

Meteorologist – Subsidiary 5

APS Benchmark Listings

Sub.	Bench- mark No.	Department	Working Title Job Title	Know-How				Creativity/ Problem Solving		Responsibility		Total Points
				Prof./ Cont.	Comp. Div.	H.R. Skills	Points	%	Points	Profile	Points	
Meteorologist 2 (Point Range 371 - 438)												
005	058MT01	Forestry and Parks	Fire Weather Program Lead	E+	1	2	230	38	87	R1	100	417
Meteorologist 1 (Point Range 314 - 370)												
005	057MT01	Forestry and Parks	Fire Weather Meteorologist	E	1	2	200	33	66	R1	76	342

Last Review / Update: April 2024

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Subsidiary 5

Benchmark Evaluation – 058MT01

Identification Section

Working Title:	Fire Weather Program Lead
Department:	Forestry and Parks
Division, Branch/Unit:	Forestry Division, Wildfire Management Branch/Wildfire Predictive Services
Reports To:	Manager, Wildfire Predictive Services
Levels to D.M.:	5
Job Description:	058MT01
Minimum Recruitment Standard:	See Minimum Recruitment Standards for Meteorologist
Job Code:	058MT - Meteorologist 2

Comments on Role

The Fire Weather Program Lead supervises staff who are engaged in the preparation of provincial fire weather forecasts and spot forecasts for purposes such as wildfire and prescribed burn operations, system and data compilation and provincial-wide remote automatic weather station network. As the senior fire weather meteorologist, is responsible for the acquisition, analysis, diagnosis, and prognosis of meteorological data to meet the requirements of the provincial fire management program. Provision of fire weather briefings to fire management and other personnel and generating fire weather parameters for fire suppression and pre-suppression operations are responsibilities of this position. Position conducts fire weather research and develops education training material on fire weather for internal and external audiences.

Evaluation

Knowledge	Creativity / Problem Solving	Responsibility	Total Job Points
E+ I 2 230	38% 87	R1 100	417

Comments on Evaluation

- **Knowledge:**

Professional/Content Knowledge:

The position is the senior provincial fire weather specialist requiring a degree related to Atmospheric Science/Meteorology, courses in forestry or fire weather and extensive related operational experience in fire weather and research. An extensive knowledge of complex atmospheric and physical science processes including knowledge of related data systems and software relevant to fire weather forecasting is necessary to provide direction, training, and mentorship/knowledge transfer to fire weather meteorologists, and for the overall production of provincial fire weather analysis, forecasts, and information in support of the provincial fire management program. The position supervises the provincial remote automatic weather station network (there are over 190 stations in the province) including placement as well as evaluation and procurement requiring considerable

knowledge of the network's operations and equipment. As the program lead, the position requires supervisory skills as well as knowledge of budgeting, contracting, procurement policies and processes. The push (+) on the E recognizes the depth of specialized knowledge and experience as the senior provincial fire weather meteorologist and lead in the division. The focus is on a specialized, complex component of meteorology hence the F rating is not warranted.

Complexity and Diversity:

As the unit lead, the position is required to plan, organize, coordinate, and direct the fire weather analysis and forecasting program to support the fire suppression and pre-suppression operations for the province. The position also leads/conducts specific related research and develops fire weather training for in-house wildfire staff as well for external audiences.

Human Relations Skill:

The position requires strong leadership and interpersonal skills including the ability to influence behavior, to assign, monitor, schedule and review work and provide mentoring/training and knowledge transfer to staff. The position also requires significant communication and interpersonal skills to interact and liaise with a variety of stakeholders in the provision of a range of information from scientific advice, specialized information, educational and public presentations on fire weather analysis, forecasting and data collection and interpretation.

- **Creativity/Problem Solving:**

There is considerable latitude to work within a broadly defined environment with clearly defined objectives and a framework of ministry policies, standard operating procedures, business rules and standards. As the divisional and ministry/provincial fire weather program lead, it relies on its extensive knowledge and experience to manage the acquisition, analysis, diagnosis, and prognosis of data to meet fire management needs and accuracy of forecasts and weather. The position is also a working supervisor and produces forecasts, warnings, etc.

Position is responsible for reviewing the unit's fire season performance and operations for meeting client and meteorological needs, assessing/identifying areas for change and/or additional information, analyzing and developing appropriate resolutions including new procedures. Researches, evaluates/assesses weather station and related equipment replacement and/or new, considering options, costs, reliability, maintenance, meeting performance standards and budget allocation.

The position has access to external atmospheric and specialized fire weather experts within the provinces, nationally and internationally as well as universities and research papers for information and/or assistance with very complex issues. The highest level of operational thinking of 38% is appropriate.

