



Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada

# METEOROLOGY CAREERS AT THE METEOROLOGICAL SERVICE OF CANADA

Who we are, what we do and how  
you can apply



Canada 

# MSC: WHO WE ARE

- Division of the federal department Environment and Climate Change Canada
- **Official source** of weather warnings in Canada
- Principal scientific authority for standards, information and advice on the past, present and future state of the atmosphere (weather and climate), hydrosphere (lakes and rivers) and cryosphere (snow and ice)



## Why work for the Meteorological Service of Canada?

- Varied career opportunities: Public, aviation, ice and military operational forecasting. Research, development, service delivery, training, air quality, climatology, atmospheric modelling, etc
- Salary
- Good benefits
- Job security
- Many advancement opportunities!



## 6 MAIN CAREER PATHS



- Operational meteorologists
- Services
- Development (R&D)
- Training
- Performance measurement
- Management

# OPERATIONAL METEOROLOGISTS

## THERE ARE FOUR FORECAST PROGRAMS IN CANADA

### Storm Prediction Centres (SPCs):

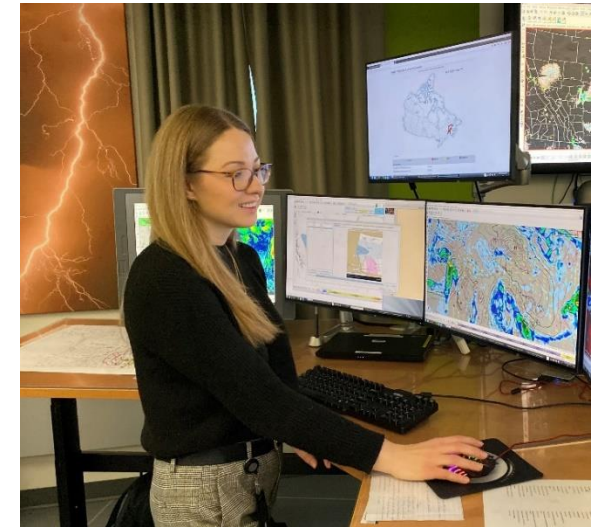
- Gander, NL
- Dartmouth, NS
- Montreal, QC
- Toronto, ON
- Winnipeg, MB
- Edmonton, AB
- Vancouver, BC

### Aviation Centres (CMACs)

- Montreal, QC
- Edmonton, AB

### Ice Services

- Ottawa, ON



### Aviation And Defence Weather Services

- Halifax, NS
- Gagetown, NB
- Esquimalt, BC



# OPERATIONAL METEOROLOGISTS

## STORM PREDICTION CENTRES



Offices: Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Dartmouth, Gander



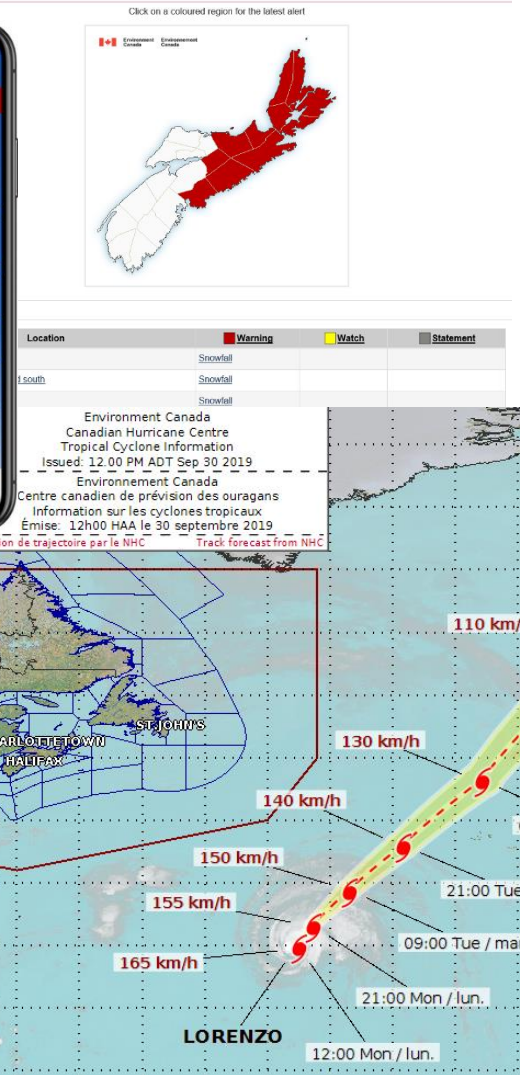
# OPERATIONAL METEOROLOGISTS

## ROLES OF THE SPC

- High impact weather and public, marine and air quality forecasts
- All alerts (special weather statements/ advisories/ watches/ warnings)
- Communication with media / Emergency services / the public
- Everyday weather:
  - Occurrence, type & quantity of precipitation
  - Visibility (fog, blowing snow)
  - Cloud cover
  - Temperature
  - Wind speed/direction



