

**TITLE: CENTRAL AVALANCHE PROGRAM & WEATHER NETWORK PROGRAM CONSTRUCTION AND INSTALLATION SUPERVISOR**

**CLASSIFICATION: SCIENTIFIC TECHNICAL OFFICER 24**

**MINISTRY: TRANSPORTATION AND INFRASTRUCTURE**

**WORK UNIT: AVALANCHE AND WEATHER PROGRAMS**

**SUPERVISOR TITLE: SENIOR MANAGER AVALANCHE & WEATHER PROGRAMS**

**SUPERVISOR POSITION #: 00041551**

## **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.*

*This position interfaces directly with members of the Ministry's Provincial Avalanche Program and the Provincial Weather Network Program (WNP) by managing the Central Avalanche Program, and overseeing all of the WNP's new electronic weather station installation construction projects. In addition, this position also is required to install any Vaisala imbedded road sensors and manage the safety during the previously mentioned activities.*

*The Central Avalanche Program operates in accordance with the Avalanche Safety Plan and in conjunction with other programs within the Province. Avalanche staff work closely with other ministry representatives, the maintenance contractors and key stakeholders throughout the winter months (October through May) to minimize the risk to the travelling public through avalanche areas. The program is required 24 hours per day, 7 days per week throughout the winter months. The severity of weather and snowpack conditions determine the requirements for avalanche staff to work extended shifts, to be on call or to work on scheduled days off.*

*The WNP installs and maintains a network of 214 remote automated weather stations throughout the Province of British Columbia. The mission of the WNP is to provide effective environmental sensing services that support the safety and integrity of the provincial highways system. The WNP consists of three specific types of weather stations, each of which have their own distinctive functions:*

- *The Remote Automated Weather Stations (RAWS) are used by Ministry avalanche technicians to help provide accurate avalanche forecasts.*
- *The Road Weather Stations (RWS) provide real time road elevation weather and pavement data to numerous clients including the maintenance contractors. The data collected from these stations is used to assist in providing a higher level of efficiency while at the same time increasing the safety for the traveling public.*
- *The Frost Probe Stations (FPS) used by the Ministry, help determine the implementation and rescinding dates of the spring load restrictions for the Seasonal Strength Loss Program. If load restrictions are not implemented at the correct time, it has been estimated that there is a potential to incur up to \$75 to \$150 million worth of damage annually to the B.C. highways infrastructure.*

## **JOB OVERVIEW -- CENTRAL AVALANCHE PROGRAM SUPERVISOR**

### **APPROXIMATELY 50% OF THE POSITION'S TIME**

The Central Avalanche Program Supervisor operates a Headquarters level program in an expert and timely manner in order to achieve the operational objectives. The position collaborates with other ministry representatives, the maintenance contractors and key stakeholders to help prioritize improvements to the Program. The position may provide advice and/or recommendations on avalanche related matters.

A primary focus of this position is delivery of the structured avalanche forecasting and avalanche risk mitigation program. Of equal importance is the delivery of the comprehensive avalanche risk management program for all of the workplace activities related to achieving the primary objectives of the program.

