

Update

Ministry
Environment and Protected Areas

Describe: Basic Job Details

Position

Position ID: ~~100000000~~ V
Position Name (): Information Services Manager

Current Class
Manager (Zone 2)

Job Focus: Operations/Program
Supervisory Level: 01 - Yes Supervisory

Agency (ministry) code: ~~0000~~ B
Cost Centre: ~~00000~~ B
Program Code: (enter if required): ~~00000~~ B

Employee

Employee Name (or Vacant): Vacant (~~NO ORGANIZATION~~)

Organizational Structure

Division, Branch/Unit: RSD, Enviro Knowledge and Prediction Branch Current organizational chart attached?

Supervisor's Position ID: ~~00000~~ 5
Supervisor's Position Name (30 characters): Director, EKDS
Supervisor's Current Class: Senior Manager (Zone 2)

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd
2024-07-01

Responsibilities Added:
Expanded to include more information management systems and content management services.

Responsibilities Removed:
Reduced the emphasis upon data collection and data assets management.

Job Purpose and Organizational Context

Why the job exists:
The Information Services Manager, reporting to the Director of Environmental Knowledge and Data Stewardship (EKDS), holds a key leadership position within Alberta Environment and Protected Areas (EPA). This is the only role within government that oversees content management within environmental information management systems.

To do so, this role leads and mentors teams of technical specialists responsible for environmental data stewardship, ensuring that highly regulated and critical information is effectively managed, maintained at high standards of quality, readily accessible, and utilized to inform decision-making and environmental protection practices. These teams tend to commit significant resources to distributing information and improving information management and technology systems.

As a result, the Information Services Manager focuses on effectively managing and leveraging environmental information within existing systems such as the Enterprise Data Warehouse and emerging systems such as the modern Data Management Platform, developed to support the transformative Digital Regulatory Assurance System (DRAS), regulatory requirements, and organizational commitments such as those related to water availability management. In fact, development and enhancement of these systems often requires the Manager to make key information management decisions before any change may occur.

Key responsibilities also include ensuring data governance and quality, facilitating information integration and interoperability, developing new information systems while decommissioning older ones, promoting data accessibility, and supporting regulatory compliance. Additionally, the manager engages partners and stakeholders, fosters innovation in information management and technology, builds capacity through training, and provides strategic leadership to support sustainable environmental management practices.

The Information Services Manager collaborates closely with the EKDS Data Services Manager to ensure seamless integration and quality assurance of environmental data assets across systems, and with the EKDS Communications Manager to promote data accessibility, transparency, effective communication and change to stakeholders and the public. They also regularly interact with managers and experts within the ministry and other government departments and agencies to help manage environmental data and information throughout its lifecycle. The incumbent ensures that data stewardship and management activities align with the government's strategic direction and comply with relevant information management and technology regulations, policies, and standards. To do so, the Manager regularly collaborates with information management and technology resources within Alberta Technology and Innovation.

A critical aspect of the Information Services Manager's responsibilities is building and maintaining effective, open, and collaborative relationships with a diverse range of stakeholders. This includes providing products and services to federal and municipal governments, commercial businesses, industry, Indigenous and community organizations, environmental associations, scientists and researchers, landowners, and citizens. By fostering these relationships and ensuring the high quality and accessibility of environmental data, the Information Services Manager supports the achievement of the ministry's information and environmental goals.

Responsibilities

1. Lead and Mentor Teams:

- Lead multiple teams of environmental data specialists responsible for stewardship and distribution of environmental information.
- Ensure teams effectively manage stakeholder communications, data collection, validation, loading, classification, maintenance, integration, protection, and dissemination.
- Develop, mentor, and empower staff to deliver results aligned with branch, division, and departmental strategic directions.
- Ensure compliance with legislative and regulatory requirements pertaining to environmental assets.
- Drive continuous improvements in data quality, governance, reliability, accessibility, and trustworthiness, promoting research and innovation through integration, visualization, optimization, and machine learning.
- Cultivate a data-literate culture that leverages reliable quantitative and qualitative information for decision-making.
- Support responsible digital transformation initiatives across people, processes, tools, and assets for executive decision-making systems.

2. Program Development and Governance:

- Lead the development of a robust data stewardship program emphasizing strong information governance and streamlined business processes.
- Develop, implement, and enhance central environmental data platforms and information service hubs.
- Provide strategic advice and ensure compliance with Alberta Government's information management policies, vision, strategies, standards, and guidelines.
- Establish environmental data standards, strategies, and performance measures within a comprehensive stewardship program.
- Foster a common language, leverage management and analysis tools, and ensure effective stewardship training.
- Lead the production of value-added products and knowledge-related services, liaising with department data custodians, controllers, and external agencies as data trustees in partnership with stakeholders and citizens.
- Align with government governance and technology standards, policies, and frameworks to enhance data accessibility, quality, and value.
- Influence information management policies and strategies under Alberta Technology and Innovation (TI) leadership.
- Develop, communicate, and coordinate a department-wide environmental data knowledge and stewardship strategy in collaboration with the EKDS Communications Manager.