Public Weather Alerts for Nova Scotia



# OPERATIONAL METEOROLOGISTS

## Canadian Meteorological Aviation Centres (CMAC)

- CMAC-East in Montreal, QC
- CMAC-West in Edmonton, AB

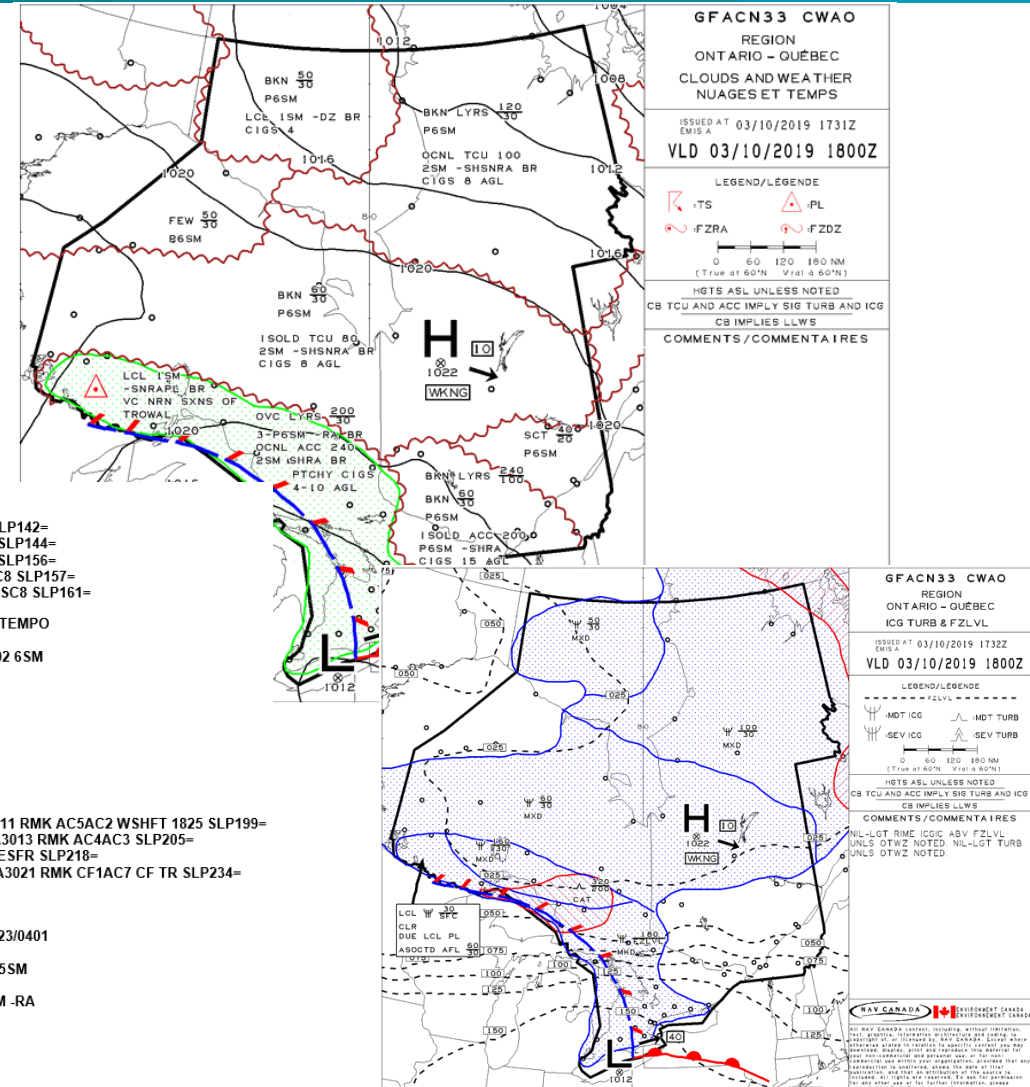




# OPERATIONAL METEOROLOGISTS

## ROLES OF THE CMAC

- Forecast weather for the aviation industry:
- Take-off/landing conditions at ~200 airports across Canada
- Communication of weather risks to safety of the air navigation system
- Turbulence
- Convection
- In-Flight Icing
- Volcanic Ash
- Wind Shear/Gusts
- Low ceilings and visibilities



### TORONTO/LESTER B. PEARSON INTL/ON

SPECI CYYZ 031822Z 06011KT 8SM -RA OVC004 10/09 A2994 RMK SC8 SLP142=  
 METAR CYYZ 031800Z 07014KT 8SM -RA OVC005 09/09 A2994 RMK SC8 SLP144=  
 METAR CYYZ 031700Z 07015KT 8SM -RA OVC008 09/08 A2998 RMK SC8 SLP156=  
 SPECI CYYZ 031653Z 07015G20KT 8SM -RA OVC009 09/08 A2998 RMK SC8 SLP157=  
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 0318/0320 6SM BR SCT008 OVC010  
 FM032000 12005KT 2SM -RA -DZ BR SCT003 OVC005 TEMPO 0320/0402 6SM  
 BR PROB30 0320/0402 3/4SM -RA BR OVC003  
 FM040200 VRB03KT 5SM -DZ BR SCT008 OVC010  
 FM040400 35010KT P6SM FEW008 BKN010 BKN030  
 FM041100 36010KT P6SM BKN015  
 FM041600 02012KT P6SM SCT025  
 RMK NXT FCST BY 032100Z=

