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JOB POSITION: ENGINEERING/GIS TECHNICIAN III (SURVEY)

Division: Engineering
Status: Non-Exempt
Grade: 13
Job Code: 323
Reports To: Engineering Coordinator
Date: 09-01-20
Revised Date: 04-01-22
Last Reviewed Date: 04-01-22

SUMMARY OF JOB

Leads and supervises the internal design survey crew. Responsible for overseeing/coordinating/ executing survey work for water/sewer design projects/as-built surveys/data collection/mapping/construction stake out and provides related technical support for projects. Perform data collection using GPS equipment, electronic/optical instruments, asset management/mapping software platforms, and other technologies. Associate's degree in Surveying Technology or related field plus five (5) or more years related experience preferred. Virginia Designation as **SIT** or Licensed Surveyor (LS) preferred.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Includes the following. Other duties may be assigned or scheduled.

- Direct and coordinate work of assigned employees.
- Ensure employee evaluations and timesheets are complete and accurate and meet all requirements.
- Perform data collection using GPS equipment, electronic/optical instruments, asset management/mapping software platforms, and other technologies.
- Perform field surveying and construction stake out in support of engineering, design and construction activities.
- Perform quality control of work for exactness, neatness, and conformance to specifications.
- Document survey data in field books, forms and work order systems.
- Read and interpret construction plans, specifications, and correspondence.
- Inventory and maintain survey equipment and materials.
- Oversee/perform processing of survey field data.
- Conduct court house property and easement research.
- Investigate project areas including plans/documentation to determine correct layout of existing utilities and existing conditions.
- Create and submit line location tickets for project area surveys.

- Schedules all assigned tasks including the collection of survey data required for design of proposed projects.
- Schedules stake-out surveys for various construction projects.
- Establishes best practices to be followed by all survey team members.
- Train survey team members in the use of survey equipment and work order software platforms.
- Oversee the work of various survey team members.
- Create standard operating procedures for survey and related work.
- Schedule and perform mapping related work orders.
- Perform fire hydrant pressure monitoring and flow testing.
- Perform GIS mapping updates and update asset data registry..
- Perform and document infrastructure assessments and evaluations (e.g., manhole surveys, etc.)

SUPERVISORY RESPONSIBILITIES

Supervises assigned employees in accordance with the organization's policies and applicable laws. Responsibilities include interviewing, hiring, and training employees; planning, assigning, and directing work; appraising performance; rewarding and disciplining employees; addressing complaints and resolving problems.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Ability to direct and supervise work of assigned personnel.
- Ability to review and recommend improvements in processes and procedures for assigned area.
- Ability to think logically and comprehend data.
- Ability to work with minimal supervision.
- Ability to work safely and obey all safety rules.
- Ability to communicate effectively, both verbal and in writing.
- Ability to respond to inquiries from employees and customers orally or in writing as necessary.
- Ability to represent assigned area in meetings attended.
- Ability to identify problems and/or conflict and seek management assistance in dealing with problems and/or conflicts.
- Ability to analyze and solve technical and administrative problems.
- Ability to read and interpret documents such as safety rules, operating and maintenance instructions, maps and procedure manuals.
- Ability to apply common sense understanding to carry out instructions furnished in writing, oral or diagram form.

- Ability to write reports, correspondences and procedure manuals in a clear concise manner.
- Ability to establish and maintain effective working relationships with co-workers, employees, other Water Authority departments and the general public.
- Ability to work alone or in a team environment.
- Must possess and maintain a good work ethic concerning attendance, punctuality, positive attitude, meeting deadlines, being a team player and encouraging teamwork among employees.
- Working knowledge of hand-held and RTK GPS receivers, survey instruments, and survey and mapping technologies.
- Basic knowledge of equipment, materials, methods and procedures used in water and sewer related activities.
- Skill in the use of computers and various software programs including but not limited to InfoAsset Manager, InfoAsset Mobile, Leica survey software, GIS, AutoCAD, Microsoft Excel, Microsoft Word, Microsoft PowerPoint, Microsoft Access, and Microsoft Outlook preferred.

EDUCATION and/or EXPERIENCE

Associate's degree from an accredited college or university in Surveying Technology or related field preferred, plus five (5) or more years related experience, or equivalent combination of education and experience.

