and preparation of correspondence.
- Various computer hardware and software applications.
- Operational characteristics, administration and maintenance of various other network operating systems.
- Advanced characteristics and limitations of computer-related equipment.
- Advanced principles and techniques of computer systems, programming, and networking.
- Methods and techniques for: administrative, fiscal, and comparative analysis; effective technical, administrative, and

financial record keeping; report preparation, and presentation.
- Recent developments, research methods, current literature, and sources of information related to assigned service area.
- Standard database, word processing, spreadsheet and report generation PC software packages.
- Advanced applications of computer logic and mathematics.
- Modern office procedures, methods, and equipment including computers and applicable software applications such as word processing, spreadsheets, and databases.
- English usage, spelling, grammar, and punctuation.

Ability to:
- Independently perform varied computer-aided mapping and relational database work.
- Operate a variety of Geographic Information System (GIS), mapping software applications and peripheral equipment, and related software programs.
- Perform technical research related to computer mapping, database descriptions and GIS.
- Prepare and determine plans and estimates involving the scope, time and resources needed to complete GIS projects.
- Train City staff how to use different tools, such as ArcGIS and web applications to accomplish business tasks that require the use of spatial data.
- Troubleshoot the most complex hardware and software problems and make appropriate modifications and repairs.
- Evaluate graphic data entry and editing systems compatibility.
- Construct basic macro application programs to perform desired tasks and automate process.
- Install, diagnose, repair and configure the most complex hardware and software applications.
- Perform professional analytical, programmatic and administrative duties involving the use of independent judgment and personal initiative.
- Understand the organization and operation of the City, assigned program, and of outside agencies as necessary to assume assigned responsibilities.
- Understand, interpret, and apply administrative and departmental policies and procedures as well as pertinent federal, state, and local laws, codes, and regulations.
- Work on multiple concurrent projects with strict deadlines and with frequent interruptions.
- Exercise good judgment and maintain confidentiality in maintaining critical and sensitive information, records, and reports.
- Read and interpret documents and maps.
- Perform routine mathematical and engineering calculations.
- Establish and maintain various data collection, record keeping, tracking, filing, and reporting systems.
- Organize and prioritize timelines and project schedules in an effective and timely manner.
- Work under steady pressure with frequent interruptions and a high degree of contact by phone or in person.
- Work effectively, independently, and as part of a team.
- Interpret, explain, and enforce department policies and procedures.

- Utilize standard office equipment including computers and related software applications.
- Prepare clear and concise reports.
- Work independently in the absence of direct supervision.
- Understand and follow oral and written instructions.
- Communicate clearly and concisely, both orally and in writing.
- Establish and maintain effective working relationships with those contacted in the course of work.
- Understand, interpret, explain, and apply applicable federal, state, and local policies, laws, and regulations.
- Respond and perform assigned duties in the event of a City-declared emergency.

Competencies:

➢ Effective Communicator
➢ Team Builder
➢ Strategic Thinker
➢ Accountable
➢ Problem Solver and Decision Maker
➢ Planner and Organizer
➢ Technically Knowledgeable

Education and Experience Guidelines:

Any combination of education and experience that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Education:
Equivalent to the completion of an Bachelor's Degree with major coursework in Geographic Information System (GIS), cartology, computer science, info systems, graphic design or a related field.

Experience:
Four years of increasingly responsible experience related to Geographic Information System (GIS) implementation.

Licenses; Certificates; Special Requirements:
A valid Class C California driver's license is required.

Physical and Environmental Conditions:

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Physical: Sufficient physical ability to work in an office setting; sit, stand, walk, reach, twist, turn, kneel, bend, squat, and/or stoop for prolonged periods of time; perform duties requiring grasping, repetitive hand movement, and fine coordination; lift, drag, and push/pull files, paper, and documents weighing up to 25 pounds; and operate office equipment. **Vision:** See in the normal visual range with or without correction; vision sufficient to read computer screens and printed documents and to operate office equipment. **Hearing:** Hear in the normal audio range with or without correction.

Environment: Standard office setting; interact with officials and the public.

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