### MONTREAL/PIERRE-ELLIOTT-TRUDEAU INTL/QC

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 6SM -SHRA BR BKN020 OVC030  
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 -RA BR OVC008  
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 BR OVC006  
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 FM041100 30005KT P6SM SCT020  
 FM041600 32012KT P6SM BKN030  
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# OPERATIONAL METEOROLOGISTS

## AVIATION AND DEFENCE WEATHER SERVICES

3 Offices: ▶ Esquimault, BC (MetOc) ▶ Halifax, NS (MetOc) ▶ Gagetown, NB (JMC)



MetOc = Meteorology and Oceanography Centre

JMC= Joint Meteorological Centre



# OPERATIONAL METEOROLOGISTS

## ROLE OF AVIATION AND DEFENCE WEATHER SERVICES

- Geographic forecast areas vary around the globe to support current DND activities
- Mixture of aviation, marine and public forecast types
- To work in this section, all employees must obtain “SECRET” security level clearance

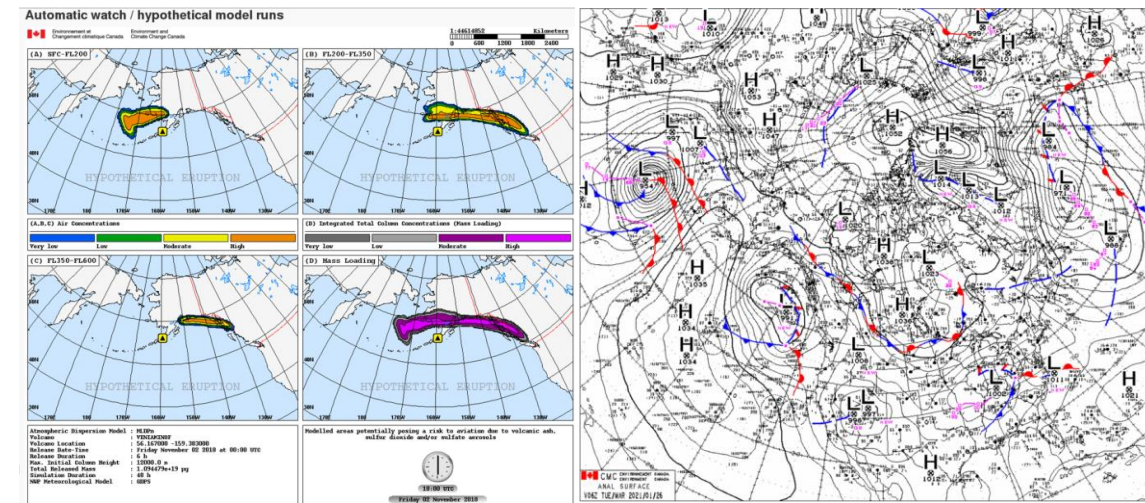


# OPERATIONAL METEOROLOGISTS

## Analysis & Prognosis (A&P)

Dorval, QC

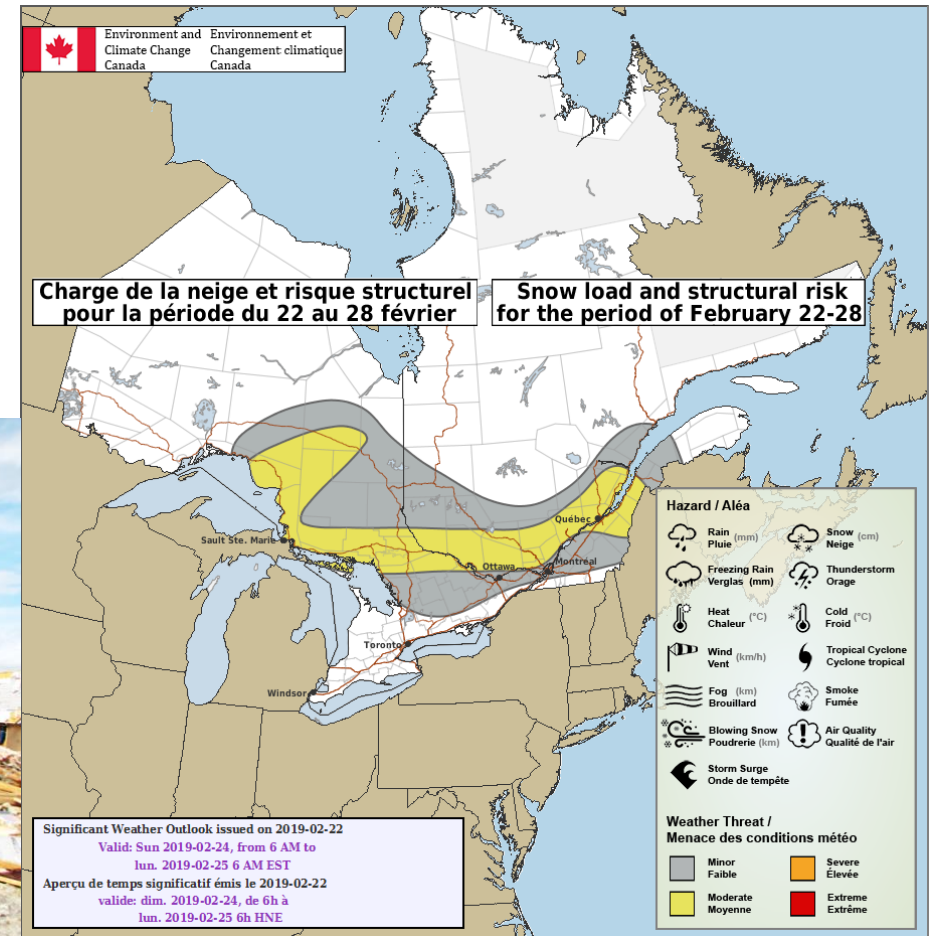
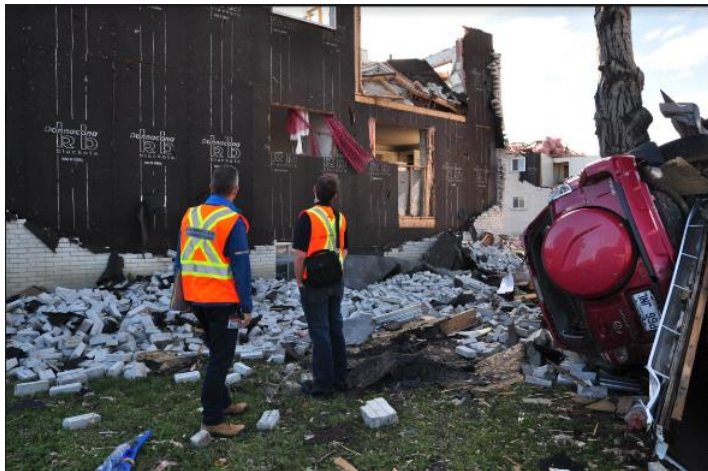
- Monitor performance of Numerical Weather Prediction Models
- Provide operational response for volcanic ash or environmental emergencies
- Perform evaluations and verification of domestic model output
- Validate outputs for soon to be implemented domestic models
- Produce national surface charts and weather outlooks, along with seasonal forecasts
- Briefings to the Government Operations Center (GOC)



