

FIRE DEPARTMENT  
SANTA CLARA COUNTY

**GEOGRAPHIC INFORMATION SYSTEM (GIS) ANALYST**

DEFINITION

Under the direction of the Director of Information Technology, the GIS Analyst provides geo-spatial strategic planning, documents, coordinates, plans, installs, implements, tests, and maintains databases and applications related to the Department's Geographic Information System. The incumbent performs spatial analysis, data entry, object manipulation, integration from other platforms and applications. Provide production of cartographic products such as digital printed maps and mobile map services used in all fire apparatus, as well as other Department Divisions.

The GIS Analyst is a journey-level classification requiring the knowledge and application of a body of geo-spatial theories and principles. The incumbent performs technical level work related to creating, maintaining, displaying geo-spatial data for the Department and for use in supporting the Computer-Aided Dispatch (CAD) system for the purpose of production of updated electronic and hardcopy maps.

This classification is a Fair Labor Standards Act exempt, represented position in the Classified Service.

EXAMPLES OF DUTIES

The following duties listed are intended to describe the general nature and level of work performed. The duties may include, but are not limited to the following:

- Use of complex drafting and drawing applications to implement and maintain a comprehensive geographic information system
- Develop GIS software tools to allow routine tasks to be completed more efficiently using macros and other computer languages.
- Provide consultation and technical support on map feature detail, installation of map files to the mobile data tablets, and assist with development of cartographic products for fire operations, fire prevention and administration.
- Provide oversight of the most complex Department-wide and regional GIS technical/analytical projects and assignments requiring professional, specialized technical knowledge and competency.
- Perform complex analysis of Department-wide and regional GIS data to support, public safety, emergency preparedness, 911 dispatching, fire prevention and other groups by resolving their geo-spatial questions with GIS data and processes.

EXAMPLES OF DUTIES (continued)

- Consult and give advice to the Department, agencies and regional GIS and business partners on GIS project direction and feasibility; provide analysis and recommendations for modifying procedures, developing technical strategies and workable solutions for managing GIS data problems; Evaluate alternatives and make recommendations as it pertains to geo-spatial innovations.
- Provide analysis and support of Department GIS business needs through staying abreast of the latest GIS technologies and innovations, researching, compiling and evaluating alternatives and making recommendations to management on the benefits on new products and trends available for the Department's GIS infrastructure.
- Investigate and analyze GIS data sources to retrieve required data to utilize and potentially integrate into the Department's geographic data sets.
- Design, create and plot publication-quality maps, specifying coordinates, scale, size, line patterns, and colors; design and position map legends; execute system macros to produce maps according to specifications.
- Assist in the development of Department GIS policies, procedures, standards and operations.
- Develop, test, and implement quality assurance (QA) and quality control (QC) processes to ensure GIS data accuracy and integrity.
- Analyze geographic data consistency and accuracy.
- Provide education to address the implications of problems with cartography, automated mapping, map projections and coordinated geometry.
- Identify and recommend enhancements to Department base map.
- Conduct geographic information systems training utilizing data mapping systems and use of data.
- Database creation, maintenance and integration.
- Respond as assigned to provide geospatial support for large scale incidents such as EOC or incident management team activation.
- Manage third party geo-spatial products/integrations/support/technical issues.
- Participate in regional and County-wide enterprise GIS work groups to share and exchange information and data, and discuss GIS issues to corroborate and formulate creative solutions, and ensure the data and software meets Department needs and standards.
- Implement updates of new streets, business complexes, multi-unit housing, and other data from multiple sources and its base map layers and additional data layers in a timely manner.
- Assemble, organize, and digitize information into the appropriate GIS database by using multiple software applications and platforms.

