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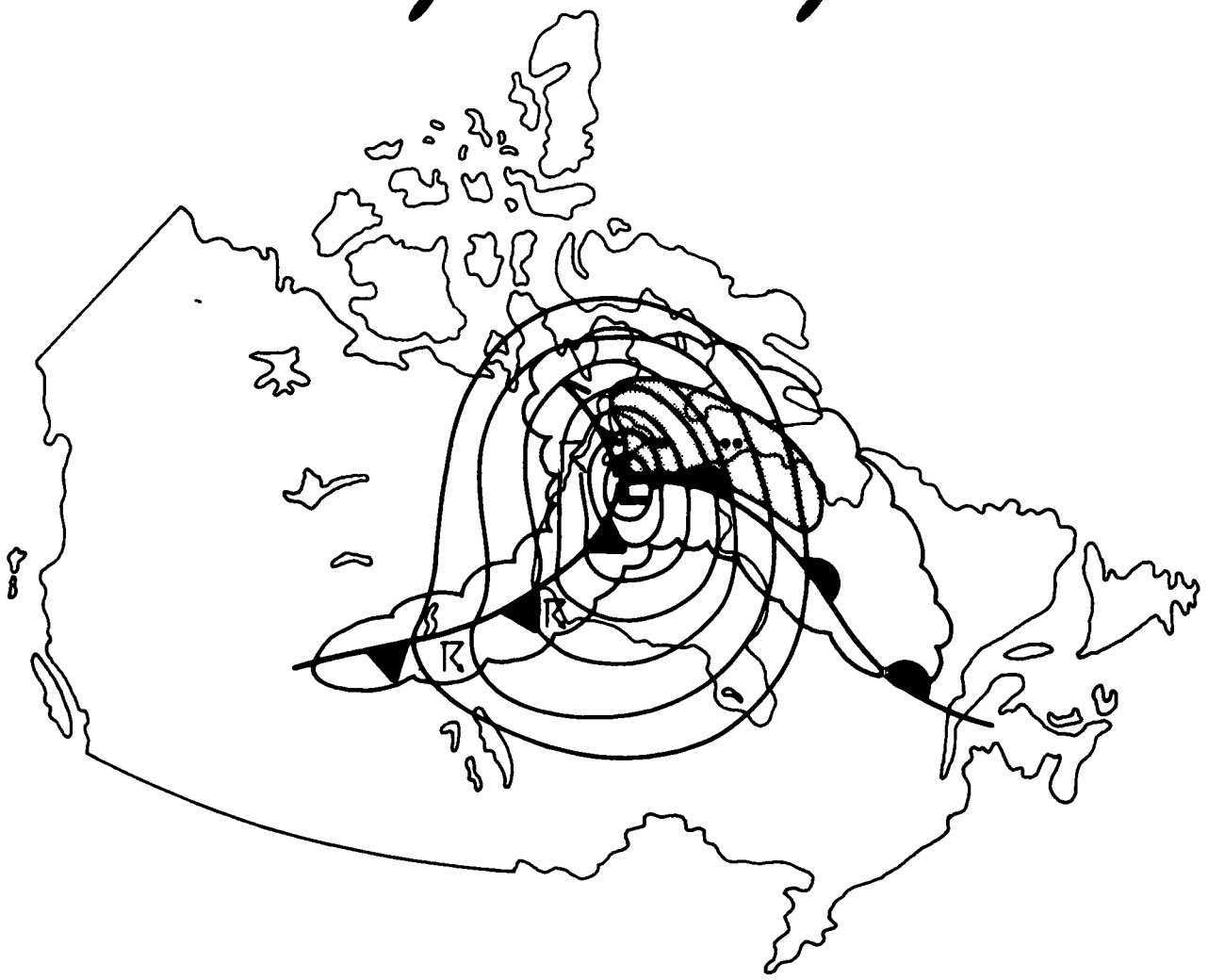
Environment Canada / Environnement Canada

Atmospheric Environment Service / Service de l'environnement atmosphérique

ATMOSPHERIC ENVIRONMENT SERVICE

Program Digest



1986 – 1987

AES MANAGEMENT SERIES

THE BUSINESS OF AES

The business of AES is to report past and present conditions and predict future conditions of the atmosphere and closely-related phenomena such as sea ice and sea state for safety of Canadians and to benefit Canada's economic and social life Primary among such predictions are weather, climate and ice forecasts, severe weather, sea-state, sea-ice and iceberg warnings, and warnings of potential hazards related to these phenomena In addition to physical conditions, the AES must report and predict the chemical composition of the atmosphere and its precipitation Predictions are of an operational, "real-time" nature, of a statistical or climatological variety, or are the product of research

These services are provided to general and specialized publics for safety and to benefit Canada's economic and social life

As AES cannot itself undertake to satisfy all demands for information on such conditions, it has the added responsibility of promoting and coordinating similar activities among universities, private Canadian meteorological agencies and other such expert bodies, as well as internationally where there is clearly a national benefit

H L Ferguson

The Atmospheric Environment Service

Canada's Weather Service (Much More Than The Weather)

The Atmospheric Environment Service (AES), which is part of the federal department of the Environment, provides most Canadians with daily weather information through weather reports in newspapers, broadcasts on television and radio or through direct enquiries to its offices

The primary goal of AES is to ensure the safety of Canadians and the protection of their property This is met by providing warnings of approaching severe storms and through regular weather forecasts As well, AES contributes to the international competitiveness of the Canadian private sector in two important ways

1) By providing weather information to industries which are particularly weather sensitive, and,
2) By supporting companies in the development of specialized high technological systems associated with atmospheric sciences

AES maintains environmental data files to answer questions on climatic extremes and normals for numerous applications, monitors ice and iceberg motion to protect ships and drill rigs in the Arctic and Atlantic, and monitors and predicts the movement of atmospheric pollution to help safeguard environmental quality Research covers major aspects of acid rain, toxic air pollutants, the high level ozone layer, and anticipated changes in climate produced by an increasing "greenhouse" effect due to atmospheric contamination AES also ensures that Canada meets its international obligations to civil aviation and military alliances by providing weather data and forecasts for Canadian territory and air space

Over 100 Years of Service

In Canada, weather observations can be traced back to 1839 when British military officers established an observatory in Toronto It was not until 1871 when Canada formally instituted its own national weather service The observatory for this service was located on the grounds of the University of Toronto and supervised by Professor George Kingston To assist the service, five thousand dollars was received in federal funds so that the observatory could provide storm warnings for ships on the Great Lakes

Throughout its history, the national weather service has gradually expanded its jurisdiction of provisions In the early 1900's, a telegraph system was established and expanded the distribution of weather forecasts which finally made the weather service "national" By the 1930's, the national weather service became better known as the Meteorological Service. As well, the service expanded to include national forecasts to the public, maritime interests and the fast-growing aviation sector In the 1950's, the service began forecasting ice conditions on the open seas, and in the 1970's, air quality services were added to the services's responsibilities

Forecasting The Weather

Weather forecastng is beneficial and sometimes extremely important to Canadians Not only do weather forecasts allow us to plan our daily activities such as picnicking, fishing and/or farming, but they aso provide us with warnings about the possibility of severe weather that could threaten our lives and property

The basic services provided by AES are publicly funded in order to ensure the safety of Canadians and the security of their property, to contribute to the efficiency of the economy and to help safeguard environmental quality AES issues warnings on tornadoes, blizzards, high winds, extreme cold, hail and heavy rains, plus forecasts of precipitation, temperature, wind, and sky cover for 270 urban, rural and marine areas Public and marine forecasts valid for the current day and next day are issued once a day for up to five days ahead Finally, long-range forecasts of average temperature and precipitation are issued twice a month for the following two-week period

Forecasts are distributed to the public mainly by radio, television and newspapers In areas of frequent severe weather or high economic activity, AES provides weather information through two additional means - Weatheradio and tape-recorded telephone messages

Special forecasts are also provided for particular sectors on a cost-recovery basis For instance, provincial and municipal governments can be kept informed about snowfall amounts for snow removal and highway conditions We can tell power companies when to expect a cold snap so they can prepare for high energy consumption

Many industries need special meteorological services to assist in planning their day-to-day operations Many of these services can be provided by private meteorological companies in Canada These companies are able to purchase the meteorological data collected by the federal network operated by AES

The Basic Components of Weather Forecasting

Providing weather forecasts is a three step process

Step one is collecting all the available information about today's weather A large observing network does this job In Canada, more than 300 stations take hourly weather observations, 33 additional stations sample the upper atmosphere twice daily using instrumental balloons, 10 satellite centres receive continuous measurements and 14 weather radars operate in southern Canada Selected data, along with relevant data collected at the Canadian Meteorological Centre from around the globe, are then sent on a Canada-wide telecommunications network to all AES forecasting centres These data give the forecaster a "snapshot" of the world's weather in that instantaneous moment

Step two is a forecast production At the heart of this system lies the CRAY supercomputer in Montreal This number-cruncher can simulate or project what the atmosphere should be like in the future from the information streaming in from Canada and around the globe These projections of the future atmospheric conditions are then transformed by highly trained and experienced weather

forecasters into predictions of regional conditions Meteorologists at nine regional centres use these CRAY forecast weather maps along with satellite and radar weather data, and other information to produce the detailed forecasts and weather warnings for their own regions

Step three is delivery AES provides these forecasts and warnings to radio, television, Weatheradio, newspapers and through 59 weather service offices throughtout Canada

The Canadian Climate Centre

Every building in Canada built to the National Building code, is designed on the basis of data on past weather or climate Roofs burdened by snow loads, structures subject to wind forces, heating systems, drainage facilities - all are designed to deal with conditions determined by climate statistics But it's not just our houses and buildings that are affected, almost all Canadian occupational activities either do or could benefit from wise use of climate data

An Army of Volunteers

AES scientists and an army of more than 2,300 volunteer climate observers collect information on weather and climate on land and at sea The land-based network is more than a century old and is operated by a cross-section of Canadians, including farmers, homemakers, pensioners and teachers, all taking temperature and precipitation readings twice a day in their backyards or gardens These observations provide the statistics essential to our national climate archives

In adition, several thousand severe weather watchers, such as students and police officers, serve their fellow citizens by assisting the severe weather warning system in terms of reporting thunderstorms, tornadoes and hailstorms to the regional centres

Keeping Watch on Offshore Ice

AES is also responsible for monitoring and forecasting ice movements along Canada's coastlines and inland waterways Aircrafts use advanced radar equipment to observe sea ice along the Atlantic coast, the Great Lakes/St Lawrence system and in the Arctic A new aircraft (a deHavilland Dash-7) will be used to survey icebergs In Ottawa, the Ice Forecasting Centre combines this aircraft information with other information from satellites, and weather data and forecasts to produce detailed ice charts and ice forecasts so that ships can plot a safe course through ice-infested waters Fishermen, shipping companies and offshore oil and gas exploration companies all receive these status reports on offshore ice This helps prevent marine accidents that would endanger both lives and the fragile marine environment

As experts on atmospheric processes, AES scientists play a vital role in advising the government and industrial decision-makers on such key issues as acid rain, toxic chemicals and climate change This expertise is backed up with painstaking research from the ground up to the Space Shuttle and from the chemistry lab to the computer room Observational programs are maintained to determine changes and trends in the quality of our air and our rain

Research and Development

AES is a scientific service We depend on research and development to improve services, and to be at the forefront of the environmental sciences

We can't do it alone We work with Canadian industry, with universities, with provincial agencies and other federal government departments We collaborate internationally with scientific research institutions contributing to world-wide advances in atmospheric sciences and we draw from the efforts of other countries

We've had major successes. We helped to pioneer the techniques which permit computer forecasting of weather up to 5 and 6 days These are now in use world-wide We have developed processing systems in co-operation with Canadian industry that deliver weather satellite data across Canada We are recognized as a world leader in the science of acid rain and long-range transport of pollution including Arctic Haze Our research on climate change, while modest, is recognized internationally as first-rate

In collaboration with Canadian industry, we have developed sophisticated instrumentation to measure the high-altitude ozone layer both from the ground and from space One of our instruments was used on the Space Shuttle by Canadian Astronaut Marc Garneau and another will be used by our next Astronaut Steve MacLean

The future looks exciting Satellite and supercomputers present opportunities to provide more accurate and timely weather warnings as we improve the understanding of how the atmosphere works Very long-range forecasts of general weather conditions seem possible At the same time, the details of the transport and transformation of acidic and other pollutants are emerging from our research efforts

Partners in Global Weather

Weather knows no frontiers The World Meteorological Organization (WMO), a United Nations agency based in Geneva, co-ordinates the global distribution and exchange of weather information among 160 countries

As a large country, Canada benefits from its participation in the WMO as global data are required for longer term forecasts over its geographically variable territories In turn, Canada contributes to the world meteorological community

by sharing its data and participating in joint programs such as the World Climate Program and in the WMO training programs

In addition, Canada is an active partner in global research programs that deals with drought, carbon dioxide emissions and climate change, protecting the ozone layer and efforts to improve weather forecasting on a world-wide basis

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1 1 PURPOSE

"The Program Digest" describes

- the objectives, mandate and responsibilities of AES, and
- the AES budget by program sub-activity (SA 1) and program sub-sub-activity

"An Addendum to the Program Digest" describes

- sub-sub-sub-activity (SA 3) and the program activity element (SA 4) level definitions of the program activities,
- the relationship between responsibility centres and SA 3 program activities, and
- the AES financial and human resource allocations at the SA 3 and SA 4 levels by organizational unit

1 2 HOW TO REFERENCE ITEMS IN THE PROGRAM DIGEST

This volume of the Program Digest is structured such that the table of contents may be used as an index, permitting the reader to reference any item Information relating to AES program activities and AES organizational units is provided in Chapters 4 and 5 respectively, with each chapter having an introduction and general overview

Any comments or suggestions for amendments to this document should be forwarded to the Policy, Planning and Assessment Directorate

CHAPTER 2

Atmospheric Environment Service

RESPONSIBILITIES and LEGAL MANDATE

2. ATMOSPHERIC ENVIRONMENT SERVICE RESPONSIBILITIES AND LEGAL MANDATE

The Department of Environment came into being in June, 1971 following proclamation of the Government Organization Act, 1970 Known now as Environment Canada, the Department was created from components within the federal structure that relate to the natural environment Subsequent organizational adjustments were effected through the Government Organization Act, 1979 which separated the fisheries and marine component, by Order-in-Council PC-1979-1617 which added Parks Canada to the Department's structure, and by Order-in-Council PC-1984-3200 which transferred the Canadian Forestry Service to Agriculture Canada

The Government Organization Act (GOA), 1979 and the subsequent Miscellaneous Statutes Law Amendment Act (June 1984) and Order-in-Council PC-1984-3200 which modified the effect of the Act, states that the duties, powers and functions of the Minister of the Environment extend to and include

(i) all matters over which Parliament has jurisdiction not otherwise assigned to other federal departments, boards and agencies relating to
- the preservation and enhancement of the quality of the natural environment, including water, air and soil quality,
- renewable resources including migratory birds and other non-domestic flora and fauna,
- water,
- **meteorology,**
- the enforcement of rules and regulations made by the International Joint Commission relating to boundary waters, and questions arising between the United States and Canada insofar as they relate to the preservation and enhancement of the quality of the natural environment, and
- the co-ordination of the policies and programs of the Government of Canada respecting the preservation and enhancement of the quality of the natural environment

(ii) such other matters over which Parliament of Canada has jurisdiction relating to the environment as are by law assigned to the Minister

Orders-in-Council PC-1979-1617 and PC-1979-1841 added responsibilities for national parks, national battlefields, historic sites and monuments and certain canals to the Minister of the Environment

Recognizing that the preservation and enhancement of environmental quality in Canada is a responsibility of each federal department, and of provincial governments and the public, the GOA also gives to the Minister of the Environment broad responsibilities to promote and encourage practices and conduct leading to the better preservation and enhancement of environmental quality, and to co-operate with provincial governments or agencies thereof, or any bodies, agencies or persons in any programs having similar objectives It also empowers the Minister to establish guidelines and advise heads of departments, boards and agencies of the federal government in all matters pertaining to the preservation and enhancement of the quality of the natural environment Finally, it allows the Minister to enter into agreements with other governments or agencies for the purpose of carrying out programs for which the Minister is responsible

To carry out its programs the department has developed a framework that in addition to national heritage (Parks), includes the following main environmental objectives. These are to promote the safety and security of the environment, environmental quality and the wise use of renewable resources, and to facilitate the adaptation of human activities to environmental conditions The provision of environmental information is a primary mechanism for achieving these objectives Based on world class scientific and technical capability the AES does its part by continuously monitoring environmental conditions and processes in relation to the atmosphere and advising Canadians on hourly, daily and longer-term changes in weather and climate, approaching storms and sea and ice conditions Along with the rest of the department (and other departments as appropriate) AES also provides environmental information relative to environmental issues such as acid rain, carbon dioxide build-up, destruction of the stratospheric ozone layer, explosions of insects and pests, criteria for forest fire danger ratings, land-use and flood-plain classification, floods, and droughts and other water shortage or water quality issues

CHAPTER 3

Atmospheric Environment Service

OBJECTIVES PRIORITIES and HIGHLIGHTS

3 1 OBJECTIVE OF ENVIRONMENT CANADA

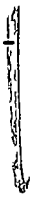
- to foster harmony between society and the environment for the economic, social and cultural benefit of present and future generations of Canadians

Environment Canada has three Main Estimates Programs
Environmental Services, Parks and Administration (diagram on page 17)
The Atmospheric Environment Service is one Planning Element of the Environmental Services Program The other Planning Elements are the Environmental Conservation Service and the Environmental Protection Service

3 2 OBJECTIVE OF ENVIRONMENTAL SERVICES PROGRAM

- to promote and enhance the maintenance of environmental quality and the wise management and use of renewable resources, and
- to facilitate the adaptation of human activities to environmental conditions

3 3 OBJECTIVE OF THE ATMOSPHERIC ENVIRONMENT SERVICE



to ensure that Canada has adequate information on the atmosphere, ice and sea state for the safety of life, the security of property, the greater efficiency of economic activities and for the maintenance and enhancement of environmental quality

3 3 ATMOSPHERIC ENVIRONMENT SERVICE'S PRIORITIES 1986 - 1991

In support of the Government's overall priorities, AES will focus on control of expenditures, streamlining of services delivered to Canadians, economic development through private sector stimulation, and enhancement of Canadian sovereignty AES will participate in the achievement of the Departmental priorities of environmental security and safety for Canadians, acid rain, toxics, water, the modernization of weather services, and the implementation of the Canadian Climate Program

Priorities

Accordingly, AES priority activities are

1 To increase the safety of Canadians and the security of their property by modernizing the weather service to improve the utility of weather warnings and forecasts by

   (a) focusing effort towards severe weather warnings and short term forecasts (next 48 hours) in Regional Centres where human judgement has a major impact,

   (b) automating to the extent possible the longer term forecasts through use of the CMC computer,

   (c) improving the efficiency of the delivery of weather information by extending mass dissemination means such as the weatheradio network, automated telephone answering devices, cable television, automatic voice distribution systems, and self-briefing graphic display systems

   (d) improving marine weather services in the Arctic, off the East and West coasts, and in the Great Lakes, and

   (e) implementing ice and iceberg surveillance and forecasting services in the Arctic and off the East Coast.

2 To contribute to the enhancement of environmental (air) quality in Canada by

   (a) conducting the atmospheric component of the LRTAP/Acid Rain research,

   (b) co-ordinating Canadian Long Range Transport of Air Pollution (LRTAP/acid rain/toxic chemicals) research,

   (c) making recommendations on policies and control programs,

   (d) developing capability in assessing atmospheric toxic chemicals

3. To promote economic development by the enlightened use of climate knowledge by

   (a) acting as the lead agency for the Canadian Climate Program,

   (b) encouraging the private sector to provide consultation services in the application of climate information to climate sensitive industries,

   (c) developing monthly and seasonal climate forecasts for operational production,

   (d) improving the monitoring of atmospheric carbon dioxide and other radiatively active gases and promoting the study of the long term impacts of climate change on major economic sectors in Canada

4 To contribute to better management of water resources by implementing a hydrometeorological program at the National Hydrology Research Centre (NHRC) in Saskatoon on drought predictions and northern hydrology

5 To contribute to streamlining Government operations by

   (a) stimulating the private sector by contracting out ice reconnaissance, equipment development and other AES core activities,

   (b) fostering the further development of the private sector by encouraging them to provide services beyond the AES core level,

   (c) decreasing administrative overhead costs, and

   (d) increasing the levels of cost recovery

6 Contribute to sovereignty by augmenting AES programs over frontier areas, particularly the Arctic, and increasing their visibility.

3 4 1986 - 1987 HIGHLIGHTS

1 Improve Weather Services

- Improve marine weather services by increasing research on major oceanic storms, assigning more meteorologists to marine forecasting, improving marine observations, and by providing sea state (wave) information
- Continue installing a satellite-based communications system to relay weather and ice data more efficiently and effectively
- Automate more weather observing functions, modernize display systems for forecasters, and use computers to produce longer-range forecasts

2 LRTAP/Acid Rain

- Continue co-ordination of a national Long Range Transport of Air Pollutants scientific program
- Provide follow-up to the report of acid rain envoys Mr Davis and Mr Lewis
- Publish results of the Muskoka acid rain conference

3 Climate Services

- Evaluate experimental monthly and seasonal forecasts and make a decision on their validity as operational products by March 1987
- Issue in December 1986 another report on CO_2 build-up and its possible impacts
- Improve climate services through the Canadian Climate Program (CCP) (draft a Cabinet Document for Phase II)

4 Ice Services

- Take delivery of new ice reconnaissance aircraft (Dash-7IR) in the spring of 1986
- Begin iceberg suveillance and forecast services
- Increase Canadian private sector involvement in airborne ice reconnaissance

5 Air Quality Services and Atmospheric Research

- Continue close monitoring of the ozone layer and meet international agreements to control ozone
- Improve understanding of the ozone layer, climate change and acid rain through Space Shuttle experiments with the sunphotometer and Brewer ozone instrument

6 Other Items

- Address recommendations of the Auditor General, Nielsen and other related reports.
- Expand the cost-recovery, user pay philosophy for certain specialized weather and climate services

CHAPTER 4

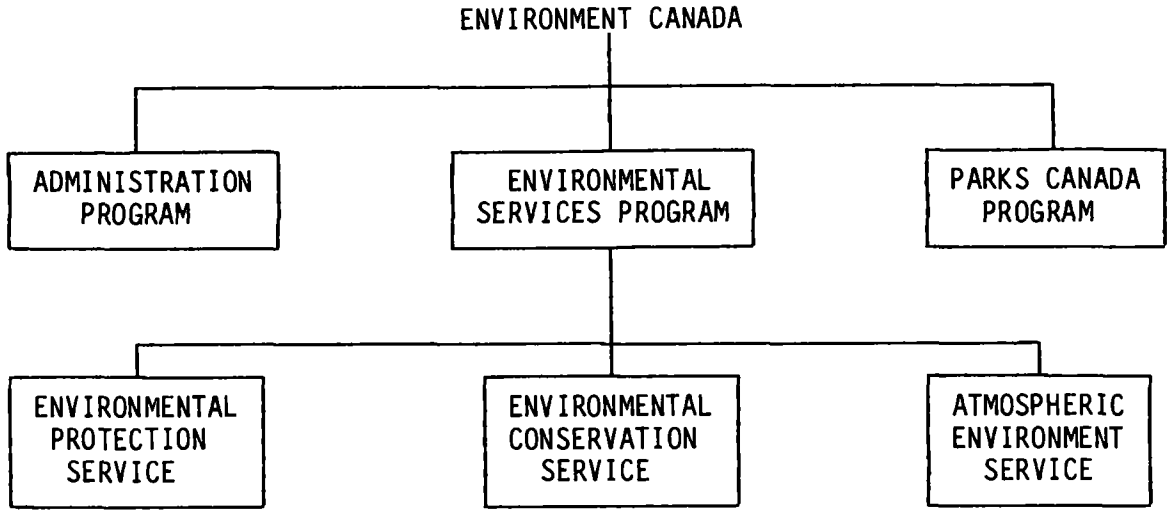
Atmospheric Environment Service

BUDGET
by
Program Activity

4 1 AES BUDGET BY SUB-ACTIVITY

4 1 1 PROGRAM ACTIVITY STRUCTURE

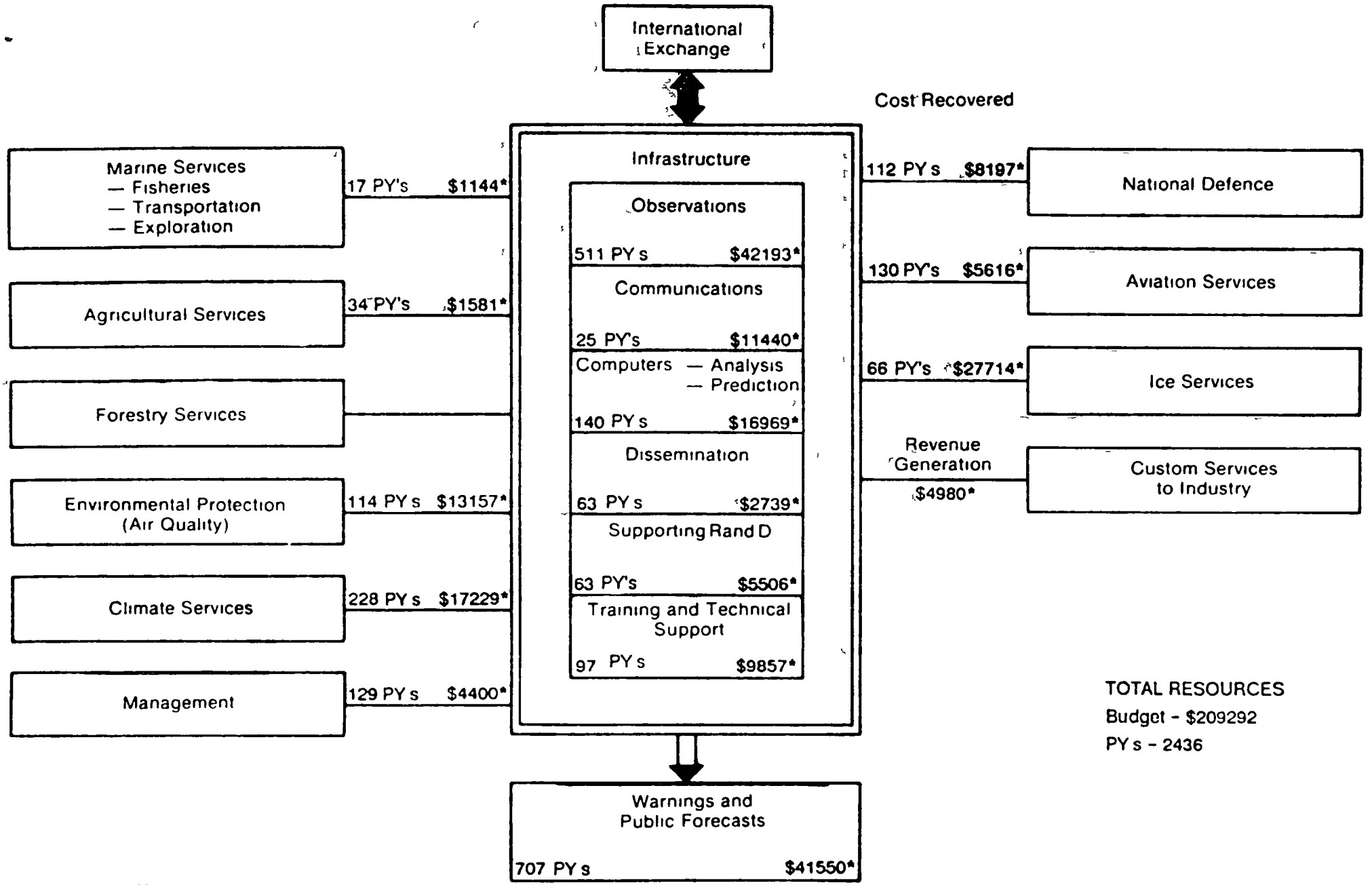
Environment Canada has three Main Estimates Programs Administration, Environmental Services and Parks Canada The Environmental Services Program is divided into three activities, one of which is AES, as indicated below



As a service, AES provides

i) past, present and future weather, climate, sea state and ice information for all areas of Canada and contiguous waters,
ii) advice on the impact of the above elements on human activities and on the application of the atmospheric sciences to weather sensitive operations in such activities as forestry, agriculture, aviation and national defence,
iii) research on chemical and physical processes of the atmosphere to improve the prediction of environmental elements,
iv) assessments of the impacts of human activity on the atmospheric environment, including the provision of information and policy advice on the atmospheric aspects of acid rain, toxic chemicals and the depletion of the ozone layer,
v) participation in international programs and negotiations including air quality, weather, climate, ice and sea state services, and
vi) promotion and/or co-ordination of national operational and scientific programs in these areas including the scientific leadership of the Canadian Long Range Transport of Airborne Pollutants program The diagram on the following page, called "A Single Service", demonstrates the distribution of the services and resources of AES

"A SINGLE SERVICE"



TOTAL RESOURCES
Budget - $209292
PY s - 2436

* (THOUSANDS OF DOLLARS)

The Atmospheric Environment Service has four different program activity levels to depict and describe budgets and program information in varying degrees of detail with the program activity element providing the most detail They are

Sub-Activity	SA 1 Level
Sub-Sub-Activity	SA 2 Level
Sub-Sub-Sub-Activity	SA 3 Level
Program Activity Element	SA 4 Level

For fiscal year 1986/87 the AES program activity structure will consist of 6 sub-activities, 24 sub-sub-activities, 52 sub-sub-sub- activities, and 152 program activity elements

The AES budget and programs are given by the following sub-activity (SA 1) and sub-sub-activity (SA 2) later in this chapter

Sub-Activity (SA 1)	Sub-Sub-Activity (SA 2)
1000 Weather Services	1100 Public Weather Services
	1200 Marine Weather Services
	1300 Aviation Weather Services
	1400 Economic Weather Services
	1500 Canadian Forces Weather Service
	2000 Data
	3000 Weather Services Support Systems
4000 Climate Services & Research	4100 Climate Services
	4500 Climate Research
	4600 Climate Services Support Systems
5000 Ice Services	5100 Ice Reconnaissance and Data Acquisition
	5200 Ice Analysis and Forecasting
	5300 Ice Climate Services
	5400 Ice Services Support Systems
6000 Air Quality Services and Atmospheric Research	6100 Air Quality Services
	6300 Air Quality Research
	6600 Research - Other
	6700 Air Quality and Research Support Systems

Sub-Activity (SA 1)	Sub-Sub-Activity (SA 2)
7000 Departmental Integrated Programs	7200 LRTAP
	7300 Toxic Chemicals
	7400 Great Lakes Water Quality
	7500 Baseline Studies
0800 Management and Common Support Services	0810 Management
	0830 Common Support Services

While there is a relationship between the organizational structure and the sub-activities of the AES, they do not correspond exactly

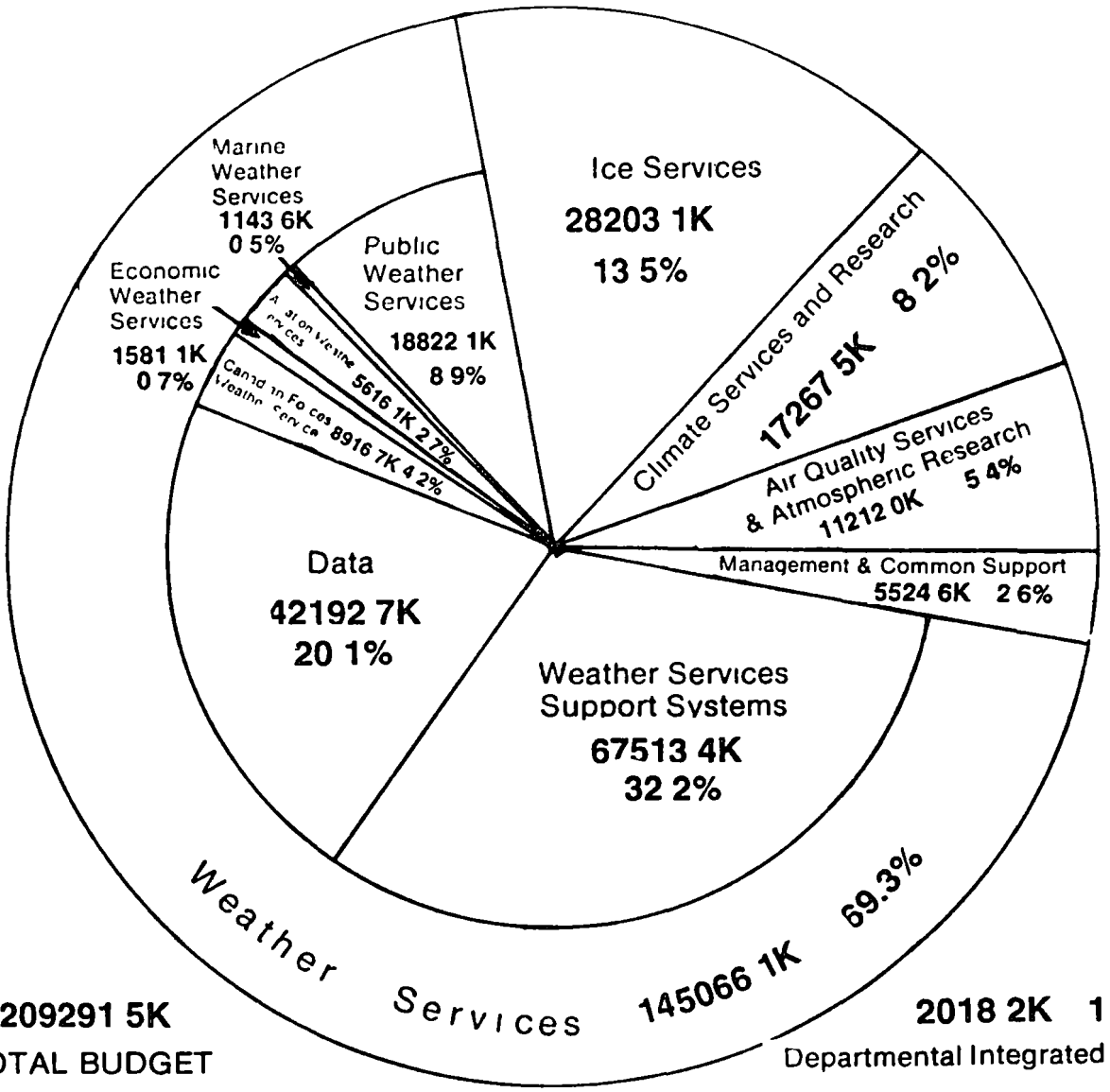
The Addendum of the Program Digest contains the AES sub-sub-sub-activity (SA 3) and program activity element (SA 4) structures and the corresponding budget information.

