



NATIONAL DRAINAGE AND IRRIGATION AUTHORITY

JOB DESCRIPTION

POSITION: GIS ENGINEER

REPORTING TO: CHIEF EXECUTIVE OFFICER

SUPERVISES: LAND SURVEYOR

SALARY SCALE: BAND 6

The holder of the post is required to provide GIS analytical and geoprocessing services to the National Drainage & Irrigation Authority. This responsibility includes the use of various systems and technologies to create and maintain maps which can be combined with data that is geographically referenced.

Main Responsibilities

- Coordinates with, engineers, planners and other professionals to develop GIS analytical and geoprocessing functions, including input, editing, manipulation, management, analysis, and output of spatial and tabular data sets for the analysis of water resource, planning, engineering, and other department projects.
- Works with professionals in departments within the NDIA to coordinate and develop strategies to incorporate GIS in the management of project development.
- Coordinates with engineers and other staff to capture and develop GIS data for use in hydraulic and hydrologic modeling.
- Analyzes project needs for spatial data by reviewing existing NDIA data, recommending data needs, accessing available digital data from outside sources, and determines analyses needed to fulfill project requirements; analyzes GIS data requirements by reviewing existing manually maintained data and available digital data and determines digital data design, assembly, conversion, compilation, and maintenance procedures required.
- Develops, and manages geospatial data sets using a variety of methods including Global Positioning Systems for the collection of natural resource, infrastructure, and other data for scientific, engineering, and planning applications.
- Assumes lead role to coordinate the collection of field data by professional and technical field personnel; develops data standards and methodology for professional and technical field personnel to follow in completion of data collection; ensures that completed work complies with data standards.
- Prepares and presents oral, written, and multimedia presentations which describe GIS and related application procedures, data requirements, software functions, and work that will performed or that has been completed at division staff meetings and local and national professional conferences. Provides technical support and may act as GIS liaison and technical resource between NDIA and other agencies.

- Operates workstations, digitizers, plotters, printers, Global Positioning System equipment, scanners, and digital cameras as required for GIS development and implementation.
- Manages water resource GIS data and **all organization data** and maintains data in accordance with quality assurance and quality control standards; ensures compliance with department data standards and procedures.
- Prepares written reports, digital metadata to describe application procedures, data requirements, software functions, and the work that will be performed or that has been completed.
- Produces cartographic products utilizing a variety of software and programming languages for use by engineers, planners, and other professionals for field use, public presentation, and analysis.

Required Knowledge, Skills and Abilities

- Demonstrates a keen understanding of spatial data and algorithms.
- Shows the ability to enter quickly, correctly and efficiently.
- Understands how to convert data from older sources such as maps and books into digital formats.
- Understands how to create and edit metadata.
- Possesses the ability to build models in order to create an efficient workflow.
- Demonstrates a vast knowledge of cartography and at least some understanding of graphic design.

Education and Experience

The candidate should have a Bachelor's or Master's degree in a study such as geography, computer science, surveying and engineering. As part of this, the candidate should have studied courses that are specific to GIS and mapping. Courses such as statistics, cartography, geodesy and GPS measurement and analysis are also beneficial. Potential GIS analysts should have some experience with mapmaking, surveying and computers.

Work Environment

The work environment of a GIS analyst is quite diverse since these individuals will spend time in the field collecting data as well as time in the office entering data, creating software or making maps. As such, it is possible that these individuals will be exposed to harsh climates from time to time and may be required to travel for extended periods.

Requirements

The candidate should have a Bachelor's or Master's degree in a study such as geography, computer science, surveying and engineering from a recognized institution. As part of this, the candidate should have studied courses that are specific to GIS and mapping. Courses such as

statistics, cartography, geodes and GPS measurement and analysis are also beneficial. Potential GIS analysts should have at least four (4) years' experience with mapmaking, surveying and computers.

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Supervisory Responsibility

This job holder will be required to supervise the minimum of three (3) persons.

Work Environment

While performing the duties of this job, the employee regularly works in the field and office setting

Physical Demands

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.

Position Type/Expected Hours of Work

This is a full-time position. Days and hours of work are Monday through Thursday, 8:00 a.m. to 4:30 p.m. and Fridays from, 8:00 a.m. to 3:30 p.m. respectively but may be required to work weekends and beyond the call of duty as the need arises.

Updated by: Ms. J Blackman

Human Resource Manager

Dated : 2021-10-03