



IDENTIFICATION

Department	Position Title	
Finance	Geographic Information Systems Specialist	
Position Number	Community	Division/Region
15-14215	Yellowknife	NWT Centre for Geomatics

PURPOSE OF THE POSITION

The Geographic Information Systems (GIS) Specialist provides a broad range of geospatial services to all GNWT departments, including associated boards and agencies. The position collaborates with the federal government, various Indigenous organizations, private industry and with the public. As a senior geomatics practitioner, the GIS Specialist provides expert advice and advanced geomatics services including: online geospatial application development and content management, data production, analysis and maintenance; and advanced GIS project management.

SCOPE

The position is located in Yellowknife and is part of the NWT Centre for Geomatics (NWTCG) Division within the Office of the Chief Information Officer branch in the Department of Finance. The GIS Specialist reports to the Manager, Geomatics Services. The NWTCG is the GNWT Centre of Excellence for geomatic services, Earth Observation (EO), geographic databases and applications, remote sensing and geographic information systems.

The position operates within the policy framework established by the GNWT Informatics Policy Council on matters related to information management, open data, and various technologies as they relate to spatially referenced data and information collections.

The GIS Specialist provides leadership and expertise on matters related to: mapping; spatial data creation, maintenance, storage; geospatial analysis; modelling and automation; standards; and development of online geospatial tools and services.

The GIS specialist is a senior role within the Geomatics Services team and works independently in day-to-day project management and leads collaborative engagements with both clients and stakeholders.

The GIS specialist promotes the use of geospatial data and tools for decision making through education and outreach programs, and collaboration with a variety of internal and external partners. Through these efforts the GIS specialist maximizes the benefits of investments made in geospatial resources by raising awareness of geospatial data created or acquired across departments of the GNWT, such as new aerial photography or vector data like roads and land withdrawals.

As a data scientist, the incumbent utilizes advanced geospatial knowledge and techniques to create, analyze, model, automate, represent and administer geospatial information, through the development of custom scripts and reiterative models combined with both scientific and statistical methodologies. The GIS specialist is responsible for quality control of data prior to its publication into the spatial data warehouse and integration with web mapping applications. This is done by ensuring adherence to data management and metadata standards.

The GIS specialist actively promotes the use of best practices and standards to clients through various forms of communications including outreach initiatives and the development of training materials. The GIS Specialist also guides the development of standards in partnership with national standards organizations including the Canadian Geospatial Data Infrastructure (CGDI) and the Open Geospatial Consortium (OGC).

The GIS Specialist works closely with all clients to scope projects, provide advice, and formulate solutions. In doing so, the incumbent is required to have broad knowledge of the various functions of these clients, including land management, land negotiation and land claims, surface and subsurface tenure, census and electoral processes, infrastructure planning and resource management.

The incumbent also supports the broader activities of the NWTCG by maintaining continuous communications with the Manager and colleagues on process improvements, adoption of new standards, upcoming initiatives, new technologies and new methodologies.

RESPONSIBILITIES

1. Develops and maintains geospatial data and acts as a custodian of GNWT geospatial resources by:

- Conducting quality assurance and control of data and recommending standards and best practices to data authorities for inclusion of data in the GNWT's Spatial Data Warehouse, managed by the NWTCG;
- Designing and creating new geospatial data sets from advanced spatial analysis using scientific and/or statistical methodologies;
- Applying advanced understanding and seasoned knowledge of various geospatial software programs including the Esri suite and scripting languages including python;
- Developing and publishing metadata, to provide decision making insight into data sets;
- Automating geospatial data creation and data manipulation to improve efficiency in delivery of services through scripts and models;

- Maintaining current knowledge of relevant GNWT legislation and policies that relate to geospatial data and processes (ie. Public Lands Act);
- Developing and maintaining foundational and authoritative geospatial datasets critical to GNWT operations including but not limited to the NWT road network, land withdrawals, protected and regulated areas, and electoral boundaries;
- Publishing and migrating data in the Spatial Data Warehouse, following rigorous quality control processes to adhere to enterprise data standards;
- Publishing, updating and maintaining web mapping libraries;
- Collaborating with external organizations to exchange data and best practices.