1986-87 Budget by Sub-Activity (SA-1) and Sub-Sub Activity (SA-2)
($000)

4 1 2 ATMOSPHERIC ENVIRONMENT SERVICE

SUB-ACTIVITY Sub-Sub-Activity	PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0810 Management	21.0	902 9	257 4	33.6		1193 9
0830 Common Support Services	96 0	3010 3	1204.3	116 1		4330.7
0800 MANAGEMENT AND COMMON SUPPORT SERVICES	117 0	3913 2	1461 7	149 7		5524 6
1100 Public Weather Services	432 0	17185.6	1592.3	44.2		18822 1
1200 Marine Weather Services	17 0	825 3	318.3			1143 6
1300 Aviation Weather Services	129.5	5340.0	261.1	15 0		5616 1
1400 Economic Weather Services	34 0	1456 2	124 9			1581 1
1500 Canadian Forces Wx Service	112.0	5251 1	2946 0			8197 1
2000 Data	511 3	20026 2	16692.1	5474.4		42192 7
3000 Wx Services Support Sys	673 1	29713.9	27588 7	9462.8	748 0	67513 4
1000 WEATHER SERVICES	1908 9	79798.3	49523 4	14996 4	748 0	145066 1
4100 Climate Services	145.5	5647 0	2399 1	862 8		8908 9
4500 Climate Research	19 5	972 2	208 0	103 0		1283 2
4600 Climate Services Sup Sys	63.0	2411.5	2159 2	2424 7	80 0	7075 4
4000 CLIMATE SERVICES AND RESEARCH	228 0	9030 7	4766.3	3390 5	80 0	17267 5
5100 Ice Recon & Data Acq	31 5	1456 0	19127 4	480 0		21063.4
5200 Ice Anal & Forecasting	21.0	897 3	1027 0	75.0		1999.3
5300 Ice Climate Services	4.0	203 0	540 0			743.0
5400 Ice Services Support Sys	10.0	448 0	3734 4	215 0		4397 4
5000 ICE SERVICES	66 5	3004.3	24428.8	770 0		28203 1
6100 Air Quality Services	12 0	506 9	49 8	0 5		557 2
6300 Air Quality Research	53 6	2581 6	809 7	577.0		3968 3
6600 Research - Other	31.7	1453 1	2415.0	840 1		4708 2
6700 Air Qual & Res Sup Sys	14 3	669 2	518 1	99 0	692.0	1978 3
6000 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH	111.6	5210 8	3792.6	1516 6	692.0	11212 0
7200 LRTAP	4 0	163 9	1320 5	533 8		2018 2
7300 Toxic Chemicals						
7400 Great Lakes Water Quality						
7500 Baseline Studies						
7000 DEPARTMENTAL INTEGRATED PROGRAMS	4 0	163 9	1320 5	533 8		2018 2
GRAND TOTAL	2436.0	101121 2	85293 3	21357 0	1520 0	209291.5

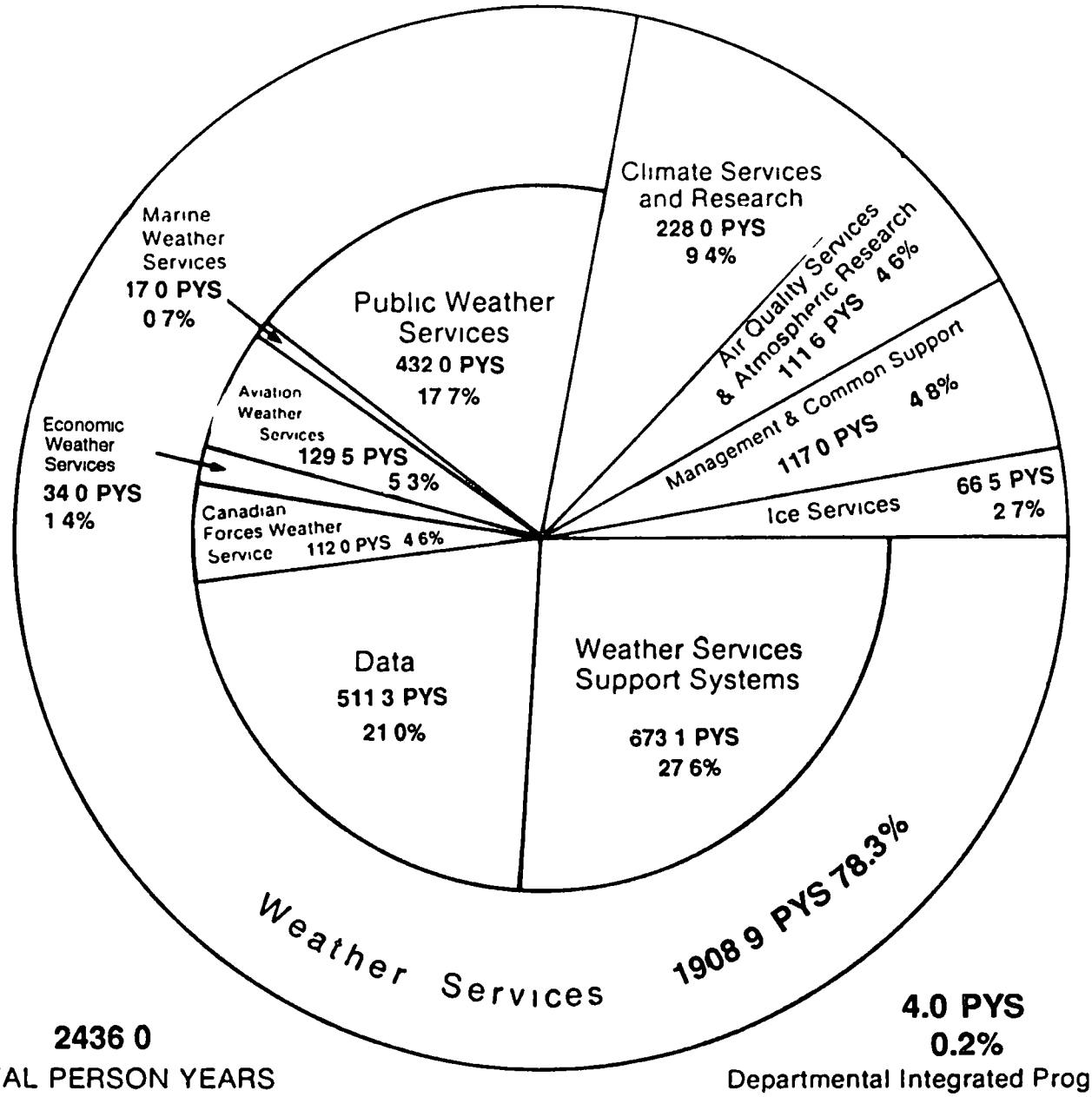
4 1 3 AES TOTAL BUDGET BY PROGRAM SUB-ACTIVITY
1986-1987



209291 5K
TOTAL BUDGET

2018 2K 1 0%
Departmental Integrated Programs

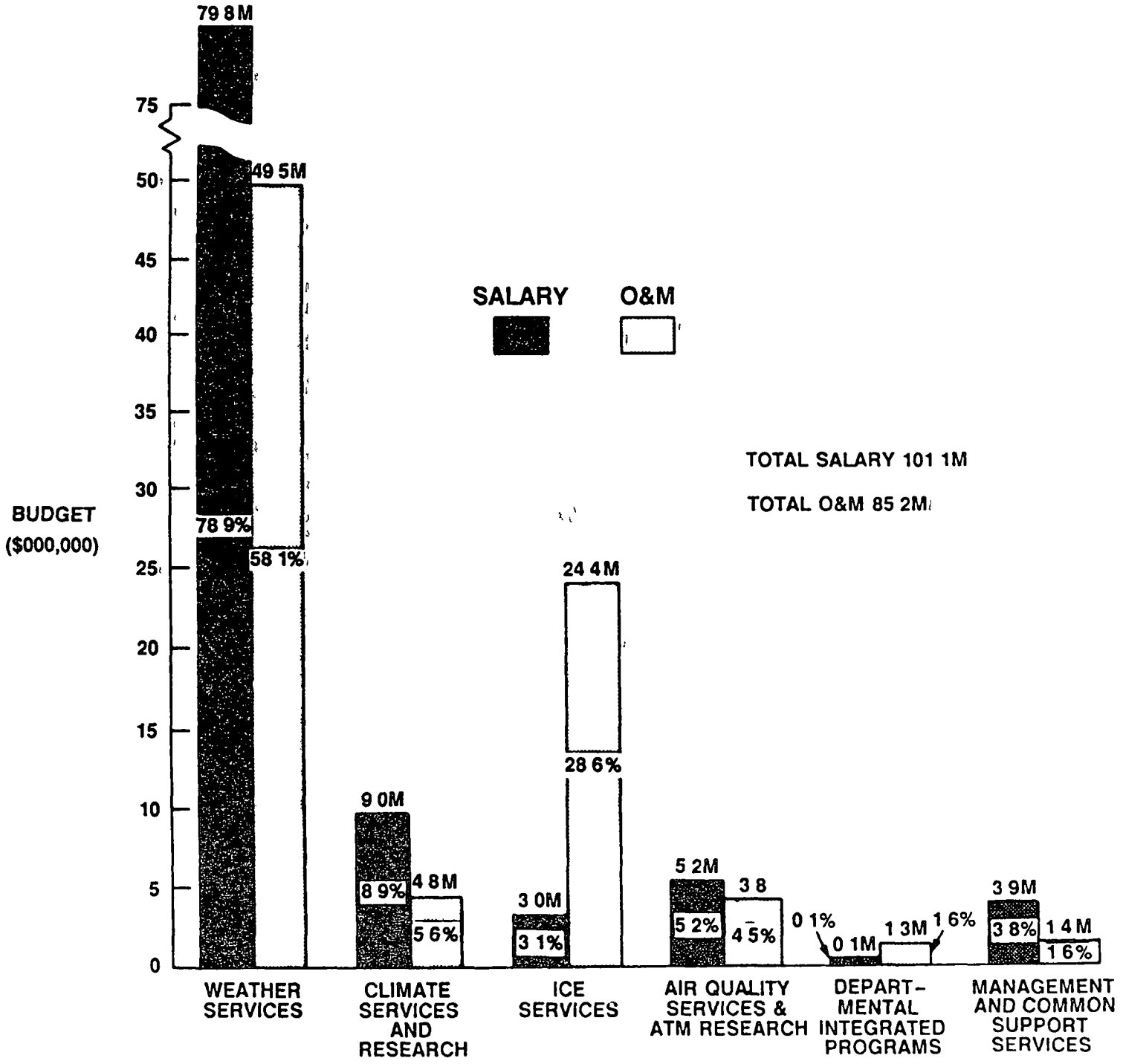
4 1 4 AES PERSON YEARS BY PROGRAM SUB-ACTIVITY 1986-1987



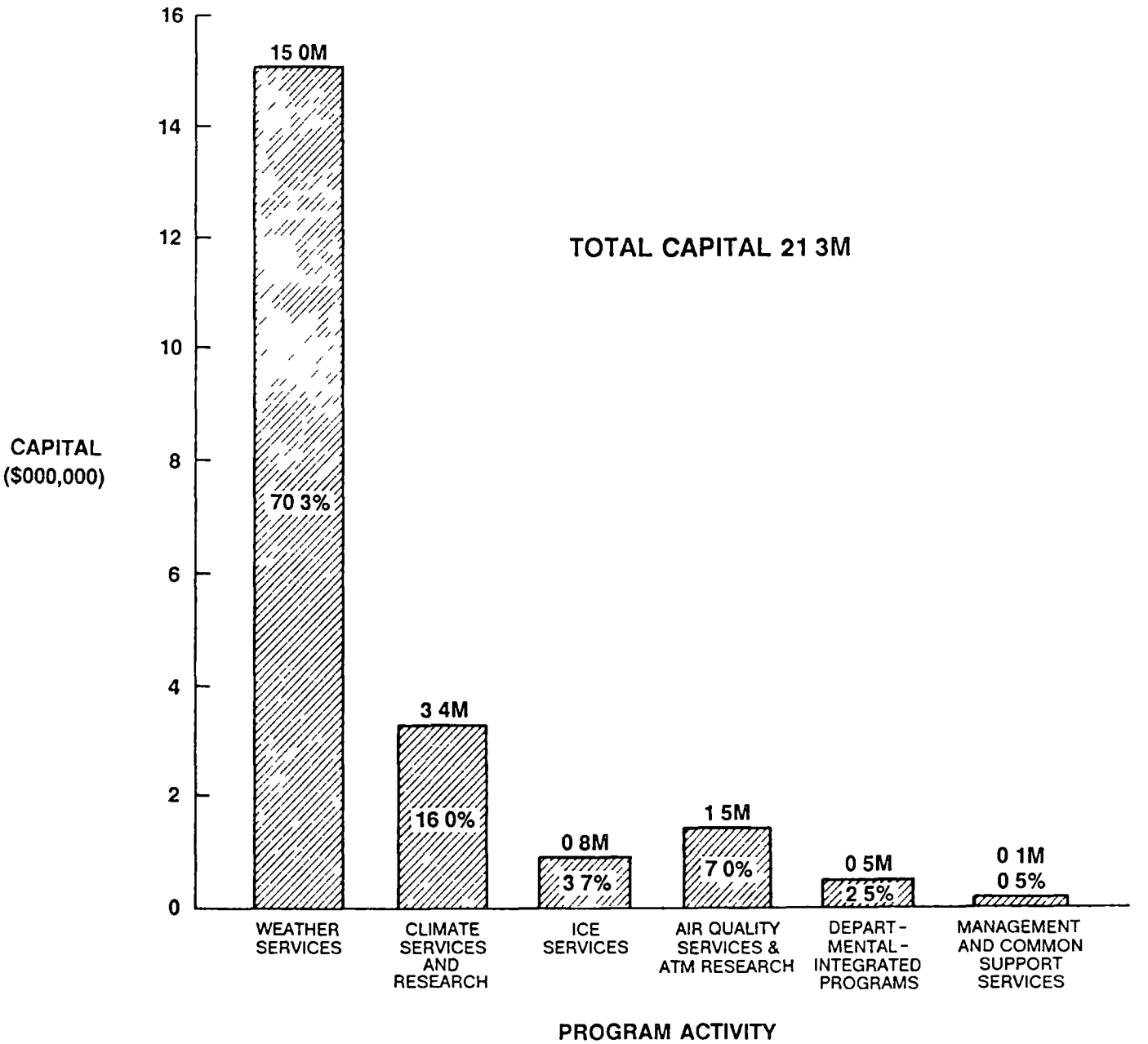
2436 0
TOTAL PERSON YEARS

4.0 PYS
0.2%
Departmental Integrated Programs

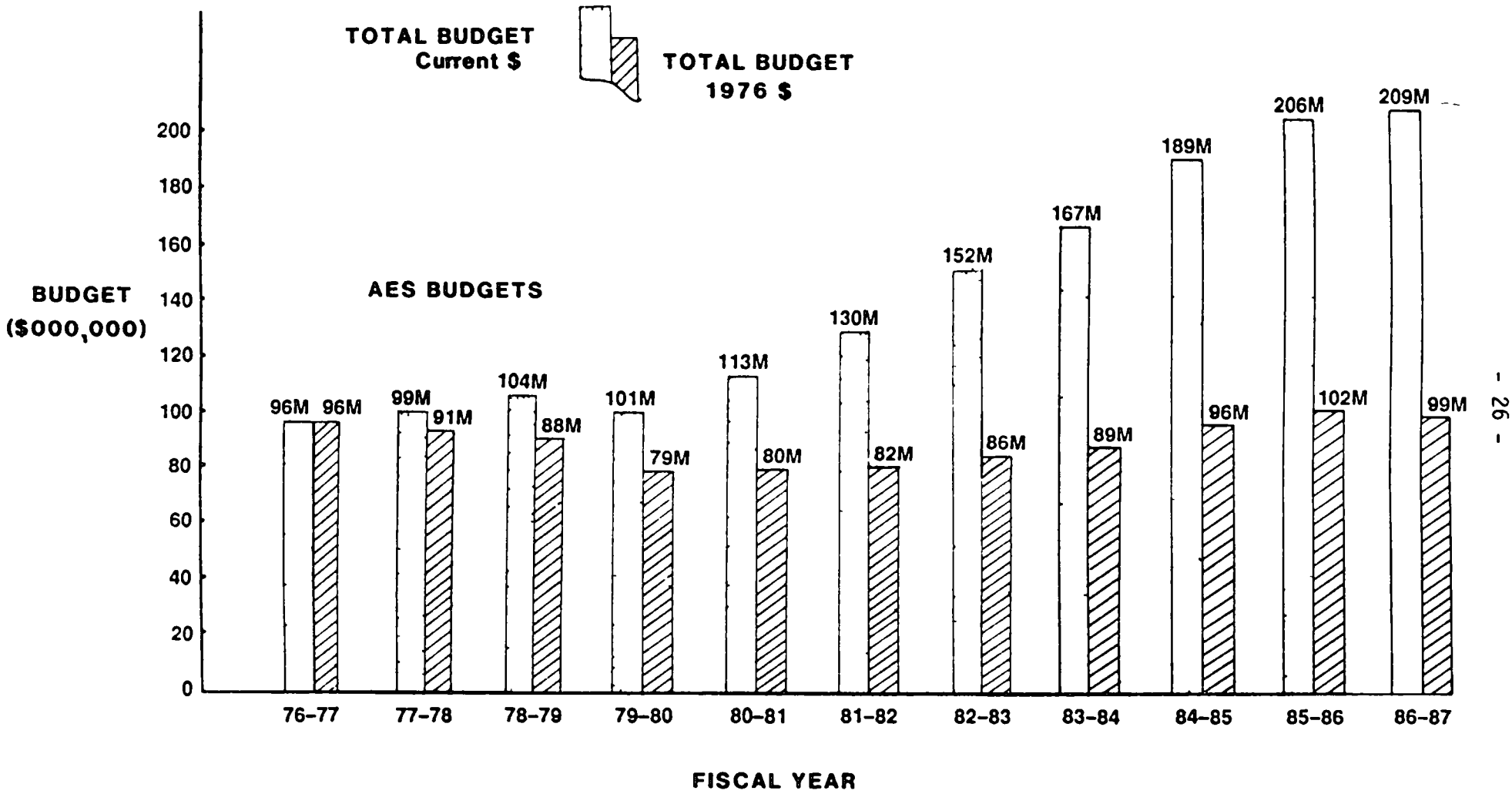
4 1 5 AES SALARY AND O&M BY SUB-ACTIVITY 1986-1987



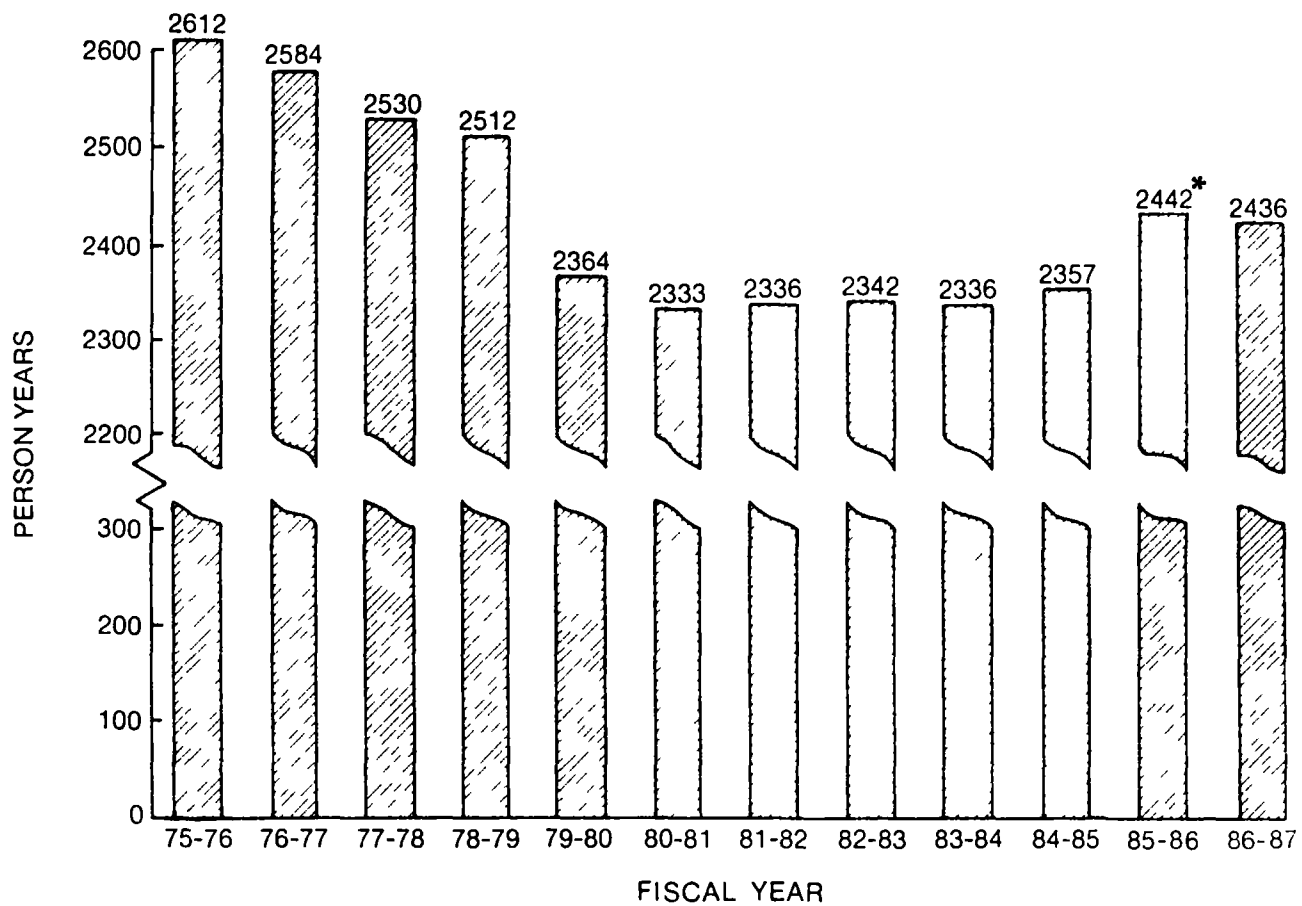
4 1 6 AES CAPITAL BY SUB-ACTIVITY
AES BUDGET 1986-1987



4 1 7 AES BUDGETS 1976–1986



418 AES PERSON YEARS 1976-1986



*Personnel Function Transferred to AES (56 PYs)

4 2 WEATHER SERVICES Sub-Activity (1908 9 PY, $145,066 1K)

4 2.1 Objectives WEATHER SERVICES

- to provide present and predicted weather and marine data and advice for the safety of Canadians, the security of their property, the support of economic activities and the protection of environmental quality in Canada,
- to acquire the basic understanding of atmospheric properties and behaviour needed to maintain and enhance such services

4 2 2 Budget WEATHER SERVICES 1986-87 Budget by Sub-Sub-Activity (SA 2)

For further details on the Weather Services 1986-87 Budget by Sub-Sub-Activity refer to p. 21, chart 4 1 2

4 2.3 Description WEATHER SERVICES

4 2 3.1 Public, Marine, Aviation, Economic and Canadian Forces Weather Services Sub-Sub-Activities (724 5 PY, $35,360 OK)

The functions of these sub-sub-activities include the commitment to provide information, 24 hours per day every day, on current and predicted weather for all land areas of Canada and the adjacent oceans The information provided includes weather warnings, forecasts and sea state conditions of the Atlantic and Pacific Oceans, particularly within the 200 mile economic zone. When compiled, the information is offered to commercial fisheries and weather-sensitive economic activities such as forestry and agriculture AES, in accordance with a Memorandum of Understanding, also provides support to the Department of National Defence to meet its meteorological and oceanographic service requirements

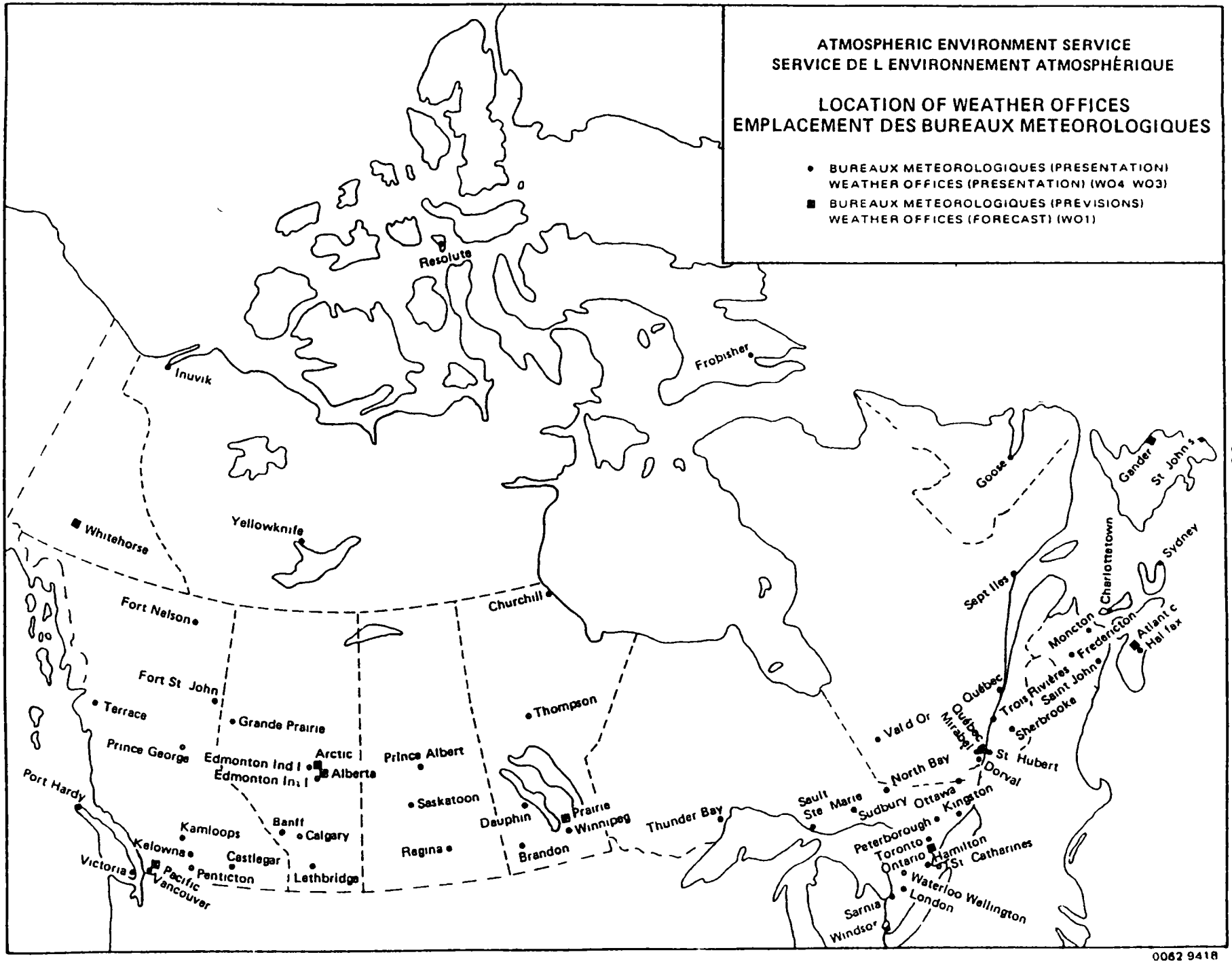
Across Canada, there are nine weather forecast offices which are supported by the Canadian Meteorological Centre in Montreal These offices conduct the analyses and prepare the warnings, forecasts and other bulletins for their respective geographical areas and users There are another fifty-nine smaller weather offices located across Canada which provide more comprehensive weather information than is available from the nine larger centres. This information can be obtained through telephone, automatic telephone answering devices, Weatheradio Canada (see pages 31 and 32), broadcasts on local radio and television and on cable television in some areas The number of contacts by users with the AES is displayed on pages 33 and 34