- **Responsibility:**

This is a service delivery role in the analysis of meteorological data to meet the requirements of the provincial fire management program.

Last reviewed: April 2024

Subsidiary 5 Benchmark

Job Description – 058MT01

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Fire Weather Program Lead is responsible for the fire weather program that provides meteorological services to meet the requirements of the provincial wildfire management program. Position supervises staff who are responsible for the network to provide weather data and staff who are responsible for the preparation of provincial fire weather forecasts and spot forecasts. This position is responsible to ensure the fire weather network is functioning properly, weather data is collected accurately, and timely and weather products are produced accurately and timely for use in daily wildfire management activities. The Fire Weather Program Lead is knowledgeable of the duties and participates in the roles of the staff that reports to this position.

Responsibilities and Activities

(The purpose of the job can be broken down in different responsibilities and end results. Each end result shows what the job is accountable for, within what framework and what the added value is. Normally a job has 4-8 core end results. For each end result, approximately 3 major activities should be described.)

Organize and conduct the fire weather analysis and forecasting program to provide quantitative and qualitative guidance to fire control personnel.

- Ensure operational output conforms to the needs and objectives of the division.
- Diagnose and provide prognosis of atmospheric conditions by analyzing surface and upper air charts.
- Interpret and evaluate computer models as well as radar, satellite imagery and lightening detection data.
- Generate provincial fire weather forecasts on a fire control zone basis including the preparation and delivery of site-specific weather forecasts.
- Provide aviation forecasts for aircraft operations when required.
- Brief fire management, media, and other personnel.
- Provide direct input of present and forecasted weather parameters.

Oversee and manage fire weather analysis and forecasting unit.

- Supervise professional and technical staff, and formally evaluate performance.
- Recruit new staff and oversee employment contracts.
- Manage the financial requirements of the division's weather-related needs including preparing and administering an annual budget.
- Provide guidance to technical staff in the retrieval and preparation of weather data.
- Administer equipment maintenance and computer program development contracts.
- Evaluate, specify, and purchase technological equipment supporting weather forecasting program and weather observation network.
- Act as a liaison with external agencies, stakeholders, and active partners in data collection networks such as the lightning detection network. These partners include major utility corporations, the national parks, the provincial flood forecasting unit of Alberta Environment, Alberta Agriculture, Environment and Climate Change Canada. Activities includes long term strategic planning of requirements and network design.

Lead studies related to weather effects on fire behaviour.

- Suggest appropriate topics for investigation.
- Participate in research studies and arrange the publication of results.
- Participate in national and international symposium.

Oversee a fire weather education program.

- Direct and develop fire weather related technical courses to be delivered at provincial and national levels to fire management staff. Training also conducted at post secondary institutions including university level programs.
- Conduct presentations on fire weather issues to public stakeholders such as municipal fire departments and community groups.

Scope

(List specific information that illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Typical problems solved:

- The Fire Weather Program Lead is responsible to deal with problems that provide direction or resolve issues for the program as a whole. Examples of these are determining new practices to meet operational requirements, issues effecting supply of weather equipment, budget requirements and impacts effecting program effectiveness and requests from public or stakeholders for information or services provided by the fire weather program.

Types of guidance available for problem solving:

- Wildfire Management has policies and standard operating procedures that guide most operational activities within the Branch. There are also policies and guidelines for activities dictated by the GOA such as purchasing and contracting procedures. Participation with different working groups within Wildfire Management provides direction and guidance for how the unit can support with functions performed within the Branch.

Direct or indirect impacts of decisions:

- Position applies knowledge of complex atmospheric and physical science processes to manage the acquisition, analysis, diagnosis, and prognosis of meteorological data to meet provincial fire management requirements. Oversees a unit that prepares provincial fire weather forecasts and spot forecasts for wildfires and prescribed burn operations. Fire weather forecasts generated by the unit influence planning and tactical decisions of provincial and national fire management personnel for protection of life, communities, watersheds and soils, natural resources, and infrastructures. Position is a working supervisor performing roles similar to its subordinates.

Knowledge, Skills, and Abilities

(Provide a list of the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others not only diplomas and degrees. Specific training if it is an occupational certification/registration required for the job.)

Qualifications:

- Bachelor's Degree (4year) in science. Degree in Meteorology or Math/Physics Degree with a Meteorology Diploma.
- Position typically requires a degree related to meteorology, courses in forestry or fire behaviour and considerable related experience. This position needs to understand the standards for fire weather

equipment meeting wildfire meteorology standards.

