



## Career Service Authority

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# Geographic Information System Analyst

### GENERAL STATEMENT OF CLASS DUTIES

Performs standard level statistical and spatial analysis, Geographic Information System (GIS) mapping, Information Technology technical work supporting desktop, legacy systems, databases, and/or Information Technology GIS functions, produces relevant text and presentation graphics utilizing multiple GIS software packages and modules and applies analysis to routine situations involving a limited number of datasets (3 or less).

### DISTINGUISHING CHARACTERISTICS

This is the second class in a three class series. GIS Analyst is distinguished from the *GIS Technician* because the main responsibilities of this position involve collecting, translating, and maintaining data within multiple databases. The GIS Technician is responsible for entry level Information Technology (IT) system and software support while the GIS Analyst is responsible for standard level system and software support. In addition, the GIS Analyst is responsible for the performance of standard level statistical and spatial analysis and GIS mapping.

GIS Analyst is distinguished from the *Senior GIS Analyst* because this position is responsible for performing full-performance level statistical and spatial analysis. The responsibilities for Senior GIS Analyst include working with more complex types of data, which involves using multiple modeling techniques to create geospatial surfaces. The Senior GIS Analyst is responsible for designing new databases and developing new methods of representing data. In addition, the Senior GIS Analyst is responsible for developing and recommending standards for GIS data development and cartography. Finally the Senior GIS Analyst is responsible for training employees/users in GIS concepts.

#### ***Guidelines, Difficulty and Decision Making Level:***

Guidelines are generally numerous, well established and directly applicable to the work assignment. Work assignment and desired results are explained by general oral or written instructions. Duties assigned are generally repetitive and restricted in scope but may be of substantial intricacy. Employee primarily applies standardized practices. Decisions or recommendations on non-standardized situations are limited to relating organizational policies to specific cases. Problems that are not covered by guidelines or are without precedent are taken up with the supervisor.

#### ***Level of Supervision Received and Quality Review:***

Under normal supervision, within a standardized work situation, the employee performs duties common to the line of work without close supervision or detailed instruction. Work product is subject to continual review.

***Interpersonal Communications and Purpose:***

Contacts with the public or employees where explanatory or interpretive information is exchanged, gathered or presented and some degree of discretion and judgment are required within the parameters of the job function.

***Level of Supervision Exercised:***

None

**ESSENTIAL DUTIES**

Provides and presents reports, maps and charts of data displayed by geographical region for analysis and presentation to the public and agency staff, and generates statistical analysis on data provided by agencies.

Applies spatial interpolation techniques to create geostatistical surfaces, streets or facility networks that can be modeled, analyzed and applied to routine problems, and uses various modeling methods to answer questions and solve problems.

Utilizes spatial autocorrelation techniques to measure the association of various geographic features.

Installs and reviews desktop software and provides technical support in a formal or informal help desk setting to users with common problems on database issues and legacy software including logging, troubleshooting, resolving, or referring problems to the appropriate information technology resource.

Maintains computerized inventory of data, databases, software, applications and specialized services for users.

Performs minimal programming tasks to include modifications of existing code to fit specific agency needs.

Reviews, tests and recommends integrated technology software and documents usage.

Assists with the design, development, loading and maintenance of spatial databases to enable statistical analysis, geographic analysis and mapping using GIS software.

Interprets aerial photographs and satellite data to prepare new GIS data sets, and inputs spatial features into GIS databases by utilizing methodologies such as trace digitizing, coordinate geometry (COGO), surveyor notations and graphic input into digital formats.

Interprets existing spatial data and applies the appropriate mathematical and data conversion techniques to project, re-project, transform, rubber-sheet, conflate and accurately register it to city coordinates.

Updates and maintains existing map collections and applies data for map production, quality assurance and quality control (QA/QC) procedures, problem solving and analysis and assigns geographic coordinates to addresses and inputs the data into GIS systems for analysis.

Uses Global Positioning System (GPS), wireless GIS systems and field visits to collect or verify the accuracy of GIS data.

Assists with quality control procedures such as file integrity, positional and dimensional accuracy and metadata documentation.

Documents and logs metadata for data and database warehouses, and assists with the quality control procedures for file integrity, workflow analysis and position and dimensional accuracy.

Performs other duties as assigned.

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Any one position may not include all of the duties listed.  
However, the allocation of positions will be determined by  
the amount of time spent in performing the essential duties  
listed above.  
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## MINIMUM QUALIFICATIONS

### ***Competencies, Knowledges & Skills:***

**Conflict Management** - Manages and resolves conflicts, grievances, confrontations, or disagreements in a constructive manner to minimize negative personal impact.