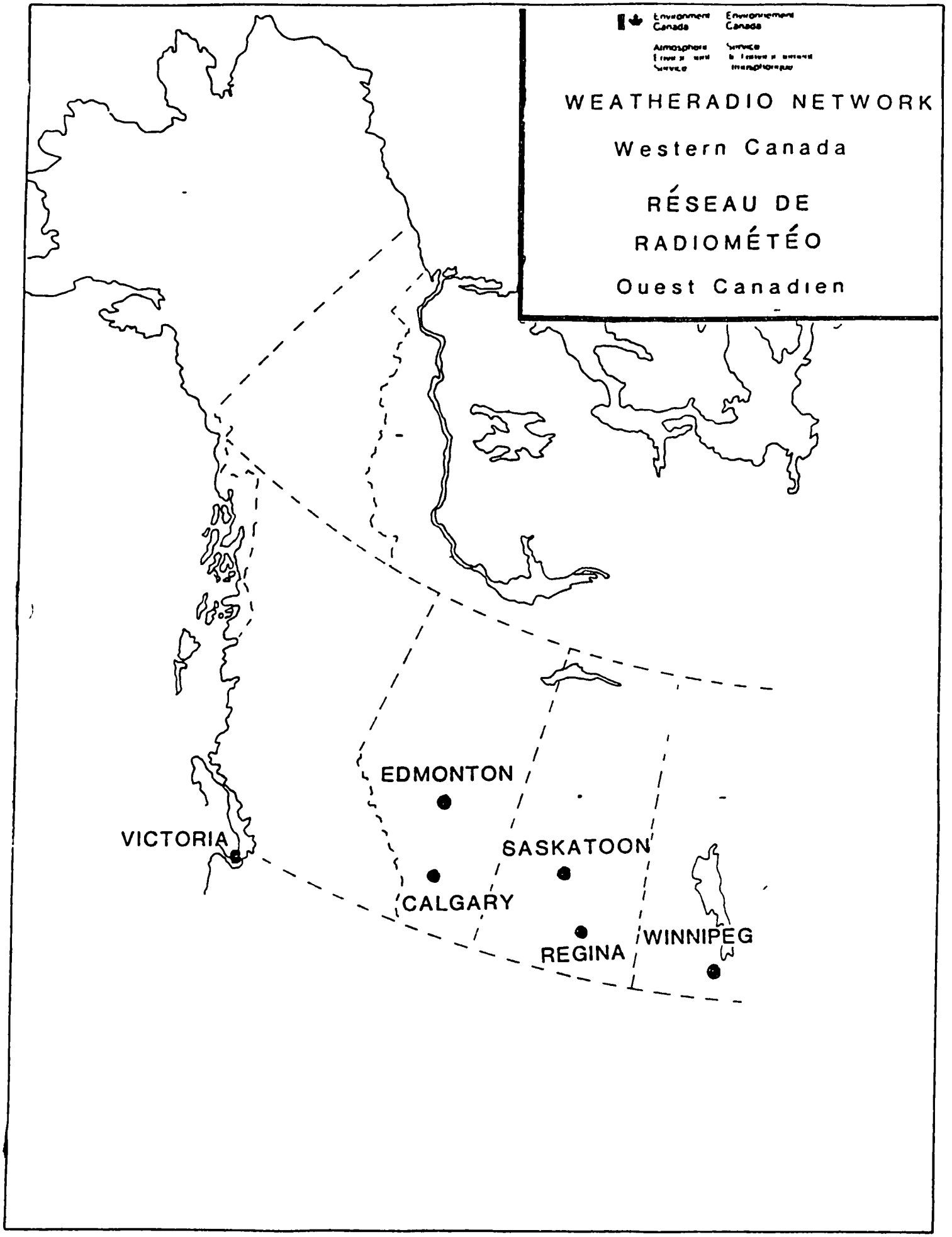
The services provided by these weather offices vary according to the needs of the user The chart "Weather Offices/Weather Centres" on page 35, and the map "Location of Weather Offices" on page 30, identify each office The services available include, for example, severe weather, heavy precipitation, potentially damaging winds and extremes in temperatures Warnings are emphasized in forecasts for the general public When doing marine forecasts and warnings, the offices are concerned with wind, visibility and freezing spray. Services to aviation include weather conditions at airports, and significant en route winds and temperatures at flight levels. Services to the agricultural sector and forestry industry are directed towards such activities as prevention or reduction of frost damage, crop spraying and forest fire control The weather offices and regional Scientific Services Divisions support air quality and climate services as well as environmental assessment programs

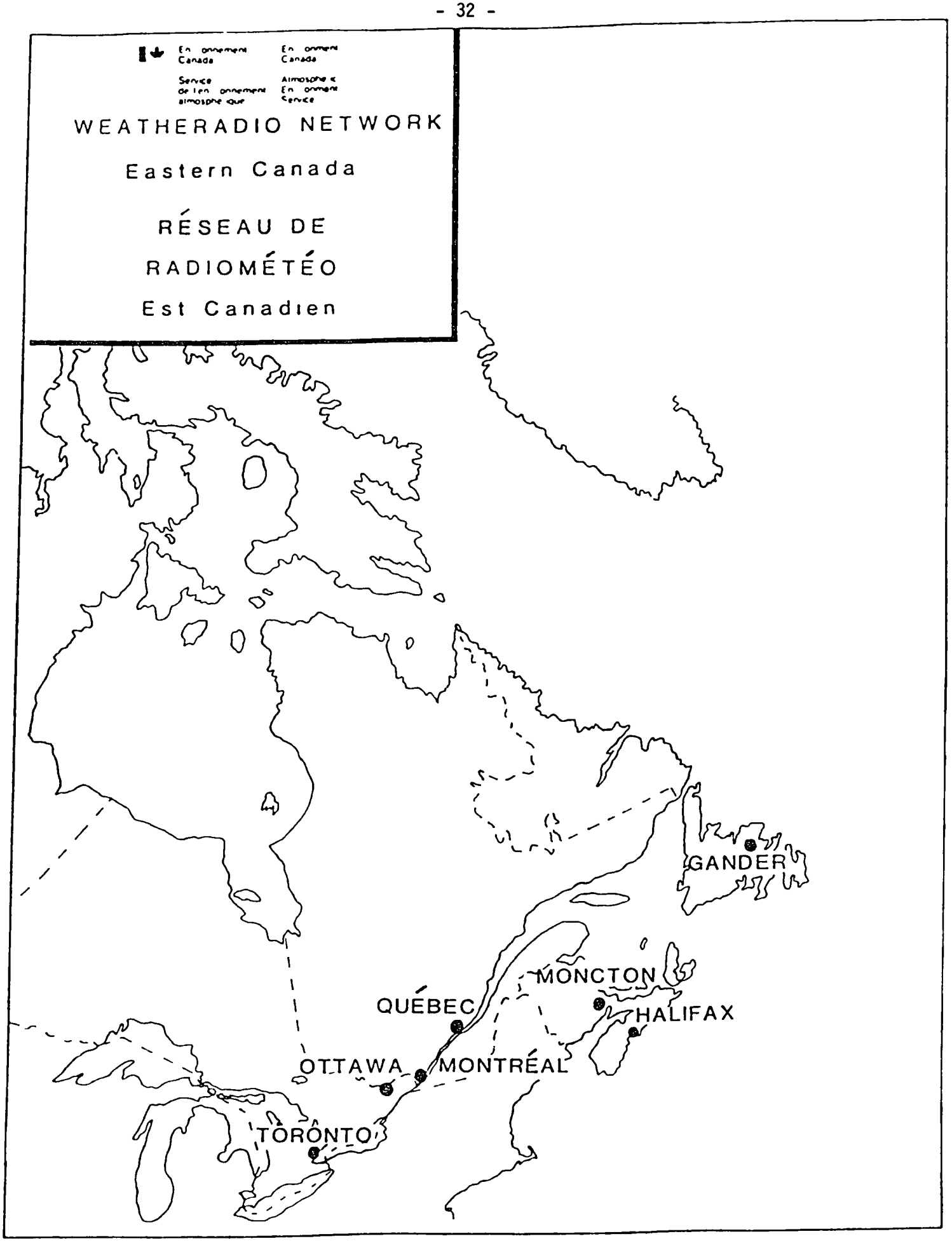
Maps which present the geopgraphical coverage of forecasts for Canada and adjacent waters are located as follows

1) Public forecast regions - pages 36 - 37,
2) Marine forecast regions - pages 38 - 39,
3) Aerodrome forecast locations - page 40,
4) Aviation weather forecast regions - pages 41 - 44

AES has completed a long-term strategic plan which defines the direction for the organization as a whole and outlines the major changes necessary to achieve this direction The plan will be updated to be consistent with Ministerial direction on levels of service that should be provided at taxpayers expense It will also address the provision of these services with diminishing resources Priority improvements in services will be included and also be directed towards better public and marine forecast and warning services for the safety of Canadians, and be achieved through further automation and the astute use of human resources

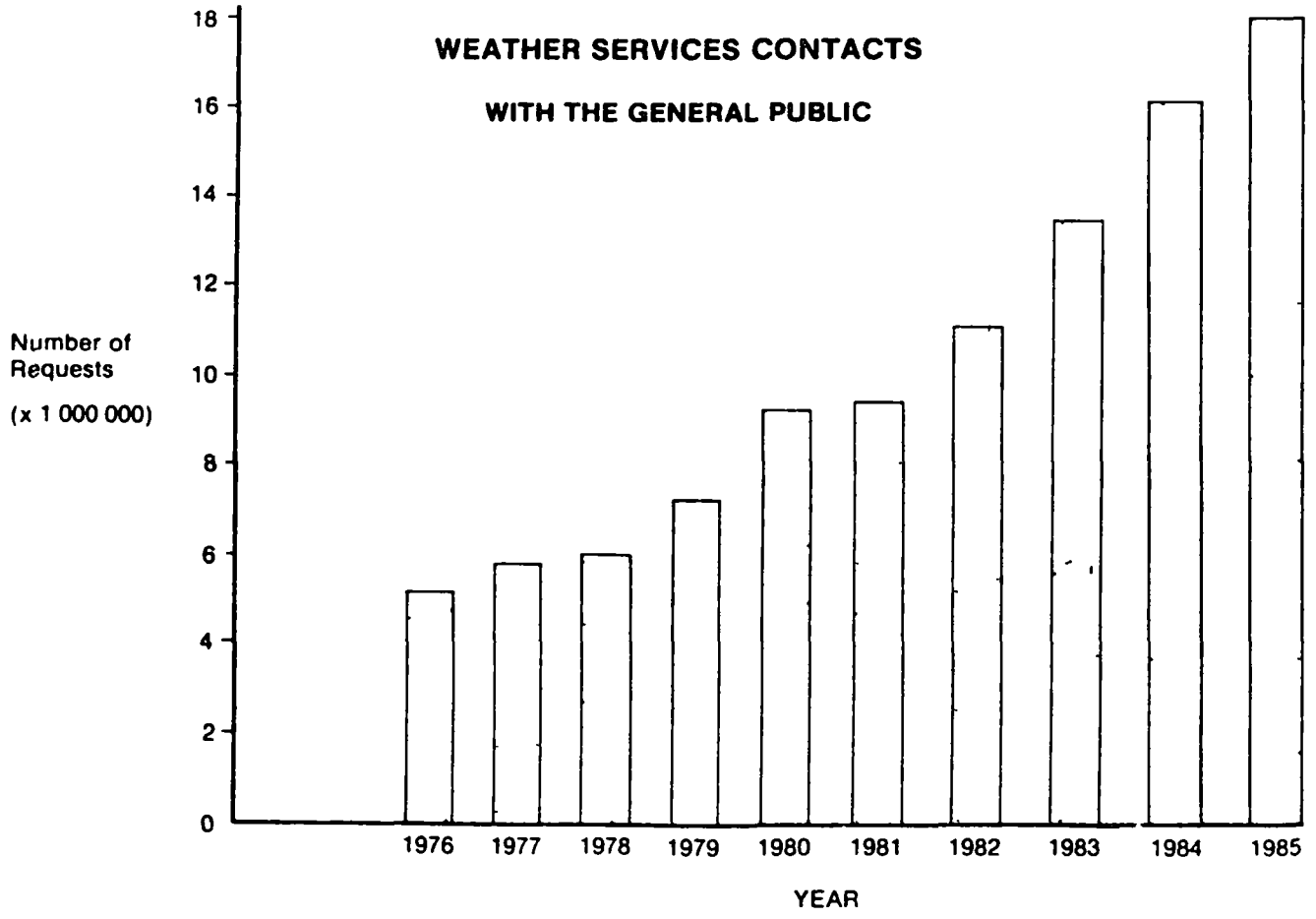

ATMOSPHERIC ENVIRONMENT SERVICE
SERVICE DE L ENVIRONNEMENT ATMOSPHÉRIQUE
LOCATION OF WEATHER OFFICES
EMPLACEMENT DES BUREAUX METEOROLOGIQUES
BUREAUX METEOROLOGIQUES (PRESENTATION)
WEATHER OFFICES (PRESENTATION) (WO4 WO3)
BUREAUX METEOROLOGIQUES (PREVISIONS)
WEATHER OFFICES (FORECAST) (WO1)
Resolute
Frobisher
Inuvik
Goose
Gander
St John's
Whitehorse
Yellowknife
Sydney
Charlottetown
Churchill
Sept Iles
Fort Nelson
Moncton
Fredericton
Atlantic
Halifax
Fort St John
Terrace
Grande Prairie
Thompson
Québec
Trois Rivières
Saint John
Sherbrooke
Prince George
Edmonton Intl
Arctic
Alberta
Prince Albert
Val d'Or
Mirabel
St Hubert
Dorval
Port Hardy
Saskatoon
North Bay
Sault Ste Marie
Sudbury
Ottawa
Kingston
Kamloops
Banff
Calgary
Dauphin
Prairie
Winnipeg
Thunder Bay
Peterborough
Toronto
Hamilton
Ontario
St Catharines
Kelowna
Castlegar
Regina
Brandon
Victoria
Pacific
Penticton
Lethbridge
Vancouver
Waterloo Wellington
London
Sarnia
Windsor
0062 9418


Environment Canada
Environnement Canada
Atmospheric Environment Service
Service de l'environnement atmosphérique
WEATHERADIO NETWORK
Western Canada
RÉSEAU DE RADIOMÉTÉO
Ouest Canadien
EDMONTON
VICTORIA
SASKATOON
CALGARY
REGINA
WINNIPEG

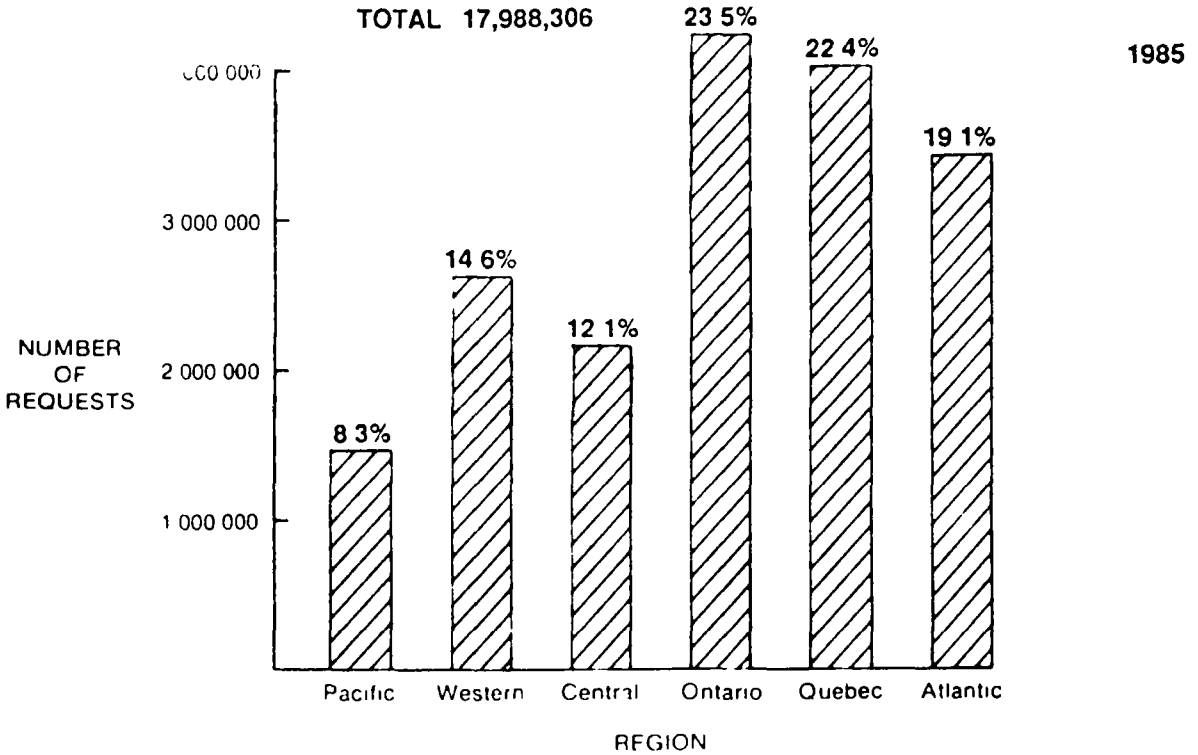

En onnement Canada
En onnement Canada
Service de l'en onnement atmosphe que
Atmosphe e En onnement Service
WEATHERADIO NETWORK
Eastern Canada
RÉSEAU DE
RADIOMÉTÉO
Est Canadien
GANDER
MONCTON
QUÉBEC
HALIFAX
OTTAWA
MONTRÉAL
TORONTO

ATMOSPHERIC ENVIRONMENT SERVICE
WEATHER SERVICE CONTACTS
(in thousands)

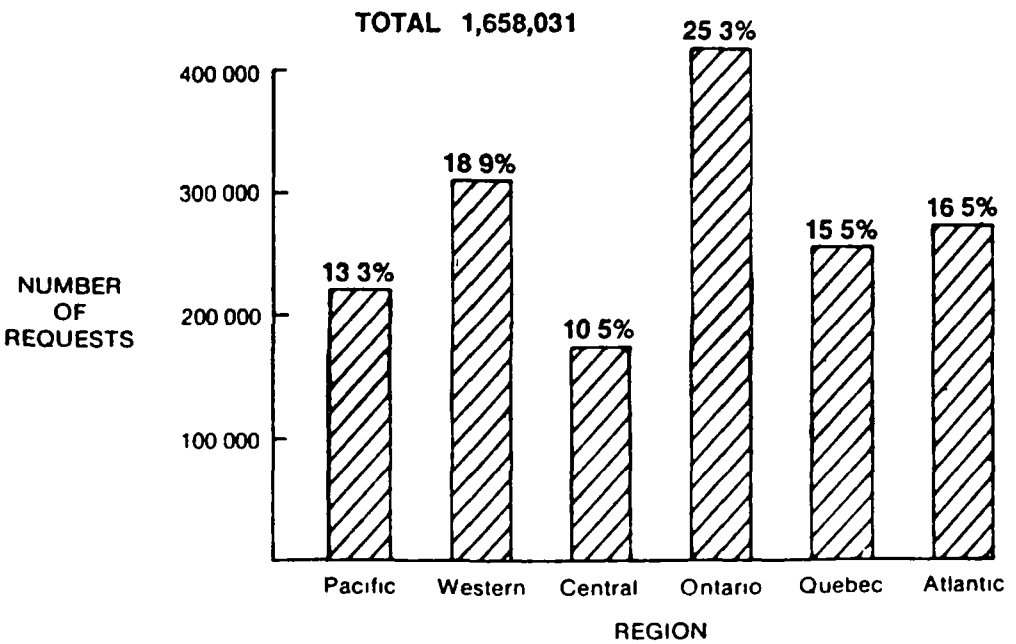
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
GENERAL PUBLIC	5 284	5 767	5 963	7 411	9 314	9 489	11 707	13 876	16 063	17 988
ECONOMIC DEVELOPMENT	227	244	289	272	387	388	328	688	707	839
TRANSPORTATION	1 483	1 516	1 539	1 660	1 631	1 547	1 501	1 532	1 845	2 001
RADIO TV BROADCASTS	92	95	128	137	161	143	173	210	396	407
VISITORS	46	38	37	36	35	32	36	42	43	41
TOTAL	7 131	7 660	7 956	9 516	11 613	11 606	13 745	16 348	19 054	21 277



WEATHER SERVICE TO THE GENERAL PUBLIC BY REGION



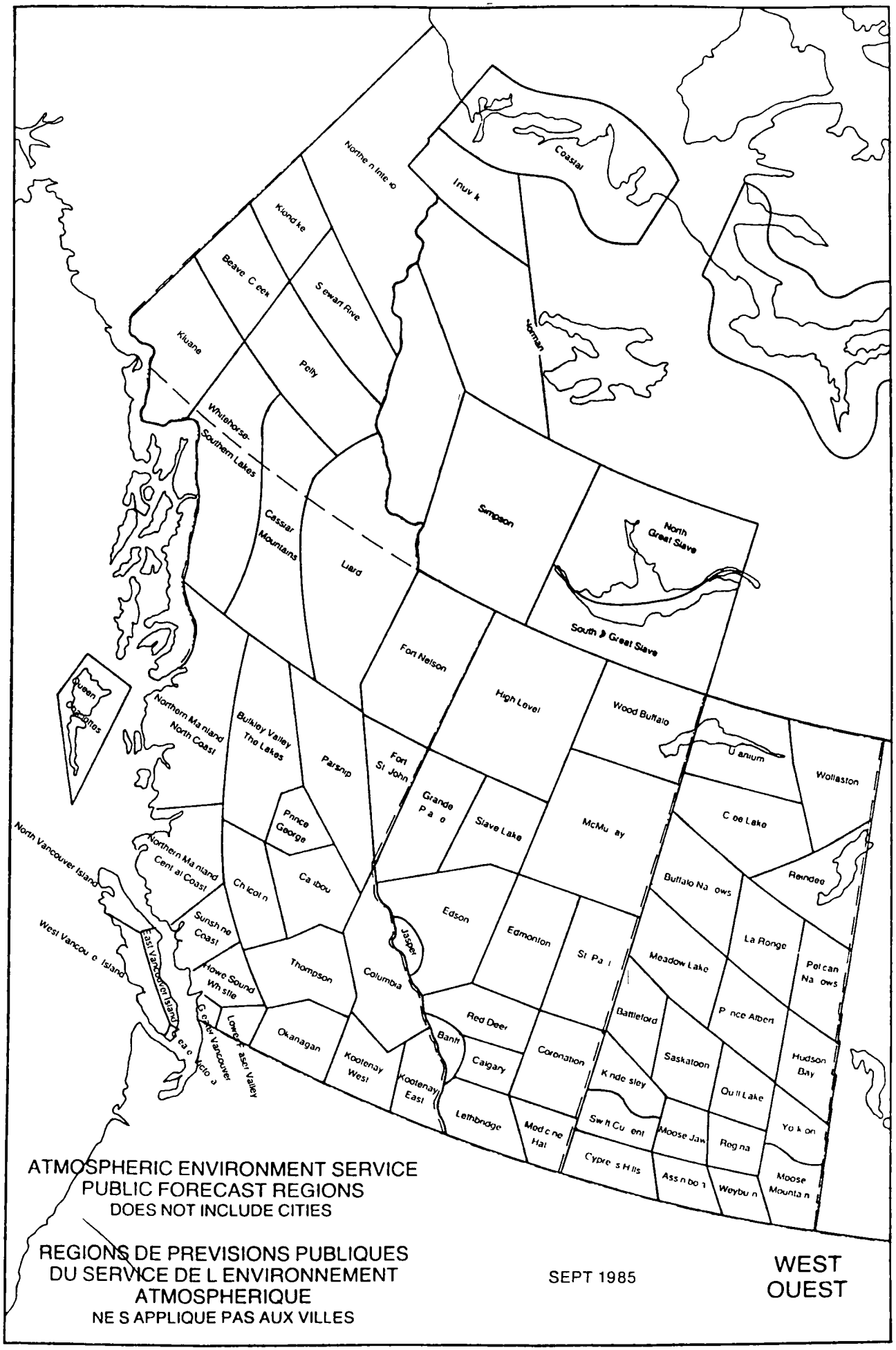
WEATHER SERVICE TO THE AVIATION INDUSTRY BY REGION



Note 1985 Figures include consultation contacts with information contacts not demonstrated in previous years

WEATHER OFFICES/WEATHER CENTRES
1985/86

REGION / TYPE	PACIFIC	WESTERN	CENTRAL	ONTARIO	QUEBEC	ATLANTIC
W O 1 Forecast Office (9)	Pacific Weather Centre	Alberta Weather Centre Arctic Weather Centre Yukon Weather Office	Prairie Weather Centre	Ontario Weather Centre	Quebec Weather Centre	Maritimes Weather Centre Newfoundland Weather Centre
W O 3 Weather Service Office with Professional Consultation Available (4)	Victoria	Yellowknife	Regina Saskatoon			
W O 4 Weather Service Office (55)	Castlegar Kamloops Kelowna Penticton Port Hardy Prince George Terrace Vancouver Fort St John Fort Nelson	Calgary Edmonton International Edmonton Municipal Grande Prairie Inuvik Lethbridge Banff	Brandon Churchill Dauphin Prince Albert Resolute Thompson Winnipeg Int'l	Hamilton Kingston London Niagara Dist (St Catharines) North Bay Ottawa Peterborough Sarnia Sault Ste Marie Sudbury Thunder Bay Toronto Waterloo-Wellington Windsor	Frobisher Montreal/Mirabel Montreal/Dorval Québec Sept-Iles Sherbrooke St Hubert Trois Rivieres Val D'Or	Charlottetown Fredericton Goose Bay Halifax International Moncton Saint John St John's Sydney
Canadian Forces Weather Office (19)	Comox Esquimalt	Cold Lake Edmonton	Moose Jaw Portage la Prairie Winnipeg	North Bay Ottawa Petawawa Trenton	Bagotville St Hubert	Chatham Gagetown Greenwood Halifax (METOC) Shearwater Summerside
TOTAL 87	14	13	13	19	12	16

