Public (when completed)

Common Government

# New

Ministry

Forestry and Parks

## Describe: Basic Job Details

### Position

Position ID

Position Name (30 characters)

Spatial Data Analyst

Requested Class

Job Focus

Operations/Program

Supervisory Level

00 - No Supervision

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

### Employee

Employee Name (or Vacant)

### Organizational Structure

Division, Branch/Unit

Forestry Division, Forest Stewardship and Trade

☑ Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Senior Resource Analyst

Supervisor's Current Class

## Design: Identify Job Duties and Value

### Job Purpose and Organizational Context

Why the job exists:

The Spatial Data Analyst is responsible for developing analytical products and delivering spatial data management services in support of Forest Stewardship and Trade Branch (FSTB) and Forestry Division (FD) Digital Transformation and Modernization Initiatives. The position is a diverse, complex position that requires a high level of creativity and well developed problem solving skills. While the overall goal of an initiative or project is often known, the “how to deliver on it” is largely determined by the incumbent's expertise and judgment. The incumbent is expected to work with a large degree of independence in meeting objectives. The incumbent requires the application and utilization of content knowledge in a wide variety of situations, which necessitates substantial knowledge in several specialized fields. The incumbent requires the use of a suite of software tools at an advanced/expert level, including Geographic Information System (GIS) and the application of that technology to forest management practice, regulatory oversight and resource decision-making.

Working within a team environment, and often with only broadly defined project objectives, the Spatial Data Analyst develops solutions to multifaceted spatial problems related to natural resource and land management. These solutions often result in the development of new and complex databases and models. The databases and models must be provided to clients in the specified format and meet client requirements for accuracy, currency and quality. The databases and models created contribute to the Department's understanding of the province's natural resource assets and the impacts of various activities on those natural resources. They also allow the Spatial Data Analyst to respond to specific requests for information and analysis for use by the Department Executive or by other staff in the Department.

## Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

1. Provide critical support to determination of geospatial data architecture across forestry regulatory system modernization.
    - Assist in the development of geospatial tools for data collection, QA/QC, compilation, management, and publication, with a goal of process automation and efficiency.

2. Spatial Data Directive (SDD) audits.
    - Assist in the audit process of SDD data submissions ensuring service level agreements are met.
    - Assist in data management processes to compile and append master databases.
    - Provide input on the development, maintenance, and implementation of geomatics audit scripts for spatial data submissions.

3. Client Service Delivery - Delivering services to (FD) clients. This includes the following services:
    - Assist with the performance of complex spatial analysis, geo-processing and generating custom maps and reports.
    - Compilation of data in support of data sharing agreements, requests or contracts.
    - Integrate various datasets into normalized data models that can be used for forest management, regional and sub-regional planning.
    - Provide technical support and subject matter expertise on resource information, geomatics, and GIS.

4. Standards - Work with the Sr. Resource Analyst and geomatics community of practice in developing standards for data, processes and applications in accordance with industry best practices. This includes:
    - Developing and maintaining standards and specifications for the development and implementation of GIS data and technologies.
    - Developing and maintaining metadata standards for data and tools.

## Problem Solving

Typical problems solved:

Complete and accurate spatial data of various types is critical for the sustainability of Alberta's forest resource. This incumbent will play a key role in defining future geospatial data architecture, foundational to the development and review of forest management plan decision making. The incumbent works with geomatics staff and clients to define spatial data models, design, create and implement strategic provincial-level spatial databases that are vital to supporting the Department's long-term goals and commitments.

As technology advances, both the types of spatial data and the software options to managed these data change. The incumbent needs to keep abreast of developments that may have implications for how the Department deliver on their spatial data work. The incumbent must provide advice to Department management and professional staff, regarding identification and evaluation of information technology alternatives related to geomatics initiatives. The incumbent must research new techniques, applications, software and models that will fulfill specific needs regarding natural resource management.

The incumbent must find solutions for best ways to ensure easy access to geospatial data within the Department. This must be done in the context of changes in software, evolving computing technology (for example increased use of mobile devices), and user needs and expectations.

Types of guidance available for problem solving:

There is little to no guidance for problem solving beyond that which the incumbent is tasked with developing or is responsible for maintaining. The combination of understanding of standard practices, potential emerging technologies, and considerable experience are generally the foundation upon which problem solving is based.

The incumbent works closely with the Senior Resource Analyst, but ultimately is expected to show a great deal of independence when deciding the course of action for spatial data management solutions. Where required, consultation with RIBS' subject matter experts may be needed to better understand the data need so that the incumbent can decide on an appropriate course of action.

Direct or indirect impacts of decisions:

Data quality and availability is key to informed forest management, regional and sub-regional plan decision making. Data architecture designs by the incumbent are some of the most foundational to understanding our forest resource and the forest sector

activities that are occurring. Processes implemented by the incumbent make these key robust data sets available across the Department to ensure efficient regulatory oversight and decision making.

## Key Relationships

Major stakeholders and purpose of interactions:

Works with technical and professional staff and managers in FSTB as well as other Branches within the Department to identify user needs for database and application development. Works with industry counterparts to create standards for data sharing. Works with spatial data professionals in Alberta Environment and Parks to create standardized data models and applications, enabling cross-Ministry sharing of data.