CERTIFICATE, LICENSE, REGISTRATION REQUIREMENTS

- Must possess a valid Virginia driver's license or have the ability to obtain one within 60 days of employment date. No more than six (6) demerit points on driving record if required to drive Water Authority vehicles.
- Virginia Designation as SIT or Licensed Surveyor (LS) preferred

PHYSICAL DEMANDS OF THIS JOB

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- While performing the duties of this job, the employee is regularly required to walk, stand, and sit; use hands to finger, handle or feel; reach with hands and arms; talk and hear.
- Specific vision abilities required by this job include ability to adjust focus. If corrective lenses are noted on driver's license, the lenses must be worn when operating Authority vehicles.
- Repetitive movement using equipment is involved.
- While performing the duties of this job, the employee is regularly required to stoop, kneel, crouch, bend, climb, balance or crawl.
- Employee must be able to stand for an extended amount of time at the jobsite.
- Employee must be physically able to walk several miles during the day.
- Employee must be physically able to regularly reach overhead.

- Employee must regularly lift, carry and/or move up to 50 pounds and occasionally 100 pounds. Assistance is required on weight amounts above those listed. Failure to do so could result in injury and denied Worker's Compensation benefits.

WORK ENVIRONMENT ENCOUNTERED IN THIS JOB

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Employee will be regularly exposed to moderate or high noise level, extreme outside weather conditions, uneven, steep, slippery terrain conditions, dusty conditions and wet and/or humid conditions.
- Employee will be subject to exposure to moving mechanical parts and heavy equipment operation.
- Employee will be subject to roadway hazards, i.e. traffic.
- Employee will be subject to outside hazards, i.e. poison ivy, bees, spiders, dirt, animals.

GENERAL STATEMENT AND SELECTION GUIDELINES

The above statements describe the general nature and level of work assigned to in this job position. They should not be construed as an exhaustive list of all job duties or tasks performed by personnel so classified.

The following will identify the selection guidelines for job placement:

- WVWA application
- Rating of education, experience, training and qualifications
- Reference checks
- Interview with WVWA management team
- Applicant must pass a pre-employment physical and drug/alcohol test
- A criminal background check and social security number verification will be performed. The results must match information provided by the applicant on the WVWA application
- Job related test might be required and would be administered to all applicants applying for the position



**JOB POSITION: ENGINEERING/GIS TECHNICIAN II
(Planning and Asset Management)**

Division: Engineering
Status: Non-Exempt
Grade: 12
Job Code: 322
Reports To: Program Manager – Planning & Asset Management
Date: 05-17-21
Revised Date: 04-01-22
Last Reviewed Date: 04-01-22

SUMMARY OF JOB

Support the Authority's planning and asset management functions by providing field and office support for Geographic Information System (GIS), Mapping, and Asset Management programs. Associate's degree or certificate in GIS or related program from a recognized technical training institution. Strong knowledge of cartographic principles and their application in the digital realm/ map coordinate systems/projections and their usage in GIS. Skill in use of computers and various software programs which may include InfoNet Desktop/Mobile, ArcMap, AutoCAD, Microsoft Excel/Word/PowerPoint/Access/Outlook **required**. Bachelor's degree and two (2) or more years related experience preferred.

ESSENTIAL DUTIES AND RESPONSIBILITIES

In order to perform this job successfully, an individual must be able to perform each essential duty satisfactorily. Assigned duties and responsibilities will include the following. More duties may be assigned as needed.

- Uses and maintains mobile data collection devices
- Creates and edits geometry of a point, line, or polygon based on field collected data
- Creates and edits attributes of geospatial data
- Adds data across multiple file formats from difference sources into field data collection applications
- Read and interprets record drawings, as-builts, plans, and specifications
- Convert or import digital data using digitizers, scanners or GPS.
- Analyze raster data sets (TINs), analyze vector data sets
- Project spatial data
- Creates and Maintains GIS Metadata
- Convert data (i.e., geodatabase, shapefiles, coverage, DWG, etc.)
- Integrates work order and as-built information into the Asset System of Record.