# SERVICES METEOROLOGISTS

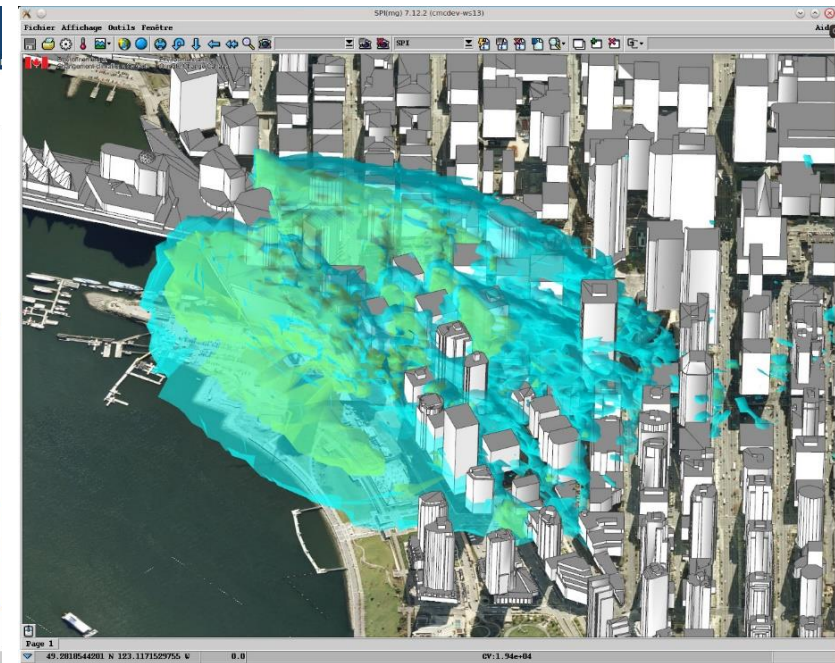
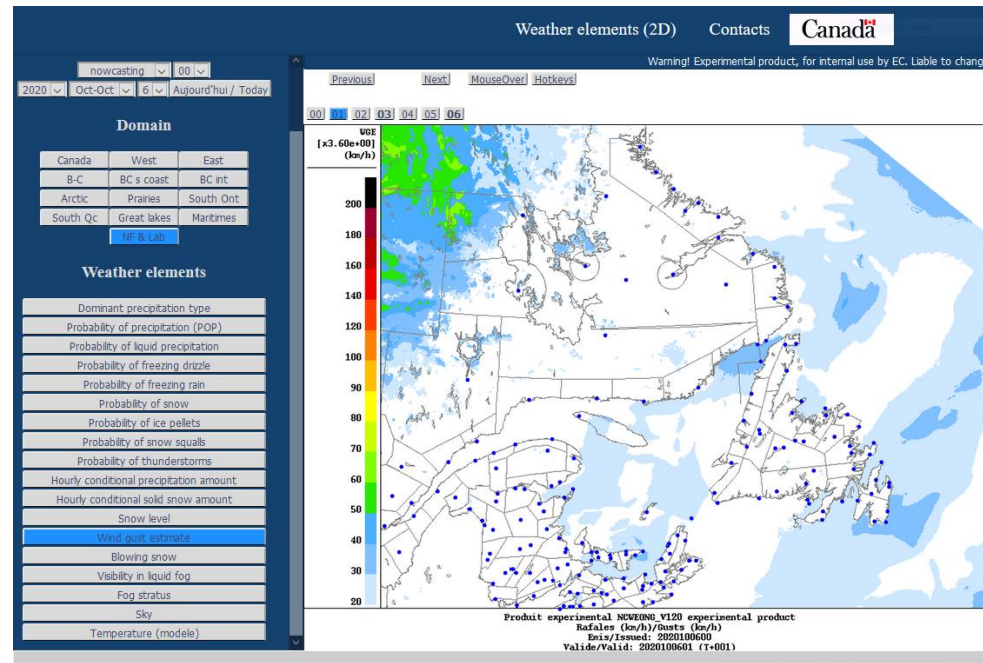
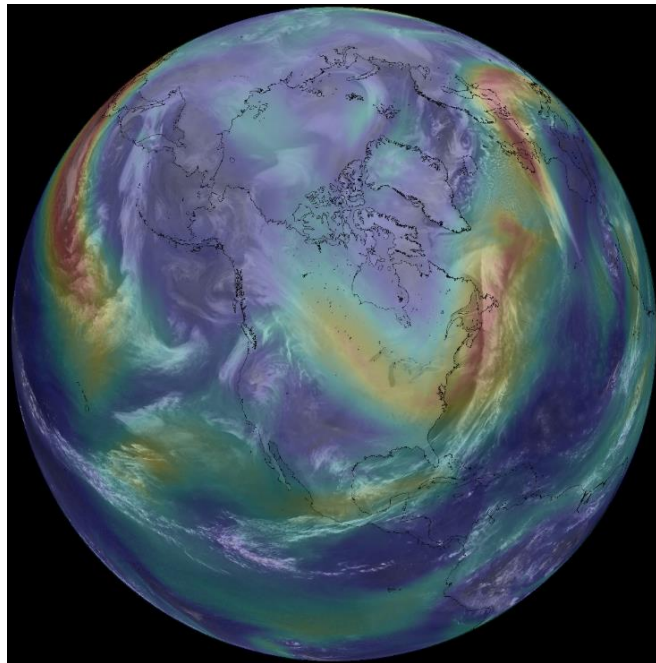
## CLIENT SERVICE OPERATIONS

- Staffed by Warning Preparedness Meteorologists (WPMs) and Program Meteorologists across Canada
- Provide decision support services to major clients, including emergency management organisations, provincial and national government groups, and media
- Investigate damage sites following severe weather events
- Communicate risk



# DEVELOPMENT METEOROLOGISTS (R&D)

- Work in developing/improving numerical weather prediction models, post-processing, algorithms, products and forecasting tools used by operational meteorologists
- Collaborate with operational meteorologists to validate all of the above