## **ACCOUNTABILITIES**

- Determines the equipment, financial and human resource needs required to complete routine projects and work assignments. Prepares program cost estimates, controls and reports on expenditures up to or sometimes exceeding \$100,000.00, and acts as Project Manager in the delivery of avalanche related projects.
- Supervises staff including keeping them abreast of information relevant to the successful completion of their duties, and ministry or Public Service plans and initiatives; seeking input and feedback and fostering effective teamwork; explaining decisions and their impact on the team; setting clear expectations for work assignments, ensuring assignments are manageable and that the team has the tools, training and equipment required to be successful; ensuring training requirements are met; developing and evaluating performance plans and providing frequent, constructive feedback; acting as a mentor; approving and scheduling leave; and dealing promptly, fairly and effectively with issues including conflict within the work unit or with individuals outside it, including recommending disciplinary action.
- Delivers the operational program for managing the avalanche risks present in the operation of highways in avalanche areas and the risk management program for all of the workplace activities related to achieving the primary highway operational objectives of the program.
- Delivers a program for collecting avalanche information from various locations in mountain terrain. This includes the identification and selection of information and workplace appropriate study sites and travel routes, adherence to safe work practices and preparedness for emergency response. Ensures worker training and experience for travel in mountain terrain is suitable for each work assignment.
- Delivers a program for the safe and secure storage, transportation, handling, fixing and firing of explosives and explosive delivery devices at the highest standard and in full compliance with all regulatory and ministry requirements.
- Recommends effective and economically sensitive temporary avalanche mitigation measures including traffic management and artificial triggering of avalanches to reduce the uncertainty of future avalanche size and timing.
- Recommends highway closures when and where required and implements safe, effective, measures to facilitate highway operational recovery from these activities. Provides timely direction and response in emergency situations including organizing, directing, and conducting avalanche search and rescue.
- Ensures appropriate avalanche safety training of ministry and maintenance contractor personnel and/or other personnel who provide services for the operation of the highway in avalanche areas.
- Maintains clear, timely and accurate records of all aspects of the work conducted on an electronic network with a high level of accuracy and quality. Produces reports on avalanche program events and information. Frequently uses computer systems and a variety of commercial and proprietary software to store, retrieve, analyze, review and report on information from a variety of sources. Works with a variety of team members and stakeholders to ensure timely and accurate reporting of incident and near miss events.

## **JOB OVERVIEW -- WNP CONSTRUCTION AND ROAD SENSOR INSTALLATION SUPERVISOR APPROXIMATELY 50% OF THE POSITION'S TIME**

The Weather Network Program Road Sensor Installation Supervisor position is focused on activities associated with the installation of new electronic weather stations and replacing or installing sensors that require being embedded in or under the road surface, such as frost probes and pavement condition sensors. The Construction and Road Sensor Installation Supervisor is required to liaise with WNP, Ministry and/or subcontractor staff to determine the requirements for all construction projects within the Weather Network Program.

The position has unique and specialized training and certification in the installation of program specific sensor equipment. Activities associated with the installation function are complex and highly technical. The accuracy and reliability of the road sensors is critical for the success of the program. The impact of errors can be significant (i.e., errors made in the installation of sensor equipment can lead to erroneous pavement temperature and condition data which in turn can lead to inappropriate action taken by the maintenance contractor during potential unsafe driving conditions).

## ACCOUNTABILITIES

- Provide project management for all new station installation including, but not limited to; planning, scheduling, inventory acquisition, equipment rental, traffic management, site/worker safety, supervision and performance evaluation of contractors, sub-contractors.
- Contribute toward the development of annual budget requirements for environmental sensor equipment and supplies.
- Order and procure weather sensing installation equipment parts and supplies and track expenditures.
- Prepare cost estimates for project work and assist in the preparation and management of Local Minor Work contracts.
- Draw equipment plans for the modification and mounting of existing or prototype equipment, brackets and braces; organize tools and equipment for roadside work, ensuring safe and efficient work practices.
- Conduct the installation and maintenance of the WNP road sensor equipment, in consultation with the Weather Network Program Manager and/or other technical program staff. Determine location requirements and define road sensor requirements. Install, replace or repair specific electronic equipment and implement specific upgrades at roadside weather stations, and run diagnostic testing on newly installed components.
- Identify and recommend improvements, alternatives and modifications to resolve installation and maintenance issues.
- Operate computer software to consolidate, gather, analyze and disseminate current information and data, and ensure compliance with ministry standards.
- Procure weather sensing equipment parts and supplies, track expenditures, and maintain related inventories.
- When appropriate, provide road sensor installation training for the Environmental Electronics Technicians.
- Determine, allocate and evaluate the work of contractors, suppliers, students and others.
- Draw equipment plans for the modification and mounting of existing or prototype equipment, brackets and braces; organize tools and equipment for roadside work, ensuring safe and efficient work practices.
- Conduct the installation and maintenance of the WNP road sensor equipment, in consultation with the Weather Network Program Manager and/or other technical program staff. Determine location requirements and define road sensor requirements. Install, replace or repair specific electronic equipment and implement specific upgrades at roadside weather stations, and run diagnostic testing on newly installed components.
- Identify and recommend improvements, alternatives and modifications to resolve installation and maintenance issues.
- Operate computer software to consolidate, gather, analyze and disseminate current information and data, and ensure compliance with ministry standards.
- Procure weather sensing equipment parts and supplies, track expenditures, and maintain related inventories.
- When appropriate, provide road sensor installation training for the Environmental Electronics Technicians.
- Determine, allocate and evaluate the work of contractors, suppliers, students and others.