- Performs basic field surveying for data collection using GPS equipment and asset management software platforms.
- Manipulates geographic data in spatial and tabular databases.
- Reads and interprets record drawings, as-builts, plans, and specifications.
- Performs quality control of work for exactness, neatness, and conformance to specifications and internal standards.
- Assists in training others in the use of GPS equipment and asset management software platforms.
- Coordinates, processes data, and prepares summary reports for hydraulic analysis and hydrant flow tests.
- Assists with field and office work to support engineering projects for water and wastewater capital improvements.
- Coordinates quality control, data validation, and input of data into mapping and databases.
- Integrates work order and as-built information into the Asset System of Record.
- Examines work for exactness, neatness, and conformance to specifications.
- Assists and trains system users with hardware, software and conversion of documents.
- Assist in the production of presentation quality maps, exhibits, graphics, schematics, plots, and other technical documents.
- Creates and processes field survey data for use in updating the asset registry.
- Assists in creation of base maps and asset inventories for design projects from the asset system of record.
- Undertakes daily updates and quality control in the Authority's asset management databases and GIS for design project areas.
- Provides assistance in improving and updating existing internal GIS standards, templates, and workflows.
- Able to develop standard operating procedures for documenting common workflows.
- Assists with data collection, monitoring, and documentation of field activities, as needed.
- Imports and manipulates survey data to update the Asset System of Record.

SUPERVISORY RESPONSIBILITIES

Depending on qualifications and experience, may supervise entry-level technicians and interns.

QUALIFICATIONS

The requirements listed below are representative of the knowledge, skill, and/or abilities of an excellent candidate for this position.

- Use Python / Ruby scripts to retrieve data sources for production and updating of authoritative data in an enterprise geodatabase.
- Design maps and visualizations, develop mapping software, and automate geographic analysis.
- Ability to automate data QA/QC whenever possible

- Documentation of processes and workflows to help convey information to users of different levels of expertise.
- Develop web-based GIS applications using ArcGIS Online
- Familiarity with asset management basics and geographical information systems (GIS).
- Strong working knowledge of cartographic principles and their application in the digital realm.
- Strong working knowledge of map coordinate systems and projects, and their usage in GIS applications.
- Strong computer skills, and experience with or ability to learn new GIS applications and programming techniques for improving data processing workflows.
- Proficiency in use of computers and various software programs such as Microsoft Office suite, ESRI products and platforms, InnoVize geographic information/asset management systems, SharePoint, etc.
- Working knowledge of hand-held and RTK GPS receivers.

EDUCATION AND EXPERIENCE

Minimum requirements: Bachelors or Associates degree from an accredited college or university or certificate in GIS or related program from a recognized technical training institution. Two (2) or more years related experience preferred or equivalent combination of education and experience. Strong knowledge of cartographic principles and their application in the digital realm.

- Strong knowledge of map coordinate systems and projections, and their usage in GIS.
- Basic knowledge of equipment, materials, methods and procedures used in water and sewer related activities.
- Skill in use of computers and various software programs including but not limited to InfoNet Desktop, InfoNet Mobile, ArcMap, AutoCAD, Microsoft Excel, Microsoft Word, Microsoft PowerPoint, Microsoft Access, and Microsoft Outlook preferred.

CERTIFICATE, LICENSE, REGISTRATION REQUIREMENTS

Must possess a valid Virginia driver's license or have the ability to obtain one within 60 days of employment date. No more than six (6) demerit points on driving record if required to drive Water Authority vehicles.

PHYSICAL DEMANDS OF THE JOB

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- While performing the duties of this job, the employee is regularly required to walk, stand, and sit; use hands to finger, handle or feel; reach with hands and arms; talk and hear.
- Specific vision abilities required by this job include ability to adjust focus. If corrective lenses are noted on driver's license, the lenses must be worn when operating Authority vehicles.
- Repetitive movement using equipment is involved.
- While performing the duties of this job, the employee is regularly required to stoop, kneel,

crouch, bend, climb, balance or crawl.

- Employee must be able to stand for an extended amount of time at the jobsite.
- Employee must be physically able to walk several miles during the day.
- Employee must be physically able to regularly reach overhead.
- Employee must regularly lift, carry and/or move up to 50 pounds and occasionally 100 pounds. Assistance is required on weight amounts above those listed. Failure to do so could result in injury and denied Worker's Compensation benefits.

WORK ENVIRONMENT ENCOUNTERED IN THIS JOB

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Employee will be regularly exposure to moderate or high noise level, extreme outside weather conditions, uneven, steep, slippery terrain conditions, dusty conditions and wet and/or humid conditions.
- Employee will be subject to exposure to moving mechanical parts and heavy equipment operation.
- Employees will be subject to roadway hazards, i.e. traffic.
- Employee will be subject to outside hazards, i.e. poison ivy, bees, spiders, dirt, animals.
- Employee will be subject to confined areas, i.e. confined spaces, sewer manholes, water vaults, wastewater pits, and/or protected trenches.