3. Enterprise-wide Data and Information Governance:

- Contribute to the implementation of enterprise-wide governance standards and practices.
- Ensure EPA maintains credibility as a trusted source of environmental data and information and manages it as a strategic asset.
- Build awareness, commitment, and understanding of data standards and practices among government staff and stakeholders.
- Collaborate with government staff and stakeholders to implement procedures and enhance data quality, reliability, integrity, accessibility, and trust.

4. Technology and Stewardship Support:

- Ensure stewardship activities and information needs are supported by current and emerging technologies.
- Collaborate with TI and contracted IT service providers to maintain critical systems and protect information.
- Act as a liaison between business units, external data providers, TI, and IT service providers.
- Contribute to TI initiatives aimed at advancing data and information management across sectors.
- Provide necessary tools and support to data providers to meet regulatory requirements.
- Serve on EPA committees and lead significant business initiatives dependent on information systems.

5. Stakeholder Engagement and Strategic Advice:

- Provide strategic advice and raise awareness of issues impacting consistent application of resources, tools, and processes.
- Communicate project updates and issues to ensure consistency across stakeholders.
- Identify and communicate risks, challenges, recommendations, and lessons learned.
- Encourage staff to provide expert advice to partners, stakeholders, citizens, and stewards.
- Support effective monitoring, reporting, and data stewardship systems.
- Engage in and promote departmental data and information stewardship activities.
- Address issues affecting interpretation and implementation of policies and practices.
- Assist in operational, financial planning, succession planning, performance evaluations, staff learning, and maintaining health and safety programs.

6. Building and Maintaining Stakeholder Relationships:

- Foster effective, open, and collaborative relationships with ministry staff, partners, provincial departments, federal and municipal governments, commercial businesses, industry, Indigenous and community organizations, environmental associations, and landowners.
- Ensure high quality and accessibility of environmental data to support the ministry's environmental and information-related goals.

Problem Solving

Typical problems solved:

An Information Services Manager faces several key challenges on a regular basis. Ensuring data quality and integrity is paramount, requiring robust verification, validation and QA/QC processes to maintain accurate and reliable data. Integrating data from various sources into a unified system is another significant task, which involves developing integration frameworks and using ETL (Extract, Transform, Load) tools to standardize and consolidate information.

Data accessibility and security are also critical concerns. The manager must make environmental data easily accessible to stakeholders, including ministry staff, partners, and the public, through user-friendly portals and open data initiatives. At the same time, protecting sensitive data from unauthorized access necessitates strong cyber-security measures, access controls, and regular security audits. Maintaining regulatory compliance is essential, which involves staying updated on legislative changes and ensuring all data management practices meet relevant standards.

Effective stakeholder coordination is crucial for the role. This includes managing relationships with government agencies, businesses, Indigenous communities, and environmental organizations through regular communication and clear data-sharing protocols. Technological advancements pose another challenge, requiring continuous learning and system upgrades to keep pace with evolving technologies and to foster a culture of innovation and adaptability within the organization.

Additionally, the manager must establish and maintain data governance frameworks to manage the life-cycle of environmental data, ensuring efficient resource allocation and promoting a data-driven culture. During environmental emergencies, providing timely and accurate data is critical, which involves setting up rapid data collection and dissemination protocols. Maximizing the utility of environmental data through advanced analytics and fostering partnerships for research and policy development are also key responsibilities. These challenges demand a combination of technical expertise, strategic thinking, and strong leadership and communication skills.

Types of guidance available for problem solving:

The Information Services Manager may leverage organizational supports, external resources, and technological tools to navigate the complexities of environmental data management, ensuring that the data is reliable, accessible, and effectively utilized to achieve the ministry's strategic goals.

Organizational support plays a critical role, including access to detailed policy and procedural documents that ensure adherence to data governance and regulatory standards. Guidance from senior leaders and mentors, such as the EKDS Director, provides strategic insights and decision-making support. Additionally, cross-functional collaboration with key personnel, such as the EKDS Data Services Manager and Communications Manager, fosters a collaborative environment conducive to effective problem-solving. Opportunities for continuous learning through workshops and certification programs also help the manager stay current with industry trends and advancements.

Governmental and external resources further bolster the manager's capabilities. Government-wide policies, standards and directives advanced by TI coupled with industry standards and best practices from organizations like the International Organization for Standardization (ISO) and the Data Management Association (DAMA) offer frameworks for data governance and quality management. Regulatory bodies provide essential updates on environmental laws and data protection regulations, ensuring compliance. Participation in professional networks and associations enables knowledge sharing and peer support, while collaborations with academic and research institutions provide access to cutting-edge research and innovative solutions.

Technological tools are indispensable for managing environmental data effectively. Advanced data management and integration platforms facilitate efficient data processing and dissemination, ensuring high-quality and accessible data. Optimization tools, including data integration, visualization and machine learning, allow the manager to extract valuable insights and support data-driven decision-making. Robust cyber-security solutions protect sensitive data from breaches, ensuring data integrity and compliance with privacy regulations. Real-time monitoring and reporting software aids in tracking environmental data, supporting emergency responses, and providing timely information to

stakeholders.

