

IDENTIFICATION

Department	Position Title	
Aurora College	Geographic Information System (GIS) Technician	
Position Number(s)	Community	Division/Region(s)
91-15215	Inuvik	Research Division

PURPOSE OF THE POSITION

Geographic Information Systems (GIS) Technician will provide geospatial support to the Aurora research Institute's (ARI) research projects, researcher projects of Western Arctic researchers, and the geomatics activities of Western Arctic Communities. In addition, the incumbent will also support the ARI team in geomatics outreach and capacity building. The incumbent will be a member of a team whose mission is to advance the use of Earth Observation (EO) in the Western Arctic.

SCOPE

The position is located in Inuvik, at the Western Arctic Research Center (WARC) and the GIS Technician will report to the Manager, GIS Programs. The focus of the GIS programs is to grow geomatics capacity and promote the use of EO data, tools, and applications across the Western Arctic. This is achieved mainly through the provision of the following EO services: data collection; creating, editing, and manipulating geospatial data; storing geospatial information and their associated attributes; using GIS tools to integrate different type of datasets and perform analysis; building elevation models; interpretation and analysis of space-based Earth Observation (SBEO); development of cartographic products (e.g., maps, charts, and reports); GIS/geography outreach, and the development of other forms of EO information products.

RESPONSIBILITIES

1. Use EO data and tools to provide accurate and timely EO products and services to support research projects.

- Perform geospatial data capture (may include for example digitizing, geo-referencing, GPS data, Remotely Piloted Aircraft Systems (RPAS) data);
- Produce geo-referenced maps from scanned documents and aerial photos;
- Perform geospatial analysis, modeling, and other geoprocessing activities;

- Assist in preparing maps, drawings, figures, sketches, charts and presentation posters for use in research proposals, reports, and community engagement;
- Provide EO consultation to researchers;
- Integrate different types of EO datasets to support research projects;
- Build elevation models;
- Build story-maps to support the dissemination of research results.

2. Work closely with the Manager, GIS Programs to manage ARI's geospatial data.

- Assist in the development of new Standard Operating Procedures for EO workflows and quality control;
- Perform quality control on geospatial datasets;
- Database and file management;
- Update GIS layers with data from various sources;
- Create and document procedures and maintain metadata definitions;
- Develop and implement procedures to ensure digital information is correctly stored and available.

3. Assist in the management of geospatial, equipment, hardware and software.

- Manage GIS software and software licences;
- Support the asset management activities of the GIS Team;
- Keep abreast with the latest development in EO software and hardware;
- Recommend hardware and software upgrades;
- Consult with Esri technical support, open-source help, web forums, and other resources available to problem-solve technical or workflow-related issues;
- Prepare regular status reports, highlighting GIS issues requiring attention.

4. Support geomatics outreach and capacity building. Working closely with the ARI's Outreach team to develop and deliver geomatics outreach and capacity building content, presentations, and training.

5. Support ARI's RPAS activities and perform other related duties as assigned.

- Assist in the design of ground control networks for RPAS surveys;
- Assist in establishing ground control points for RPAS surveys using GNSS;
- Assist in RPAS mission planning and data capture;
- Assist in the processing of RPAS data.

WORKING CONDITIONS

Physical Demands

The majority of the time is spent on a computer, generally a minimum of 5 hours/day, 5 days/week with extensive use of a mouse. Some projects may require 7 hours/day for 2 to 3 weeks at a time. Some travel is required with the associated demands.

Environmental Conditions

Most work will be undertaken in a comfortable environment. However, occasionally fieldwork may be required as part of the job. This may involve exposure to climatic conditions, which

may include extremes in temperature values and the presence of wildlife. During summer months, bugs may be a nuisance.

Sensory Demands

Concentrated visual attention to colours, tones, textures of digital maps on a computer monitor. The ability to determine the full range of colours must be unencumbered. The demand to minute detail, focusing for long periods on a computer monitor can lead to eyestrain.

Mental Demands

Mental demands to meet deadlines of overlapping projects. In some circumstances, balancing priorities may be extremely difficult.

KNOWLEDGE, SKILLS AND ABILITIES

The successful GIS Technician will have these skills and qualifications:

- Advanced knowledge of GIS and geographic principles
- Minimum 2 years related practical GIS experience (data capturing, data creation, geoprocessing, modeling, geodatabases, data maintenance, and metadata)
- Practical experience building and working with elevation models (DSM, DTM and DEM)
- Practical experience and knowledge of ESRI products (e.g., ArcMap 10.xx, Pro, and the common extensions, ESRI Story-maps, and ArcGIS Online)
- Proficiency in MS Windows-based computers and Office 365
- Practical experience working with space-based earth observation data
- Excellent cartographic skills and knowledge (e.g., projections, datums, and developing geospatial information communication products)
- Very strong oral and written communication skills
- Detail-oriented with very strong organizational skills
- Demonstrated ability to meet tight deadlines and work independently under pressure
- Strong people skills and an ability to work in a team environment
- Experience working with RPAS data

Typically, the above qualifications would be attained by:

The knowledge, skills and abilities for this post are generally obtained through the acquisition of the following:

- An Advanced Technical Diploma in GIS and/or a University Degree in Geography, Geomatics or other related discipline from an accredited post-secondary institution; and
- At least two years of experience as a GIS technician.

ADDITIONAL REQUIREMENTS

Position Security (check one)

No criminal records check required

Position of Trust – criminal records check required

Highly sensitive position – requires verification of identity and a criminal records check

French language (check one if applicable)

French required (must identify required level below)

Level required for this Designated Position is:

ORAL EXPRESSION AND COMPREHENSION

Basic (B) Intermediate (I) Advanced (A)

READING COMPREHENSION:

Basic (B) Intermediate (I) Advanced (A)

WRITING SKILLS:

Basic (B) Intermediate (I) Advanced (A)

French preferred

Indigenous language: Select language

Required

Preferred