GENERAL STATEMENT AND SELECTION GUIDELINES

The above statements describe the general nature and level of work assigned to in this job position. They should not be construed as an exhaustive list of all job duties or tasks performed by personnel so classified.

The following will identify the selection guidelines for job placement:

- WVWA application
- Rating of education, experience, training and qualifications
- Reference checks
- Interview with WVWA management team
- Applicant must pass a pre-employment physical and drug/alcohol test
- A criminal background check and social security number verification will be performed. The results must match information provided by the applicant on the WVWA application
- Job related test might be required and would be administered to all applicants applying for the position



**JOB POSITION: ENGINEERING/GIS TECHNICIAN I
(Planning and Asset Management)**

Division: Engineering
Status: Non-Exempt
Grade: 10
Job Code: 321
Reports To: Program Manager-Planning and Asset Management
Date: 07-01-07
Revised Date: 04-01-22
Last Reviewed Date: 04-01-22

SUMMARY OF JOB

Support the Authority's planning and asset management functions by providing field and office support for Geographic Information System (GIS), Mapping, and Asset Management programs. Associate's degree or certificate in GIS or related program from a recognized technical training institution. Strong knowledge of cartographic principles and their application in the digital realm/ map coordinate systems/projections and their usage in GIS. Ability to become proficient in use of computers and various software programs which may include InfoNet Desktop/Mobile, ArcMap, AutoCAD, Microsoft Excel/Word/PowerPoint/Access/ Outlook **required**.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Includes the following. Other duties may be assigned or scheduled.

- Investigates plans/documentation of existing utilities and conditions in specified areas to support mapping updates and project design efforts.
- Processes field survey data for use in CAD and GIS.
- Assists in creation of base maps for design projects using AutoCAD Civil 3D software.
- Updates company asset management databases and GIS for design project areas.
- Provides assistance in improving and updating existing internal CAD standards, templates, and standard operating procedures.
- Prepares base sheets, plats, site plans, plan/profiles, details, schematics, and other project-related documents under the close direction of an Engineer.
- Performs basic field surveying for design of construction projects and support of construction activities, as needed.
- Assists with data collection, monitoring, and documentation of field activities, as needed.
- Imports and manipulates survey data using computer software.
- Performs basic updates of GIS mapping and databases.

- Examines work for exactness, neatness, and conformance to internal CAD standards.
- Composes and produces presentation quality maps, graphics, schematics, plots and basic technical reports under the close direction of an Engineer.

SUPERVISORY RESPONSIBILITIES

None.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Ability to work with minimal supervision.
- Ability to work safely and obey all safety rules.
- Ability to communicate effectively, both verbal and in writing.
- Ability to establish and maintain effective working relationship with coworkers, other Water Authority departments and the general public.
- Ability to read and interpret documents such as safety rules, operating and maintenance instructions, maps, and procedure manuals.
- Ability to read and interpret construction plans, drawings, specifications, reports, and related correspondence.
- Ability to apply common sense understanding to carry out instructions furnished in writing, verbally, or diagram form.
- Ability to work alone or in a team environment.
- Must possess and maintain a good work ethic with a strong emphasis on good attendance, reporting to work on time, completing job assignments in a timely manner, maintaining a good work attitude, performing all job duties as assigned and/or scheduled.
- Working knowledge of computer aided drafting (CAD) applications, techniques, and requirements to prepare technical drawings and exhibits.
- Basic knowledge of AutoCAD/Land Desktop/Civil 3D applications for preparation of site plans and plan/profiles under the close direction of an Engineer.
- Familiarity with asset management databases and geographical information systems (GIS).
- Basic knowledge of cartographic principles and their application in the digital realm.
- Basic knowledge of map coordinate systems and projects, and their usage in AutoCAD.
- Strong computer skills, and experience with or ability to learn GIS and CAD software.
- Ability to become proficient in use of computers and various software programs such as AutoCAD, AutoCAD Civil 3D, Microsoft Office suite, Innovyze geographic information/asset management systems, SharePoint, etc.
- Basic knowledge of hand-held and RTK GPS receivers or ability to learn how to use such equipment.

EDUCATION and/or EXPERIENCE

Associate's degree from an accredited college or university or certificate in

computer aided drafting or related program from a recognized technical training institution. Two (2) or more years related experience preferred or equivalent combination of education and experience.

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