GIS Technician

General Information	
Classification Code:	TCHSPC
Effective Date:	06/05/2023
Pay Grade:	B22 - B23
FLSA Status:	Non-exempt

Position Summary

The GIS Technician performs a variety of technical duties that are of a more routine nature in the development and maintenance of the Geographic Information System (GIS). This position is responsible for collecting, digitizing, and managing spatial data using Esri ArcGIS software, SDE databases, mobile devices, and GPS software. Integrates data from asset maintenance / management database programs, as-built record drawings, AutoCAD and field data collection to provide end users with accurate mapping and attribute information. Performs other duties of a similar nature or level.

Classification Characteristics

The Technical Specialist is a paraprofessional classification focused on performing specialized functions and on how to carry out the operations of the process specified by higher level positions. This position has a choice as to how and when operations are carried out but not as to what operations constitute the process. This class may perform some advanced skills involving technical knowledge that requires an understanding of established and defined department or program policies and procedures. May include lead responsibilities for lower-level staff.

GIS Technician I (B22) – This is the entry level class within the Technical Specialist classification. This level performs basic and routine supportive technical tasks. This includes entry-level data collection, data entry, and basic spatial analysis. This position is distinguished from the GIS Technician II by the performance of more basic and/or routine technical skills and typically works under the guidance and supervision of more experienced GIS professionals. Employees at this level are not expected to perform with the same independence of direction and judgment on matters related to established procedures and guidelines as are positions allocated to the II level. Since this classification is typically used as a training class, employees may have only limited work experience.

GIS Technician II (B23) – This is the journey level class within the Technical Specialist classification. This level is distinguished from the GIS Technician I level by the assignment of the full range of duties. This class performs some advance skills involving technical knowledge that require an understanding of established and defined department or program policies and procedures. This includes performing more advanced data analysis, data management, and project coordination tasks. A GIS Technician II is expected to have a deeper knowledge of GIS principles, methodologies, and software tools, and can work more independently under general guidance from a supervisor. *Positions assigned to this level are flexibly staffed and are normally filled by advancement from the first level. When filled from the outside, they require several years of prior experience in the assigned field.*

This classification is differentiated from the technical analyst classification as responsibility of the Technical Analyst is at a broad professional level.

Essential Duties

The duties listed below are a typical sample; position assignments may vary.

Essential Duties	
1	Develops and maintains the cartographic and tabular databases, and the GIS map base layers using various software. Represents current conditions, such as new or corrected addresses, annexations, minor partitions, etc. Processes street name correction forms.
2	Performs routine GIS data maintenance, manipulation, extraction, and generation assignments. Develops and prepares custom maps and views using cartographic techniques to represent special data. Enters, updates, and maintains data layers using GIS tools and relational databases.
3	Collects, audits and updates data to ensure the integrity and applicability of the information. Performs recordkeeping and inventory. Documents and files data sources and map files for future reference.
4	Conducts technical research in the geographic information systems, asset management, and other relational databases to produce products and supporting documentation for use in a variety of situations.
5	Maintains metadata describing data sources, map feature types, descriptive feature attributes, and other information about data layers.
6	Produces spatial products, database queries, and other products using GIS software in response to requests from staff.
7	Communicate information to others in need of geographic information. Assists department staff with providing the data for GIS analysis and map production needs, including evaluation of data sources, preparing simple maps and graphs, and finding locations of features.
8	Assists in system administration, hardware, software, and peripherals installations and upgrades. Recommends and assists in problem resolutions.
9	Assists staff in the appropriate use of field data collection tools, other spatial products and spatial data sets.
10	Creates application and process user documentation and conducts user training.
11	Performs troubleshooting by identifying errors within systems or data and researching solutions.
12	Performs other duties of a similar nature or level.

Functional Specific Responsibilities

N/A

Qualifications

Minimum Qualifications:

- GIS Technician I: Associate degree or two-year technical certificate relevant to area of assignment and 0-2 years of experience or an equivalent combination of education and experience to successfully perform the job.
- GIS Technician II: Associate degree or two-year technical certificate relevant to area of assignment and 3-5 years of experience or an equivalent combination of education and experience to successfully perform the job.

Licensing/Certifications:

- NA

Technology Skills:

- ESRI ArcGIS family of products, AutoCAD
- Database management system software — Microsoft SQL Server Management Studio, Oracle SQLDeveloper
- Database reporting software — ArcGIS Dashboard, MS PowerBI, SQL Server Reporting Server, Crystal Reports or similar
- Electronic mail software — Email software; Microsoft Outlook
- Geographic information system — ESRI ArcGIS software Geographic information system GIS software
- Graphics or photo imaging software — Adobe Illustrator; A
- Internet browser software — Edge, Chrome, Safari
- Office suite software — Microsoft Office software including Word, Excel, SharePoint, Teams, etc.
- Facilities management – Infor public sector
- Application and permitting – Accela
- Field data collection – Tablets, smartphones and other devises for data collection.
- Programming/Scripting Language –Python, R, XML, ANSI SQL and related languages to automate processes.

