

1. IDENTIFICATION

Position No.	Job Title	Supervisor’s Position	Financial Code	
08-10716	Geographic Information System Officer	Manager, Heritage Resources (08- 14381)	.08500-01-2-230-0850000-01-????	
Department		Division/Region	Community	Location
Culture & Heritage		Heritage (08500-02)	Igloolik	Qikiqtaaluk

2. PURPOSE

Main reason why the position exists, within what context and what the overall end result is.
Under the supervision of the Manager, Heritage Resources, the Geographic Information Systems (GIS) Officer provides GIS products, services, expertise, and advice to Culture and Heritage staff and external clients in Nunavut, to federal government and land claim organizations, private industry and the general public. These activities form part of the management, monitoring and protection of Heritage Resources in Nunavut.

3. SCOPE

Describe the impact the position has on the area in which it works, or if it impacts other departments, the government as a whole, or the public directly or indirectly. How does the position impact those groups/individuals, the organization and/or budgets? What is the magnitude of that impact?
<p>The Heritage Division of the Department of Culture & Heritage is responsible for the creation, maintenance and administration of digital data pertaining to its responsibilities for archaeological sites (~16,000 records), palaeontological sites, geographic names (~15,000 records), historic sites (~ 30 records; in development) and land use development impacts (~150 annual reviews).</p> <p>The incumbent provides geographic information system products and services to department personnel, other GN departments, to external clients in the federal government, land claim agencies, private industries, archaeological and heritage consultants, as well as the general public. These services are provided to assist with the management, monitoring, and protection of heritage sites and resources in Nunavut.</p> <p>The incumbent works directly with staff or clients to define their needs and to implement geographic information systems solutions within the available range of equipment, software, data, and human resources. The incumbent also serves as a technical consultant/advisor for less experienced staff and other clients undertaking GIS projects.</p> <p>The position is located within the Heritage Division in Igloolik and reports to the Manager, Heritage Resources. The incumbent works independently on many projects and interacts directly with other Culture and Heritage staff, Government of Nunavut staff, with external agencies, as well as with the public. Decisions made by this position affect public perception of the Department and the Government of Nunavut.</p>

4. RESPONSIBILITIES

Describe major responsibilities and target accomplishments expected of the position. List the responsibilities that have the greatest impact on the organization first and describe them in a way that answers *why* the duties of the position are being performed. For a supervisory or management position, indicate the subordinate position(s) through which objectives are accomplished.

The incumbent is responsible for the overall management of the GIS hardware, software and geo-referenced digital data maintained by the Department of Culture & Heritage. The incumbent also assists in making decisions in the review of land use permit applications and in answering requests for spatial data. To meet this goal, the incumbent will be expected to:

Provide standard GIS products and services to clients in the department, Government of Nunavut, land claim organizations, community organizations, federal government, private business, and the general public in order to assist in the management, monitoring, and protection of NU heritage resources:

- ◆ Produces geo-referenced maps in digital and hard copy format following standard procedures;
- ◆ Integrates and validates the quality of geo-referenced data from a variety of sources;
- ◆ Plans, schedules and conducts all phases of projects;
- ◆ Maintains the Division's geo-referenced digital databases according to operational requirements; and
- ◆ Screens land use permit applications for departmental review and prepares custom maps for reviews as required.
- ◆ Develops products (maps, documents, methods, spatial data, software customizations) that may require the combination of GIS, remote sensing, and other data sets, advanced analysis and modelling techniques, independent judgment, or research into methods or algorithms;
- ◆ Plans, schedules and conducts all phases of projects;
- ◆ Responds to all archaeological data requests and manages requests involving the use of archaeological site information;
- ◆ Develops new or improved approaches and solutions to GIS problems in order to enable the Division to provide products to meet legal requirements of heritage protection;
- ◆ Prepares reports and technical presentations; and
- ◆ Provides recommendations and advice on data management strategies.
- ◆ Creates, controls, and ensures the quality of spatial data through appropriate management;
- ◆ Initiates and implements procedures to speed up and make more efficient data organization and access;
- ◆ Ensures data quality/assurance; and
- ◆ Performs technical review of geographic data to determine accuracy and usability.
- ◆ Maintains viability and security of GIS hardware and software:
- ◆ Ensures that software and data sharing agreements are current and implemented;
- ◆ Maintains map plotting and related hardware;
- ◆ Initiates and implements data security measures as required; and
- ◆ Troubleshoots minor IT issues related to GIS function.
- ◆ Provides guidance to other Division staff or casual GIS staff:
- ◆ Assists with project planning and scheduling where necessary; and
- ◆ Provides training, feedback and advice on GIS project related tasks and issues.

5. KNOWLEDGE, SKILLS AND ABILITIES

Describe the level of knowledge, experience and abilities that are required for satisfactory job performance.

Knowledge identifies the acquired information or concepts that relate to a specific discipline. *Skills* describe acquired measurable behaviors and may cover manual aspects required to do a job. *Abilities* describe natural talents or developed proficiencies required to do the job.

These requirements are in reference to the *job*, not the incumbent performing the job.