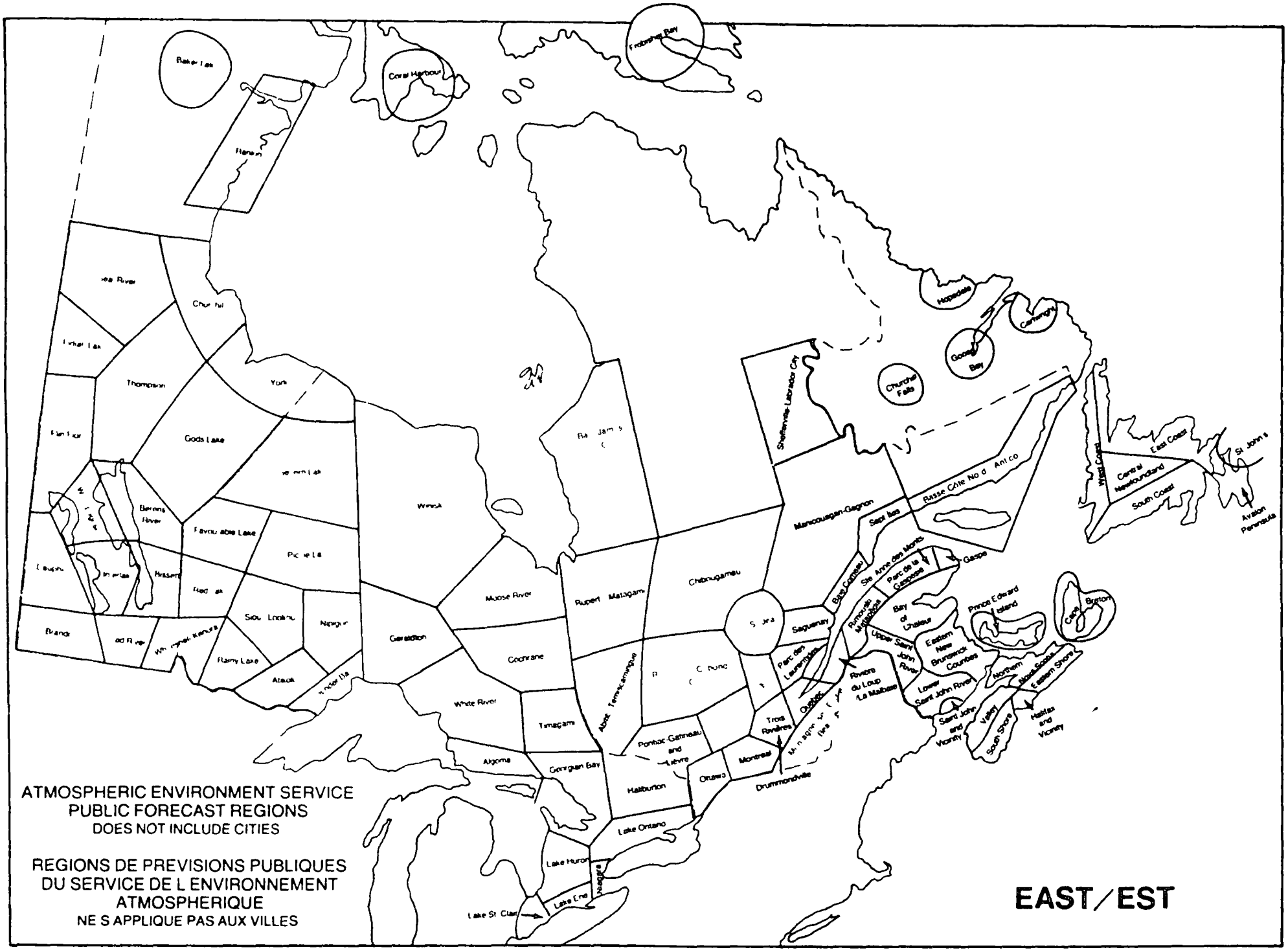


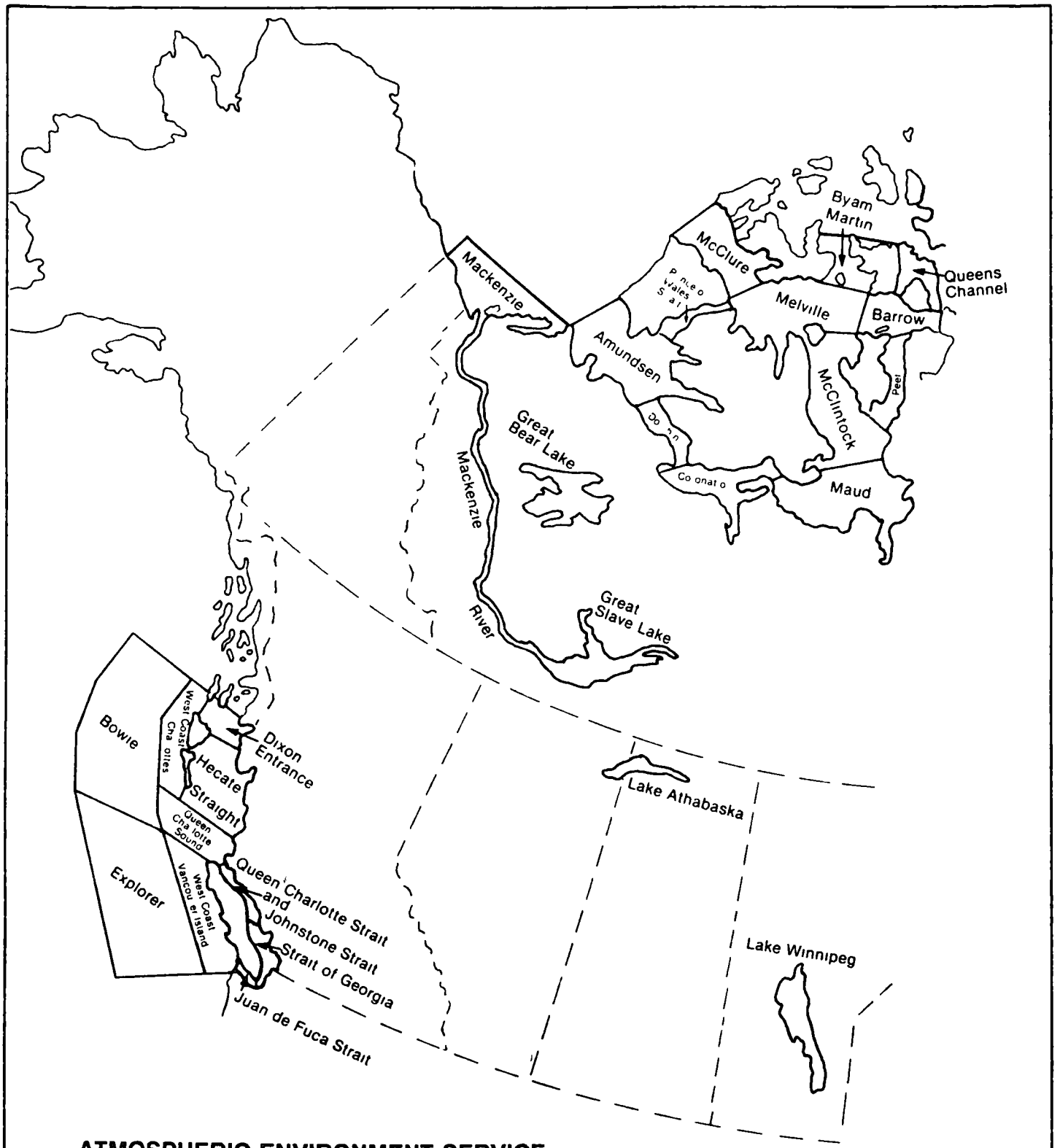
ATMOSPHERIC ENVIRONMENT SERVICE
PUBLIC FORECAST REGIONS
DOES NOT INCLUDE CITIES

REGIONS DE PREVISIONS PUBLIQUES
DU SERVICE DE L ENVIRONNEMENT
ATMOSPHERIQUE
NE S APPLIQUE PAS AUX VILLES

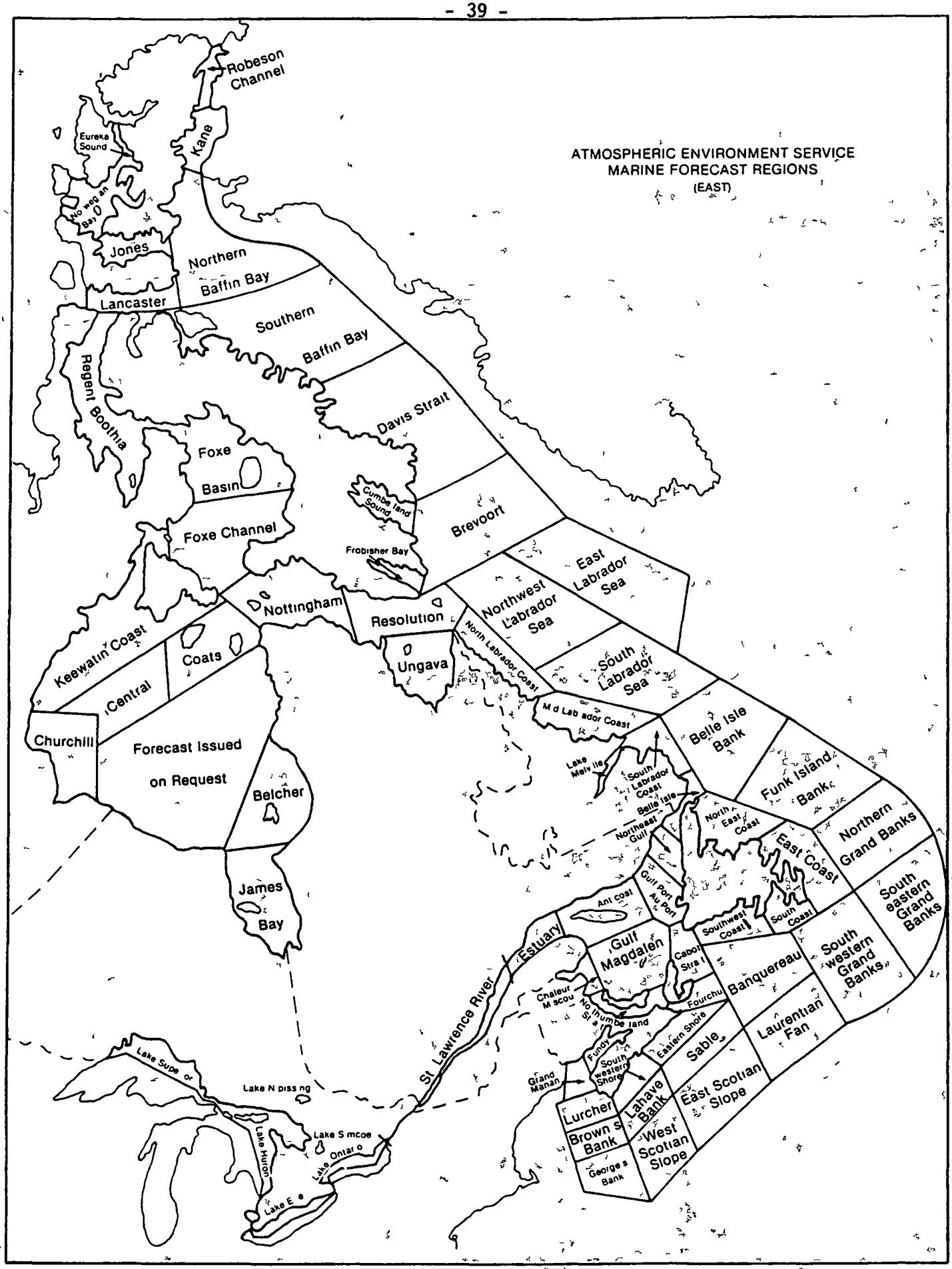
SEPT 1985

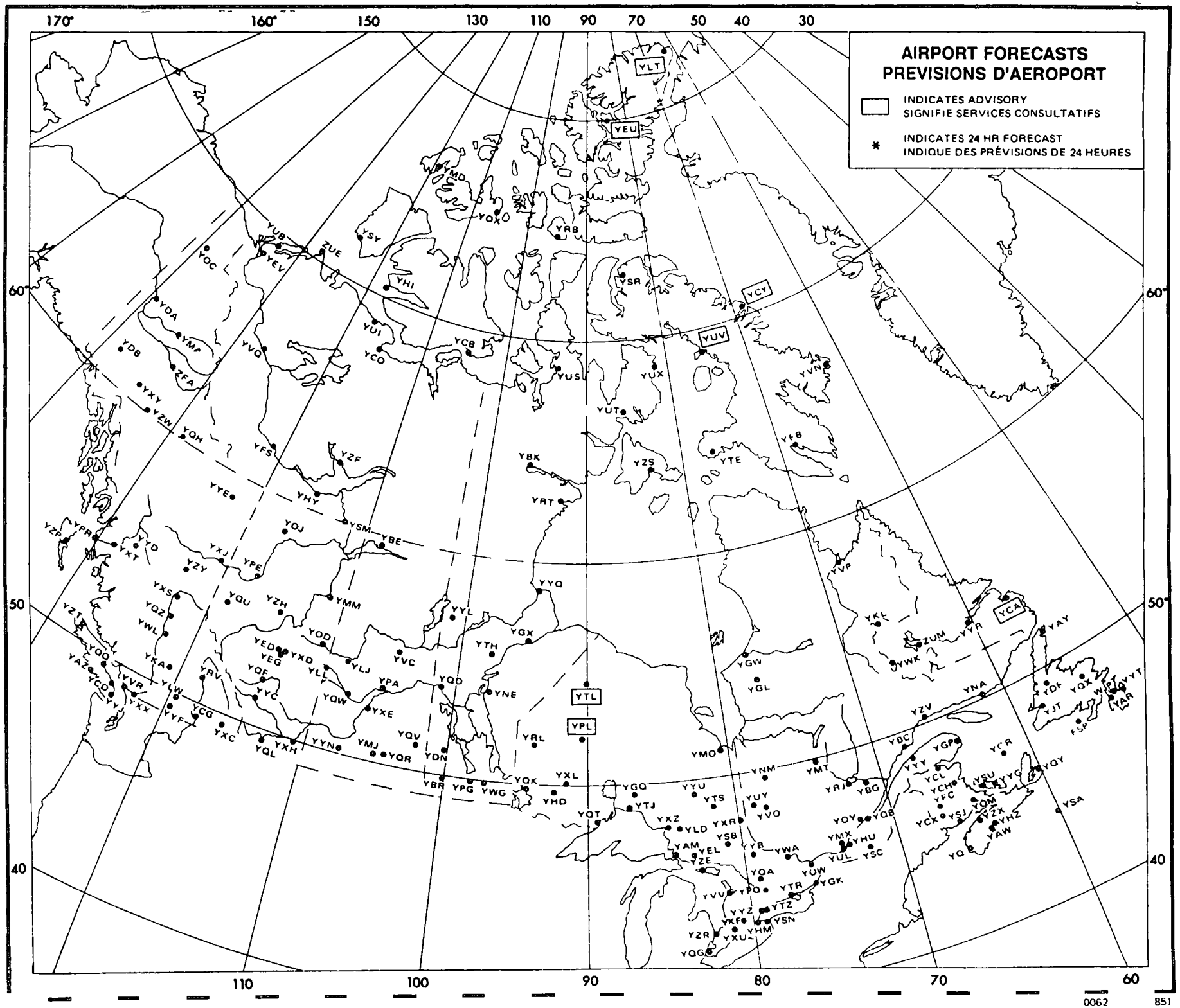
WEST
OUEST

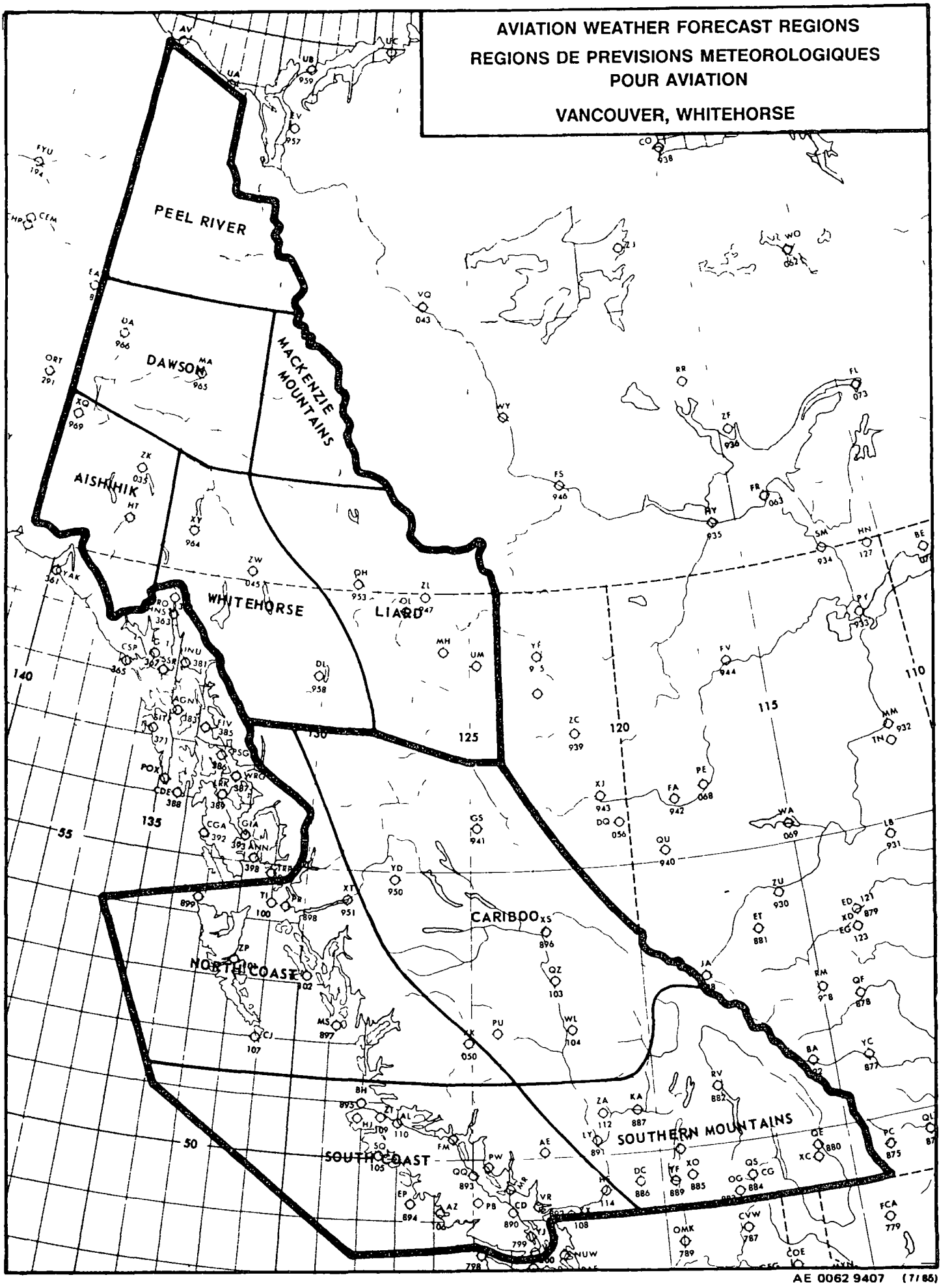

ATMOSPHERIC ENVIRONMENT SERVICE
PUBLIC FORECAST REGIONS
DOES NOT INCLUDE CITIES
REGIONS DE PREVISIONS PUBLIQUES
DU SERVICE DE L ENVIRONNEMENT
ATMOSPHERIQUE
NE S APPLIQUE PAS AUX VILLES
EAST/EST
Baker Lake
Coral Harbour
Frobisher Bay
Hopedale
Goose Bay
Churchill Falls
Sheffervile-Labrador City
West Coast
East Coast
Central Newfoundland
South Coast
St. John's
Avalon Peninsula
Gods Lake
York
Winisk
Rupert Matagami
Chibougamau
Muose River
Cochrane
White River
Timagami
Algoma
Georgian Bay
Haliburton
Pontiac-Gatineau and Lievre
Ottawa
Montreal
Drummondville
Trois Rivieres
Lake Ontario
Lake Huron
Lake Erie
Niagara
Lake St. Clair
Manicouagan-Gaspon
Sept Iles
Baie Comeau
Ste Anne des Monts
Parc de la Gaspesie
Gaspe
Saguenay
Parc des Laurentides
Rivieres du Loup / La Matapedia
Bay of Chaleur
Upper Saint John River
Eastern New Brunswick Counties
Prince Edward Island
Cape Breton
Northern Nova Scotia
Eastern Shore
Lower Saint John River
Saint John and Vicinity
Valley South Shore
Halifax and Vicinity



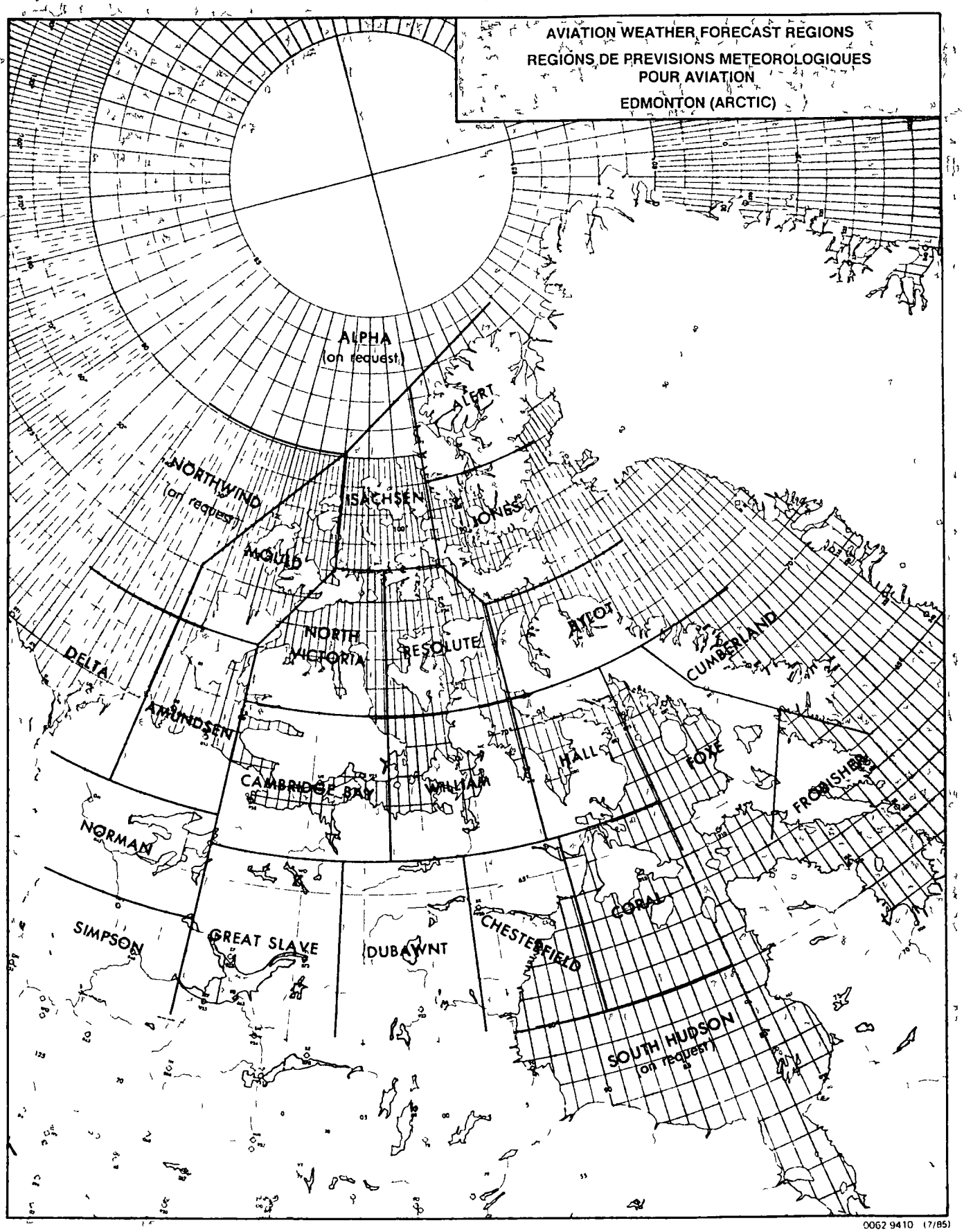
ATMOSPHERIC ENVIRONMENT SERVICE
MARINE FORECAST REGIONS
(WEST)
SEPT 1985

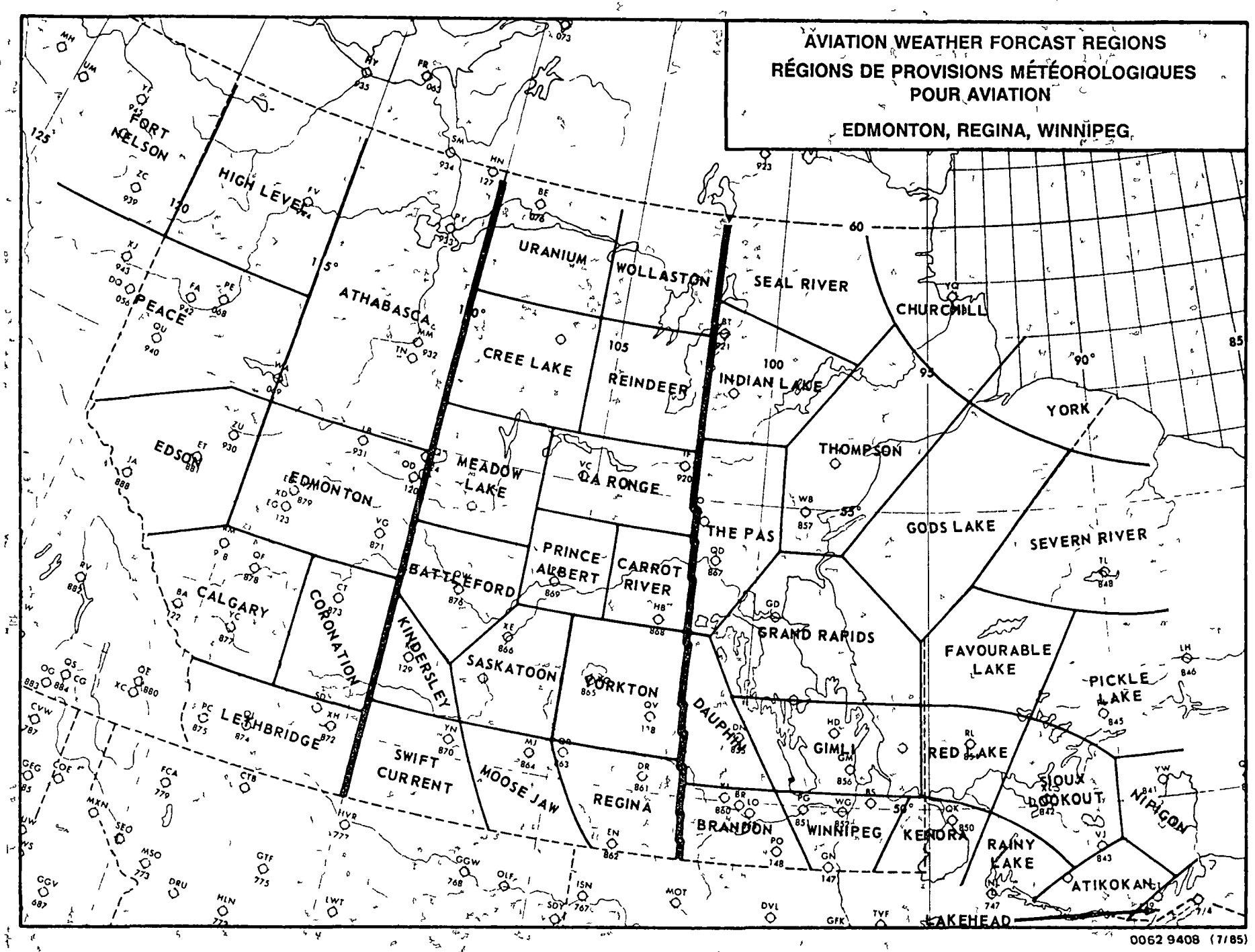

ATMOSPHERIC ENVIRONMENT SERVICE
MARINE FORECAST REGIONS
(EAST)
Robeson Channel
Eureka Sound
Kane
Jones
Northern Baffin Bay
Lancaster
Southern Baffin Bay
Regent Boothia
Davis Strait
Foxe Basin
Foxe Channel
Cumberland Sound
Frobisher Bay
Brevoort
East Labrador Sea
Northwest Labrador Sea
South Labrador Sea
Nottingham
Resolution
Ungava
North Labrador Coast
Mid Labrador Coast
Keewatin
Coats
Central
Churchill
Forecast Issued on Request
Belcher
James Bay
Belle Isle Bank
Funk Island Bank
Northern Grand Banks
South eastern Grand Banks
South western Grand Banks
Banquereau
Laurentian Fan
East Scotian Slope
West Scotian Slope
Sable I
Lahave Bank
Browns Bank
George's Bank
Lurcher
Grand Manan
Fundy
Eastern Shore
South western Shore
Cabot Strait
Gulf Maggalen
Estuary
St Lawrence River
Anticosti
Gulf Port Au Port
Northeast Gulf
South Labrador Coast
Belle Isle
North East Coast
East Coast
South Coast
Southwest Coast
Fourchu
Lake Superior
Lake Nipissing
Lake Huron
Lake Simcoe
Lake Ontario
Lake Erie

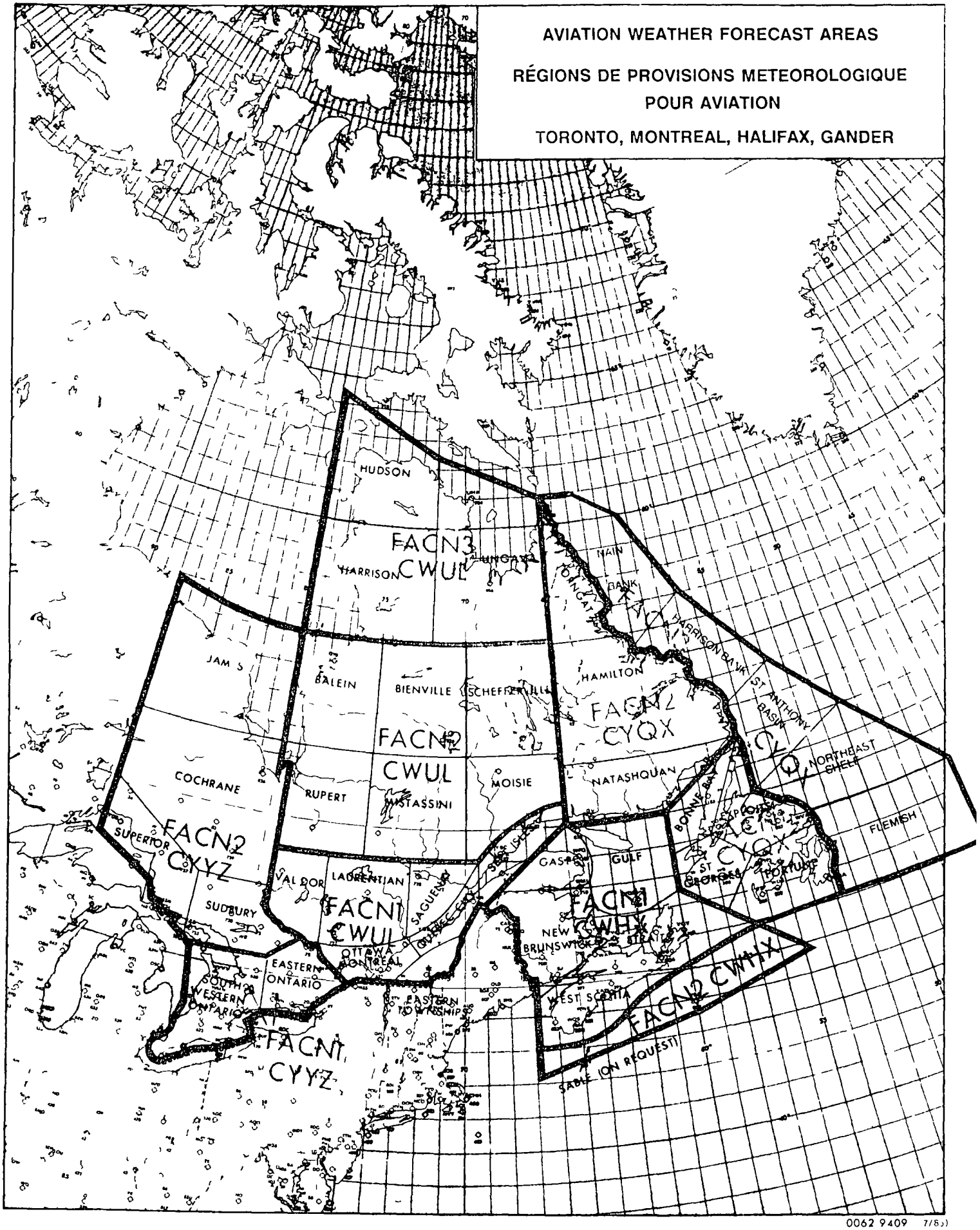

AIRPORT FORECASTS
PREVISIONS D'AEROPORT
INDICATES ADVISORY
SIGNIFIE SERVICES CONSULTATIFS
INDICATES 24 HR FORECAST
INDIQUE DES PRÉVISIONS DE 24 HEURES
170°
160°
150
130
110
90
70
50
40
30
60°
50
40
110
100
90
80
70
60
YLT
YEU
YCY
YUV
YTL
YPL
YCA
0062
851