Knowledge:

- Requires knowledge of complex atmospheric and physical science processes to effectively provide diagnosis and prognosis of complex meteorological data.
- Must have a fundamental understanding of computer programming and various software applications.
- There is also a requirement to have a thorough knowledge of remote automatic weather station equipment and lightning detection systems to provide direction on the programs equipment standards.

Skills and Abilities:

- Position requires the ability to lead a team and effective public speaking skills.

Contacts

(The main contacts of this position and the purpose of those contacts.)

Fire Weather Program Lead position also presents lectures at provincial, national, and university institutions. Positions maintain contact with experts on atmospheric issues within the province, nationally and internationally to exchange information. Positions provide scientific advice and specialized information as a department representative to industry and the public by making presentations, serving on work groups, attending international symposiums, and responding to questions from the public, industry, and other governments.

Supervision Exercised

Position supervises staff who are responsible for the network to provide weather data and staff who are responsible for the preparation of provincial fire weather forecasts and spot forecasts.

Subsidiary 5

Benchmark Evaluation – 057MT01

Identification Section

Working Title:	Fire Weather Meteorologist
Department:	Forestry and Parks
Division, Branch/Unit:	Forestry Division, Wildfire Management Branch, Wildfire Predictive Services
Reports To:	Fire Weather Program Lead, Meteorologist 2
Levels to D.M.:	6
Job Description:	057MT01
Minimum Recruitment Standard:	See Minimum Recruitment Standards for Meteorologist
Job Code:	057MT – Meteorologist 1

Comments on Role

The Fire Weather Meteorologist is responsible for the acquisition, analysis, diagnosis, and prognosis of meteorological data in support of provincial fire management. Position produces professional work of fire weather forecasts, spot forecasts, fire weather advisories/warnings for wildfires and prescribed burn operations at provincial and national levels in a timely manner. Provision of fire weather and briefings to fire management and internal/external personnel and generation of fire weather parameters for fire suppression and pre-suppression are responsibilities of this position. Position conducts fire weather and fire behaviour research. Participates in provincial and national fire weather/fire behaviour educational training at provincial, national and university levels through preparation and delivery of courses.

Evaluation

Knowledge	Creativity / Problem Solving	Responsibility	Total Job Points
E 1 2 200	33% 66	R1 66	342

Comments on Evaluation

- **Knowledge:**

Professional/Content Knowledge:

The position requires a degree related to Meteorology/Atmospheric Science including an extensive knowledge of complex atmospheric and physical science processes in order to effectively diagnose and prognosticate complex meteorological data in support of provincial fire management. Considerable related operational experience in the development and production of specific forecasts preferably applicable to fire weather is necessary. Additional fire weather forecasting knowledge and skills are acquired through on-the-job experience and mentoring. A push (+) on the E is not warranted as knowledge is specific to fire weather forecasting.

Complexity and Diversity:

The position requires the application of analytical skills and specialized knowledge in the generation of fire weather

forecasts. Requires an understanding of the relationship of fire weather forecasting with the operational requirements for timely wildfire suppression/pre-suppression, prescribed burns, alerts/warnings, and the diverse needs of users/stakeholders both internally and externally.

Human Relations Skill:

The Fire Weather Meteorologist produces forecasts for consumption by many groups of stakeholders from the very scientific to very plain language necessitating the need to translate the forecasts to meet the needs of diverse audiences. Using appropriate language ensures decision makers are informed, understand, and know the weather risks presenting, as the fire weather information influences planning and tactical decisions of provincial and national fire management personnel. The position also delivers training and presentations to audiences ranging from scientific community to industry and/or general public on fire weather. The HR 2 rating is appropriate as the nature of communication is beyond information exchange, requiring translation of forecasts for diverse audiences.

▪ **Creativity/Problem Solving:**

The position independently applies theoretical knowledge including principles, concepts and practices and specialized knowledge of fire weather forecasting to analyze complex meteorological data and produce varied and timely practical information and forecasts to meet daily provincial fire management requirements.

Using data from multiple sources including remote weather stations and open-source providers such as Environment and Climate Change Canada, the position uses professional judgement to determine the best approach to resolve issues encountered such as inconsistencies in data, lack of reportable data and/or availability, and/or connection issues with weather stations. During fire season the unit produces two (2) daily forecasts including spot forecasts, weather alerts, warnings, and relevant information. The position conducts research on current and emerging related fire weather topics including new technology and equipment and makes recommendations to the Fire Weather Program Lead on findings. Within the unit there are procedural documents for fire weather and access to the Program Lead for assistance with complex issues warranting the rating of 33%.

