

TITLE: WEATHER AND CLIMATE SPECIALIST

CLASSIFICATION: STO 24

MINISTRY: TRANSPORTATION AND INFRASTRUCTURE

WORK UNIT: AVALANCHE AND WEATHER PROGRAMS

SUPERVISOR TITLE: SENIOR MANAGER, AVALANCHE
AND WEATHER PROGRAMS

SUPERVISOR POSITION #: 51587

CONTEXT

A primary function of the ministry is to ensure the safe and efficient movement of goods, services and people. The ministry avalanche programs are in place to support these objectives, ensuring the safety of all highway users while minimizing the frequency and duration of avalanche related road closures.

The Avalanche and Weather Program establishes operational policies for Ministry and Maintenance Contractor operations in order to ensure safety to provincial highway users, particularly in snow and avalanche conditions. This program provides technical direction and support for all provincial avalanche crews. The program coordinates resources that obtain and distribute weather, road condition and seasonal strength loss information in support of avalanche, maintenance contractor and Ministry requirements.

The Weather and Climate Specialist administers the Provincial Road Weather Station network and Road Weather Information System (RWIS); and provides expert weather forecasting information and training services in support of snow avalanche forecasting and highways maintenance activities performed by Ministry and private sector contract partners.

JOB OVERVIEW

The Weather and Climate Specialist oversees the development, expansion and upgrading of the Road Weather Information System, including the stations and their sensors, and the data visualization tools. This position will ensure the maximum benefits of the weather network for operational decision making by Ministry personnel, Road and Bridge Maintenance Contractors, data sharing partners, and the users of British Columbia's highway network.

ACCOUNTABILITIES

- The Weather and Climate Specialist will be responsible for providing forecasts services for several business areas:
 - Twice daily road temperature and condition forecasts for operational decision making in winter highway maintenance
 - Mountain weather forecasts in support of avalanche forecasting on provincial highways in specific areas
 - Other forecast services as required for emergency response to natural hazards

- The Weather and Climate Specialist is responsible for ensuring the quality of environmental sensing data collected by the Weather Network Program by:
 - Taking responsibility for final site selection of any new stations being installed
 - Selecting appropriate instrumentation and sensors and having a detailed understanding of their operation including signal processing, strengths, weaknesses, and limitations as well as their siting requirements
 - Playing a lead role in quality assurance and quality control of the data
 - Performing extensive data analysis and producing data summaries and reports
 - Staying current in the topics of Climate Change, Climate Monitoring, and Climate Change Adaptation related to transportation

- Administer the Provincial Road Weather Station Network and Information System to achieve appropriate design and installation of automated Road Weather Stations adapted to local topography and meso-scale and synoptic-scale meteorological influences.
 - Ensuring reliable operation, effective maintenance, and efficient integration of data in coordination with other road, weather and avalanche networks, systems and equipment.
 - Define requirements and specifications for weather and road temperature and condition forecast products.

- The Weather and Climate Specialist will be responsible for the selection of instrumentation and siting of installations for all weather responsive ITS projects and will oversee the development of the algorithms employed in the operation of these systems.
 - When weather responsive ITS systems become operational, this position will monitor the performance of the systems through ongoing data analysis and make incremental improvements in the algorithms and data processing to improve their performance over time and optimize their effectiveness.

- Represent the Ministry in the BC Climate Related Monitoring Program. Assure the high quality of the data from Ministry networks that is contributed to the Provincial Climate Data Set and participate in working groups devoted to optimization of the data quality for Climate Monitoring purposes.
 - Oversee the design and implementation of additional sensing stations or networks of stations to assist in managing hazards to the transportation network and its users resulting from climate change impacts and geomorphological response to climate change.
 - Advise Ministry personnel on the magnitude and expected ranges of Regional Climate Change related to Transportation Planning, impacts on policy decisions and implications for major projects.

- Establish Data Sharing Agreements and protocols between federal and provincial agencies, the private sector, and academia.

- Design Data Visualization tools and interfaces to the data to enable effective interpretation and operational decision making.

Date: November 27, 2019

- Conduct training for Ministry and Maintenance Contractor staff on data access, interpretation, and weather related decision making, including assessment of weather forecast quality and uncertainty and the use of web based tools and resources
- Oversee the administration of the RWIS Recoveries under Schedule 10 of the Road and Bridge Maintenance Contracts (up to \$1M+ per year)
- Lead, or participate in, special projects and perform other related duties

JOB REQUIREMENTS

- Minimum of a Bachelor's degree in Atmospheric Science (Meteorology), including:
 - synoptic and meso-scale meteorology
 - boundary layer meteorology
 - atmospheric physics
 - instrumentation
 - signal processing and data processing
 - physical climatology.
- Education in geomorphology and natural hazards is preferred
- Experience in principles, practices, and techniques of meteorology and snow avalanche phenomena.
- Experience in avalanche risk management preferred.

Other Requirements

- Computer and communication skills to conduct data analysis and to write clear and concise technical reports.
- Valid Class 5 BC Driver's Licence.
- Willingness to safely work outdoors in adverse winter weather.
- Willingness to speak in public.
- Successful completion of security screening requirements of the BC Public Service, which may include a criminal records check, and/or Criminal Records Review Act (CRRA) check, and/or enhanced security screening checks as required by the ministry.

BEHAVIOURAL COMPETENCIES

- **Decisive Insight** combines the ability to draw on one's own experience, knowledge and training and effectively problem-solve increasingly difficult and complex situations. It involves breaking down problems, tracing implications and recognizing patterns and connections that are not obviously related. It translates into identifying underlying issues and making the best decisions at the most appropriate time.
- **Analytical Thinking** is the ability to comprehend a situation by breaking it down into its components and identifying key or underlying complex issues. It implies the ability to systematically organize and compare the various aspects of a problem or situation, and determine cause-and-effect relationships ("if...then...") to resolve problems in a sound, decisive manner. Checks to ensure the validity or accuracy of all information.
- **Relationship Building** is working to build or maintain ethical relationships, networks or contacts with people who are, or may be, potentially helpful in achieving work-related goals and establishing advantages. These people may include customers, clients, counterparts, colleagues, etc.
- **Service Orientation** implies a desire to identify and serve customers/clients, who may include the public, co-workers, other branches/divisions, other ministries/agencies, other government organizations and non-government organizations. It means focusing one's efforts on discovering and meeting the needs of the customer/client.
- **Teamwork and Cooperation** is the ability to work cooperatively within diverse teams, work groups and across the organization to achieve group and organizational goals. It includes the desire and the ability to understand and respond effectively to other people from diverse backgrounds with diverse views.
- **Initiative** involves identifying a problem, obstacle or opportunity and taking appropriate action to address current or future problems or opportunities. As such, initiative can be seen in the context of proactively doing things and not simply thinking about future actions.
- **Business Acumen** is the ability to understand the business implications of decisions and the ability to strive to improve organizational performance. It requires an awareness of business issues, processes and outcomes as they impact the client's and the organization's business needs.