Qualifications

Knowledge Required:

- Computers and Software — Knowledge of computer hardware and software including applications, scripting and programming.
- Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- Education and Training — Knowledge of principles and methods for teaching and instruction for individuals and groups.
- English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- Geography — Knowledge of principles and methods for describing the features of the land and water including physical characteristics, locations, interrelationships, and distribution of plant, animal, and human demographics.
- Mathematics — Knowledge of arithmetic, algebra, geometry and their applications.

Skills:

- Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.
- Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Coordination — Adjusting one's own actions in relation to another's to achieve positive outcomes.
- Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to cartographic problems.
- Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Mathematics — Using mathematics to solve problems.
- Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.
- Science — Using geospatial scientific rules and methods to solve problems.
- Speaking — Talking to others to convey information effectively.
- Time Management — Managing one's own time effectively and making effective use with the time of others.
- Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Abilities:

- Deductive Reasoning — The ability to apply general rules to specific problems to produce answers that make sense.
- Flexibility of Closure — The ability to identify or detect a pattern (image, object or data) that is hidden in other distracting material.
- Inductive Reasoning — The ability to combine pieces of geographic information to form general assumptions or conclusions (includes finding relationships among seemingly unrelated objects).
- Mathematical Reasoning — The ability to choose the right mathematical methods or formulas to solve a problem.
- Oral Comprehension & Expression — The ability to listen to and understand information and ideas presented through spoken words and sentences.
- Oral Expression — The ability to communicate information and ideas in speaking so others will understand.
- Perceptual Speed — The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns including geospatial information. The things to be compared may be presented at the same time or over a period of time.
- Problem Sensitivity — The ability to tell when geospatial information is wrong or is likely to be used incorrectly. It does not involve solving the problem, only recognizing that there is a problem.
- Selective Attention — The ability to concentrate on a task over a period of time without being distracted.
- Visualization — The ability to imagine how a spatial object will look after it is moved around or when its parts are moved or rearranged.

Qualifications

- Written Comprehension — The ability to read and understand information and ideas presented in writing.
- Written Expression — The ability to communicate information and ideas in writing so others will understand.

Physical Requirements

Key	None 0% (0 hrs.)	Seldom 1-10% (Up to 1 hrs.)	Occasionally 11-35% (Up to 3 hrs.)	Frequently 36-75% (3-6 hrs.)	Continuous 76-100% (6+ hrs./day)

	0%	1-10%	11-35%	36-75%	76-100%		0%	1-10%	11-35%	36-75%	76-100%
BODY POSITIONS						**PUSH/PULL**					
Standing				X		0-10 lbs.		X			
Sitting				X		11-20 lbs.		X			
Walking – Even Surface		X				21-50 lbs.	X				
Walking – Uneven Surface		X				51-75 lbs.	X				
Kneeling	X					76-100 lbs.	X				
MOVEMENTS						**ENVIRONMENTAL HAZARDS**					
Bending/Stooping		X				Indoors					X
Twisting		X				Outdoors			X		
Crawling		X				Dust	X				
Squatting/Crouching		X				Fumes/Odors/Gasses	X				
Balancing		X				Chemical Agents	X				
Reach – Overhead		X				Biological Agents	X				
Reach – Forward		X				Noise – Low		X			
Reach – Backward		X				Noise – Moderate	X				
Climbing – stairs		X				Noise – High	X				
Climbing - ladder	X					Low Light	X				
USE OF HANDS						Heat		X			
Grasping – whole hand		X				Cold		X			
Grasping – pinch grip	X					Restricted workspace	X				
Fine manipulation/feeling				X		Vibration – whole body	X				
Keyboarding				X		Vibration - extremity	X				
LIFT/CARRY						**JOB SPECIFIC**					
0-10 lbs.		X				Driving – vehicle/equipment		X			
11-20 lbs.		X				Operate foot controls	X				
21-50 lbs.	X					Seeing					X
51-75 lbs.	X					Talking			X		
76-100 lbs.	X					Hearing			X		
						Extended work hours		X			

Classification History

Created 2012.01
2016.06 – Revisions by HR
2023.06 – Reformatted & revisions by HR

I have reviewed the job description.

Employee: Name_____ Signature _____ Date _____