AE 0062 9407 (7/85)


AVIATION WEATHER FORECAST REGIONS
REGIONS DE PREVISIONS METEOROLOGIQUES POUR AVIATION
EDMONTON (ARCTIC)
ALPHA
(on request)
ALERT
NORTHWIND
(on request)
ISACHSEN
LONGST
MOULD
NORTH VICTORIA
RESOLUTE
BYLOT
CUMBERLAND
DELTA
AMUNDSEN
CAMBRIDGE BAY
WILLIAM
HALL
FOXE
FROBISHER
NORMAN
SIMPSON
GREAT SLAVE
DUBAWNT
CHESTERFIELD
CORAL
SOUTH HUDSON
(on request)
0062 9410 (7/85)


AVIATION WEATHER FORCAST REGIONS
RÉGIONS DE PROVISIONS MÉTÉOROLOGIQUES POUR AVIATION
EDMONTON, REGINA, WINNIPEG
FORT NELSON
HIGH LEVEL
PEACE
ATHABASCA
CREE LAKE
REINDEER
URANIUM
WOLLASTON
SEAL RIVER
CHURCHILL
INDIAN LAKE
YORK
THOMPSON
EDSON
EDMONTON
MEADOW LAKE
LA RONGE
THE PAS
GODS LAKE
SEVERN RIVER
CALGARY
CORONATION
BATTLEFORD
PRINCE ALBERT
CARROT RIVER
GRAND RAPIDS
FAVOURABLE LAKE
PICKLE LAKE
LETHBRIDGE
KINDERSLEY
SASKATOON
BORKTON
DAUPHIN
GIMLI
RED LAKE
SIOUX LOOKOUT
NIPIGON
SWIFT CURRENT
MOOSE JAW
REGINA
BRANDON
WINNIPEG
KENORA
RAINY LAKE
ATIKOKAN
THUNDER BAY
0062 9408 (7/85)



0062 9409 7/83)

4 2 3 2 Data Sub-Sub-Activity (511 3 PY, $42,192 7 K)

This sub-sub-activity involves a commitment to acquire environmental data in Canadian and adjacent air-space and waters as required for weather, climate and research services Data are gathered by means of various forms of observation procedures as outlined below

1) Surface weather observations are provided by about 350 weather observation stations Approximately 100 of these are automatic measuring and reporting stations These are supplemented by voluntary observation programs undertaken by over 500 ships operating on the Great Lakes and in the Atlantic, Pacific and Arctic Oceans All land stations are shown on pages 48 and 49
2) Temperature, pressure, relative humidity and wind velocity observations measured at heights to 35,000 metres in the free atmosphere are provided in an upper air network of 33 stations as shown on page 50,
3) Both of the above sets of observations are taken at regular intervals and are available in real-time for weather analysis, advisory purposes and use by weather services in other countries In return, AES receives world wide surface and upper air data on an international communications network,
4) Climatological information is provided by a network of 250 synoptic weather stations and 2300 climatological stations mostly run by volunteers and some stations jointly operated through agreements with the provinces,
5) Information on the presence and movement of severe storms and precipitation is provided by 15 strategically located weather radars as shown on page 51 There are also over four thousand volunteer severe weather observers,
6) Information on satellite imagery of North American weather systems and ice conditions is provided by satellite readout stations at Vancouver, Whitehorse, Edmonton, Inuvik, Yellowknife, Resolute Bay, Frobisher, Gander, Toronto and a joint Canadian-Danish station at Sondre Stromfjord These stations are shown on page 54,
7) Radioactive Fallout Monitoring (AES Portion) is taken at 26 stations across the country (with 2 other stations - one in Ottawa and the other in Digby - operated by other departments within the federal government) Recently monitoring of radioactivity has been increased in Canada in response to the accident at the Chernobyl nuclear power station in the Ukraine The 26 locations of these stations are shown on page 53,
8) Other observation programs are conducted by many weather stations in the form of

    i) observations on seasonal freeze-up and break-up of water bodies, evaporation, sunshine, total ozone and solar radiation,

ii) seismic observations taken by 9 weather stations for the Department of Energy, Mines and Resources, and
iii) air quality measurements taken at 49 locations, and
iv) solar radiation measurements taken at 51 stations

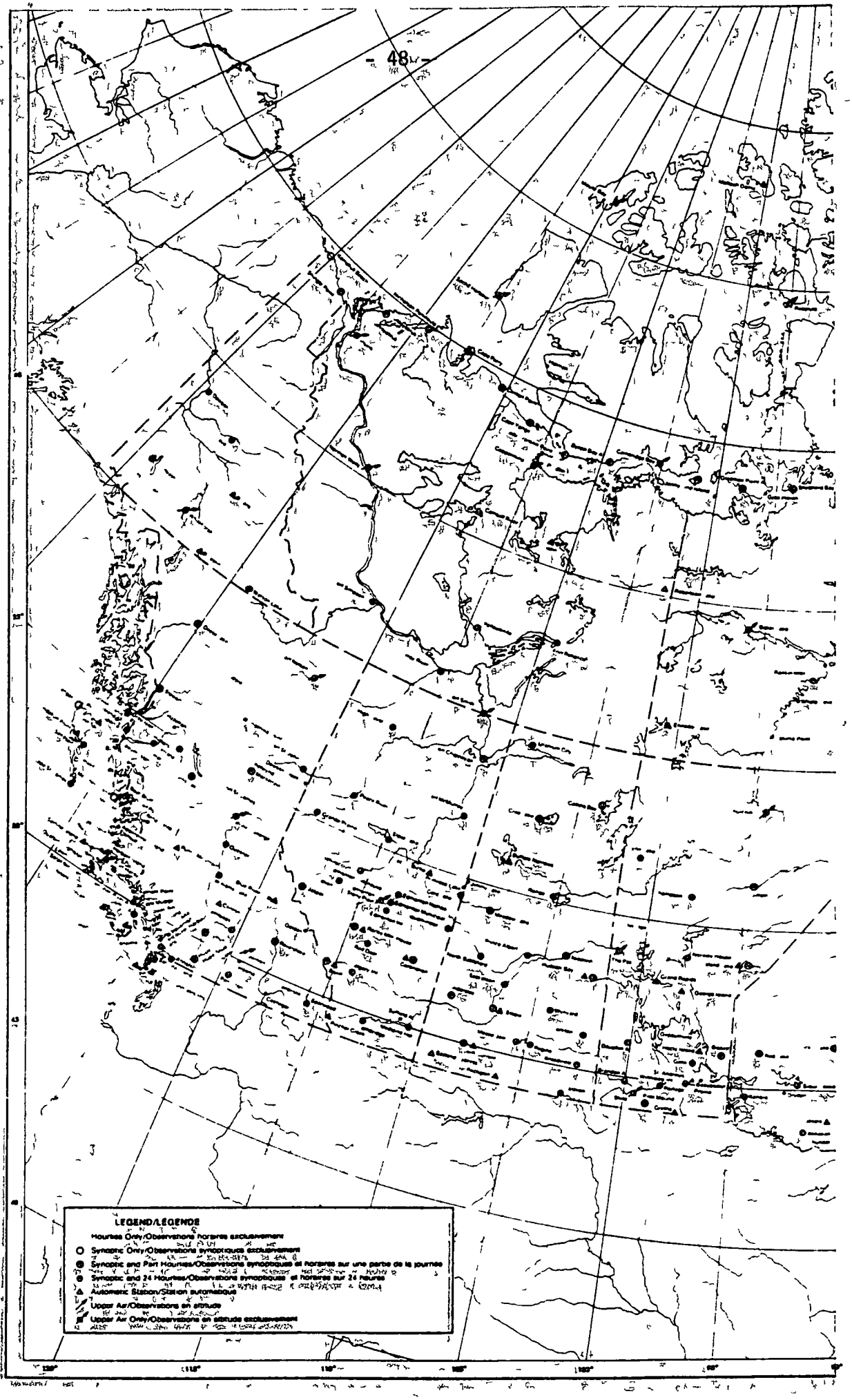
A map indicating the precipitation and air quality monitoring stations can be found on page 52

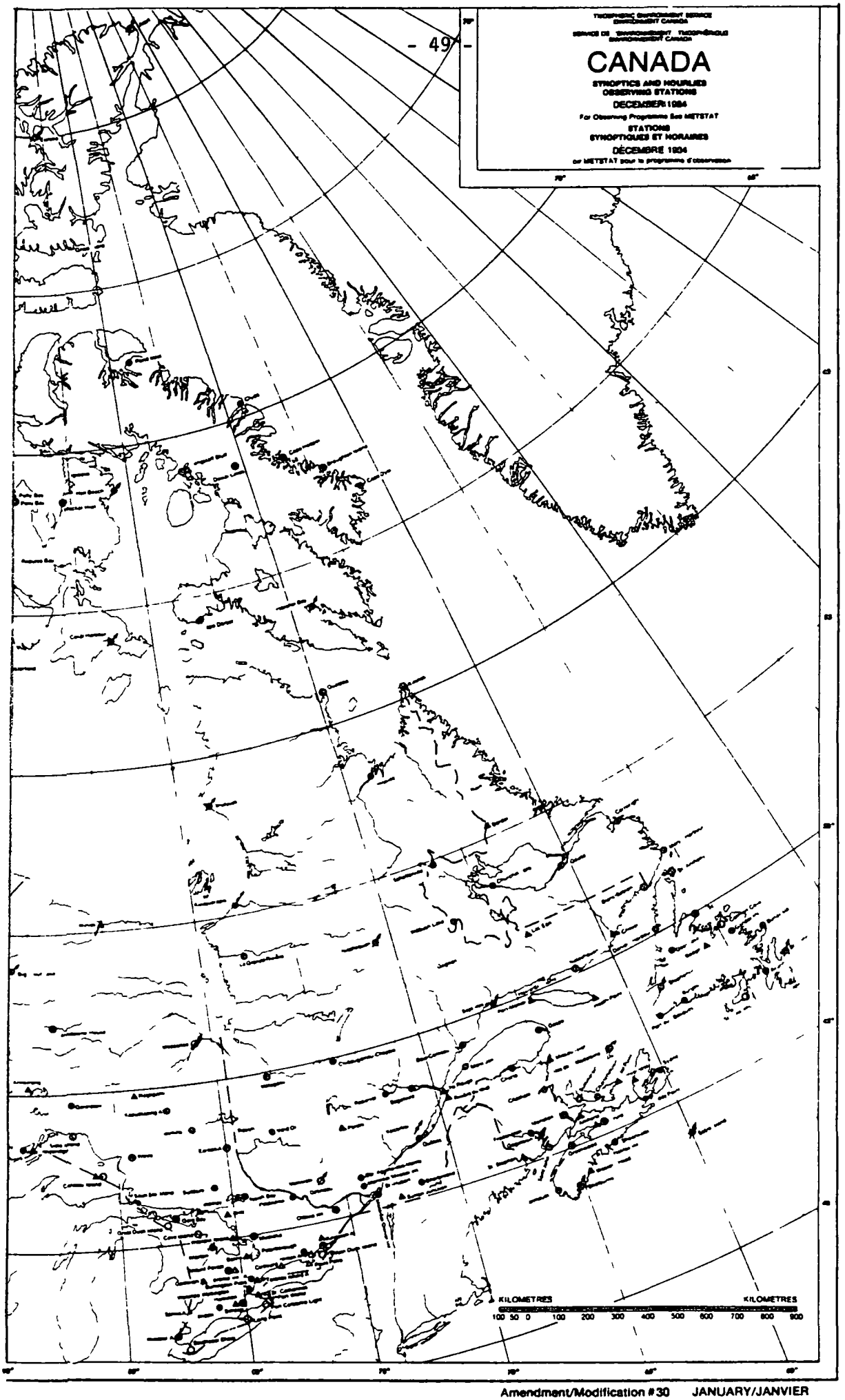
AES DATA ACQUISITION STATIONS BY REGION BY TYPE

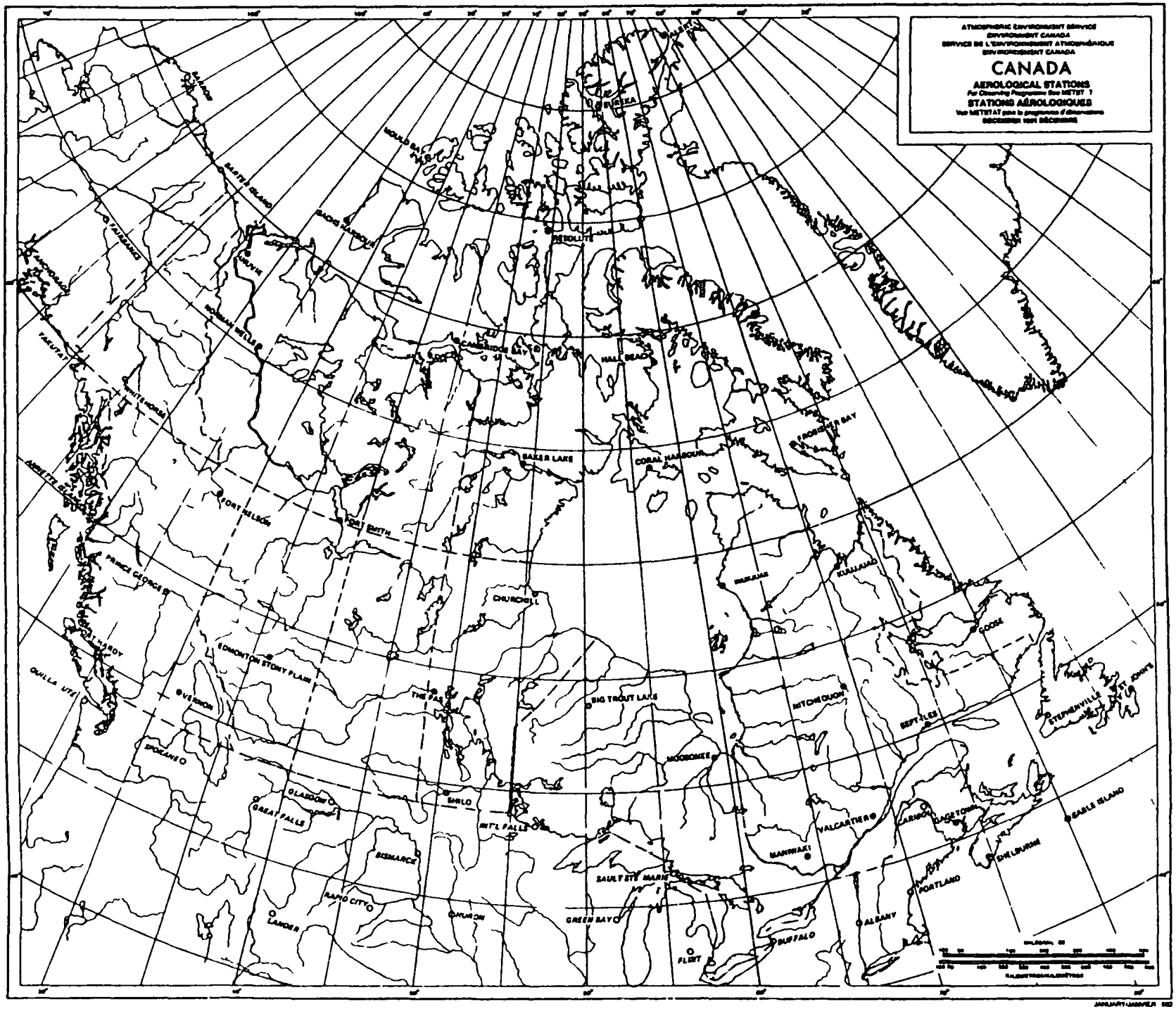
1986-87

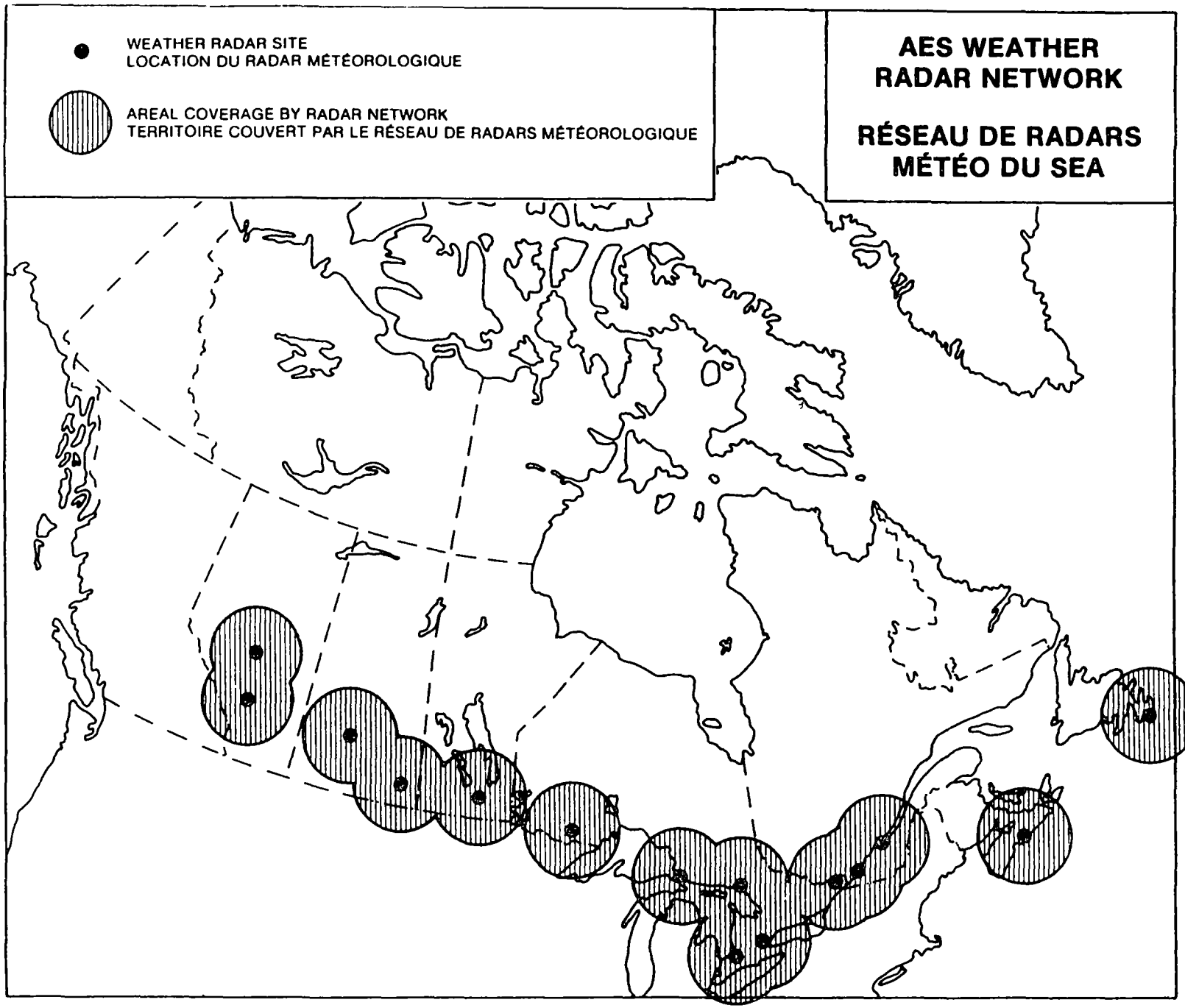
TYPE	REGION						
	PACIFIC	WESTERN	CENTRAL	ONTARIO	QUEBEC	ATLANTIC	TOTAL
Automatic Station	16	9	13	18	9	14	79
Upper Air Station	4	7	9	2	6	5	33
Synoptic Station	35	58	47	40	36	38	254
Climate Station	451	442	404	368	406	242	2313
Weather Radar Station	0	2	3	6	2	2	15
Satellite Station	1	4	1	2	1	1	10
Seismic Station (AES Portion)	1	3	4	0	1	0	9
Air Quality Measurement	9	7	5	13	7	8	49
Solar Radiation	8	9	12	6	9	7	51
Radioactive Fallout Monitoring (AES Portion)	1	6	6	6	2	5*	26

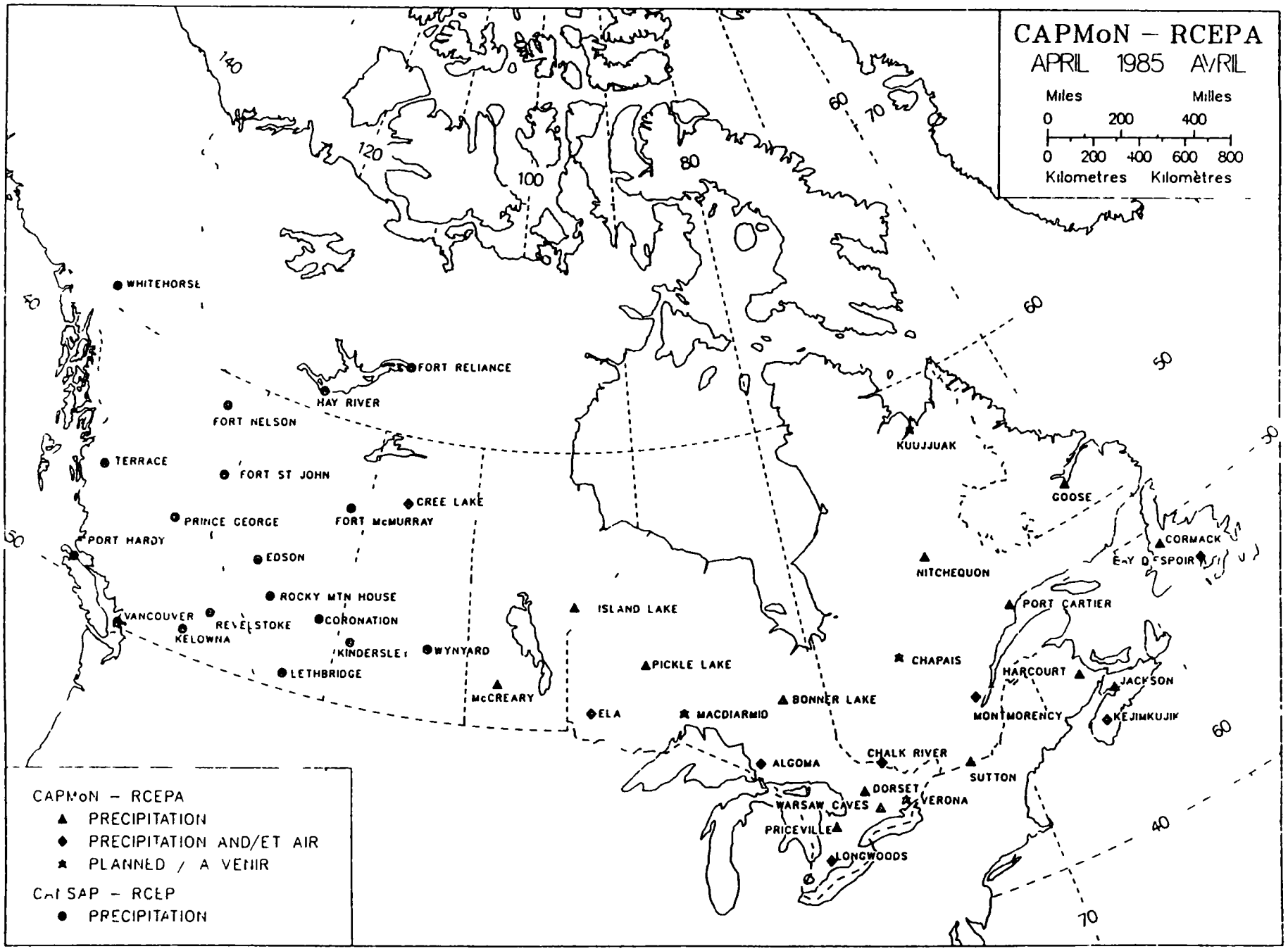
*includes DND Shearwater and Greenwood

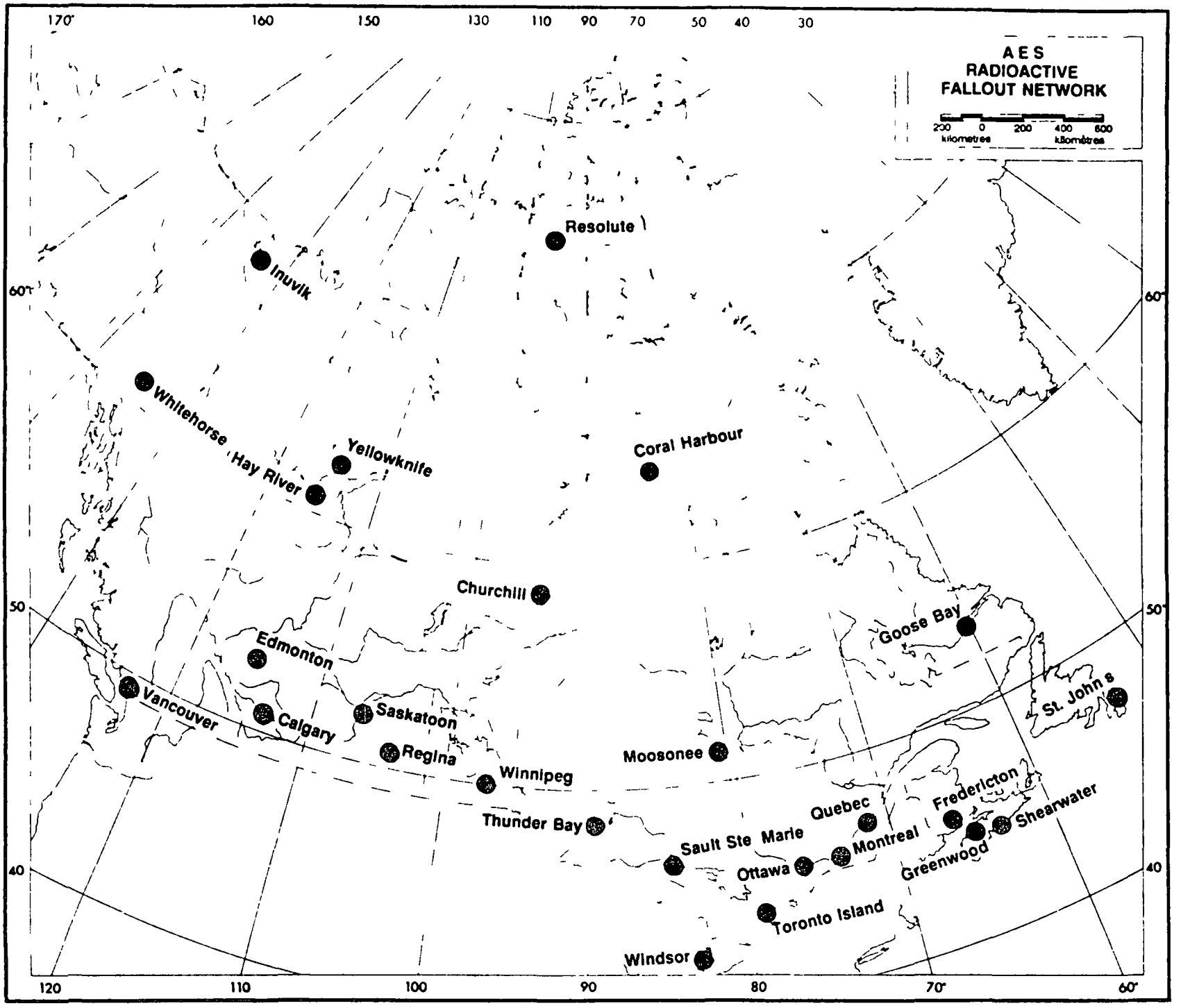

LEGEND/LÉGENDE
Hourlies Only/Observations horaires exclusivement
Synoptic Only/Observations synoptiques exclusivement
Synoptic and Part Hourlies/Observations synoptiques et horaires sur une partie de la journée
Synoptic and 24 Hourlies/Observations synoptiques et horaires sur 24 heures
Automatic Station/Station automatique
Upper Air/Observations en altitude
Upper Air Only/Observations en altitude exclusivement

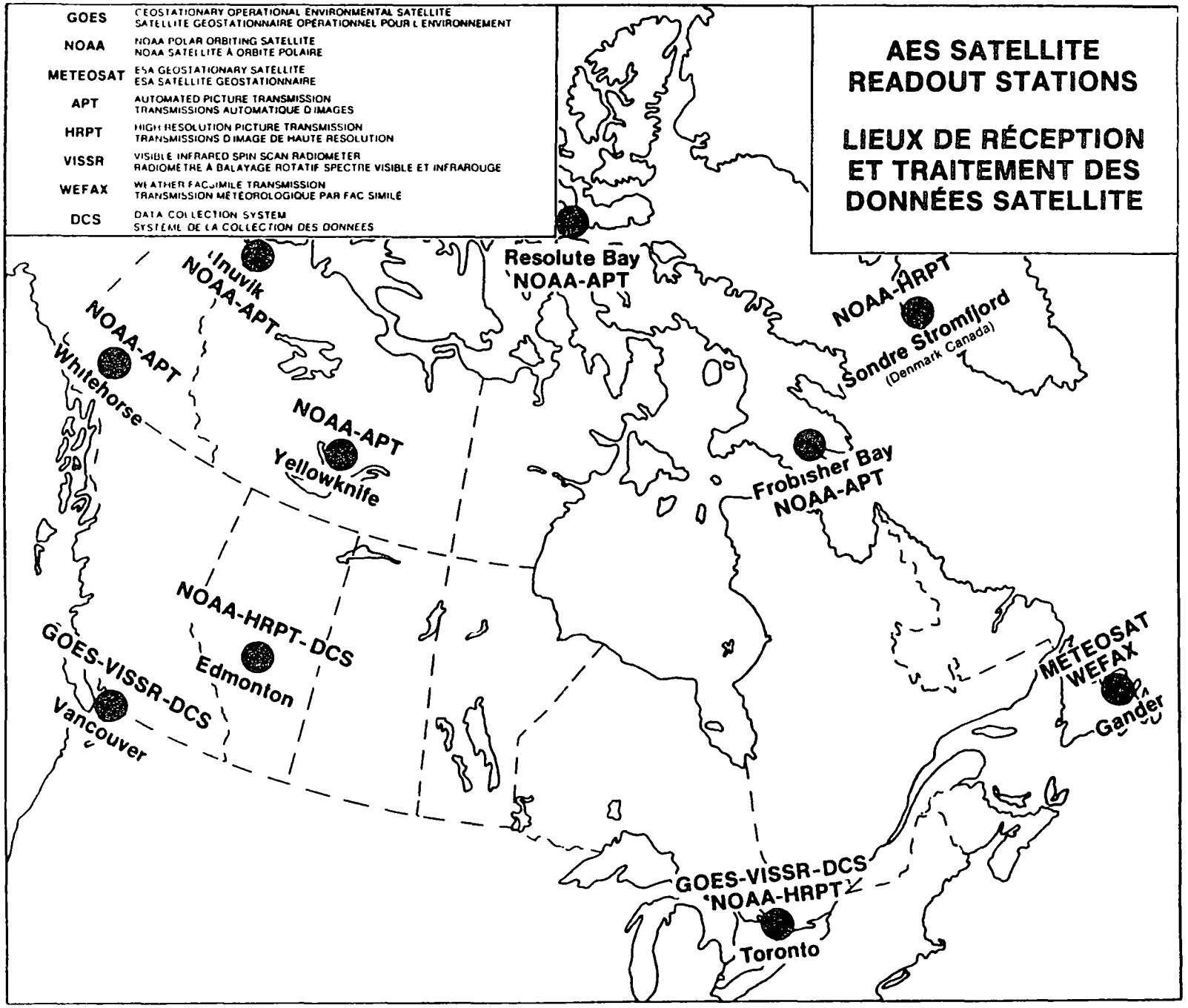

CANADA
SYNOPTICS AND HOURLIES
OBSERVING STATIONS
DECEMBER 1984
For Observing Programme See METSTAT
STATIONS
SYNOPTIQUES ET HORAIRES
DÉCEMBRE 1984
KILOMETRES
KILOMETRES
100 50 0 100 200 300 400 500 600 700 800 900