Contextual knowledge:

- ◆ Knowledge of the theory, principal, practices, methods of mapping human cultural landscapes, and be able to work with 3D and temporal data
- ◆ Knowledge of Esri's ArcGIS 10.x and ArcGIS Pro 2.x suite of products, tools (ie. Model Builder), applications, and extensions
- ◆ Knowledge of specialized software such as ArcPy and Structured Query Language (SQL)
- ◆ Knowledge of conceptualization, design, development and populate Relational Database Management Systems data models
- ◆ Object-oriented Database Management Systems data models
- ◆ Windows Operating Systems
- ◆ Microsoft Office Production Suite of software; specifically Access and Excel applications
- ◆ Programming in Microsoft Visual Basic for Applications (VBA)
- ◆ Familiarity with heritage resource (Archaeological and Toponymic) terminology
- ◆ Knowledge of the National Topographic Database (NTDB)
- ◆ Knowledge of large-format plotters
- ◆ Knowledge of northern cultures, politics and environments

Skills and Abilities:

- ◆ Ability to use geospatial portals to discover, access, and retrieve spatial data
- ◆ Ability to manipulate spatial data using geoprocessing techniques
- ◆ Ability to communicate complex technical concepts and techniques to a non-technical audience
- ◆ Effective verbal and written communication skills,
- ◆ Teamworking skills and the ability to work independently
- ◆ Attention to detail
- ◆ Presentation and project management skills
- ◆ Ability to coordinate multiple tasks efficiently
- ◆ Analytic, cognitive and creative problem-solving skills
- ◆ The ability to deal with complex data,
- ◆ Strong cartographic abilities

Qualification requirements:

- ◆ Typically, the knowledge, skills and abilities would be obtained through completion of a Diploma in Geographic Information Systems or related field with a minimum of 1 year related experience.
- ◆ An acceptable combination of education and related work experience may be considered.

The ability to speak two or more of the official languages of Nunavut is an asset

6. WORKING CONDITIONS

List the unavoidable, externally imposed conditions under which the work must be performed and which create hardship for the incumbent. Express frequency, duration and intensity of each occurrence in measurable time (e.g. every day, two or three times a week, 5 hours a day).

Physical Demands

Indicate the nature of physical demands and the frequency and duration of occurrences leading to physical fatigue or physical stress.

- ◆ Occasional lifting and moving of computers and related equipment
- ◆ Prolonged, daily use of video monitors in a sitting position
- ◆ Daily use of computers and other office equipment
- ◆ Much time is spent in a sitting position with frequent opportunity to move about
- ◆ Extended periods of time standing/leaning over a digitizing table while interacting with a video monitor and keyboard may lead to eye strain, back discomfort and keyboard/mouse or digitizing-induced tensions
- ◆ Use of equipment requiring a high degree of dexterity, and sustained periods of time maintaining concentrated attention to detail
- ◆ Occasional travel requires time away from home, uncomfortable conditions in field situations, and exposure to cold and other forms of extreme weather

Environmental Conditions

Indicate the nature of adverse environmental conditions to which the jobholder is exposed, and the frequency and duration of exposures. Include conditions that disrupt regular work schedules and travel requirements, and conditions that increase the risk of accident, ill health, or physical discomfort.

- ◆ Most work takes place in a comfortable office setting
- ◆ Occasional travel to communities may present different working and living conditions
- ◆ Fieldwork in remote situations presents a variety of health risks, and presents the incumbent with extreme environmental conditions, requiring mental and physical alertness at all times
- ◆ In field situations the incumbent may be without emergency medical assistance for extended periods of time

Sensory Demands

Indicate the nature of demands on the jobholder's senses. These demands can be in the form of making judgements to discern something through touch, smell, sight, and/or hearing. It may include concentrated levels of attention to details though one or more of the incumbents' senses.

- ◆ Map creation requires the ability to differentiate accurately between colours and create compositions of data that differentiate the data clearly and in an aesthetically pleasing manner
- ◆ The ability to differentiate between different screen colours and symbols is necessary
- ◆ The position may entail long hours sitting at the computer, which could lead to strained eyes and muscles

Mental Demands

Indicate conditions within the job that may lead to mental or emotional fatigue that would increase the risk of such things as tension or anxiety.

The following situations contribute to stress or to emotional fatigue:

- ◆ The GIS Officer is subject to competing priorities and demands that can be stressful and time sensitive therefore, the incumbent will be under constant pressure to balance demands, expectations, or needs of management.
- ◆ The incumbent is subject to handle excess volumes of work that may require working overtime and/or during non-standard working hours such as weekends or holidays to minimize client disruption while completing scheduled tasks. This can lead to mental fatigue, tension, and irritability.
- ◆ The incumbent must be extremely perceptive to detail and is required to ensure their work is accurate. This attention to detail requires multiple cross-referencing, fact checking, and repetitive reviewing which may cause considerable stress based on the significant risks associated with poor judgement, advice, and the appropriate responses for best scenario outcomes regarding issues.
- ◆ The incumbent must coordinate a heavy workload and competing deadlines, and liaise with colleagues in person, over the telephone, and electronically. The incumbent may often experience frequent interruptions which are difficult to control and may result in frustration due to loss of concentration and having to redo or restart work.
- ◆ The incumbent must explain job requirements, disciplinary actions, and performance-related information and policies to staff, which may be mentally draining and requires a high degree of knowledge, confidence, tact, and diplomacy.

7. CERTIFICATION

<p>_____ Employee Signature</p> <p>_____ Printed Name</p> <p>_____ Date</p> <p>I certify that I have read and understand the responsibilities assigned to this position.</p>	<p>_____ Supervisor Title</p> <p>_____ Supervisor Signature</p> <p>_____ Date</p> <p>I certify that this job description is an accurate description of the responsibilities assigned to the position.</p>
<p>_____ Deputy Minister</p> <p>_____ Date</p> <p>I approve the delegation of the responsibilities outlined herein within the context of the attached organizational structure.</p>	

8. ORGANIZATION CHART

Please attach Organizational Chart indicating incumbent’s position, peer positions, subordinate positions (if any) and supervisor position.

“The above statements are intended to describe the general nature and level of work being performed by the incumbent of this job. They are not intended to be an exhaustive list of all responsibilities and activities required of this position”.