## Required Education, Experience and Technical Competencies

| Education Level | Focus/Major | 2nd Major/Minor if applicable | Designation |
|---|---|---|---|
| Applied Degree | Other | | Other |

If other, specify:

GIS Technology (or equivalent)

Job-specific experience, technical competencies, certification and/or training:

- In-depth knowledge of GIS processes and practices, and how they are applied to sustainable land and resource management.
- Advanced skills in standard GIS software (ArcGIS), including the knowledge of and ability to use various programming languages to create custom GIS applications (Python) as well as FME Workspace and FME Flow Automations creation and maintenance.
- Ability to combine knowledge of Department business processes and knowledge of database design to conceptualize, define, and implement robust database models.
- Solid research and critical thinking skills as well as logical and good analytical judgment are required. An ability to examine findings and identify relevance to current work is necessary.
- Good communication skills are required to provide and obtain clarification, question inconsistencies in technical data in a professional manner and interpret recommendations and provide advice to non-technical staff and management. This includes presentation skills for internal and external audiences - both technical and non-technical.
- Ability to work in a team environment and to contribute to the success of the team by dealing with multiple ongoing projects, shifting priorities and tight timelines.
- Technical diploma/degree/applied degree/masters with a Geomatics, GIS, or related natural resources specialization. with a minimum of 4 years related work experience is required. OR Two-year technical diploma in Geomatics, GIS, or related natural resources, plus six years related experience or equivalent.
- Proven experience in computer programming, complex database design, and operation of standard MS Office, database and GIS software is required.
- Experience in application development (using .NET framework or others) would be an asset.

## Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

| Competency | Level A B C D E | Level Definition | Examples of how this level best represents the job |
|---|---|---|---|
| Systems Thinking | ○ ◉ ○ ○ ○ | Considers inter-relationships and emerging trends to attain goals:<br>• Seeks insight on implications of different options<br>• Analyzes long-term outcomes, focus on goals and values<br>• Identifies unintended | Spatial data managed by the incumbent originates and is ultimately used by a diverse group of individuals ranging from technical, professional, scientific and management.<br>The incumbent needs to understand in detail the origins of the data so |

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| | | consequences | they can find solutions for most effective and practical submission standards.<br>The incumbent also needs to understand how the data ultimately will be used to ensure data is robust enough to satisfy this desired utility. |
| Creative Problem Solving | ○ ◉ ○ ○ ○ | Focuses on continuous improvement and increasing breadth of insight:<br>• Asks questions to understand a problem<br>• Looks for new ways to improve results and activities<br>• Explores different work methods and what made projects successful; shares learning<br>• Collects breadth of data and perspectives to make choices | Development of scripts/ processes to improve our efficiency requires a aptitude for problem solving.<br>The incumbent needs to understand the data and tools that are used to manage the data to meaningfully develop and implement process improvements.<br>The incumbent has core programs and data that they are directly responsible, but is also expected to help solve spatial data related challenges for others across the Department. |
| Drive for Results | ○ ○ ◉ ○ ○ | Takes and delegates responsibility for outcomes:<br>• Uses variety of resources to monitor own performance standards<br>• Acknowledges even indirect responsibility<br>• Commits to what is good for Albertans even if not immediately accepted<br>• Reaches goals consistent with APS direction | The incumbent needs to strive for effective completion of routine tasks to ensure data is processed and made available to users in a timely manner.<br>Project work such as tool development and other process improvements need to be carefully scheduled along with other priority initiatives. |
| Build Collaborative Environments | ○ ◉ ○ ○ ○ | Facilitates open communication and leverages team skill:<br>• Leverages skills and knowledge of others<br>• Genuinely values and learns from others<br>• Facilitates open and respectful conflict resolution<br>• Recognizes and | The incumbent must understand how the spatial data they are developing models for are used to appropriate decisions on architecture are made. Working closely with other technical and professional staff in the Department is key to |

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|---|---|---|---|
| | | appreciates others | ensuring best outcomes. |

## Benchmarks

List 1-2 potential comparable Government of Alberta: Benchmark

Business Analyst, Information Technology System Management (024PS69 - PS4) - These positions similarly are the only positions responsible for the scope of work and requires an understanding and application of significant content knowledge usually acquired through specialized on-the-job training and extensive experience. Both positions are expected to work with a broad range of different business units in varying Ministries and external stakeholders each having different and unique business processes. These positions both work with these representatives in determining how best to address their requirements to ensure that the system solutions will meet their needs.

Business Analyst, Mineral Development (023PS70 - PS3) - Both positions assist in identifying opportunities for re-engineering, streamlining or enhancement of business processes. Differing and variable situations influence which technical principle to use.

## Assign

The signatures below indicate that all parties have read and agree that the job description accurately reflects the work assigned and required in the organization.

| | | |
|---|---|---|
| Employee Name | Date yyyy-mm-dd | Employee Signature |
| Supervisor / Manager Name | Date yyyy-mm-dd | Supervisor / Manager Signature |
| Director / Executive Director Name | Date yyyy-mm-dd | Director / Executive Director Signature |
| ADM Name | Date yyyy-mm-dd | ADM Signature |
| DM Name | Date yyyy-mm-dd | DM Signature |