▪ **Responsibility:**

The position is providing service delivery in the production of fire weather information necessary to the pre-suppression and suppression fire activities.

Last Reviewed: April 2024

Subsidiary 5 Benchmark

Job Description – 057MT01

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Fire Weather Meteorologist acquires, analyses, diagnoses, and prognoses meteorological data in support of provincial wildfire management. Position produces professional work of fire weather forecasts, spot forecasts, fire weather advisories/warnings for wildfires and prescribed burn operations at provincial and national levels in a timely manner. Provision of fire weather briefings to fire management and internal/external personnel and generation of fire weather parameters for fire suppression and pre-suppression are responsibilities of this position. Position conducts fire weather research and assists with the remote weather station network and lightning detection system. Participates in provincial and national fire weather educational training at provincial, national and university levels through preparation and delivery of courses.

Responsibilities and Activities

(The purpose of the job can be broken down in different responsibilities and end results. Each end result shows what the job is accountable for, within what framework and what the added value is. Normally a job has 4-8 core end results. For each end result, approximately 3 major activities should be described.)

Participate in a fire weather analysis and forecasting program to provide quantitative and qualitative guidance to fire control personnel at provincial and national levels.

- Diagnosis and prognosis of complex atmospheric conditions by analyzing 4-dimensional meteorological data under operational time constraints.
- Interpret and evaluate atmospheric computer models, and remote sensing equipment (radar, satellite imagery and lightning detection data).
- Produce daily fire weather forecasts on a fire control zone basis including preparation and delivery of site-specific weather forecasts and fire weather advisories/warnings under operational time constraints.
- Interpret and brief fire weather forecasts for wildfire management and incident management personnel at provincial levels.
- Input present and forecast weather parameters for fire weather indices calculations and fire behaviour specialists.
- Diagnose and provide prognosis of atmospheric conditions by analyzing surface and upper air charts.
- Provide aviation forecasts for aircraft operations when required.

Assist the Fire Weather Network team with the maintenance, operation and quality control of fire weather observations and remote automatic weather station networks when required.

- Ensure quality of meteorological data.

Other related responsibilities.

- Supervise permanent and seasonal technical staff and contract meteorologists on an operational basis.
- Participate in provincial, national and university fire weather training through preparation and delivery of courses using latest meteorological forecasting science.
- Conduct fire weather research and studies.
- Attend and participate in national and international symposia dealing with weather effects on fire behaviour.
- Develop and deploy computer systems to integrate new streams of meteorological data for forecasting and briefing utilization.

Scope

(List specific information that illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Typical problems solved:

- Problems typically revolve around access to the data and issues with the forecasts. Typical data issues can be as a result of connection issues with remote automatic weather stations or data availability from open-source providers such as Environment and Climate Change Canada. Typical issues with the forecast are the actual weather values didn't match what the forecast predicted.

Types of guidance available for problem solving:

- For a fire weather meteorologist there are procedural documents within the Fire Weather Unit to follow and other supports available such as the Fire Weather Program Lead and Fire Weather Support Lead to aid in troubleshooting.

Direct or indirect impacts of decisions:

- Fire weather forecasts that are generated influence planning and tactical decisions of provincial and fire management personnel for protection of life, communities, watersheds and soils, natural resources, and infrastructure. Position applies knowledge of complex atmospheric and physical science processes for the acquisition, analysis, diagnosis, and prognosis of meteorological data to meet provincial fire management requirements. Production of provincial fire weather forecasts, spot forecasts and fire weather advisories/warnings for wildfire and prescribed burn operations are responsibilities of the fire weather meteorologist.

Knowledge, Skills, and Abilities

(Provide a list of the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others not only diplomas and degrees. Specific training if it is an occupational certification/registration required for the job.)

Qualifications:

- Bachelor's Degree (4year) in science. Degree in Meteorology or Math/Physics Degree with a Meteorology Diploma.
- Requires a degree related to meteorology, experience in operational forecasting and experience in weathers effects on fire behaviour.

Knowledge:

- Requires extensive knowledge of complex atmospheric and physical science processes to effectively provide diagnosis and prognosticate of complex meteorological data under operational time constraints.

Contacts

(The main contacts of this position and the purpose of those contacts.)

Fire weather meteorologist positions also present lectures at provincial, national, and university institutions. Positions maintain contact with experts on atmospheric issues within the province, nationally and internationally to exchange information. Positions provide scientific advice and specialized information as a department representative to industry and the public by making presentations, serving on working groups, attending international symposiums, and responding to questions from the public, industry, and other governments.

Supervision Exercised

No Supervision.