

The Maryland-National Capital Park and Planning Commission

Title: CAD/GIS Technician II

Grade: E Code: 4221

Series: Paraprofessional Engineering, Drafting

Date: 3/23/99 (Rev.)

Class Definition

Under general supervision uses traditional and computer aided drafting (CAD) techniques, and/or Geographic Information System (GIS) software to perform the full range of technical work involving production of maps, charts and related materials. Work involves conferring with planning staff to determine the nature of the assignment; collecting data and information needed to prepare maps and other materials; producing maps, charts, and other graphics; and/or digitizing and entering geographic and related data into base map databases. An employee in this class determines information needed and methods to be used, and applies a variety of techniques to complete assignments. CAD/GIS Technicians II may specialize in the tools they use to generate maps, such as CAD and graphics or GIS, or may use a combination of tools.

Examples of Important Duties

CAD

1. Updates and produces new maps and graphics manually and using computer aided software (CAD) in support of departmental staff of planners, architects, engineers, landscape architects, surveyors and cartographers in the development of master plans, functional plans, site plans and project plans.
2. Prepares maps to scale using legal descriptions, ownership information, and other information pertaining to topology, variances, restrictions and closures; plots angles and closures, draws curvilinear and irregular features.
3. Generates maps from GIS databases and converts to CAD.
4. Prepares special displays, graphics, and charts, manually and with computer software. Uses laser, pen, and plotters.
5. Collects information to be plotted from various records and official documents.
6. Posts record plats using CAD or COGO software, traditional drafting media, or other appropriate technique.
7. Interacts with other members of planning department staff to provide maps and graphics to support projects; confers with staff to determine project requirements; and prepares written and oral reports of project methods and status.
8. Responds to public and inter-departmental requests for property information and maps; produces hard copies of computer-generated maps.

9. Uses and maintains plotters and related equipment.

Geographic Information System (GIS)

1. Updates GIS databases by collecting, reviewing, digitizing, and entering data (e.g. property, geographic, land use, topographic, and political) into GIS databases; collects information from planners and other sources for incorporation into GIS databases; reviews source data to identify data to be entered into the database and to check for accuracy; converts data, if necessary, from non-digital maps and raw data into digital form using specialized software; enters other data elements.
2. Performs GIS digital map maintenance routines (feature coding, attributing, annotating and adding record plat information) using standard GIS software such as ArcView and ArcInfo. Creates scripts or modifies existing scripts.
3. Performs (or assists in) quality control checks.
4. Collects information to be plotted from various records and official documents.
5. Posts record plats using COGO software.
6. Interacts with other members of planning department staff to provide maps and graphics to support projects; confers with staff to determine project requirements; and prepares written and oral reports of project methods and status.
7. Responds to public and inter-departmental requests for property information and maps; produces hard copies of computer-generated maps.
8. May participate in developing and documenting procedures.
9. Uses database or spreadsheet software to populate GIS databases or to process information from GIS databases.

Other Duties

1. May train other staff including less experienced Technicians in use of mechanical and computerized drafting methods.
2. May manage and recommend procurement of supplies, equipment, and services.
3. Performs related duties as assigned.

Important Worker Characteristics

Knowledge of:

CAD: 1) the terminology, techniques, and practices of drafting (traditional and CAD); 2) mathematics including algebra, trigonometry, and plane geometry; 3) basic drafting nomenclature and symbols; 4) graphics techniques used to produce special displays, graphics, and charts; 5) cartographic design.

GIS: 1) modern GIS programs (ARC/INFO and ArcView); 2) mapping techniques and cartographic design; 3) data sets used and manipulated in GIS.

Skill in:

CAD: 1) traditional drafting techniques; 2) use of CAD and design software; 3) preparation of computer and manually generated maps, graphics and charts; 4) use and care of mechanical drawing instrument, computers and related peripherals.

GIS: 1) entering, accessing, and manipulating data in a GIS database to produce standard and custom maps; 2) producing and editing maps in ArcView; 3) cartographic design.

Ability to:

CAD 1) understand and follow oral and written instructions and sketches; 2) make mathematical computations accurately; 3) plan and organize own work.

GIS: 1) understand and follow oral and written instructions and sketches; 2) develop skills in using a variety of GIS software to produce and edit maps; 3) plan and organize own work.

Minimum Qualifications

1. A high school diploma including, or supplemented by, course work in drafting, geography, and mathematics and
2. Two years of work experience in traditional drafting and computer aided drafting (CAD technology and graphics; or (GIS) in geographic information systems software; or
3. An equivalent combination of education and experience. (An Associate Arts degree in a relevant discipline or equivalent training in CAD or GIS software can be substituted for the two years of work experience).

Working Conditions

Work is performed in an office. Work requires close attention, involves pressure to meet deadlines, and requires sustained operation of a computer.