ATMOSPHERIC ENVIRONMENT SERVICE
ENVIRONMENT CANADA
SERVICE DE L'ENVIRONNEMENT ATMOSPHÉRIQUE
ENVIRONNEMENT CANADA
CANADA
AEROLOGICAL STATIONS
STATIONS AÉROLOGIQUES
RESOLUTE
CAMBRIDGE BAY
HALL BEACH
BAKER LAKE
CORAL HARBOUR
FORT NELSON
FORT SMITH
PRINCE GEORGE
CHURCHILL
EDMONTON STONY PLAIN
THE PAS
BIG TRUT LAKE
MOOSONEE
SPOKANE
GLASGOW
GREAT FALLS
SHILO
INT'L FALLS
BISMARCK
RAPID CITY
LANDER
OMAHA
GREEN BAY
SAULT STE MARIE
FLINT
BUFFALO
ALBANY
MANIWAKI
VALCARTIER
PORTLAND
GAGETOWN
SHELBURNE
SABLE ISLAND
STEPHENVILLE
ST. JOHN'S
GOOSE
SEPT-ILES
MITCHIQUON


WEATHER RADAR SITE
LOCATION DU RADAR MÉTÉOROLOGIQUE
AREAL COVERAGE BY RADAR NETWORK
TERRITOIRE COUVERT PAR LE RÉSEAU DE RADARS MÉTÉOROLOGIQUE
AES WEATHER RADAR NETWORK
RÉSEAU DE RADARS MÉTÉO DU SEA


CAPMoN – RCEPA
APRIL 1985 AVRIL
Miles Milles
0 200 400
0 200 400 600 800
Kilometres Kilomètres
WHITEHORSE
FORT RELIANCE
HAY RIVER
FORT NELSON
TERRACE
FORT ST JOHN
CREE LAKE
PRINCE GEORGE
FORT McMURRAY
PORT HARDY
EDSON
ROCKY MTN HOUSE
VANCOUVER
REVELSTOKE
CORONATION
KELOWNA
KINDERSLEY
WYNYARD
LETHBRIDGE
McCREARY
ISLAND LAKE
PICKLE LAKE
ELA
MACDIARMID
BONNER LAKE
ALGOMA
KUUJJUAK
GOOSE
NITCHEQUON
CORMACK
PORT CARTIER
CHAPAIS
HARCOURT
JACKSON
MONTMORENCY
KEJIMKUJIK
CHALK RIVER
SUTTON
DORSET
VERONA
WARSAW CAVES
PRICEVILLE
LONGWOODS
CAPMoN – RCEPA
PRECIPITATION
PRECIPITATION AND/ET AIR
PLANNED / A VENIR
CAPSAP – RCEP
PRECIPITATION


AES
RADIOACTIVE
FALLOUT NETWORK
200 0 200 400 600
kilometres kilomètres
170°
160
150
130
110
90
70
50
40
30
60°
50
40
120
110
100
90
80
70°
60°
Resolute
Inuvik
Whitehorse
Hay River
Yellowknife
Coral Harbour
Churchill
Edmonton
Vancouver
Calgary
Saskatoon
Regina
Winnipeg
Moosonee
Goose Bay
St. John's
Thunder Bay
Sault Ste Marie
Quebec
Fredericton
Shearwater
Montreal
Greenwood
Ottawa
Toronto Island
Windsor


GOES GEOSTATIONARY OPERATIONAL ENVIRONMENTAL SATELLITE
SATELLITE GEOSTATIONNAIRE OPERATIONNEL POUR L ENVIRONNEMENT
NOAA NOAA POLAR ORBITING SATELLITE
NOAA SATELLITE A ORBITE POLAIRE
METEOSAT ESA GEOSTATIONARY SATELLITE
ESA SATELLITE GEOSTATIONNAIRE
APT AUTOMATED PICTURE TRANSMISSION
TRANSMISSIONS AUTOMATIQUE D IMAGES
HRPT HIGH RESOLUTION PICTURE TRANSMISSION
TRANSMISSIONS D IMAGE DE HAUTE RESOLUTION
VISSR VISIBLE INFRARED SPIN SCAN RADIOMETER
RADIOMETRE A BALAYAGE ROTATIF SPECTRE VISIBLE ET INFRAROUGE
WEFAX WEATHER FACSIMILE TRANSMISSION
TRANSMISSION METEOROLOGIQUE PAR FAC SIMILE
DCS DATA COLLECTION SYSTEM
SYSTEME DE LA COLLECTION DES DONNEES
AES SATELLITE READOUT STATIONS
LIEUX DE RÉCEPTION ET TRAITEMENT DES DONNÉES SATELLITE
Inuvik NOAA-APT
Resolute Bay NOAA-APT
NOAA-HRPT
Sondre Stromfjord (Denmark Canada)
NOAA-APT Whitehorse
NOAA-APT Yellowknife
Frobisher Bay NOAA-APT
NOAA-HRPT-DCS Edmonton
GOES-VISSR-DCS Vancouver
METEOSAT WEFAX Gander
GOES-VISSR-DCS NOAA-HRPT Toronto

4 2 3 3 Weather Services Support Systems Sub-Sub-Activity
(673 1 PY, $67,513 4K)

This sub-sub-activity provides support services necessary for the efficient functioning of a modern weather service Some of these services are described below

1) The Canadian Meteorological Centre (CMC), in Montreal, uses very powerful computers and mathematical models of the atmosphere to create meteorological forecasts for periods of up to five days in advance These forecasts are used as guidance by all other weather offices within AES,

2) Research is conducted in both Downsview and Montreal in order to improve the forecast service and related data acquisition and processing activities in support of regional and local forecasting It is concentrated on the development of computer models to predict the dynamic parameters of the atmosphere These models assist in the development of forecasting techniques and methods In the Arctic and offshore areas, emphasis is being given to atmosphere related predictions, such as ice, wind-wave and oil slick motion As well, meteorological satellite research and weather radar development are being carried out This is an attempt to further understand radar's integrated use with satellite data and its direct application to short-range severe storm forecasting,

3) The AES Communications System is required for the rapid collection and dissemination of national/international data and information The system includes national teletype, paper facsimile and photo facsimile networks The second half of a 6-year project to upgrade the system began in 1985/86,

4) The Training Branch develops and conducts advanced and refresher training courses in both official languages for professional meteorologists and technicians at training facilities in Downsview, Montreal, Cornwall and at major weather offices across the country This Branch also has ongoing development programs in cooperation with Canadian universities to encourage university physics graduates to study meteorology through a one-year diploma course,

5) The Data Acquisition Services Branch of the Central Services Directorate develops, designs and evaluates meteorological instruments to determine the optimum instrumentation required for the Weather Services sub-activity It is also responsible for the procurement, testing, installation and maintenance of field instruments

4 3 CLIMATE SERVICES AND RESEARCH Sub-Activity (228 0 PY, $17,267 5K)

4 3 1 Objectives CLIMATE SERVICES AND RESEARCH

- to promote economic and social development through the enlightened use of climate knowledge by
  1) acting as the lead agency for the Canadian Climate Program,
  2) encouraging the private sector to provide consultation services in the application of climate information to climate sensitive industries,
  3) developing monthly and seasonal climate forecasts for operational production by 1987,
  4) improving the monitoring of atmospheric carbon dioxide and other radiatively active gases and promoting the study of the long term impacts of climate change on major economic sectors in Canada,
  5) improving the national climate information base and its accessibility to users

- to contribute to better management of water resources by implementing a hydrometeorological program at the National Hydrology Research Centre (NHRC) in Saskatoon on drought prediction and northern hydrology

4 3.2 Budget CLIMATE SERVICES AND RESEARCH 1986-87 AES Budget by Sub-Sub-Activity

For further details on the Climate Services and Research 1986-87 AES Budget by Sub-Sub Activity, refer to p 21, chart 4 1 2

4 3 3 Description CLIMATE SERVICES AND RESEARCH

The Canadian Climate Centre, located in Downsview, processes about 15,000 climate inquiries per year The Centre deals with requests which are national in scope and assists the regional offices in answering their inquiries as required

The Climate Program provides services in the form of climate information, referrals, consultations and interpretations They are provided to the general public, private industry, provincial agencies and other federal departments The following table displays the number of AES Climate Services contacts per year for all users of climate services, since 1977 The majority of these inquiries are received and processed at local and regional weather offices across Canada (i e , Weather Services Directorate)

AES CLIMATE SERVICE CONTACTS
(000's)

	1977	1978	1979	1980	1981	1982	1983	1984	1985
WEATHER SERVICES DIRECTORATE	147	117*	178	173	179	204	254	316	218
CANADIAN CLIMATE CENTRE	14	14	15	15	15	15	15	15	14
TOTAL	161	131*	193	188	194	219	269	331	232

* Weather Office contacts only.

The National Climate Archive provides a data base for climate services and for research and application programs in both the government and the private sector Approximately 4 25 million weather observations are archived per year and a national data archive is maintained for over 10,000 stations, of which 2,800 are currently active

More specifically, research and development are carried out to provide specialized information needed by various federal government agencies and other users This will increase our understanding of the climate as a physical system to provide a sound basis for assessing and determining the responses of the climate to natural changes and human activities

Climate summaries, periodicals, scientific papers and major publications are prepared and published annually for distribution to regional offices, libraries and other information specialists Also, monthly and seasonal experimental climate predictions are made in an attempt to improve the operational management of energy supplies, food and forest production and water supplies

4 4 ICE SERVICESub-Activity (66 5 PY, $28,203 1K)

4 4 1 Objective ICE SERVICES

- to provide ice and iceberg data and advice for the safety of Canadians involved in fishing, marine transportation and offshore petroleum exploration, for the protection of life and property such as ships and drilling platforms, and to protect the quality of the maritime environment by supporting the prevention of environmental disasters

4 4 2 Budget ICE SERVICES 1986-87 Budget by Sub-Sub-Activity (SA 2)

For further details on Ice Services 1986-87 Budget by Sub-Sub-Activity, refer to p.21, chart 4 1 2

4 4 3 Description ICE SERVICES

This sub-activity

i) develops and maintains acquisition systems for ice data,
ii) provides forecasts of ice formation, growth and movement in Canada's major rivers, lakes and adjacent waters These activities are in support of the Canadian Coast Guard, Canada Oil and Gas Lands Administration, the fishing and marine transporation industries and the public,
iii) provides regional-scale iceberg information for Canada's offshore areas of the Northwest Atlantic Ocean, and
iv) includes ice research to develop remote sensing and improved ice forecast capabilities

Ice Observations

Ice and iceberg observation programs are conducted from aircraft, ship and shore stations in support of shipping in the ice congested waters of Canada during the appropriate seasons. Aerial ice reconnaissance is carried out every month of the year in one or more areas of the Eastern Canadian Seaboard, Canadian Arctic Waters, Hudson Bay, Hudson Strait and Inland Waterways Satellite observations are being integrated into the data acquisition system. About 3000 analyses and "nowcasts" are prepared in chart form annually

Ice Forecasts

The extent and characteristics of ice are forecast from the AES Ice Centre in Ottawa Approximately 1500 short-range tactical forecasts and bulletins and about 30 longer-range strategic forecasts are provided annually for the following areas

- Gulf of St Lawrence,
- Coastal Waters of Newfoundland and Hudson Bay and its approaches,
- Waters of the Canadian Arctic, including the Beaufort Sea,
- St Lawrence River Seaway and Great Lakes

Iceberg Advisories

The spatial distribution of icebergs off the East Coast along with information on iceberg drift will be used to produce outlooks of iceberg distribution by area over the following one-to-five days.

Ice and Iceberg Climatology

In response to about 4000 annual information requests, there is a need to increase ice climatological services and their application to winter time Arctic and east coast industrial development, and to expand the supporting data base

4 5 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH Sub-Activity (111 6 PY, $11,212 OK)

4.5 1 Objectives AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH

- be able to measure what changes have occured (or will occur) in the concentration or deposition of tropospheric chemicals at selected sites representative of the diverse natural or man-made locations in Canada
- be able to process the fluxes of tropospheric chemicals to the diverse natural or man-made surfaces representative of the regions of Canada
- be able to integrate into a whole understanding, the chemical and physical parts of the troposphere and its interaction with the diverse natural and man-made environment of Canada
- have the capability to provide, through the AES regional centres, information and advice services on atmospheric (air) quality situations that might endanger the safety and security of Canadians during environmental emergencies, or in support of economic development activities
- to co-ordinate national research on acid rain

4 5 2 Budget AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH 1986-87 AES Budget by Sub-Sub-Activity (SA 2)

For further details on Air Quality Services and Atmospheric Research 1986-87 by Sub-Sub-Activity, refer to p 21, chart 4 1 2

4 5 3 Description AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH

This sub-activity provides

1) air quality services such as monitoring (excluding LRTAP),
2) environmental impact assessments for the DOE, provincial regulatory bodies and industry,
3) environmental emergency support that can be applied in areas such as the development of systems and models for measuring wind and temperature profiles,
4) advice and consultation,
5) input to the Toxic Chemicals Management Centre (EPS) on the atmospheric transport and deposition of toxic chemicals, and
6) research to determine the effects of atmospheric dispersion and chemistry upon air pollution, by achieving improvement in the knowledge and understanding of

    a) physical and chemical processes related to stratospheric pollution,
    b) atmospheric radiation,
    c) ozone, solar and wind energy,
    d) the boundary layer,
    e) cloud and precipitation physics,
    f) cloud chemistry, and
    g) relevant prediction capabilities

4 6 DEPARTMENTAL INTEGRATED PROGRAMS Sub-Activity (4 0 PY, $2018 2K)

4 6 1 Objective

- to contribute to the Departmental programs which cover the objectives of various Services of the Department and involve a wide range of professional and scientific input from various operational units in the Department

4 6 2 Budget DEPARTMENTAL INTEGRATED PROGRAMS 1986-87 Budget by Sub-Sub-Activity (SA 2)

For further details on the Departmental Integrated Programs 1986-87 Budget by Sub-Sub-Activity, refer to p 21, chart 4 1 2

4 6 3 Description DEPARTMENTAL INTEGRATED PROGRAMS

Long Range Transport of Air Pollutants

The LRTAP program was established within Environment Canada in order to provide a vehicle for eliminating damaging loadings in the environment from the long-range transport of airborne pollutants Activities in the Department, underway since 1976, continue to support the negotiation of an agreement with the U S on trans-boundary air pollution, with initial emphasis on the emission reductions of SO_2, and the development and implementation of control strategies for the bilateral agreements negotiated with central and eastern provinces AES is the lead agency for the LRTAP scientific program AES is responsible for the co-ordination and provision of information to elected officials, the media and the general public AES also maintains and is currently upgrading a national sampling network to monitor the atmospheric concentration and deposition of sulphur, nitrogen and other compounds, with special emphasis on acidic precipitation This will include the operation of the Canadian Air and Precipitation Monitoring Network (CAPMoN) for sampling precipitation on a daily basis Nine of these stations will also sample air daily Extensive research is carried out by AES to improve the knowledge of physical and chemical processes involving LRTAP and to develop predictive models of the long-range transport, transformation and deposition of air pollutants The atmospheric LRTAP initiative to a large extent is directly supported by the A-Base sub-activity (6000) of Air Quality Services and Atmospheric Research

Toxic Chemicals

AES provides atmospheric sector scientific support to the Department with the provision of atmospheric measurements, chemical/physical pathways and characteristic research, and atmospheric transport, transformation and deposition studies of selected priority toxic chemicals in the following groups of emphasis PAHs, PCBs, pesticides and toxic trace elements including heavy metals

Great Lakes Water Quality

The Great Lakes Water Quality Program has been designed to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem The objectives of the program are to provide environmental data for a better understanding of the Great Lakes Basin Ecosystem and to develop measures to reduce the discharge of pollutants into the Great Lakes System

The Canadian program is managed under the lead of Environment Canada which chairs an interdepartmental committee The Ontario Region of Environment Canada manages the program The AES component is concerned with estimating the atmospheric input of certain nutrients, heavy metals and organic contaminants to the Great Lakes and with examining the relative importance of various sources through modelling

Baseline Studies

The Baseline Studies Integrated Program has been designed primarily to ensure that adequate environmental information is available to permit Environment Canada to fulfill its responsibilities under the Federal Environmental Assessment Review Process All operational Services including AES are involved and much of the required information is derived from ongoing programs in the regions

4 7 MANAGEMENT AND COMMON SUPPORT SERVICES Sub-Activity (117 0 PY, $5,524 6K)

4 7 1 Objectives MANAGEMENT AND COMMON SUPPORT SERVICES

- to provide continuous policy guidance and leadership for the service including the establishment of objectives, goals and priorities,
- to provide management and administrative support to the Atmospheric Environment Service in the area of financial management, human resources management, materiel management, policy and planning, general administration, library services, official languages, and affirmative action,
- to co-ordinate participation in international programs in accordance with Canada's commitment to the World Meteorological Organization, and to contribute to the development of the AES scientific and technological base,
- to promote the science and public awareness of meteorology and other environmental disciplines in Canada by
  - i) supporting organizations concerned with the advancement of meteorology and other environmental disciplines,
  - ii) supporting meteorological and other environmental research in Canadian universities,
  - iii) encouraging the development of meteorological and other environmental services in the private sector within Canada

4 7 2 Budget MANAGEMENT AND COMMON SUPPORT SERVICES 1986-87 Budget by Sub-Sub-Activity (SA 2)

For further details on Management and Common Support Services 1986-87 Budget by Sub-Sub-Activity, refer to p 21, Chart 4 1 2

4.7 3 Description MANAGEMENT AND COMMON SUPPORT SERVICES

This sub-activity includes the executive direction of the AES, the management function related to the development and maintenance of overall goals and objectives for the AES, policies, and program development and evaluation, information services, and participation in international meteorological affairs Also included are those common services which support AES in areas of administration, personnel, facilities, library, materiel and financial management

CHAPTER 5

Atmospheric Environment Service

BUDGETS by Program Activity and Organizational Unit

5 1 ATMOSPHERIC ENVIRONMENT SERVICE

5 1 1 AES Organizational Structure

The Atmospheric Environment Service is organized functionally into five Directorates and two Branches

Weather Services Directorate	WSD
Atmospheric Research Directorate	ARD
Canadian Climate Centre	CCC
Central Services Directorate	CSD
Policy, Planning and Assessment Directorate	APDG
Finance and Administration Branch	AABD
Human Resources Branch	AHRD

Four of the five Directorates, the Finance and Administration Branch and the Human Resources Branch have their headquarters in Downsview, Ontario while the Assistant Deputy Minister and the Policy, Planning and Assessment Directorate have their offices in Hull, Quebec but also maintain staff in Downsview

The Atmospheric Environment Service provides weather and sea-state services to the Department of National Defence as provided for in a Memorandum of Understanding between the two parties DND maintains a Canadian Forces Weather Service headed by the Director of Meteorology and Oceanography (DMetOc) in Ottawa DMetOc formally reports to a higher level DND authority while, functionally, and on technical matters, he reports to the ADM of the Atmospheric Environment Service or to the Director General of the Weather Services Directorate as appropriate

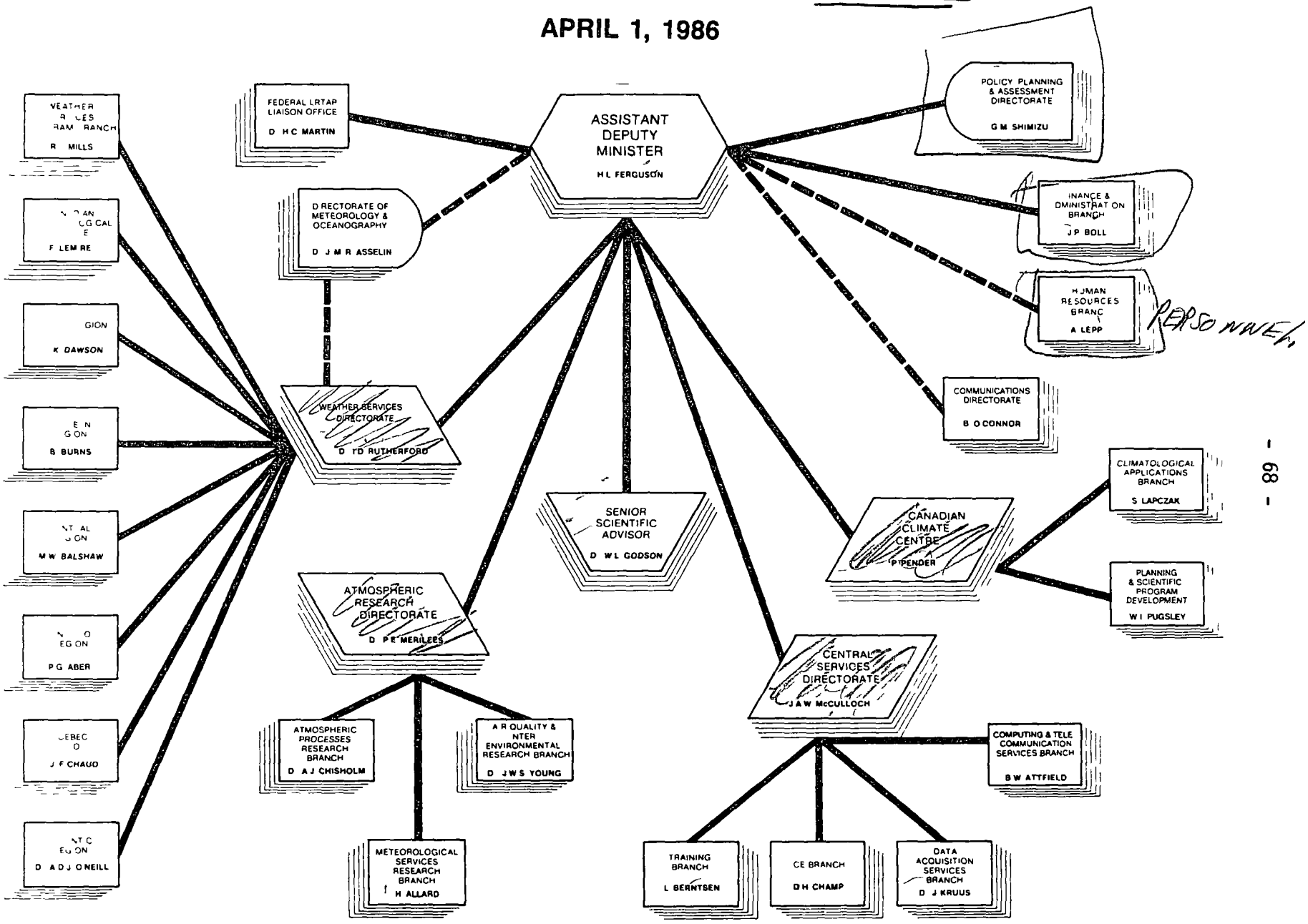
The Communications Directorate, located in Downsview, is not part of AES However, it provides support to the ADM and services to AES managers Also, in co-operation with AES managers, this directorate develops and implements AES' public information and media relations programs (in particular press releases)

The liaison office for the federal scientific LRTAP program is also located in Downsview This office reports directly to the ADM and is responsible for the provision of information, advisory services, and directs and co-ordinates Canada-USA and federal/provincial LRTAP scientific research programs

The International Affairs Co-ordinator reports to the ADM as well He/She assists the ADM and other managers with official business with other countries and organizations

ATMOSPHERIC ENVIRONMENT SERVICE

APRIL 1, 1986



1986-87 Budget
($000)

5 1 ATMOSPHERIC ENVIRONMENT SERVICE

5 1 2 TOTAL BUDGET BY PROGRAM ACTIVITY AND ORGANIZATION

SUB-ACTIVITY Sub-Sub-Activity	ADMA	AABD	AHRD	ARD	CCC	CSD	WSD	TOTAL
0800 MANAGEMENT AND COMMON SUPPORT SERVICES	1020 5	3009 0	1495 1					5524 6
0810 Management	1020 5	173 4						1193 9
0830 Common Support Services		2835 6	1495 1					4330 7
1000 WEATHER SERVICES		4576.0		5970.3		33167 4	101352 4	145066.1*
1100 Public Weather Services							18822 1	18822 1
1200 Marine Weather Services							1143 6	1143.6
1300 Aviation Weather Services							5616 1	5616 1
1400 Economic Weather Services							1581 1	1581 1
1500 Canadian Forces Wx Service							8197 1	8197.1
2000 Data		1485 8				5124 8	35582.1	42192 7
3000 Wx Services Support Sys		3090 2		5970 3		28042 6	30410 3	67513 4
4000 CLIMATE SERVICES AND RESEARCH		776 3		358 0	8719 6	4390 3	3023 3	17267 5
4100 Climate Services		145 1			6251 0		2512 8	8908 9
4500 Climate Research				358 0	925 2			1283.2
4600 Climate Services Sup Sys		631 2			1543.4	4390 3	510 5	7075 4
5000 ICE SERVICES		1170 0				27033 1		28203 1
5100 Ice Recon & Data Acq						21063 4		21063 4
5200 Ice Anal & Forecasting						1999 3		1999 3
5300 Ice Climate Services		340 6				402 4		743 0
5400 Ice Services Support Sys		829 4				3568 0		4397 4
6000 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH	123 0	882 0		9842 5			364 5	11212 0
6100 Air Quality Services				296 6			260 6	557 2
6300 Air Quality Research	123 0	116 5		3624 9			103 9	3968 3
6600 Research - Other				4708 2				4708 2
6700 Air Qua & Res Sup Sys		765 5		1212.8				1978 3
7000 DEPARTMENTAL INTEGRATED PROGRAMS	298 4			1719 8				2018 2
7200 LRTAP	298 4			1719 8				2018.2
7300 Toxic Chemicals								
7400 Great Lakes Water Quality								
7500 Baseline Studies								
GRAND TOTAL	1441 9	10413 3	1495 1	17890 6	8719 6	64590 8	104740 2	209291 5

* Includes Canadian Forces Weather Service

1986-87 Budget
($000)

5 1 ATMOSPHERIC ENVIRONMENT SERVICE

5 1 3 PERSON YEARS BY PROGRAM ACTIVITY AND ORGANIZATION

SUB-ACTIVITY Sub-Sub-Activity	ADMA	AABD	AHRD	ARD	CCC	CSD	WSD	TOTAL
0800 MANAGEMENT AND COMMON SUPPORT SERVICES	19 0	66.0	32 0					117 0
0810 Management	19 0	2 0						21 0
0830 Common Support Services		64 0	32 0					96 0
1000 WEATHER SERVICES		34 0		72 9		218 5	1583 5	1908.9*
1100 Public Weather Services							432 0	432 0
1200 Marine Weather Services							17 0	17 0
1300 Aviation Weather Services							129 5	129 5
1400 Economic Weather Services							34 0	34 0
1500 Canadian Forces Wx Service							112 0	112 0
2000 Data						81 0	430 3	511.3
3000 Wx Services Support Sys		34.0		72 9		137 5	428 7	673.1
4000 CLIMATE SERVICES AND RESEARCH				2 5	127 0	47.0	51 5	228 0
4100 Climate Services					99 0	6 0	40 5	145 5
4500 Climate Research				2 5	17 0			19 5
4600 Climate Services Sup Sys					11 0	41 0	11 0	63 0
5000 ICE SERVICES						66 5		66 5
5100 Ice Recon & Data Acq						31 5		31 5
5200 Ice Anal & Forecasting						21 0		21 0
5300 Ice Climate Services						4 0		4 0
5400 Ice Services Support Sys						10 0		10 0
6000 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH	2.0			101 6		1.0	7 0	111 6
6100 Air Quality Services				7 0			5 0	12 0
6300 Air Quality Research	2.0			49 6			2.0	53 6
6600 Research - Other				31 7				31 7
6700 Air Qua & Res Sup Sys				13 3		1 0		14 3
7000 DEPARTMENTAL INTEGRATED PROGRAMS	3 0			1.0				4 0
7200 LRTAP	3 0			1 0				4 0
7300 Toxic Chemicals								
7400 Great Lakes Water Quality								
7500 Baseline Studies								
GRAND TOTAL	24 0	100 0	32 0	178 0	127 0	333 0	1642 0	2436 0

* Includes Canadian Forces Weather Service

1986-87 Budget
($000)

