

## The Maryland-National Capital Park and Planning Commission

Title: Principal GIS Specialist

Grade: 28

Date: 8/26/2020

Series: Information Technology

Code: 1360

EEO: Professional

FLSA: Exempt

### Class Definition:

Under direction, performs as a project leader and expert in the design, development, testing, installation and maintenance of geographic information system (GIS) applications; which includes database administration, data production and data management, software development and technical assistance and end-user support. Leads the administration of geospatial databases requiring advanced geospatial analytical skills. Some work can be confidential. As an individual contributor, work results in completed assignments that have a direct impact on programs of the department. Applies expert knowledge of GIS in conjunction with knowledge of information technology (IT) project management, information system (IS) network and system architectures, data quality assurance (QA) and quality control (QC), diagnostics and tuning and programming languages. Independently performs various types of analyses and solves conventional, non-standard and challenging problems to provide a full range of products and services. Interacts with people inside and outside the organization to exchange information, coordinate, instruct, guide, advise and obtain agreement or compliance or achieve other desired actions. Performs other duties, as assigned.

Work is assigned in terms of functions, priorities, requirements of specific assignments, known or suspected problems. The incumbent independently plans and carries out the work in conformance with these parameters, established policies, procedures and accepted practices of the field of work, and resolves commonly encountered problems by selecting and applying, or adapting and adjusting, the applicable guides. The incumbent is to keep the supervisor informed and to seek assistance only for highly complex or very sensitive matters. Work is expected to meet objectives effectively – the incumbent is held responsible for results, and is evaluated in terms of quality, quantity, timeliness, teamwork, customer service and such other factors as use of skill and ingenuity in overcoming technical and non-technical problems.

### Examples of Important Duties (Estimated Percentages):

#### 1. Core Functions ( $\pm$ 70%) – assigned functions vary by position

- Project/Team Leadership. Leads projects and assigned project team staff in such work as designing, developing, testing, installing, maintaining, enhancing or customizing geospatial databases and applications. Specifies tasks and coordinates work of project team. Coordinates and ensures quality assurance and quality control of deliverables (for contracted and in-house work) through monitoring, evaluation and testing. Reports project progress to management and stakeholders. Modifies project plan and timeline as requirements change. Provides strategic direction on projects; provides advice and analyses of projects.
- Database and Systems Administration. Leads the design, implementation, maintenance and quality control of spatial databases; develops applications through programming scripting, modeling, and data processing. Ensures the implementation and documentation of database metadata, backups and archive procedures. Recommends design/automation

## The Maryland-National Capital Park and Planning Commission

Title: Principal GIS Specialist

Grade: 28

Date: 8/26/2020

Series: Information Technology

Code: 1360

EEO: Professional

FLSA: Exempt

of data management workflows between disparate systems. Monitors, evaluates, and resolves database performance and scalability issues. Designs, implements and recommends hardware, software and database structures to meet performance requirements. Performs and oversees GIS system administration functions related to software installation and provisioning of user licenses, system backup and tuning protocols. Develops reporting routines and coordinates quality control reviews among data owners.

- Data Production. Leads the creation of geographic map layers based on internal and external requirements. Administers and evaluates ongoing GIS maintenance work programs (i.e. parcel, zoning, and address). Manages data acquisitions, for example, elevation (Light Detection and Radar (LiDAR), and planimetric (i.e. building, pavement) data. Coordinates the procurement of correct and timely datasets. Provides oversight of connectivity between geographic datasets and disparate management systems and the development of 3-D models.
- Data Management. Leads the maintenance of enterprise spatial databases. Ensures the production and extraction of data and coordination of data purchases. Coordinates the distribution and exchange of digital data with customers (i.e. government agencies, educational institutions, businesses and citizens). Manages baseline geospatial metadata.
- Software Development. Manages the development of prototypes and the creation, maintenance and reengineering of complex and sophisticated geospatial applications. Recommends and implements development requirements. Streamlines and integrates agency databases through web map services. Coordinates related business processes with related enterprise information systems (i.e. Oracle, Project Tracking, Asset Management, Document Management). Provides oversight for the design, development and maintenance of custom web and desktop applications as required by using application development software.
- Mapping Assistance/End-User Support. Leads and provides high level technical assistance and support to staff and end-users regarding information systems. Ensures spatial analytical decision documents are provided in static and printed mapping support, as well as web based analytical mapping products that support regulatory and planning workflows. Reviews changes to data maintenance workflows and proposed data management projects. Supports the identification, diagnosis and resolutions for high level information system technical issues and work with software developers to resolve technical problems. Coordinates and provides formal system application training to staff and end-users.

