Update

Ministry

Environment and Protected Areas

Describe: Basic Job Details

Position

Position ID

Position Name

Water Supply Data Supervisor

Current Class

Technologies 6

Job Focus

Corporate Services

Supervisory Level

01 - Yes Supervisory

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Vacant

Organizational Structure

Division, Branch/Unit

RSD, AWS/EKDS

Supervisor's Position ID

Supervisor's Position Name

Data Standard/Services Manager

Supervisor's Current Class

Manager (Zone 2)

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd

2024-10-30

Responsibilities Added:

NA

Responsibilities Removed:

NA

Job Purpose and Organizational Context

Why the job exists:

Reporting to the Data Standards and Services Manager, this position is responsible for leading and coordinating the acquisition, operation, maintenance, and research and development of the near real-time data collection network that acquires water quantity data from stream gauge and weather monitoring stations in Alberta and adjacent jurisdictions.

This position is responsible for the operational status of data acquisition systems during mission critical events, such as flooding and ice jams in Alberta rivers and lakes. Their work also contributes to important initiatives such as dam operations, drought monitoring, water allocation, and water management decisions throughout the province. This includes on-call shift work to provide expertise 24-hours per day during river flood, ice break-up, and heavy rainfall events.

The Water Supply Data Supervisor is a proactive leader, who represents the Water Supply team and the ministry regarding network planning, technical working groups, committees, and community of practices which foster relationships with internal and external stakeholders as well as partners such as the Water Survey of Canada, Meteorological Service of Canada, and private sector data users, among others, while keeping an eye on any technological advances and the emergences o best practices in data acquisition, and recommends such changes to the manager for consideration.

Responsibilities

· Supervise the operational status of the environmental data acquisition system (OpenDCS) and maintain databases with water data management programs (WISKI), including evaluating new technology and software improvements, evaluating alternatives, and improving efficiency.
· Supervise, manage, train, and coordinate technical staff in data stewardship collection activities: diagnosis, triage, and correct data acquisition interruptions, communicate with field staff to identify problems with station hardware, maintain and extend rating curves, apply station calibration information to datasets, disseminate data to stakeholders and partners, and work with IT Support teams to ensure all issues affecting data acquisition systems are resolved.
· Prepare and maintain decoding algorithm scripts for all data acquisition collection platforms.
· Identifying problems, deficiencies, or areas that require enhancements to maintain the efficiency, accuracy, and integrity of the data acquisition system. Assess business functionality of existing systems and make recommendations regarding their suitability for enhancement to meet new and emergent needs. This will include hardware and software review, testing, and evaluating of new technology and alternatives.
· Identify and supervise the consolidation of datasets (near real-time or historical) that currently exists within and outside the Government of Alberta. This includes the migration of datasets from outside sources (Water Survey of Canada, Meteorological Service of Canada, BCHydro, TransAlta Utilities, and various US agencies) into EPA's data systems to meet data user and public needs.
· Fulfill data requirements of internal and external sources, such as Environment Canada and Climate Change, EPA, educational institutions, and environmental consultants, among others.
· Act as a steward of hydrological and meteorological information, including providing technical knowledge about the content and meaning of data and suitability for use. Fulfill data requests from internal and external sources, such as Environment and Climate Change Canada, EPA, educational institutes, and environmental consultants, among others. Provide training to external data users on data request extraction and reporting.
· Lead and participate on various project teams such as the Hydrometic Working Group and Meteorological Working Group in regards to possible changes to monitoring and reporting requirements, quality assurance and quality control programs, technology, innovations, and system enhancements. Work jointly with federal agencies to develop and maintain standardized formats and protocols to simplify data transmission and processing. Maintain partnerships with external agencies (e.g., Water Survey of Canada, NOAA, TransAlta Utilities, BCHydro) to share hydrological and meteorological data and technical expertise regarding telemetry, data collection, and data management software.

Problem Solving

Typical problems solved:

· This position maintains the continuous acquisition of data during periods of critical importance, such as ice breakup and flood seasons, as well as 24-hour support during high water flood events, to ensure that the necessary data are available to ensure the safety of Albertans and property.
· Identify, prioritize, and rectify data acquisition problems and determine if they are data, telemetry, logger, database, or software related, and communicate with appropriate groups to ensure resolution.
· This position provides leadership in planning and guides the direction of the maintenance, in upgrading, and enhancement of the near real-time and historical data collection system for the hydrological and meteorological related data to Alberta. It also identifies problems, deficiencies, or areas that need enhancement and develops possible solutions or strategies for implementation to achieve goals and objectives.