Direct or indirect impacts of decisions:

Decisions made by the Information Services Manager significantly impact the ministry by ensuring the integrity, accessibility, and effective utilization of environmental information management systems. These decisions influence the quality and reliability of data that supports critical analysis, decision-making, and reporting, directly affecting the ministry's ability to respond to environmental challenges and emergencies. Effective data stewardship and governance ensure compliance with regulatory requirements, enhance transparency and trust among stakeholders, and facilitate informed policy development and resource management. Ultimately, the manager's decisions drive the ministry's strategic objectives, promoting environmental protection and sustainable development through data-driven insights and actions.

Key Relationships

Major stakeholders and purpose of interactions:

The Information Services Manager within EPA maintains key relationships with a diverse range of major stakeholders, including ministry staff, other provincial departments, federal and municipal governments, commercial businesses, industry partners, Indigenous and community organizations, environmental associations, and landowners. The purpose of these interactions is to ensure effective data governance, facilitate the seamless exchange and integration of environmental data, and support collaborative efforts in environmental monitoring and management. These relationships help align data management practices with regulatory requirements, promote data accessibility and transparency, and foster a culture of data-driven decision-making. By building and maintaining these relationships, the manager ensures that stakeholders are well-informed, engaged, and able to leverage high-quality environmental data for strategic planning and operational effectiveness.

Required Education, Experience and Technical Competencies

Education Level

Bachelor's Degree (4 year)

Focus/Major

Science

2nd Major/Minor if applicable

Other

Designation

If other, specify:

Environmental or computer science degree plus data management certification or experience

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

To effectively perform the role of Information Services Manager within EPA, candidates need extensive experience in managing content within information systems, ensuring data quality, accessibility and usability. A background in developing and enhancing information systems is essential. Additionally, proven experience in leading and mentoring teams of data specialists and managing cross-functional teams is essential. Successful candidates should also have a strong track record of overseeing complex projects, including the development and implementation of data management systems and platforms.

Technical competencies are a vital aspect of this role. Proficiency in using geographic information systems (GIS), data optimization and visualization tools such as SQL, R, or Python is beneficial. Knowledge of database management systems like SQL Server and Oracle, along with experience in ETL processes, is also important. An understanding of cybersecurity principles and practices is essential to protect data integrity and privacy. Skills in integrating data from multiple sources to ensure interoperability and familiarity with emerging technologies and digital tools that support data management and analysis are equally important.

Certifications and training enhance a candidate's suitability for the role. Certifications such as Certified Data Management Professional (CDMP) from the Data Management Association (DAMA) validate expertise in data management principles and practices. Project Management Professional (PMP) certification demonstrates proficiency in managing projects according to industry standards. Training or certification in data science, analytics, or related fields, such as Certified Analytics Professional (CAP), is beneficial. Additionally, an educational background or certification in environmental science, engineering, or a related field provides a deeper understanding of the context and importance of environmental data.

Additional training in leadership, communication, and stakeholder management is crucial for effectively

leading teams and engaging with diverse stakeholders. Training on relevant environmental laws, regulations, and data protection standards ensures compliance with regulatory requirements. A commitment to continuous learning through workshops, seminars, and courses helps candidates stay current with industry trends and technological advancements. By combining these experiences, competencies, certifications, and training, the Information Services Manager will be well-equipped to handle the complex responsibilities of the role and drive the organization's data management and environmental stewardship efforts.

Behavioral Competencies

Competency	Level					Level Definition	Examples of how this level best represents the job
	A	B	C	D	E		
Develop Networks	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<p>Leverages relationships to build input and perspective:</p> <ul style="list-style-type: none"> Looks broadly to engage stakeholders Open to perspectives towards long-term goals Actively seeks input into change initiatives Maintains stakeholder relationships 	Proactively building networks, connecting and building trust in relationships with different stakeholders.
Agility	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<p>Identifies and manages required change and the associated risks:</p> <ul style="list-style-type: none"> Identifies alternative approaches and supports others to do the same Proactively explains impact of changes Anticipates and mitigates emotions of others Anticipates obstacles and stays focused on goals Makes decisions and takes action in uncertain situations and creates a backup plan 	Ability to anticipate, assess and readily adapt to changing priorities, manage resilience in times of uncertainty and effectively work in a changing environment.
Drive for Results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<p>Works to remove barriers to outcomes, sticking to principles:</p> <ul style="list-style-type: none"> Forecasts and proactively addresses project challenges Removes barriers to collaboration and achievement of outcomes Upholds principles and confronts problems directly Considers complex factors and aligns 	Knowing what outcomes are important and maximizing resources to achieve results that are aligned with the goals of the organization, while maintaining accountability to internal and external stakeholders.

Systems Thinking



solutions with broader organization mission

Takes a long-term view towards organization's objectives and how to achieve them:

- Takes holistic long-term view of challenges and opportunities
- Anticipates outcomes and potential impacts, seeks stakeholder perspectives
- Works towards actions and plans aligned with APS values
- Works with others to identify areas for collaboration

Ability to assess and improve various aspects of systems that are related to people, processes, technology and assets.