2. Create geospatial products and project deliverables by:

- Conducting and managing all phases of project management including needs assessment, project design, client communication, timeline development, software and hardware needs, data needs, outputs (data, map & application development), documentation, and delivery of final products;
- Sourcing and evaluating new technologies, including geospatial software and hardware suitability for multiple user requirements;
- Representing, customizing and ensuring data quality through complex queries, integrated attribution, and relational tabular joins;
- Developing hard-copy maps and custom prints;
- Presenting data through specialized and sometimes custom interactive and dynamic web map tools and online viewers using a variety of geospatial software packages;
- Designing and creating complex workflows and processes to automate dynamic data analysis and/or building custom reporting tools using software modeling language;
- Documenting all phases of project work including technical documentation, and organizing documentation within GNWT's document management system (DIIMS);
- Careful consideration and on-going management of data change implications on web mapping libraries and developed applications consuming this content;

3. Provide geospatial expertise and leadership for the GNWT by:

- Developing and adhering to processes, standards and best practices related to the creation and maintenance of geospatial information;
- Creating awareness and educating clients and external stakeholders on geospatial standards, best practices and methodologies used for the development, maintenance and quality assurance of all geospatial information;
- Developing and delivering training related to geospatial processes and analysis, and use of NWTTCG derived map products including: the use of ArcGIS online maps, workflows and reports; GeoPDFs; Geocortex Web Mapping Applications; Esri software tips and tricks;
- Promoting enterprise geospatial data management;
- Developing new or improved approaches and solutions to GIS problems in order to best support client needs, including the evaluation of new tools, software or analytical techniques;

- Participating within working groups, such as the CGDI, OGC, and Canadian Council on Geomatics to represent northern interests for the development of standards, national geospatial data sets and pan-Canadian geospatial initiatives;
- Maintains tech “currency” and embracing emerging geomatics technologies to better serve GNWT clients;
- Liaising with Indigenous governments and organizations, municipalities, researchers and various industry representatives on the use of GNWT-derived geospatial data or the development of collaborative data sets and products;
- Evaluating contract bids and technical proposals on behalf of clients;
- Advising clients on estimated project timelines and budgets, and recommending appropriate technology.

WORKING CONDITIONS

Physical Demands

No unusual demands.

Environmental Conditions

No unusual demands.

Sensory Demands

Prolonged, concentrated visual attention to colours, tones and textures of digital maps on a computer monitor. Unencumbered ability to determine full range of colours.

Mental Demands

The incumbent is required to manage multiple concurrent projects with competing deadlines. At times requests from executive management require tight turnarounds and possible overtime. The GIS Specialist also manages stressful requests related to public safety, requiring rapid and accurate responses.

KNOWLEDGE, SKILLS AND ABILITIES

- Advanced knowledge and expertise in Geographic Information Systems.
- Advanced knowledge and expertise in principles of geography.
- Expert abilities in data science as it applies to the life cycle of geospatial information.
- Advanced knowledge of GIS analysis including scientific and statistical methodologies, data modeling, scripting, reporting, and programming (ie. Python, R).
- Advanced knowledge of Esri GIS software including ArcPro, ArcGIS Desktop, Enterprise, ArcSDE, ArcGIS online.
- Advanced Knowledge of metadata standards, project management and data management.
- Strong communication skills, including gathering user requirements, conveying complex technical information to a lay audience, and reporting on projects to clients, NWTCG team and managers.
- Effective writing skills, including technical and project documentation.

- Effective time management and organizational skills.
- Ability to motivate oneself and work both independently and within a team environment.
- Ability to set and assess priorities and meet deadlines.
- Ability to solve complex problems using innovative approaches and applying an advanced knowledge and understanding of GIS technology and techniques.
- Ability to work effectively as part of a larger team and demonstrate leadership when required.
- Ability to demonstrate and promote initiative and resourcefulness to manage projects, improve processes and promote the tools and resources provided by the NWTCCG.

Typically, the above qualifications would be attained by:

Completion of an undergraduate degree in geography with an emphasis in GIS with 2 years of recent, progressive, and directly related GIS experience in project management and service delivery or completion of a GIS diploma program and at least 5 years of recent, progressive, and directly related GIS experience in project management and service delivery. Other Equivalencies may be considered.

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