EXAMPLES OF DUTIES (continued)

- Develop documentation for all work performed including quality control procedures.
- Diagnose software and hardware problems and resolve problems where possible, or work with a vendor to make corrections as necessary.
- Instruct Department personnel in the use of GIS software and databases.
- Develop and provide standard reports on a regular basis.
- Prepare and coordinate GIS consultant contracts including the monitoring of contract work to ensure technical accuracy and compliance with contract agreements.
- Prepare a variety of correspondence, documentation, and other written materials; update procedural manuals as assigned.
- Design, create, prepare and print various graphic maps, diagrams, exhibits, and displays for presentation purposes, including relative to historical call activity, flood inundation, wildland interface responses, station coverage, various inspections, etc.
- May act as a lead for projects, interns, etc.
- Perform database data entry.
- Evaluate alternatives and make recommendations as it pertains to GIS innovations.
- Perform other duties as assigned.

EMPLOYMENT STANDARDS

Education and Experience: A bachelor's degree in computer science, information systems, geography, environmental studies, or a field related to the work, and three (3) years of full time experience in geographic information systems and database management, cartography, mechanical drawing, civil engineering, drafting, or related field.

Or

An associate's degree in computer science, information systems, geography, environmental studies, or a field related to the work and five (5) years of full time experience in geographic information systems and database management, cartography, mechanical drawing, civil engineering, drafting, or related field.

Highly Desirable: ICS GISS Credential in order to respond to large scale events; GISP certification and/or Esri technical certifications.

Knowledge Of:

- GIS concepts and analytical techniques including computerized mapping and digital data conversion, manipulation, and analysis.
- Principles and practices of project management, records management, and data collection techniques.
- Database administration principles, methods, and techniques.
- Esri Suite of products to include ArcGIS for Desktop, ArcGIS Pro, ArcGIS Online, ArcGIS Server, ArcGIS Extensions, Collector App, Survey123 App, QuickCapture App, etc.
- Other software and web applications to include AutoCAD, Microsoft SQL Server, and Intterra.
- Programming languages including .NET, Python, or geoprocessing scripting, etc.
- Mathematical, statistical and analytical procedures commonly supported by system applications.
- Spatial projection techniques and standards.
- Principles and procedures of quality assurance and security related to data and geo-spatial information systems.
- Global Positioning Systems (GPS) concepts and procedures.
- Working knowledge of Apple and Windows workstation hardware and the iOS platform.
- Basic remote sensing concepts and procedures.

Ability To:

- Perform strategic planning.
- Integrate various spatial and non-spatial data into GIS databases from multiple sources.
- Database creation/maintenance/integration.
- Explain technical concepts to non-technical users.
- Use GIS software to produce digital maps, hardcopy maps, databases, and other documentation as requested.
- Utilize GIS software to support Department workflows such as inspections, occupancies, permits, etc.

Ability To: (continued)

- Perform various GIS database administrative functions including developing standards and methodologies for use of the GIS database.
- Estimate time and cost requirements for specific assignments.
- Diagnose software and hardware problems and resolve problems where possible, or work with a vendor to make corrections as necessary.
- Install, troubleshoot, and upgrade GIS software.
- Prepare clear and concise work documentation; update procedures and technical reports.
- Make recommendations as necessary to improve product and/or workflow efficiency.
- Work independently, with minimal supervision.
- Exercise independent judgment and make appropriate decisions.
- Establish and maintain excellent, effective, and professional working relationships with those contacted in the course of work.
- Work collaboratively.
- Effectively act as a lead for projects.
- Effectively manage multiple projects and priorities.
- Recognize problems and develop recommendations and solutions.
- Communicate clearly and concisely, both orally and in writing.
- Work irregular or protracted hours, including evenings and weekends necessary to meet deadlines and achieve objectives.

Working Conditions/Physical Demands: Work is performed both in an office setting and in the field. Prolonged use and exposure to computer screens, maps, charts, spreadsheets and reports. Exposure to noise and dust. Work may involve physical exertion including walking, standing, kneeling, stooping, reaching, lifting, crawling, and climbing. Perform simple and power grasping, pushing, pulling, and fine manipulation; use telephone, and write or use a keyboard to communicate through written means; and lift or carry weight of 50 pounds or less. Manual dexterity; clear, understandable speech; and visual and hearing acuity are also required.

Required License: Possession of a valid state of California driver's license.

Pre-Employment Requirements: The candidate must complete and pass a background check, Live Scan fingerprint, and complete a medical examination.