Types of guidance available for problem solving:

· Coordinate with federal government in meeting standards and protocol, and coordinate with other stakeholders to ensure their data meets the standards set out by this department.
· Provide coaching, training, guidance, and leadership to technologists within the Water Supply Data Acquisition and Management team and external clients. This will require considerable experience with telemetry transmission methods, applicable hardware and software, troubleshooting, and data analysis, as well as teaching and coaching skills.
· Write and review Standard Operating Procedures and training documentation to be used in providing technical training for various tasks the teams is responsible to complete including new station creation, rating curve updates, data validation, and troubleshooting, employing written communication, mentorship, and coaching skills.
· Apply communication and mentorship skills, as well as knowledge of EPA standards, to develop and maintain a QA/QC program to review and validate incoming hydrological and meteorological data.
· Employ communication and public speaking skills to deliver presentation material outlining the data acquisition system and data available for publication or use to internal and external stakeholders, EPA executives, hydrological and meteorological working groups, and communities of practice.

Direct or indirect impacts of decisions:

· This position's contributions have a large and direct impact to many users of the ministry's near real-time data acquisition system, including users providing mission critical and mission important business functions, such as flood forecasting, stakeholders including Alberta Agriculture and Irrigation, Alberta Forestry and Parks, TransAlta Utilities, the cities of Edmonton and Calgary, Saskatchewan and Manitoba Environment ministries, hydro power operations, and federal environment and agriculture agencies.
· The EPA's near real-time data acquisition systems are recognized by many agencies with external visitors coming to Edmonton to obtain information on the methods of data collection, decoding, and reporting. The incumbent will be responsible for facilitating these interactions.

Key Relationships

Major stakeholders and purpose of interactions:

· Flood Forecasting Centre: data problems, corrections, other data issues
· Monitoring field staff: logger or telemetry issues, data problems that cannot be resolved remotely
· Water Survey of Canada: logger or telemetry issues, data problems that cannot be resolved remotely
· Meteorological Service of Canada: logger or telemetry issues, data problems that cannot be resolved remotely
· Technology and Innovation: address potential system or database problems
· Data end users (e.g., forecasters, hydrologists, limnologists, hydrogeologists, environmental scientists, researchers, general public, among others): addressing data needs and fielding data related problems

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Bachelor's Degree (4 year)	Science		

If other, specify:

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

· Requires a thorough understanding of natural hydrological and meteorological concepts and processes present in Alberta.
· Requires a good knowledge of flood, drought, and ice jams potential in Alberta.
· Requires an extensive knowledge of Alberta's water resources and methodologies in the collection of hydrological, meteorological, groundwater, and water quality near real-time data, along with extensive knowledge of data logger configuration setup and use of electronic field equipment.
· Requires constant diligence to remain updated on current data acquisition, analysis, and storage technology to maintain the efficiency of the data acquisition system.
· Requires in-depth knowledge of hydrometric data computation techniques and quality assurance/control standards used by federal and provincial agencies.
· Requires extensive knowledge of characteristics of various data logger telemetry including Sutron, Campbell, Vadas, and Ammaser.
· Requires extensive knowledge of modern communication and modern data decoding techniques.
· Requires extensive knowledge of GOES satellite data communication.
· Requires in-depth knowledge of the OpenDCS software and scripting languages applied by EPA to capture and decode

raw hydrological and meteorological data.
· Requires familiarity with UNIX/LINUX operating systems.
· Requires excellent communication skills to work with staff, consultants and stakeholders in achieving common goals.

Behavioral Competencies

Competency	Level A B C D E	Level Definition	Examples of how this level best represents the job
Creative Problem Solving	○ ○ ◉ ○ ○	Engages the community and resources at hand to address issues: • Engages perspective to seek root causes • Finds ways to improve complex systems • Employs resources from other areas to solve problems • Engages others and encourages debate and idea generation to solve problems while addressing risks	Resolves simple and complex challenges surrounding the acquisition, validation, and loading of water supply data from external parties into government systems that are continually evolving.
Systems Thinking	○ ○ ◉ ○ ○	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	This position requires the integration of multiple systems. Understanding how these systems interact and how they relate to the ministry as a business and its responsibilities is an important requirement for this position.
Agility	○ ○ ◉ ○ ○	Identifies and manages required change and the associated risks: • 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	Changes to business, technology and environments are constant. It is important the incumbent within this position be able to anticipate, assess and adapt to changing priorities, and make effective decisions

		takes action in uncertain situations and creates a backup plan	
Develop Networks	○ ○ ◉ ○ ○	Leverages relationships to build input and perspective: • Looks broadly to engage stakeholders • Open to perspectives towards long-term goals • Actively seeks input into change initiatives • Maintains stakeholder relationships	This position requires a lot of interaction with internal and external stakeholders. Developing networks to work collaboratively and solve complex problems is vital in meeting the needs of the organization.