5 1 ATMOSPHERIC ENVIRONMENT SERVICE

5 1 4 SALARY BY PROGRAM ACTIVITY AND ORGANIZATION

SUB-ACTIVITY / Sub-Sub-Activity	ADMA	AABD	AHRD	ARD	CCC	CSD	WSD	TOTAL
0800 MANAGEMENT AND COMMON SUPPORT SERVICES	810 9	2463.3	1907 2					3913 2
0810 Management	810 9	92.0						902.9
0830 Common Support Services		1815.2	1195.1					3010.3
1000 WEATHER SERVICES		1370.0		3491.1		9733 9	65203 3	79798.3*
1100 Public Weather Services							17185 6	17185 6
1200 Marine Weather Services							825.3	825 3
1300 Aviation Weather Services							5340 0	5340 0
1400 Economic Weather Services							1456 2	1456 2
1500 Canadian Forces Wx Service							5251 1	5251 1
2000 Data						3507 9	16518 3	20026.2
3000 Wx Services Support Sys		1370.0		3491 1		6226 0	18626 8	29713 9
4000 CLIMATE SERVICES AND RESEARCH				165.0	5552 5	1461 3	1851 9	9030.7
4100 Climate Services					4224 0		1423 0	5647 0
4500 Climate Research				165 0	807 2			972 2
4600 Climate Services Sup Sys					521 3	1461 3	428 9	2411 5
5000 ICE SERVICES						3004 3		3004.3
5100 Ice Recon & Data Acq						1456 0		1456.0
5200 Ice Anal & Forecasting						897.3		897 3
5300 Ice Climate Services						203 0		203.0
5400 Ice Services Support Sys						448 0		448 0
6000 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH	90 0			4771 4			349 4	5210.8
6100 Air Quality Services				255 6			251 3	506 9
6300 Air Quality Research	90.0			2393 5			98 1	2581.6
6600 Research - Other				1453.1				1453 1
6700 Air Qua & Res Sup. Sys				669 2				669 2
7000 DEPARTMENTAL INTEGRATED PROGRAMS	130 0			33 9				163 9
7200 LRTAP	130 0			33 9				163 9
7300 Toxic Chemicals								
7400 Great Lakes Water Quality								
7500 Baseline Studies								
GRAND TOTAL	1030 9	3277.2	1195 1	8461.4	5552 5	14199 5	67404 6	101121 2

* Includes Canadian Forces Weather Service

1986-87 Budget
($000)

5 1 ATMOSPHERIC ENVIRONMENT SERVICE

5 1 5 O&M BY PROGRAM ACTIVITY AND ORGANIZATION

SUB-ACTIVITY Sub-Sub-Activity	ADMA	AABD	AHRD	ARD	CCC	CSD	WSD	TOTAL
0800 MANAGEMENT AND COMMON SUPPORT SERVICES	196 0	975 7	290 0					1461 7
0810 Management	196 0	61 4						257 4
0830 Common Support Services		914 3	290 0					1204 3
1000 WEATHER SERVICES		2008.0		1515.5		15907 4	30092 5	49523 4*
1100 Public Weather Services							1592.3	1592 3
1200 Marine Weather Services							318 3	318 3
1300 Aviation Weather Services							261 1	261 1
1400 Economic Weather Services							124 9	124 9
1500 Canadian Forces Wx Service							2946.0	2946 0
2000 Data		1035 8				497.7	15158.6	16692 1
3000 Wx Services Support Sys		927 2		1515 5		15409 7	9691 3	27588 7
4000 CLIMATE SERVICS AND RESEARCH		184 0		150 0	2173.7	1129 0	1129 6	4766 3
4100 Climate Services		145 1			1187 7		1066 3	2399 1
4500 Climate Research				150.0	58 0			208 0
4600 Climate Services Sup Sys		38 9			928 0	1129 0	63 3	2159 2
5000 ICE SERVICES		1170 0				23258.8		24428 8
5100 Ice Recon & Data Acq						19127 4		19127 4
5200 Ice Anal & Forecasting						1027 0		1027.0
5300 Ice Climate Services		340.6				199 4		540 0
5400 Ice Services Support Sys		829.4				2905 0		3734 4
6000 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH	33 0	190 0		3555.0			14 6	3792 6
6100 Air Quality Services				41 0			8 8	49.8
6300 Air Quality Research	33 0	116 5		654 4			5 8	809.7
6600 Research - Other				2415 0				2415 0
6700 Air Qua & Res. Sup Sys		73.5		444 6				518 1
7000 DEPARTMENTAL INTEGRATED PROGRAMS	168 4			1152 1				1320 5
7200 LRTAP	168.4			1152.1				1320.5
7300 Toxic Chemicals								
7400 Great Lakes Water Quality								
7500 Baseline Studies								
GRAND TOTAL	397 4	4527 7	290.0	6372.6	2173.7	40295 2	31236 7	85293.3

* Includes Canadian Forces Weather Service

1986-87 Budget
($000)

5 1 ATMOSPHERIC ENVIRONMENT SERVICE

5 1 6 CAPITAL BY PROGRAM ACTIVITY AND ORGANIZATION

SUB-ACTIVITY Sub-Sub-Activity	ADMA	AABD	AHRD	ARD	CCC	CSD	WSD	TOTAL
0800 MANAGEMENT AND COMMON SUPPORT SERVICES	13 6	126 1	10 0					149 7
0810 Management	13.6	20 0						33.6
0830 Common Support Services		106.1	10 0					116.1
1000 WEATHER SERVICES		450 0		963.7		7526 1	6056 6	14996.4
1100 Public Weather Services							44 2	44 2
1200 Marine Weather Services								
1300 Aviation Weather Services							15.0	15 0
1400 Economic Weather Services								
1500 Canadian Forces Wx Service								
2000 Data		450 0				1119.2	3905 2	5474 4
3000 Wx Services Support Sys.				963.7		6406 9	2092 2	9462.8
4000 CLIMATE SERVICES AND RESEARCH		512 3		43 0	993 4	1800 0	41 8	3390 5
4100 Climate Services					839.3		23 5	862 8
4500 Climate Research				43 0	60 0			103 0
4600 Climate Services Sup Sys		512 3			94 1	1800 0	18 3	2424 7
5000 ICE SERVICES						770 0		770 0
5100 Ice Recon & Data Acq						480.0		480 0
5200 Ice Anal & Forecasting						75 0		75 0
5300 Ice Climate Services								
5400 Ice Services Support Sys						215 0		215 0
6000 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH				1516 1			0 5	1516.6
6100 Air Quality Services							0 5	0 5
6300 Air Quality Research				577 0				577 0
6600 Research - Other				840 1				840 1
6700 Air Qua & Res Sup Sys				99 0				99.0
7000 DEPARTMENTAL INTEGRATED PROGRAMS				533 8				533 8
7200 LRTAP				533 8				533 8
7300 Toxic Chemicals								
7400 Great Lakes Water Quality								
7500 Baseline Studies								
GRAND TOTAL	13 6	1088 4	10.0	3056.6	993 4	10096 1	6098.9	21357.0

1986-87 Budget
($000)

5 1 ATMOSPHERIC ENVIRONMENT SERVICE

5 1 7 G&C BY PROGRAM ACTIVITY AND ORGANIZATION

SUB-ACTIVITY Sub-Sub-Activity	ADMA	AABD	AHRD	ARD	CCC	CSD	WSD	TOTAL
0800 MANAGEMENT AND COMMON SUPPORT SERVICES								NIL
1000 WEATHER SERVICES		748.0						748 0
1100 Public Weather Services								
1200 Marine Weather Services								
1300 Aviation Weather Services								
1400 Economic Weather Services								
1500 Canadian Forces Wx Service								
2000 Data								
3000 Wx Services Support Sys.		748 0						748 0
4000 CLIMATE SERVICES AND RESEARCH		80 0						80.0
4100 Climate Services								
4500 Climate Research								
4600 Climate Services Sup Sys		80 0						80 0
5000 ICE SERVICES								
6000 AIR QUALITY SERVICES AND ATMOSPHERIC RESEARCH		692 0						692.0
6100 Air Quality Services								
6300 Air Quality Research								
6600 Research - Other								
6700 Air. Qua & Res Sup Sys		692 0						692 0
7000 DEPARTMENTAL INTEGRATED PROGRAMS								NIL
GRAND TOTAL		1520 0						1520.0

1986-87 Budget
($000)

ATMOSPHERIC ENVIRONMENT SERVICE

5 1 8 BY ORGANIZATIONAL UNIT

	PY	SALARY	O&M	CAPITAL	GRANTS & CONTRIBUTIONS	TOTAL
OFFICE OF ASSISTANT DEPUTY MINISTER	24 0	1030 9	397 4	13 6		1441 9
FINANCE AND ADMINISTRATION BRANCH	100 0	3277 2	4527 7	1088 4	1520 0	10413 3
ATMOSPHERIC RESEARCH DIRECTORATE	178 0	8461.4	6372 6	3056 6		17890 6
CANADIAN CLIMATE CENTRE	127 0	5552 5	2173 7	993 4		8719 6
CENTRAL SERVICES DIRECTORATE	333 0	14199 5	40295 2	10096 1		64590 8
WEATHER SERVICES DIRECTORATE	1530 0	62153 6	28290 7	6098 9		96543 1
CANADIAN FORCES WEATHER SERVICES	112 0	5251 0	2946 0			8197.1
HUMAN RESOURCES BRANCH	32 0	1195 1	290 0	10 0		1495 1
AES TOTAL	2436 0	101121 2	85293 3	21357.0	1520 0	209291 5

1986-87 Budget
($000)

5 1 9 ATMOSPHERIC ENVIRONMENT SERVICE

RECONCILIATION TO MAIN ESTIMATES

AND NET REFERENCE LEVEL

1)	Allocated Within AES (Total in Program Digest)		$209,291 5
2)	Plus		
	Salary Reserve Account	$1,274 8	
	Non-tax Revenue	1,418 0	
	Major Construction	1,693 0	
	Allocation In Process	2,027 7	
			6,413 5
3)	Plus		
	Employee Fringe Benefits		13,855 0
4)	Main Estimates (Blue Book)		229,560 0
	Less		
	Vote Netted Revenue		34,205 0
5)	1986/87 Net Reference Level		$195,355 0

5 1 10 AES MAIN ESTIMATES BY ORGANIZATION AND INPUT FACTOR (1986/87)

	ADMA	AABD	ACDG	CCDG	ARDG	AFDG	CFWS	AHRD	OTHER	TOTAL
P-Ys	24 0	100 0	340 0	127 0	178 0	1523 0	112 0	32 0		2436 0
SALARY	1029 4	2922 0	13517 0	5397 7	8227 0	53063 9	5016.2	1046 8	(15.1)	90204 9
OVERTIME	1 5	57 8	886 8	82 1	235 0	6954.6	124 0	1.5	406.7	8750 0
OPC	0 0	312.8	189 0	0 0	0 0	1949 8	110 9	0.0	872 5	3435 0
CEBP	144 3	417.2	2016 5	767 2	1184 7	8402 6	719 6	146.8	55 6	13854 5
O&M	397 4	4576 7	40995 1	2243 5	6038 6	27931 0	2946 0	165 0	3452 3	88745 6
CAPITAL	13 6	1088 4	10764 9	911 4	2759 8	5808.9	0 0	10 0	1693.0	23050.0
GRTS & CONTR (WMO 728, STUDENTSHIPS 80, GRANTS 692, CMOS 20)									1520 0	1520 0
TOTALS[1]	1586 2	9374 9	68369 3	9401 9	18445.1	104110 8	8916 7	1370.1	7985 0	229560 0

NOTES

(1) VNR included - see next page for details

OPC Other Personel Costs
CEBP Employee Fringe Benefits

5 1 11 VOTE NETTED REVENUE ALLOCATIONS (1986/87)

SALARY
(000's $)

	ADMA	ACDG	CCDG	AABD	ARDG	AFDG	CFWS	TOTAL ($000)	P-Ys
CMTA		1456 0						1456 0	31 0
CATA						5903 0		5903 0	144 0
EM&R						88 0		88 0	
DND							5251 0	5251 0	113 0
TOTAL SAL	0 0	1456 0	0 0	0 0	0 0	5991 0	5251 0	12698 0	288 0

NON-SALARY
(000's $)

CMTA		15385 0						15385 0	
CATA						2683 7		2683 7	
EM&R						57 0		57 0	
DND						60 0	2956 0	3016 0	
SEC OF STATE									
MISC		128 0	11.0	150 0		76 3		365 3	
TOTAL O&M	0 0	15513 0	11 0	150 0	0 0	2877 0	2956 0	21507 0	
TOTAL VNR (000's $)	0 0	16969 0	11 0	150 0	0 0	8868 0	8207 0	34205 0	
TOTAL P-Ys		31 0				144 0	113 0		288 0

ATMOSPHERIC ENVIRONMENT SERVICE

5 1 12 PERSON-YEARS BY ORGANIZATION AND BY LOCATION

(TOTAL 2436 0)

	Location	Region or Branch	Directorate
ADMA			24 0
Downsview, Ont	14 0		
Hull, Que	10 0		
FINANCE AND ADMINISTRATION		100 0	100 0
Downsview, Ont	100 0		
HUMAN RESOURCES BRANCH		32 0	32 0
Downsview, Ont	32 0		
ATMOSPHERIC RESEARCH DIRECTORATE			178 0
Director General's Office		9 0	
Downsview, Ont	9 0		
Air Quality and Inter-Environmental Research Branch		67 9	
Downsview, Ont	66 9		
Victoria, B C	1 0		
Atmospheric Processes Research Branch		37 5	
Downsview, Ont	37 5		
Meteorological Services Research Branch		66 4	
Dorval, Que	19 5		
Downsview, Ont	46 9		
CANADIAN CLIMATE CENTRE			127 0
Director General's Office		11 0	
Downsview, Ont	11 0		
Research Components		22 0	
Downsview, Ont	22 0		
Climatological Applications Branch		94 3	
Downsview, Ont	89 3		
Saskatoon, Sask	5 0		
CENTRAL SERVICES DIRECTORATE			333 0
Director General's Office		4 2	
Downsview, Ont	4 2		
Computing and Communications Services Branch		107.0	
Dorval, Que	34 0		
Downsview, Ont	73 0		
Data Acquisition Services Branch		101 0	
Downsview, Ont	101 0		
Ice Branch		65 5	
Downsview, Ont	33 5		
Ottawa, Ont	32 0		
Training Branch		69 0	
Winnipeg, Man			
Cornwall, Ont	32 0		
Downsview, Ont	30 0		
Montreal, Que.	7 0		

	Station Type *	Location	Region or Branch	Directorate
WEATHER SERVICES DIRECTORATE				1530 0
Directors General's Office			8 0	
Downsview, Ont		8 0		
Canadian Meteorological Centre			94 0	
Dorval, Que		94.0		
Program Branch			55 0	
Downsview, Ont		55 0		
Atlantic Region			234 0	
Bedford, N S - Regional Office		70 0		
Bedford, N S - Maritime Weather Centre	WO1	53 0		
Charlottetown, P E I	WO4/AT1	4 0		
Churchill Falls, Labrador	WS3	4 0		
Fredericton, N B	WO4/AT1	5 5		
Goose Bay, Labrador	WO4/WS2	9 0		
Moncton, N B	WO4/AT1	8 0		
Newfoundland, Weather Centre	WO1	42 0		
Sable Island, N.S.	WS1	6 0		
Saint John, N B	WO4/AT0	5 0		
Shelburne, N.S	WS1	5 0		
St John's, Nfld	WO4	10.5		
Stephenville, Nfld	WS2/AT1	3 0		
Sydney, N S	WO4	7 0		
Truro, N S	WS3/AM2	2 0		
Quebec Region			212 0	
Baie Comeau, Que	WS3	5 0		
Cape Dyer, N W T.	WS3	3 0		
Chibougamau, Que	WS3	5 0		
Clyde River, N W T	WS3	4 0		
Dorval, Que	WO4/WS3	21 0		
Frobisher Bay, N W T	WO4/WS2	6 0		
Inukjuak, Que	WS1	6 0		
Kuujjuaq, Que	WS1	4.0		
La Grande IV	WS3	4 0		
Maniwaki, Que	WS1	5.0		
Mirabel, Que	WS1	10.0		
Montreal (Ville St Laurent) - Regional HQ		50 0		
Montreal (Ville St Laurent) - Weather Centre	WO1	62 0		
Quebec, Que	WO3	6 0		
Sept-Iles, Que	WO4	4 0		
Sherbrooke, Que	WO4	2 0		
St Hubert, Que	WO4	5 0		
Ste Agathe des Monts, Que	WS3	5 0		
Trois Rivières, Que	WO4	1 0		
Val d'Or, Que	WO4	5 0		

* See page 83 for definitions of station types

	Station Type *	Location	Region or Branch	Directorate
Ontario Region			195 0	
Atikokan, Ont	WS3	1 0		
Hamilton, Ont	W04	4 0		
Kingston, Ont	W04/AT1/AM2	3 0		
Lansdowne House, Ont	WS3	2 0		
London, Ont	W04/AT1	5 0		
Moosonee, Ont	WS1	4 0		
Mt Forest, Ont	WS3/AM2	1 0		
Niagara District, Ont	W04	2 0		
Ottawa, Ont	W04	11 0		
Peterborough, Ont	W04	2 0		
Pickle Lake, Ont	W04/CON	1 0		
Sarnia, Ont	W04	2 0		
Sault Ste Marie, Ont	W04/A	6 0		
Simcoe, Ont	WS3/AM2	0 0		
Sudbury, Ont	W04	7 0		
Thunder Bay, Ont	W04	9 0		
Toronto - Regional Headquarters		44 0		
- Ontario Weather Centre	W01	45 0		
- Toronto Weather Office	W04	30 0		
Toronto Island, Ont	WS3/AM1	3 0		
Big Trout Lake, Ont	WS1	6 0		
Windsor, Ont	W04	7 0		
Central Region			255 0	
Alert, N W T	WS1	3 0		
Baker Lake, N W T	WS2/AT0	2 0		
Brandon, Man	W04/AT0	1 0		
Broadview, Sask	WS3	5 0		
Churchill, Man	W04/WS2	8 0		
Coral Harbour, N W T	WS2/AT0	3 0		
Cree Lake, Sask	WS3	4 0		
Dauphin, Man	W04/AT0	1 0		
Estevan, Sask	WS3	4 0		
Elbow, Sask	WS3/AM1	2 0		
Eureka, N W T	WS1/INS	8 0		
Gillam, Man	WS3/CON	1 0		
Gimli, Man	WS3/CON	2 0		
Hall Beach, N W T	WS1	5 0		
Hudson Bay, Sask	WS3/AM2	2 0		
Kindersley, Sask	WS3/CON	1 0		
Mould Bay, N W T	WS1/INS	8 0		
Prince Albert, Sask	W04/AT0/CON	3 0		
Regina, Sask	W03/SSD	14 0		
Resolute, N W T	W03/WS2/INS	9 0		

* See page 83 for definitions of station types

	Station Type *	Location	Region or Branch	Directorate
Saskatoon, Sask	WO3/INS	12 0		
The Pas, Man	WS1/ATO	7.0		
Thompson, Man	WO4/ATO	1 0		
Winnipeg, Man				
- International Airport (Pres)	WO4	23 0		
- Prairie Weather Centre	WO1	55 0		
- Regional Headquarters		61 0		
Wynyard, Sask	WS3/CON	2 0		
Pool-Surface, S of 60°		5 0		
Pool-Aerological N of 60°		3 0		
Western Region			274 0	
Banff, Alta	WO4/AM2	3 0		
Calgary, Alta	WO4	16 0		
Cambridge Bay, N W T	WS3/WS2	6 0		
Cape Parry, N W T	WS3	3 0		
Coronation, Alta	WS3/AM2	3 0		
Edson, Alta	WS3	4 0		
Edmonton, Alta				
- Regional Director		16 0		
- Data Acquisition		30 0		
- Forecast Operations	WO1	87 5		
- Scientific Services		8 5		
- Weather Services		19 0		
Fort McMurray, Alta	WS3/AT1	3 0		
Fort Reliance, N W T	WS3	3 0		
Fort Smith, N W T	WS2/AT1	3 0		
Grande Prairie, Alta	WO4/ATO	4 0		
Hay River, N W T	WS3/AT1	1 0		
Inuvik, N.W T.	WO4/WS2/AT	8 0		
Jasper, Alta	WS3	3 0		
Lethbridge, Alta	WO4	5 0		
Norman Wells, N W T	WS2/ATO	3 0		
Pincher Creek, Alta	WS3/AM1	2 0		
Rocky Mountain House, Alta	WS3/AM2	3 0		
Sachs Harbour, N W T	WS1	5 0		
Slave Lake, Alta	WS3	4 0		
Stony Plain, Alta.	WS2	4 0		
Whitehorse, Yukon	WS2/WO1	21 0		
Yellowknife, N W T	WO3	6 0		
Pacific Region			203 0	
Cape St James, B.C.	WS3	3 0		
Castlegar, B C	WO4/AT1	3 0		
Dease Lake, B C	WS3	2 0		
Fort St John, B C	WO4/AT1	3 0		
Fort Nelson, B C	WS2/WO4/AT1	5 0		
Hope, B C	WS3	3 0		
Kamloops, B C	WO4/AT1	4 0		
Kelowna, B C	WO4	6 0		
Lytton, B C	WS3	3 0		
Penticton, B C	WO4/AT1	2 0		

* See page 83 for definitions of station types

	Station Type	Location	Region or Branch	Directorate
Port Alberni, B C	WS3/AM2	2 0		
Port Hardy, B C	WS2/W04/AT1	5 0		
Prince George, B C	WS2/W04/AT1	8 0		
Revelstoke, B C	WS3	3 0		
Terrace, B C	W04/AT1	3 0		
Vancouver, B C.				
- Regional Headquarters		108 0		
- Airport	W04/WS3	22 0		
- Harbour	WS3	3 0		
- Forestry Program		2 0		
Vernon, B C	WS1	3 0		
Victoria, B C	W03/WS3	10 0		
CANADIAN FORCES WEATHER SERVICE			112 0	112 0
AES TOTAL				2436 0

Station Types

W01 - a primary forecast office which provides forecasts, consultation and presentation services, in addition to taking surface observations
W03 - provides consultation and presentation services to a wide variety of users, in addition to taking surface weather observations
W04 - provides presentation services to a wide variety of users, in addition to taking surface weather observations
WS1 - takes both surface and upper air (radiosonde and rawinsonde) observations and provides weather information service
WS2 - takes upper air observations
WS3 - maintains a full or partial surface observing program, with observations taken by AES technicians and provides weather information service
CON - Contract (with person, corporation, etc)
INS - Electronic and Surface Weather Inspection
SSD - Scientific Services

Special types of automatic stations operated by AES are
AM1 - MARS I Meteorological Automatic Reporting Station
AM2 - MARS II
AMP - MAPS Modular Acquisition Processing System

Where observations are taken by staff of the Transport Canada Air Transportation Administration (ATA), these abbreviations apply

AT0 - maintains a full or partial surface observing program
AT1 - maintains a full or partial surface observing program and provides aviation weather information service

5 2 OFFICE OF THE ASSISTANT DEPUTY MINISTER

5 2 1 FUNCTIONS OF THE OFFICE OF THE ADM (24 PY, $1,441 9K)

The Assistant Deputy Minister (ADM)

- provides executive direction to, and management of, the Atmospheric Environment Service,
- participates in the corporate executive management of Environment Canada, and
- represents Canada on the executive governing body of the World Meteorological Organization of the United Nations

The Director General of the Policy Planning, and Assessment Directorate, who reports to the ADM

- is responsible for long-term issues in policy, planning, scientific co-ordination, program development, program evaluation and program integration, and
- co-ordinates the preparation of a variety of documents for senior management consideration, including documents for the Minister and Deputy Minister of the Department, and for Central Agencies.

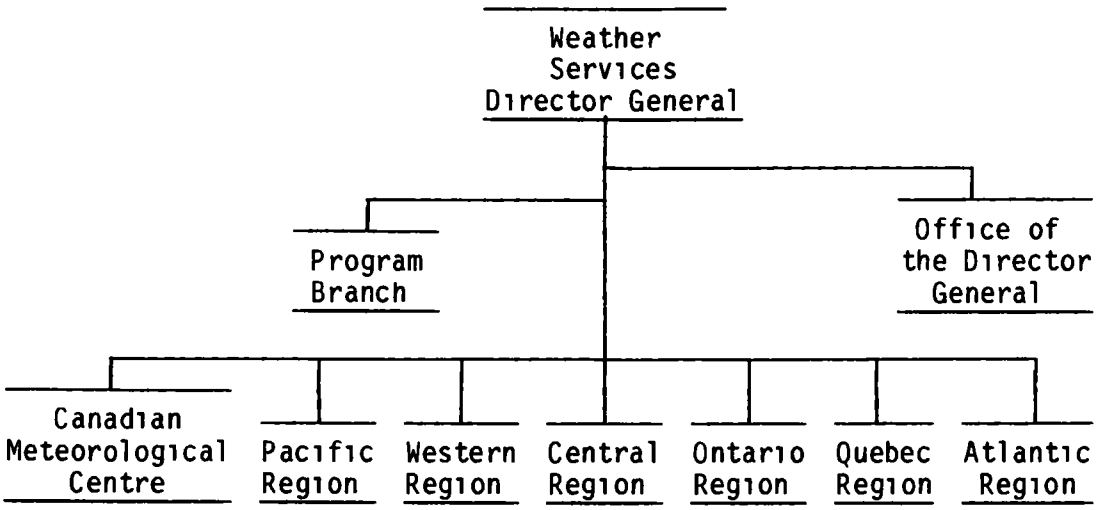
The Senior Advisor, director of the LRTAP Liaison Office, reporting to the ADM

- is responsible for the co-ordination and evaluation of the Federal LRTAP (acid rain) scientific program,
- provision of briefing notes to the ADM and other senior officials,
- provision of a secretariat function to a number of LRTAP co-ordinating committees, and
- acts as a Government media contact relating to scientific and research aspects of the acid rain issue

1986-87 BUDGET BY SA-1 TO SA-2 OFFICE OF THE ASSISTANT DEPUTY MINISTER

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	19 0	810 9	196 0	13 6	0 0	1020 5
0810	MANAGEMENT	19 0	810 9	196 0	13 6	0 0	1020 5
0830	COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	2 0	90 0	33 0	0 0	0 0	123 0
6100	AIR QUALITY SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARCH	2 0	90 0	33 0	0 0	0 0	123 0
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	3 0	130 0	168 4	0 0	0 0	298 4
7200	LRTAP	3 0	130 0	168 4	0 0	0 0	298 4
7300	TOXIC CHEMICALS	0 0	0 0	0 0	0 0	0 0	0 0
7400	GREAT LAKES WATER QUALITY	0 0	0 0	0 0	0 0	0 0	0 0
7500	BASELINE STUDIES	0 0	0 0	0 0	0 0	0 0	0 0
OFFICE OF THE ASSISTANT DEPUTY MINISTER - GRAND TOTAL		24 0	1030 9	397 4	13 6	0 0	1441 9

5 3 WEATHER SERVICES DIRECTORATE



5 3 1 FUNCTIONS WEATHER SERVICES DIRECTORATE (1530 0 PY, $96,543.1K)

This Directorate is the largest of the Service It employs 62% of the total staff It is responsible for all Regional activities, including data acquisition, the forecast production program and the dissemination of weather information to the general public The Director General is supported in Downsview by the Office of the Director General and the Program Branch Others reporting to the Director General are the Directors of the Canadian Meteorological Centre in Montreal and the six Regions of the AES Pacific, Western, Central, Ontario, Quebec and Atlantic Regions

Office of the Director General (8 0 PY, $392 OK)

This office supports the Director General in the day to day national management of the operations of the Directorate In this role this office

- provides national human resources management services including training requirements with respect to meteorologists and meteorological technicians,
- takes part in national operational activities such as Broadcast News/Canadian Press relationships, the Volunteer Observing Ships program, the national forecast translation system, publications of brochures, etc ,
- prepares and/or manages the preparation of correspondence in order to present directorate responses, positions or requests on operational matters including letters for Ministerial signature and senior management briefing notes,
- provides support for meetings chaired or attended by the Director General and co-ordinates national meetings of regional managers, and
- provides general administrative support services for the Directorate

Program Branch (55 0 PY, $6,576 1K)

The Program Branch supports the Director General in the development, control and management of change to Directorate national operations and the monitoring and assessment of trends in Directorate operations and outputs The Branch has the following composition

Policy and Plans Division
- develops national plans and policies for the WSD responsibilities for data acquisition, weather forecasting and dissemination activities, and
- develops and maintains DOE/AES agreements and relationships with components of other departments such as DOT, DND and DFO

Procedures and Standards Division
- develops the procedures and standards to be used in the WSD activities of data acquisition, weather forecasting and dissemination, and
- maintains the meteorological applications (CCP) programs used in the weather centres

Monitoring and Assessment Division
- monitors and assesses the outputs of the Weather Services program and the operations used to produce them, and
- develops and maintains a management information system for WSD

Financial Services Unit
- provides financial analysis and advice on WSD proposals for the Weather Services program,
- provides guidance and advice on financial procedures, and
- prepares resource allocations for the Directorate and monitors expenditures.

