

Jurisdiction: City of Ithaca
Jurisdictional Class: Competitive
Adopted: 09/08/21

GEOGRAPHIC INFORMATION SYSTEM DEVELOPER

DISTINGUISHING FEATURES OF THE CLASS: The work involves responsibility for designing and implementing web based geospatial applications in three ways: a) configuring ready to use applications on cloud mapping platforms ArcGIS Online and GeoCortex Essentials, such as viewers, dashboards and mobile applications, b) extending and customizing ArcGIS Pro Desktop GIS and Geocortex Essentials Viewers and c) developing custom web based geospatial applications using the latest ESRI Application Programming Interface (API), and related web frameworks and current web programming languages. The GIS Developer also creates, updates and manages GIS data and does mapping and map publishing as needed. The GIS Developer assists the GIS Administrator with the product and capacity goals of the GIS Program, in support of City operations. The duties vary according to assignment; however, in general, the incumbent will design and implement tools for the collection, management and delivery of GIS data across the enterprise and assist in managing the modification and operation of the GIS. The incumbent also performs other related professional or technical duties specific to the assignment such as installing GIS software, preparing requests for proposals for GIS services or new hardware/software implementations, developing and administering training materials and programs, and designing and managing geographic databases and data development projects. This class differs from GIS Specialist and Senior GIS Specialist in that the GIS Developer has specific and thorough technical knowledge such that they are responsible for creating and maintaining custom web-based GIS applications on the City's web mapping platforms. The GIS Developer differs from GIS Administrator in that a GIS Developer does not have the overall responsibility for the GIS Program. The work is performed under the general supervision of the Geographic Information System Administrator with leeway encouraged in exercising independent judgment in carrying out the details of the work. Project and task-specific supervision may be exercised over subordinate GIS staff and interns, particularly in the absence of the GIS Administrator. Does related work as required.

TYPICAL WORK ACTIVITIES:

- Creates, maintains, and supervises maintenance of GIS data and mapping resources in all phases of data life such as evaluation, acquisition, database design, as well as development of quality control, update and archiving procedures, metadata, and data delivery options;
- Designs and configures ArcGISOnline and GeoCortex Essentials interactive applications, and solutions including map viewers, apps, dashboards, field maps as well as deploying ESRI solutions for City's departmental clients, including user requirements assessment, demonstration apps, documentation, and training;
- Designs, develops and maintains custom geospatial web applications using ESRI ArcGIS Online platform's APIs and related web frameworks as well as current web programming languages; manages code through a repository such as GitHub and creates detailed records and reports relative to that work;
- Designs, extends and customizes GeoCortex Essentials mapping platform viewers using the platform's latest extensibility methods;
- Designs and implements customization of ArcGIS Pro desktop GIS using latest SDK and current programming languages;
- Performs evaluation and analysis of equipment, procedures and implementation options in the design of the GIS as well as users' needs and potential solutions and makes recommendations to the GIS Administrator;
- Creates GIS products on desktop GIS for clients and public;
- Automates management and administration of map content, groups and users on ArcGISOnline in coordination with GIS Administrator;

TYPICAL WORK ACTIVITIES – continued:

Integrates relational databases and applications within and throughout the departments of the City; Coordinates and collaborates with multiple staff and departments as well as GIS team to provide excellence in products and service.

FULL PERFORMANCE KNOWLEDGES, SKILLS, ABILITIES, PERSONAL CHARACTERISTICS:

Thorough knowledge of web application development methods and practices including requirements gathering, version control, testing and debugging, as well as design principles; thorough knowledge of the concepts, practices and techniques related to developing, and maintaining GIS data for analysis, mapping, and publishing using ESRI's GIS suite of software; good knowledge of maintaining and using content on a cloud web server; working knowledge of the practices and techniques related to maintaining, testing and configuring computer hardware, software and peripheral equipment as related to GIS; good knowledge of using desktop and mobile GIS; demonstrated proficiency in creating custom web based GIS applications utilizing the ESRI platform, or extending Geocortex Essentials platform through custom workflows; ability to perform close, detail work involving considerable visual effort, concentration and analytical reasoning; ability to plan and manage projects and interact effectively with team, clients and users of applications; ability to utilize and customize common office software programs including word processing, spreadsheets and databases; ability to communicate effectively both orally and in writing; ability to analyze and organize data and prepare records and reports; ability to establish and maintain effective working relationships with others; ability to effectively work with and serve a diverse local community; physical condition commensurate with the demands of the position.

MINIMUM QUALIFICATIONS: Either:

- A. Graduation from a regionally accredited college or university or one accredited by the New York State Board of Regents to grant degrees with a Bachelor's degree in spatial information technology, information technology, geography, planning, engineering, environmental science or a closely related field with similar course curriculum and three (3) years of full-time paid GIS experience, or its part-time paid and/or volunteer equivalent, at least two (2) years of which must have involved creating custom web based GIS applications using ESRI's API for JavaScript and JavaScript frameworks (such as Vue, Angular or ReACT), HTML and CSS, and managing code through a repository such as GitHub; or
- B. Graduation from a regionally accredited college or university or one accredited by the New York State Board of Regents to grant degrees with an Associate's degree in GIS or a closely related field with similar course curriculum and possession of a geographic information systems professional (GISP) certificate from the GIS Certification Institute (GISCI) and three (3) years of full-time paid GIS experience, or its part-time paid and/or volunteer equivalent, at least two (2) years of which must have involved creating custom web based GIS applications using ESRI's API for JavaScript and JavaScript frameworks (such as Vue, Angular or ReACT), HTML and CSS, and managing code through a repository such as GitHub; or
- C. Graduation from high school or possession of a high school equivalency diploma and successful completion of a spatial technology program leading to a certificate and possession of a certified geographic information systems professional (GISP) certificate from the GIS Certification Institute (GISCI) and three (3) years of full-time paid GIS experience, or its part-time paid and/or volunteer equivalent, at least two (2) years of which must have involved creating custom web based GIS applications using ESRI's API for JavaScript and JavaScript frameworks (such as Vue, Angular or ReACT), HTML and CSS, and managing code through a repository such as GitHub; or

MINIMUM QUALIFICATIONS – continued:

D. An equivalent combination of training and experience as defined by the limits of (a), (b) and (c) above.

NOTE: One year of experience extending and customizing VertiGIS' GeoCortex Map viewers with Workflow 4 or 5 may be substituted for one year of the required experience creating custom web-based GIS applications using ESRI's API for JavaScript and JavaScript frameworks (such as Vue, Angular or ReACT), HTML and CSS, and managing code through a repository such as GitHub.