# BECOMING A METEOROLOGIST WITH THE MSC

## Education Requirements - Degree

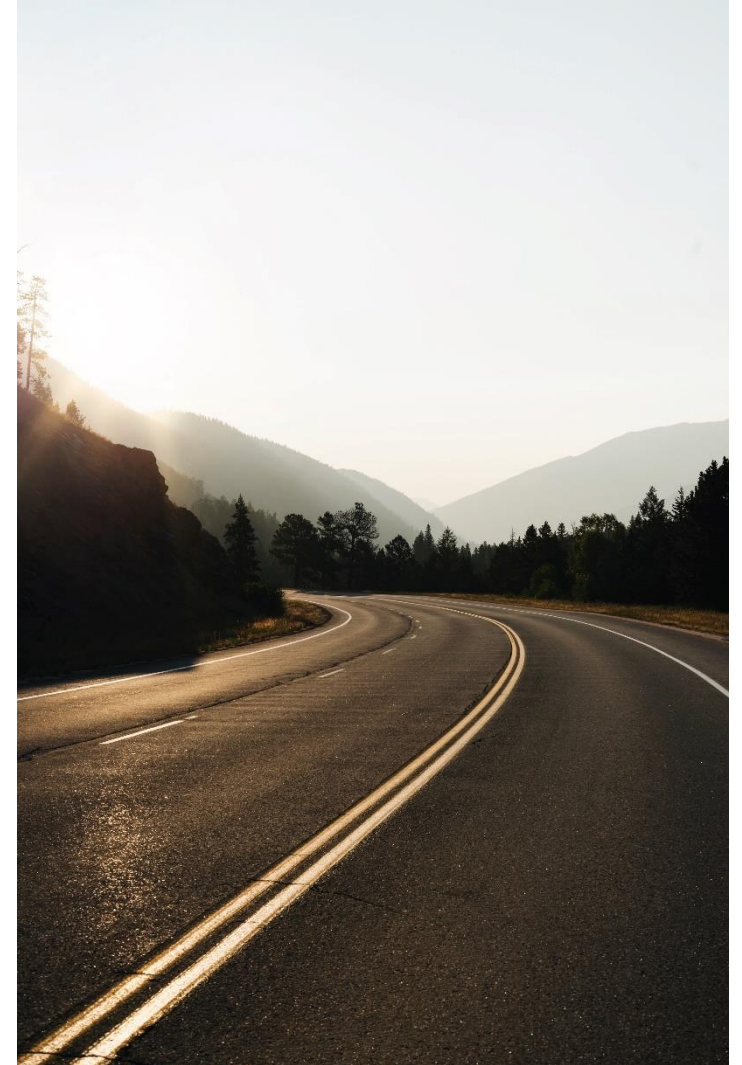
Graduation with a degree from a recognized post-secondary institution with acceptable specialization in meteorology;

OR

Graduation with a degree from a recognized post-secondary institution with acceptable specialization in Mathematics and a degree or certificate in meteorology;

OR

Graduation with a degree from a recognized post-secondary institution with acceptable specialization in sciences and a degree or certificate in meteorology.



# BECOMING A METEOROLOGIST WITH THE MSC

## Education Requirements - Courses

Notwithstanding the nature or field of the degree mentioned above, the applicant's university transcript must encompass, as a minimum prerequisite, the following courses :

- minimum of **10 courses in physics and mathematics**
- **dynamic meteorology course ; ATSC 404**
- **thermodynamic meteorology course; ATSC 405**
- **synoptic meteorology course; ATSC 413**
- **three (3) other meteorology related courses.**



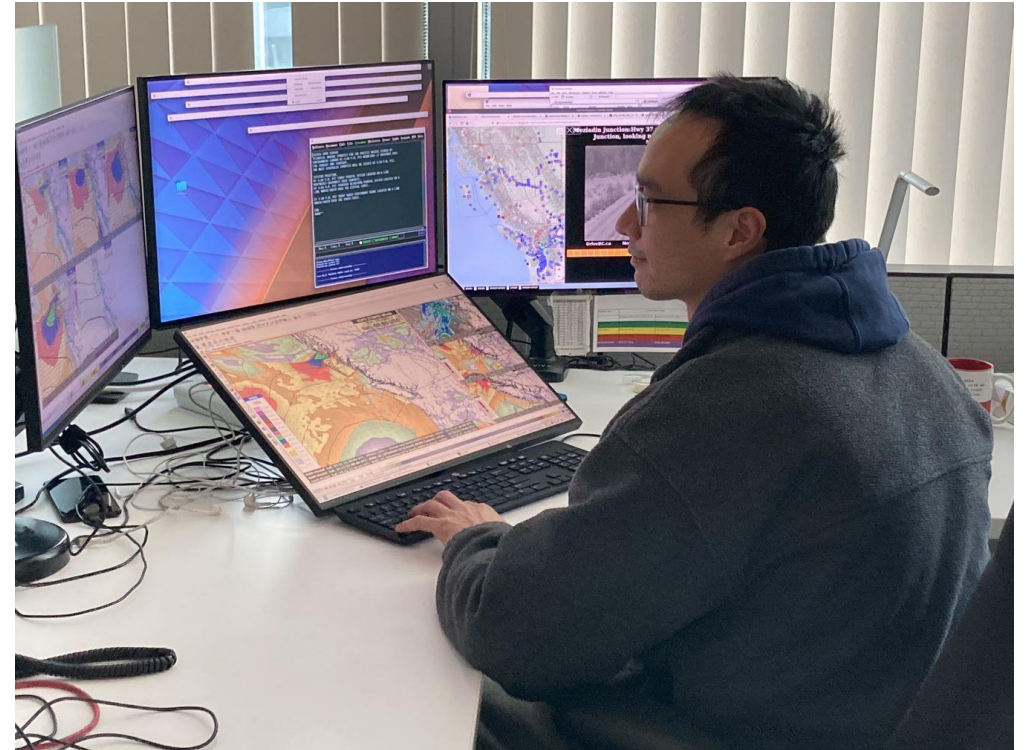


# BECOMING A METEOROLOGIST WITH THE MSC

## Conditions of Employment

- Shift work (day, evening, night, week-ends, holidays) on a 24/7 basis;
- Presence required at the working desk for the entire shift or operational training;
- Mobility to various offices across Canada is a requirement of the job in order to respond to the Meteorological Service of Canada operational needs. (5 year clause)
- Who can apply: \*Persons residing in Canada and Canadian citizens residing abroad.