**Creative Thinking** - Uses imagination to develop new insights into situations and applies innovative solutions to problems; designs new methods where established methods and procedures are inapplicable or are unavailable.

**Customer Service** - Works with customers to assess needs, provide assistance, resolve problems satisfy expectations; knows products and services; is committed to providing quality products and services.

**Influencing/Negotiating** - Persuades others to accept recommendations, cooperate or change their behavior, works with others toward an agreement; negotiates to find mutually acceptable solutions.

**Information Management** - Identifies a need for and knows where or how to gather information; organizes and maintains information or information management systems.

**Interpersonal Relationship** - Demonstrates competency in working with multiple department/agency, out side organizations, and the public with diverse expectations and requirements.

**Oral Communication** - Expresses information to individuals or groups effectively taking into account the audience and nature of the information; makes clear and convincing oral presentations; listens to others, attends to nonverbal cues, and responds appropriately.

**Problem Solving** - Identifies problems; determines accuracy and relevance of information; uses sound judgment to generate and evaluate alternatives, in addition, to make recommendations.

**Teamwork** - Encourages and facilitates cooperation, pride, trust, and group identity; fosters commitment and team spirit; works with others to achieve goals.

**Time Management** - Manages time and resolves time conflicts, recognizes priorities, determines resource requirements, coordinates with others, monitors progress in a constructive manner to achieve the project set goals.

**Writing** - Recognizes or uses correct English grammar, punctuation and spelling; communicates information in a succinct and organized manner; produces written information, which may include technical material that is appropriate for the intended audience.

Knowledge of computer hardware and software sufficient to be able to perform a variety of duties as needed.

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Knowledge of geographic information systems sufficient to be able to perform a variety of duties related to the work assignment.

Knowledge of information technology hardware and software sufficient to be able to perform basic functions, troubleshoot problems, and perform data entry and retrieval.

Knowledge of training techniques sufficient to be able to train technicians to perform the duties of the work assignment.

Skill in checking information for accuracy and completeness and correcting errors.

Skill in computing geometric areas.

Skill in establishing and maintaining effective working relationships with other employees, organizations and the public.

Skill in evaluating existing policies, procedures, and objectives and recommending changes for improvement.

Skill in exercising initiative, judgment, and decision making in solving problems and meeting organizational objectives.

Skill in independently adapting, interpreting and applying written guidelines, precedents and standardized work practices to a variety of unprecedented or problematic situations.

Skill in performing GIS database backups.

Skill in reading and interpreting detailed geographical maps.

Skill in using geographical databases.

Skill in utilizing the principles and practices of effective and persuasive communications to elicit and/or present explanatory or interpretive information.

### ***Physical Demands:***

Sitting: remaining in the normal seated position.

Reaching: extending the hand(s) and arm(s) in any direction.

Handling: seizing, holding, grasping, or otherwise working with hands.

Fingering: picking, pinching, or otherwise working with fingers.

Talking: expressing or exchanging ideas by means of spoken words.

Hearing: perceiving the nature of sounds by the ear.

Repetitive motions: Making frequent movements with a part of the body.

Eye/hand/foot coordination: performing work through using two or more.

Near acuity: ability to see clearly at 20 inches or less.  
Accommodation: ability to adjust vision to bring objects into focus.  
Color Vision: ability to distinguish and identify different colors.

***Working Environment:***

Subject to many interruptions.  
Pressure due to multiple calls and inquiries.

***Education Requirement:***

Baccalaureate Degree in Geography, Urban Planning, Engineering, GIS, Geology, Computer Science, Information Technology, Cartography, Landscape Architecture, Remote Sensing or a directly related field.

***Experience Requirement:***

Two years of hands-on experience at the type and level of a GIS Technician.

***Education/Experience Equivalency:***

A Baccalaureate Degree in an unrelated field plus either a certificate in GIS or Land Information Systems (LIS) or 12 semester hours completed in GIS/LIS coursework may be substituted for the minimum education requirement. **OR** Additional appropriate experience and education may be substituted for the minimum education and experience requirement.

***Licensure and/or Certification:***

None

**CLASS DETAIL**

***FLSA CODE:*** Non-Exempt

***ESTABLISHED DATE:*** 01/16/2005

***REVISED DATE:*** 03/01/2007

***REVISED BY:*** Melissa Palmer

***CLASS HISTORY*** 1/16/05 - This class is a consolidation of two classes originally established 9/16/95, the GIS Photogrammetry Analyst and GIS Data Analyst. It is the first level in a new two level series of GIS analyst classes.

2/13/07 - Revisions were made to the minimum qualifications and the distinguishing characteristics. The GIS Technician will be incorporated into the GIS progressive series.