## **The Maryland-National Capital Park and Planning Commission**

Title: Principal GIS Specialist

Grade: 28

Date: 8/26/2020

Series: Information Technology

Code: 1360

EEO: Professional

FLSA: Exempt

### **2. Other (±30%).**

- Directs geospatial layer production and image processing (from digital and non-digital sources) for a wide range of spatial layers for example, parcel, political, land use, planimetric, and elevation boundaries; production of cartographic maps; and provides oversight of quality assurance and quality control.
- Conducts, and coordinates system analysis; plans, designs, tests, and recommends new systems and upgrades. Recommends and reviews user hardware and software recommendations; oversees the development and/or implementation plans for configuring, testing, and installing geospatial systems. Guides the research of hardware and software capabilities, and compatibility with existing systems; development of technical specifications. Directs the establishment, design and management of GIS internet/intranet access.
- Leads request for proposal (RFP) development (i.e. scope, deliverables, quality and timelines). Assists with contract administration, writes specifications for hardware/software, supplies, and services, participates in contract and staff hiring. Monitors contractor performance and participates in contract negotiation and amendments.
- Leads the installation, configuration, testing, debugging, and repair of hardware/software. Ensures the installation and testing of application and operating software, patches, and fixes; provides support for software and hardware conflicts.
- Directs research for new computer hardware/software development and cost/benefits. Proposes implementation strategy for new technology.
- Oversees the maintenance and documentation of existing GIS hardware and software and the sources of information utilized (e.g. technical manuals reviewed, training classes attended). Guides the documentation and development of standards, procedures and techniques for entering and manipulating geospatial data; and coordinates activities with other work units.
- Ensures collaboration with staff, management, consultants, and others in the accomplishment of goals and objectives; increases interagency coordination by working closely with internal and external geospatial users.
- Reviews and follows through with quality control of data conversion, maintenance and production of geospatial data.
- Follows through with the analysis, responses, and production to internal and external requests for high quality and cartographically correct custom maps and digital reports.

## The Maryland-National Capital Park and Planning Commission

Title: Principal GIS Specialist

Grade: 28

Date: 8/26/2020

Series: Information Technology

Code: 1360

EEO: Professional

FLSA: Exempt

- Guides the preparation of communication to management, users, contractors and customers; reviews and provides feedback for justification for suggested procurements. Presents work programs at meetings and professional conferences. Establishes, maintains or enhances working relationships with internal and external contacts. Submits scheduled project status reports.
- Uses non-geospatial spreadsheets and databases to populate or process geospatial databases, software to populate or process geospatial databases and uses document and asset management systems.
- Plans, designs, directs, conducts and evaluates geospatial training classes and user groups.
- Stays informed of field of work and associated guidelines, materials, methods, techniques and practices.

### Important Worker Characteristics:

- A. (1) Expert knowledge of, and skill in applying, the principles, standards, practices, and techniques of GIS technology (including geocoding, layering and mapping techniques, ArcGISPro, ArcGIS, GIS database administration and GIS desktop and web applications development); (2) IT project management, IS network and system architectures; database quality assurance and quality control, diagnostics and tuning, and programming languages (i.e. Microsoft's .NET framework, Visual Studio, HyperText Markup Language (HTML), and JavaScript) and other programming languages; (3) land records (i.e. deeds, plats, property boundaries and assessor data) and cartography; and (4) Commission organization policies and procedures\*.

*\*Typically acquired or fully developed primarily after employment in this job class.*

- B. Knowledge of, and skill in, assigning or reviewing tasks, setting the pace, and otherwise assisting the supervisor by performing group leader work; or ability to rapidly acquire knowledge and skill set.
- C. Considerable skill in problem solving to select, organize and logically process relevant information (verbal, numerical or abstract) to solve a problem. This includes skill in identifying subtle aspects of problems and making recommendations and decisions. Examples include preparing specifications for work in-house and on contract, verifying accuracy of data, administering databases and applying a variety of IT skills in application development.

## **The Maryland-National Capital Park and Planning Commission**

Title: Principal GIS Specialist

Grade: 28

Date: 8/26/2020

Series: Information Technology

Code: 1360

EEO: Professional

FLSA: Exempt

- D. Skill in communication to understand verbal and written information (including facts, assertions and arguments), draw inferences, form hypotheses and develop logical arguments, and to express such information so that others will understand and, in some situations, agree, comply or take other desired action(s). This includes skills in actively listening to ascertain key information, including concerns, wants and needs of others, and in coordinating to obtain desired results including agreement or compliance.
- E. Interpersonal skills to interact with business contacts in a businesslike, customer service-oriented manner; this includes skill in establishing and maintaining effective working relationships and working as a member of a team.
- F. Skill in using a computer and modern office suite software (i.e. Microsoft Office) for planning/scheduling, communicating, entering/manipulating data, word processing, researching (i.e. Internet), etc., and enterprise software or specialized software (for providing geospatial products and services, reporting time and attendance, budgeting, requisitioning and performing other functions).

### Minimum Qualifications (MQs):

- 1. Bachelor's Degree in Geography, Remote Sensing, Computer Science, Information Technology, Photogrammetry, Cartography, Surveying or any related field.
- 2. Four (4) years of experience in GIS that includes geospatial data query and manipulation, map production, data mining and data quality assurance and quality control; programming and application development involving spatial or non-spatial data.
- 3. An equivalent combination of education and experience may be substituted, which together total eight (8) years.
- 4. Depending on area of assignment, a valid driver's license in accordance with both State and Commission rules and regulations. Driver's license must be unencumbered by restrictions, revocations, suspensions, or points that could limit the employee's ability to drive Commission vehicles or perform driving duties required by the position of assignment.

### Working Conditions:

Work is performed in an office setting. Work is performed in an environment with moderate pressure to meet deadlines and perform accurate work. May require occasional overtime, after-hours, weekend or on-call work.