\*Preference will be given to veterans first and then to Canadian citizens and permanent residents



# BECOMING A METEOROLOGIST WITH THE MSC

## Diversity, Employment Equity and Assessment Accommodation

- ECCC seeks to ensure that recruitment strategies are fair and accessible to members of the 4 EE groups: women, persons with disabilities, Aboriginal/Indigenous People, and visible minorities
- Candidates belonging to any of the above groups may self-declare on their application
- Assessment accommodation measures are available to candidates who require and request

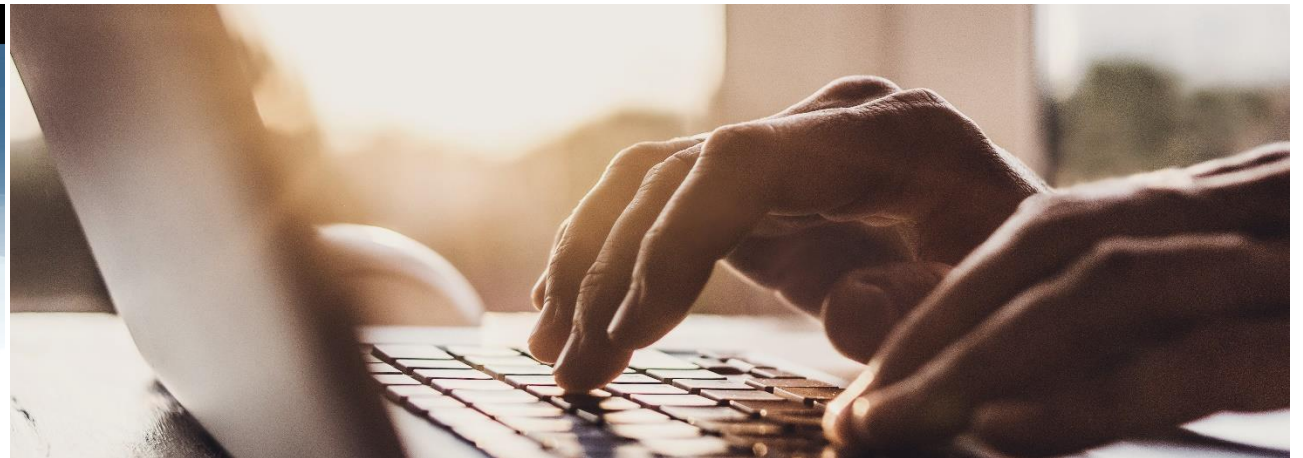


# BECOMING A METEOROLOGIST WITH THE MSC

## Initial Application

- The MT-01 job advertisement usually gets posted on the GC Jobs website in January or February each year
- In order to be notified when it is posted, create an account with GC Jobs, and set up e-mail alerts for MT jobs open to the public

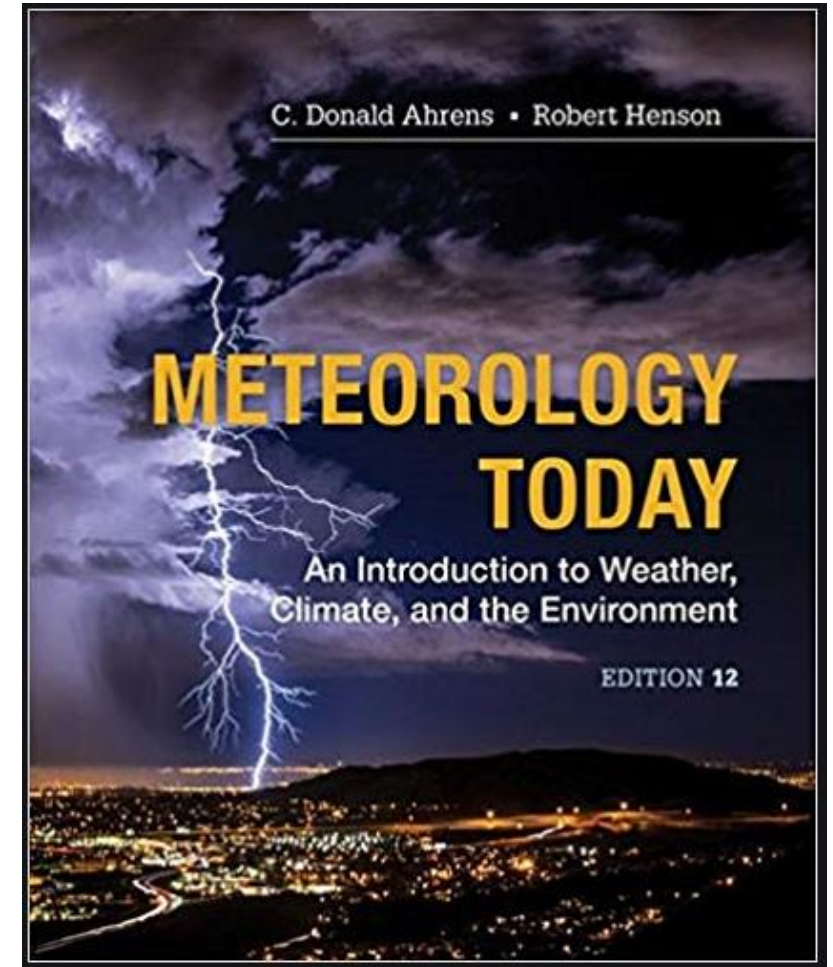
<https://emploisfp-psjobs.cfp-psc.gc.ca>