## JOB REQUIREMENTS

### Avalanche Risk Management Experience

- Secondary school graduation (or equivalent) with a minimum of 6 winter seasons of experience in an operational avalanche program; OR
- Post-secondary diploma in forestry, geography, engineering or meteorology with emphasis on avalanche phenomenon and snow science research along with 4 years of experience in an operational avalanche program.
- Operational field experience making and collecting weather, snowpack, and avalanche activity observations for avalanche forecasting and risk management.

Note: Operational avalanche program experience must include at least 4 years in an industrial risk management program with at least 2 of those years (more preferred) in a resource and/or transportation program managing avalanche risk, directing and participating in assessments of avalanche risk, and communicating information regarding avalanche risks.

### **Supervisory Experience**

- A minimum of 2 years of experience supervising staff; OR, an equivalent combination of experience and supervisory training.

### **Training Certificates/Professional Associations**

- Must be registered, or be eligible to be registered, with Canadian Avalanche Association, as a professional member in good standing.
- Canadian Avalanche Association certification (or prior Canadian Avalanche Association learning equivalency assessment) in:
  - Minimum Level 2, with Level 3 preferred;
  - Advanced Weather is preferred;
  - Avalanche Search and Rescue Response is preferred; and,
  - Introduction to Snow Avalanche Mapping is preferred.
- Occupational First Aid Level 2, or equivalent, as accredited by WorkSafe BC.
- Incident Command System 200 preferred.
- Vaisala embedded road surface sensor installation certification is preferred.

### **Blasting Certification and Explosives Experience**

- Must have an Avalanche Control Blasting Certificate - for Hand Charge and Helicopter Control Missions - acceptable to WorkSafe BC or equivalent.
- Workplace experience that demonstrates 5 or more years of experience with storing, transporting, handling, fixing and firing explosives for avalanche control operations.
- Knowledge of various provincial and federal regulations including the Transportation of Dangerous Goods Act, Federal and Provincial explosives and blasting regulations, WCB regulations and guidelines, and Workplace Hazard Information Management Systems (WHMIS).

### **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.
- Physically fit to regularly lift in excess of 20kg, to climb towers in excess of 4m high, to travel on foot in the mountains in winter, and experience traveling in avalanche terrain in a variety of conditions.
- Willingness to work outdoors in adverse winter weather.
- Experience with managing and conducting helicopter field work.
- Willingness to be on call 24/7 during elevated avalanche hazard forecast levels.
- 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 (CRRRA) check, and/or enhanced security screening checks as required by the ministry.

Note: May be asked to respond to Provincial Emergency Program callouts for mutual aid, however this is not a job requirement and participation would be at the discretion of the individual/Supervisor.

- Successful completion of security screening requirements of the BC Public Service, which may include a criminal records check, and/or Criminal Records Review Act (CRRRA) check, and/or enhanced security screening checks as required by the ministry (**Note: It is important that you read the job posting carefully to understand the specific security screening requirements pertaining to the position**).

## BEHAVIOURAL COMPETENCIES

- **Leadership** implies a desire to lead others, including diverse teams. Leadership is generally, but not always, demonstrated from a position of formal authority. The “team” here should be understood broadly as any group with which the person interacts regularly.
- **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.
- **Expertise** includes the motivation to expand and use technical knowledge or to distribute work-related knowledge to others.
- **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.

The above competencies complement the required accountabilities for this position. For more information about behavioural interviews, competency definitions, and to watch interview videos, please visit:

[Competencies in the BC Public Service](#)