# BECOMING A METEOROLOGIST WITH THE MSC

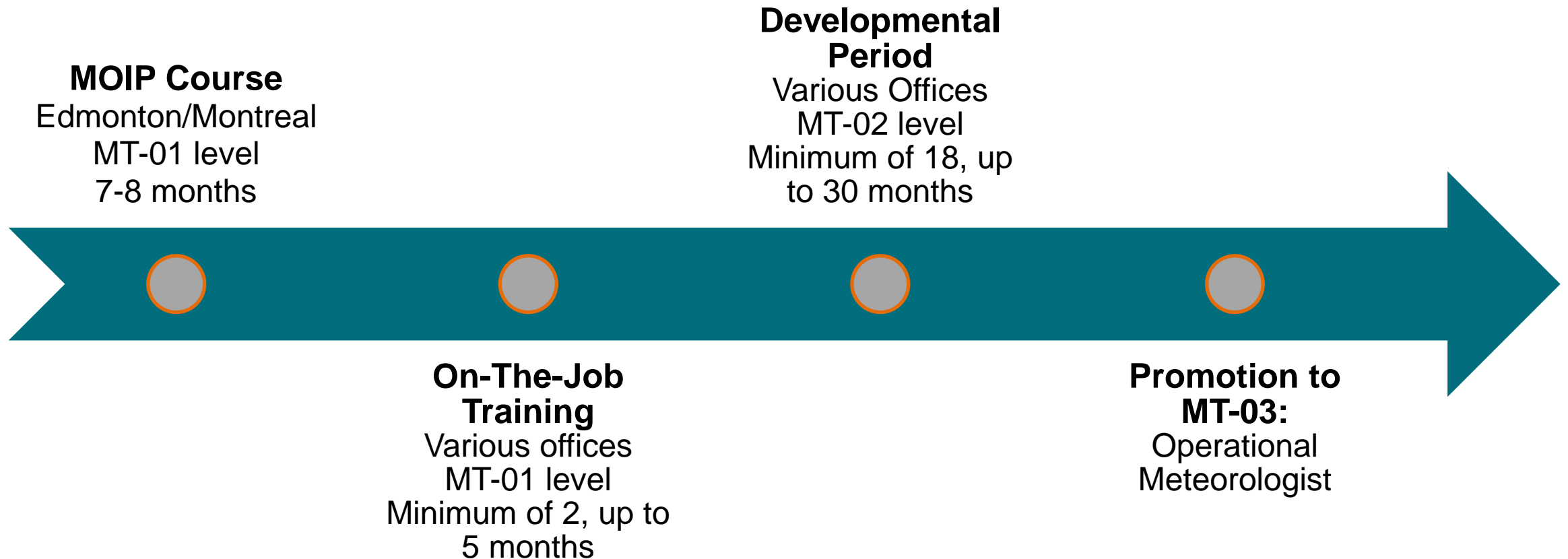
## Assessments

- Knowledge of meteorological theory
  - Oral exam online
- Behavioural competencies
  - Interview (Communication, Working with others, Adaptability, Initiative, Thinking, Client focus, Demonstrating integrity and Respect)



# BECOMING A METEOROLOGIST WITH THE MSC

## Meteorologist Occupational Development Program



# BECOMING A METEOROLOGIST WITH THE MSC

## MOIP Course

- Paid 7 to 8 month training program (MT-01 level)
  - During the course, you are asked to fill out a survey stating where in Canada you would like to be posted; postings based on organizational needs
  - You will be in a mobility pool for 5 years (or until you win a promotion)
- \* 29 interns each year maximum based on classroom sizes. Hiring numbers are subject to approval based on organizational needs.



# QUESTIONS?

Mariette Kulin  
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Training Meteorologist  
Meteorological Service of Canada  
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## Become a Meteorologist at Environment and Climate Change Canada



Join us as an Operational Meteorologist, an important part of the Meteorological Service of Canada (MSC).

### Explore your new career with us



[Who we are](#)



[What we offer](#)