Canadian Meteorological Centre (94 0 PY, $4,871.7K)

The Canadian Meteorological Centre, as described on page 55, is made up of two divisions - the Operations Division and Development Division

The Operations Division
- assimilates data into operational runs,
- prepares subjective products,
- implements and maintains the computerized production system, and
- monitors and evaluates automated and manual output

The Development Division
- improves the quality and range of forecast products, and
- provides efficient production systems

Pacific, Western, Central, Ontario, Quebec and Atlantic Regions
(1,373 0 PY, $84,703 3K)

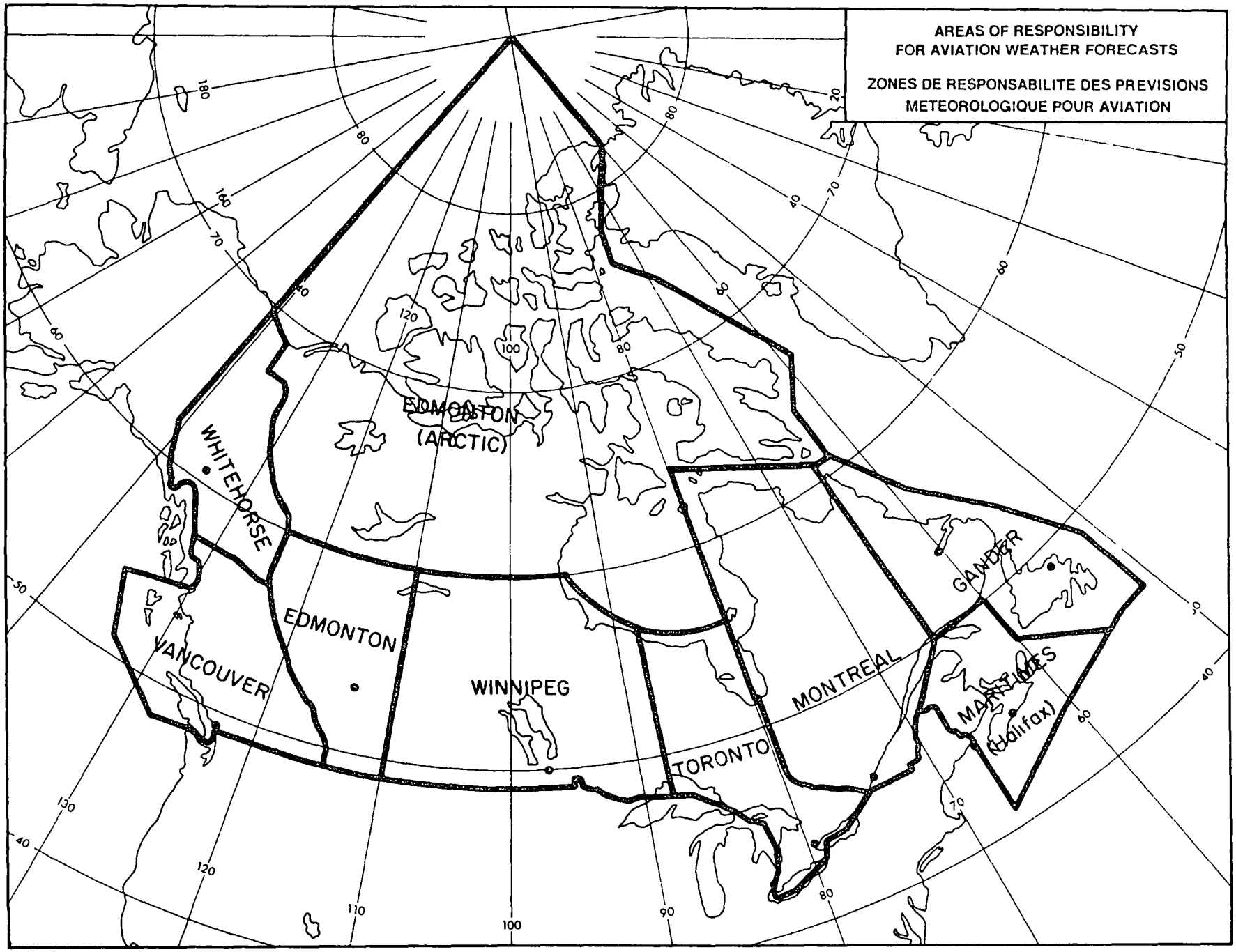
The six regions that represent AES provide services to all Canadians Although each region is similar in structure and responsibilities, they differ in their geographical coverage and regional needs Each of the regions has four divisions

1 The Data Aquisition Division
- takes observations in real-time of all standard weather elements and of special weather conditions as inputs to the AES forecast operations systems Data is taken at surface observation stations, upper-air observation stations, automatic stations, radar sites, volunteer climate stations and ships in order to gather such data as air quality, radiation measure- ment and seismic measurement,
- administers contract stations,
- ensures that the meteorological instruments are properly maintained and calibrated,
- adequately trains the volunteer observers and observers working at contract stations

2 The Regional Weather Centres and Weather Forecast Operations Division
- produces regional weather forecasts and weather warnings based on all incoming weather information The information includes weather maps produced by CMC and the National Meteorological Centre of the United States, radar and satellite imagery and synoptic weather reports The forecasts include public weather, aviation weather, marine weather and various specialized forecasts, and
- carries out development work to produce suitable products for the media

3 The Weather Services Division
- ensures that the regional needs for weather services are met,
- provides weather information mainly to the general public and aviation community from their weather offices, and
- operates Weatheradio

4 Scientific Services Divison
- controls the quality of climatological data in the region,
- provides climatological information services to users such as provincial governments, private sector, and federal and provincial agencies,
- studies regional interests such as agrometeorology, forestry, air quality related activities, energy applications, hydrometeorology and climate impacts, and
- acts as the focal point for AES regional participation in the Environmental Assessment and Review Process (EARP) and federal/provincial environment assessment



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1986-87 BUDGET BY SA-1 TO SA-2 WEATHER SERVICES DIRECTORATE

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	1471 5	59952 2	27146 5	6056 6	0 0	93155 3
1100	PUBLIC WEATHER	432 0	17185 6	1592 3	44 2	0 0	18822 1
1200	MARINE WEATHER SERVICES	17 0	825 3	318 3	0 0	0 0	1143 6
1300	AVIATION WEATHER SERVICES	129 5	5340 0	261 1	15 0	0 0	5616 1
1400	ECONOMIC WEATHER SERVICES	34 0	1456 2	124 9	0 0	0 0	1581 1
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	430 3	16518 3	15158 6	3905 2	0 0	35582 1
3000	WEATHER SERVICES SUPPORT SYSTEMS	428 7	18626 8	9691 3	2092 2	0 0	30410 3
4000	CLIMATE SERVICES & RESEARCH	51 5	1851 9	1129 6	41 8	0 0	3023 3
4100	CLIMATE SERVICES	40 5	1423 0	1066 3	23 5	0 0	2512 8
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	11 0	428 9	63 3	18 3	0 0	510 5
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	7 0	349 4	14 6	0 5	0 0	364 5
6100	AIR QUALITY SERVICES	5 0	251 3	8 8	0 5	0 0	260 6
6300	AIR QUALITY RESEARCH	2 0	98 1	5 8	0 0	0 0	103 9
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
WEATHER SERVICES DIRECTORATE - GRAND TOTAL		1530 0	62153 5	28290 7	6098 9	0 0	96543 1

1986-87 BUDGET BY SA-1 TO SA-2 OFFICE OF THE DIRECTOR GENERAL-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	8 0	292 0	100 0	0 0	0 0	392 0
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	8 0	292 0	100 0	0 0	0 0	392 0
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
OFFICE OF THE DIRECTOR GENERAL-WSD - GRAND TOTAL		8 0	292 0	100 0	0 0	0 0	392 0

1986-87 BUDGET BY SA-1 TO SA-2 WEATHER SERVICES PROGRAM BRANCH-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	55 0	2763 2	3180 2	632 7	0 0	6576 1
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	2 3	98 8	40 0	0 0	0 0	138 8
3000	WEATHER SERVICES SUPPORT SYSTEMS	52 7	2664 4	3140 2	632 7	0 0	6437 3
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
WEATHER SERVICES PROGRAM BRANCH-WSD - GRAND TOTAL		55 0	2763 2	3180 2	632 7	0 0	6576 1

1986-87 BUDGET BY SA-1 TO SA-2 CANADIAN METEOROLOGICAL CENTRE-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	94 0	4434 5	387 2	50 0	0 0	4871 7
1100	PUBLIC WEATHER	8 0	292 8	81 2	0 0	0 0	374 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	86 0	4141 7	306 0	50 0	0 0	4497 7
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
CANADIAN METEOROLOGICAL CENTRE-WSD - GRAND TOTAL		94 0	4434 5	387 2	50 0	0 0	4871 7

1986-87 BUDGET BY SA-1 TO SA-2 PACIFIC REGION-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	195 0	7540 7	4054 1	1152 9	0 0	12747 7
1100	PUBLIC WEATHER	70 0	2821 3	104 3	0 0	0 0	2925 6
1200	MARINE WEATHER SERVICES	6 0	307 0	125 6	0 0	0 0	432 6
1300	AVIATION WEATHER SERVICES	16 0	604 6	24 8	0 0	0 0	629 4
1400	ECONOMIC WEATHER SERVICES	2 0	84 9	26 5	0 0	0 0	111 4
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	59 0	2057 4	2599 4	901 2	0 0	5558 0
3000	WEATHEP SERVICES SUPPORT SYSTEMS	42 0	1665 5	1173 5	251 7	0 0	3090 7
4000	CLIMATE SERVICES & RESEARCH	6 0	232 6	209 7	16 0	0 0	458 3
4100	CLIMATE SERVICES	5 0	175 6	204 0	13 5	0 0	393 1
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	1 0	57 0	5 7	2 5	0 0	65 2
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	2 0	86 7	1 0	0 5	0 0	88 2
6100	AIR QUALITY SERVICES	1 0	52 7	0 5	0 5	0 0	53 7
6300	AIR QUALITY RESEARCH	1 0	34 0	0 5	0 0	0 0	34 5
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
PACIFIC REGION-WSD - GRAND TOTAL		203 0	7860 0	4264 8	1169 4	0 0	13294 2

1986-87 BUDGET BY SA-1 TO SA-2 WESTERN REGION-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	264 5	10773 9	4095 3	569 6	0 0	15438 8
1100	PUBLIC WEATHER	78 0	2990 6	354 3	0 0	0 0	3344 9
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	37 5	1668 7	107 2	0 0	0 0	1775 9
1400	ECONOMIC WEATHER SERVICES	2 0	202 8	34 0	0 0	0 0	236 8
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	90 0	3592 4	1986 4	0 0	0 0	5578 8
3000	WEATHER SERVICES SUPPORT SYSTEMS	57 0	2319 4	1613 4	569 6	0 0	4502 4
4000	CLIMATE SERVICES & RESEARCH	8 5	249 7	118 1	0 0	0 0	367 8
4100	CLIMATE SERVICES	6 5	182 6	100 2	0 0	0 0	282 8
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	2 0	67 1	17 9	0 0	0 0	85 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	1 0	43 2	3 0	0 0	0 0	46 2
6100	AIR QUALITY SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARCH	1 0	43 2	3 0	0 0	0 0	46 2
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
WESTERN REGION-WSD - GRAND TOTAL		274 0	11066 8	4216 4	569 6	0 0	15852 8

		BY SALARY		OF CAPITAL		G&C	OPAT
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	243 0	98 2 6	6513 4	1015 8	0 0	17871 8
1100	PUBLIC WEATHER	70 0	2873 2	469 4	0 0	0 0	3342 6
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	11 0	441 8	0 0	0 0	0 0	441 8
1400	ECONOMIC WEATHER SERVICES	2 0	93 5	0 0	0 0	0 0	93 5
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	107 0	4408 1	4914 9	1216 1	0 0	10539 1
3000	WEATHER SERVICES SUPPORT SYSTEMS	53 0	2026 0	1129 1	299 1	0 0	3454 2
4000	CLIMATE SERVICES & RESEARCH	1 0	397 4	120 9	0 0	0 0	518 3
4100	CLIMATE SERVICES	9 0	321 2	111 9	0 0	0 0	433 1
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	2 0	76 2	9 0	0 0	0 0	85 2
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	1 0	50 9	2 5	0 0	0 0	53 4
6100	AIR QUALITY SERVICES	1 0	50 9	2 5	0 0	0 0	53 4
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
CENTRAL REGION-WSD - GRAND TOTAL		255 0	10290 9	6636 8	1515 8	0 0	18443 5

1986-87 BUDGET BY SA-1 TO SA-2 ONTARIO REGION-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	183 0	7192 2	2403 6	415 4	0 0	10011 2
1100	PUBLIC WEATHER	54 0	1763 9	95 1	0 0	0 0	1859 0
1200	MARINE WEATHER SERVICES	7 0	317 5	5 8	0 0	0 0	323 3
1300	AVIATION WEATHER SERVICES	28 0	1069 0	61 1	0 0	0 0	1130 1
1400	ECONOMIC WEATHER SERVICES	18 0	686 2	37 5	0 0	0 0	723 7
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	42 0	1610 7	1604 6	336 4	0 0	3551 7
3000	WEATHER SERVICES SUPPORT SYSTEMS	34 0	1744 9	599 5	79 0	0 0	2423 4
4000	CLIMATE SERVICES & RESEARCH	11 0	365 7	139 0	12 3	0 0	517 0
4100	CLIMATE SERVICES	8 0	265 3	114 3	10 0	0 0	389 6
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	3 0	100 4	24 7	2 3	0 0	127 4
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	1 0	64 6	2 2	0 0	0 0	66 8
6100	AIR QUALITY SERVICES	1 0	64 6	2 2	0 0	0 0	66 8
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
ONTARIO REGION-WSD - GRAND TOTAL		195 0	7622 5	2544 8	427 7	0 0	10595 0

1986-87 BUDGET BY SA-1 TO SA-2 QUEBEC REGION-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	208 0	8477 5	3497 8	1332 5	0 0	13307 8
1100	PUBLIC WEATHER	61 0	2589 3	227 0	10 0	0 0	2826 3
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	21 0	873 9	40 1	15 0	0 0	929 0
1400	ECONOMIC WEATHER SERVICES	8 0	291 8	24 6	0 0	0 0	316 4
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	78 0	3042 3	2364 8	1203 8	0 0	6610 9
3000	WEATHER SERVICES SUPPORT SYSTEMS	40 0	1680 2	841 3	103 7	0 0	2625 2
4000	CLIMATE SERVICES & RESEARCH	3 0	116 9	431 2	0 0	0 0	548 1
4100	CLIMATE SERVICES	3 0	116 9	431 2	0 0	0 0	548 1
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	1 0	51 7	0 5	0 0	0 0	52 2
6100	AIR QUALITY SERVICES	1 0	51 7	0 5	0 0	0 0	52 2
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
QUEBEC REGION-WSD - GRAND TOTAL		212 0	8646 1	3929 5	1332 5	0 0	13908 1

1986-87 BUDGET BY SA-1 TO SA-2 ATLANTIC REGION-WSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	221 0	8635 6	2914 9	387 7	0 0	11938 2
1100	PUBLIC WEATHER	91 0	3854 5	261 0	34 2	0 0	4149 7
1200	MARINE WEATHER SERVICES	4 0	200 8	186 9	0 0	0 0	387 7
1300	AVIATION WEATHER SERVICES	16 0	682 0	27 9	0 0	0 0	709 9
1400	ECONOMIC WEATHER SERVICES	2 0	97 0	2 3	0 0	0 0	99 3
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	52 0	1708 6	1648 5	247 1	0 0	3604 2
3000	WEATHER SERVICES SUPPORT SYSTEMS	56 0	2092 7	788 3	106 4	0 0	2987 4
4000	CLIMATE SERVICES & RESEARCH	12 0	489 6	110 7	13 5	0 0	613 8
4100	CLIMATE SERVICES	9 0	361 4	104 7	0 0	0 0	466 1
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	3 0	128 2	6 0	13 5	0 0	147 7
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	1 0	52 3	5 4	0 0	0 0	57 7
6100	AIR QUALITY SERVICES	1 0	31 4	3 1	0 0	0 0	34 5
6300	AIR QUALITY RESEARCH	0 0	20 9	2 3	0 0	0 0	23 2
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
ATLANTIC REGION-WSD - GRAND TOTAL		234 0	9177 5	3031 0	401 2	0 0	12609 7

1986-87 BUDGET BY SA-1 TO SA-2 CANADIAN FORCES WEATHER SERVICES

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
1000	WEATHER SERVICES	112 0	5251 1	2946 0	0 0	0 0	8197 1
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	112 0	5251 1	2946 0	0 0	0 0	8197 1
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
CANADIAN FORCES WEATHER SERVICES - GRAND TOTAL		112 0	5251 1	2946 0	0 0	0 0	8197 1

1986-87 Budget
($000)

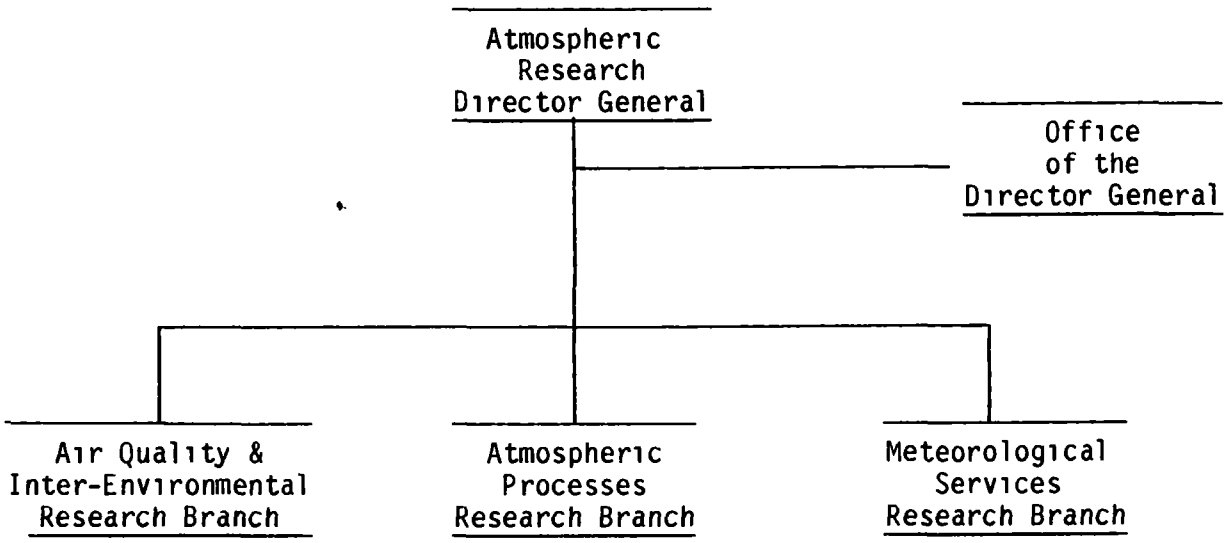
WEATHER SERVICES DIRECTORATE

5 3 13

BY ORGANIZATIONAL UNIT

	PY	SALARY	O&M	CAPITAL	G&C	TOTAL
OFFICE OF DG	8.0	292 0	100.0	0 0	0 0	392 0
PROGRAM BRANCH	55 0	2763 2	3180 2	632 7	0 0	6576 1
CANADIAN METEOROLOGICAL CENTRE	94 0	4434 5	387 2	50 0	0 0	4871 7
PACIFIC REGION	203.0	7860 0	4264.8	1169 4	0.0	13294 2
WESTERN REGION	274.0	11066 8	4216 4	569 6	0 0	15852 8
CENTRAL REGION	255 0	10290.9	6636 8	1515 8	0.0	18443 5
ONTARIO REGION	195 0	7622 5	2544.8	427 7	0 0	10595 0
QUEBEC REGION	212 0	86461 1	3929 5	1332.5	0 0	13908 1
ATLANTIC REGION	234 0	9177 5	3031 0	401 2	0 0	12609 7
WSD TOTAL	1530 0	62153.5	28290.7	6098 9	0.0	96543.1
CANADIAN FORCES WEATHER SERVICE	112 0	5251 1	2946.0	0 0	0 0	8197 1

5 4 ATMOSPHERIC RESEARCH DIRECTORATE



5 4 1 FUNCTIONS ATMOSPHERIC RESEARCH DIRECTORATE (178 0 PY, $17,890 6K)

Office of the Director General (9 0 PY, $840 4K)

This office provides the following services to the Atmospheric Directorate

- executive and management direction
- scientific leadership,
- long-term direction to Service programs,
- ensures representation of scientific research and the Service nationally and internationally,
- five PY's for resourcing the assignment of MSc meteorologists to two-year projects in order to develop their ability to carry out research work

Air Quality and Inter-Environmental Research Branch (65 1 PY, $6,326 3K)

This Branch analyzes and comprehends the atmospheric chemical and physical environment as it relates to environmental (air) quality This is done by measuring (to ascertain the extent and quality), by studying processes (to understand the method of operation), through integration (combining parts into a whole) and through the provision of services A major part of the above efforts is in support of the departmental integrated program for Long-Range Transport of Air Pollutants (LRTAP)

Atmospheric Processes Research Branch (39 5 PY, $5,335 0K)

The two Divisions that constitute this Branch are Cloud Physics and Experimental Studies They are primarily experiment-oriented and undertake field experimental programs These programs have been designed to help understand atmospheric processes in the troposphere and the stratosphere

The Cloud Physics Division remains current in all aspects of cloud and precipitation physics, and weather radar (including precipitation enhancement or suppression, modification of hailstorms, etc) Work continues on the analysis of field experimental data from airborne summer/winter programs over Algonquin Park, which is providing a much better understanding of the detailed interaction between pollutants, clouds and precipitation A new initiative, the Canadian Atlantic Storms Project (CASP), will examine major winter storms off Canada's East Coast in order to increase the accuracy and timeliness of short to medium term forecasts

The Experimental Studies Division is concerned with the gathering and interpretation of data on solar radiation and composition of the stratosphere (especially ozone) Such information is paramount for discussions of questions such as the effects of fluorocarbons on the ozone layer (and hence the amount of energy in the ultraviolet portion of the solar spectrum reaching the earth which has serious effects on plant and animal life) Even small changes in stratospheric composition can also have very significant effects, in the long term, related to climate change The Experimental Studies Division was recently successful in flying a sunphotometer experiment on board the U S space shuttle to measure O_3 and NO_2 profiles in the stratosphere as well as to determine the zero calibration for this instrument Further work on this environmental monitoring initiative will see the use of a Brewer spectrometer from a shuttle bay as early as late 1986

A highlight of branch activities was the successful conclusion/ signature of the Vienna Convention on the Protection of the Ozone Layer signed by Canada and twenty other nations on March 22, 1985

Meteorological Services Research Branch (64 4 PY, $5,388 9K)

This Branch carries out research and development in support of the prediction services of the AES for weather, sea-state, ice and other environmental related elements

The Aerospace Meteorology Division develops systems to receive and exploit data from satellites It includes an operational group, the Satellite Data Lab, which provides satellite data on a real-time basis to all components of the AES

Division de la Recherche en Prévision Numérique located in Dorval develops numerical weather forecasting models in support of the forecasting operations at the Canadian Meteorological Centre

Forecast Research Division develops statistical/dynamical models and procedures for forecasting various weather elements and environmental parameters such as sea-state, ice and ice-related variables Models are also developed to enable AES response to marine environmental emergencies Furthermore, research, development and evaluation are conducted by new technologies of potential use to the forecast system

1986-87 BUDGET BY SA-1 TO SA-2 ATMOSPHERIC RESEARCH DIRECTORATE

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	72 9	3491 1	1515 5	963 7	0 0	5970 3
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	72 9	3491 1	1515 5	963 7	0 0	5970 3
4000	CLIMATE SERVICES & RESEARCH	2 5	165 0	150 0	43 0	0 0	358 0
4100	CLIMATE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4500	CLIMATE RESEARCH	2 5	165 0	150 0	43 0	0 0	358 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	101 6	4771 4	3555 0	1516 1	0 0	9842 5
6100	AIR QUALITY SERVICES	7 0	255 6	41 0	0 0	0 0	296 6
6300	AIR QUALITY RESEARCH	49 6	2393 5	654 4	577 0	0 0	3624 9
6600	RESEARCH-OTHER	31 7	1453 1	2415 0	840 1	0 0	4708 2
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	13 3	669 2	444 6	99 0	0 0	1212 8
7000	DEPARTMENTAL INTEGRATED PROGRAMS	1 0	33 9	1152 1	533 8	0 0	1719 8
7200	LRTAP	1 0	33 9	1152 1	533 8	0 0	1719 8
7300	TOXIC CHEMICALS	0 0	0 0	0 0	0 0	0 0	0 0
7400	GREAT LAKES WATER QUALITY	0 0	0 0	0 0	0 0	0 0	0 0
7500	BASELINE STUDIES	0 0	0 0	0 0	0 0	0 0	0 0
ATMOSPHERIC RESEARCH DIRECTORATE - GRAND TOTAL		178 0	8461 4	6372 6	3056 6	0 0	17890 6

1986-87 BUDGET BY SA-1 TO SA-2 OFFICE OF THE DIRECTOR GENERAL-ARD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	5 0	234 4	2 5	0 0	0 0	236 9
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	5 0	234 4	2 5	0 0	0 0	236 9
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	4 0	263 0	311 5	29 0	0 0	603 5
6100	AIR QUALITY SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	4 0	263 0	311 5	29 0	0 0	603 5
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
OFFICE OF THE DIRECTOR GENERAL-ARD - GRAND TOTAL		9 0	497 4	314 0	29 0	0 0	840 4

1986-87 BUDGET BY SA-1 TO SA-2 AIR QUALITY & INTER-ENVIRONMENTAL RESEARCH BR

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	2 5	165 0	150 0	43 0	0 0	358 0
4100	CLIMATE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4500	CLIMATE RESEARCH	2 5	165 0	150 0	43 0	0 0	358 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	61 6	2847 1	759 4	642 0	0 0	4248 5
6100	AIR QUALITY SERVICES	7 0	255 6	41 0	0 0	0 0	296 6
6300	AIR QUALITY RESEARCH	49 6	2393 5	654 4	577 0	0 0	3624 9
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	5 0	198 0	64 0	65 0	0 0	327 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	1 0	33 9	1152 1	533 8	0 0	1719 8
7200	LRTAP	1 0	33 9	1152 1	533 8	0 0	1719 8
7300	TOXIC CHEMICALS	0 0	0 0	0 0	0 0	0 0	0 0
7400	GREAT LAKES WATER QUALITY	0 0	0 0	0 0	0 0	0 0	0 0
7500	BASELINE STUDIES	0 0	0 0	0 0	0 0	0 0	0 0
AIR QUALITY & INTER-ENVIRONMENTAL RESEARCH BR - GRAND TOTAL		65 1	3046 0	2061 5	1218 8	0 0	6326 3

1986-87 BUDGET BY SA-1 TO SA-2 ATMOSPHERIC PROCESS RESEARCH BRANCH-ARD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	6 5	311 8	106 0	107 8	0 0	525 6
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	6 5	311 8	106 0	107 8	0 0	525 6
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	33 0	1521 2	2447 1	841 1	0 0	4809 4
6100	AIR QUALITY SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	28 7	1313 0	2378 0	836 1	0 0	4527 1
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	4 3	208 2	69 1	5 0	0 0	282 3
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
ATMOSPHERIC PROCESS RESEARCH BRANCH-ARD - GRAND TOTAL		39 5	1833 0	2553 1	948 9	0 0	5335 0

1986-87 BUDGET BY SA-1 TO SA-2

METEOROLOGICAL SERVICES RESEARCH BRANCH-ARD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	61 4	2944 9	1407 0	855 9	0 0	5207 8
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	61 4	2944 9	1407 0	855 9	0 0	5207 8
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	3 0	140 1	37 0	4 0	0 0	181 1
6100	AIR QUALITY SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	3 0	140 1	37 0	4 0	0 0	181 1
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
METEOROLOGICAL SERVICES RESEARCH BRANCH-ARD - GRAND TOTAL		64 4	3085 0	1444 0	859 9	0 0	5388 9

1986-87 Budget
($000)

ATMOSPHERIC RESEARCH DIRECTORATE

BY ORGANIZATIONAL UNIT

5 4 7

	PY	SALARY	O&M	CAPITAL	G&C	TOTAL
OFFICE OF DG	9.0	497.4	314 0	29 0	0 0	840 4
AIR QUALITY & INTER-ENVIRONMENTAL RESEARCH BRANCH	65 1	3046 0	2061 5	1218 8	0 0	6326 3
ATMOSPHERIC PROCESSES RESEARCH BRANCH	39 5	1833 0	2553 1	948 9	0 0	5335 0
METEOROLOGICAL SERVICES RESEARCH BRANCH	64 4	3085 0	1444 0	859 9	0 0	5388 9
ARD	178.0	8461.4	6372 6	3056 6	0 0	17890 6

5 5 CANADIAN CLIMATE CENTRE

5 5 1 FUNCTIONS THE CANADIAN CLIMATE CENTRE (127 0 PY, $8,719 6K)

The Canadian Climate Centre was organized in 1978 to provide a focus for climate activity in Canada The Centre consists of a Climatological Applications Branch with four Divisions, a Research Component with a Chief Scientist and two Divisions and the Canadian Climate Program Office

Office of the Director General and Climate Program Office
(11 0 PY, $1,543 4K)

- provides the executive scientific direction and management of the Canadian Climate Centre

The Climate Program Office acts as a focal point to
- provide secretariat support for the Climate Planning Board of Canada and other committees associated with the Canadian Climate Program,
- promote the achievement of Climate Program objectives, and
- provide up-to-date information and advice concerning CO_2 issues to EMR, DOE and the Climate Planning Board

Research Component (22 0 PY, $1,141 0K)

The research component of the Centre consists of two divisions working under the supervision of the Director, Planning & Scientific Program Development

1) The Numerical Modelling Division
   - undertakes research to gain improved knowledge of climate as a physical system and to simulate climate through numerical modelling

2) The Monitoring and Prediction Division
   - develops improved systems for monitoring the current climate situation across Canada for weekly publication, and
   - analyses and assesses statistical and other methods of climate prediction

Climatological Applications Branch (94 0 PY, $6,035 2K)

This Branch consists of a Director's Office and four Divisions

1) The Data Management Division
   - collects and quality controls all surface, upper air and supplemental data entering the national climate archives, and
   - manages archives to serve the needs for climate data in applications and research

2) The Climatological Service Division
   - assists regional offices in handling inquiries,
   - processes inquiries that are national in scope,
   - prepares climate data and information (such as maps, atlases, guides, manuals, bibliographies, data summaries and climate studies) describing the availability of climate data,
   - provides information in digital form, on microfilm and in printed copy, and
   - assembles the information in national, current, historical and statistical series publication.

3) The Hydrometeorological and Marine Services Division
   - deals with services for river, lake and marine applications, special projects and research and development

4) The Hydrometeorological Research Division (Saskatoon)
   - undertakes research to produce a better understanding of physical processes within the hydrological cycle, and
   - develops techniques to analyse hydroclimate statistics and to tailor the application of NWP products to the water resource sector with emphasis on Prairie and Arctic hydrology problems

5) The Applications and Impact Division
   - has extensive applications expertise dealing with agriculture and forestry meteorology, biometeorology, arctic meteorology, energy, industrial applications, and the overall implications of climate variability and change upon Canada

1986-87 BUDGET BY SA-1 TO SA-2 — CANADIAN CLIMATE CENTRE

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	127 0	5552 5	2173 7	993 4	0 0	8719 6
4100	CLIMATE SERVICES	99 0	4224 0	1187 7	839 3	0 0	6251 0
4500	CLIMATE RESEARCH	17 0	807 2	58 0	60 0	0 0	925 2
4600	CLIMATE SERVICES SUPPORT SYSTEMS	11 0	521 3	928 0	94 1	0 0	1543 4
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
CANADIAN CLIMATE CENTRE - GRAND TOTAL		127 0	5552 5	2173 7	993 4	0 0	8719 6

1986-87 BUDGET BY SA-1 TO SA-2 OFFICE OF THE DIRECTOR GENERAL-CCC

		PY SALARY		O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	11 0	521 3	928 0	94 1	0 0	1543 4
4100	CLIMATE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	11 0	521 3	928 0	94 1	0 0	1543 4
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
OFFICE OF THE DIRECTOR GENERAL-CCC - GRAND TOTAL		11 0	521 3	928 0	94 1	0 0	1543 4

1986-87 BUDGET BY SA-1 TO SA-2 RESEARCH-CCC

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	22 0	996 0	70 0	75 0	0 0	1141 0
4100	CLIMATE SERVICES	5 0	188 8	12 0	15 0	0 0	215 8
4500	CLIMATE RESEARCH	17 0	807 2	58 0	60 0	0 0	925 2
4600	CLIMATE SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
RESEARCH-CCC - GRAND TOTAL		22 0	996 0	70 0	75 0	0 0	1141 0

1986-87 BUDGET BY SA-1 TO SA-2 CLIMATOLOGICAL APPLICATIONS BRANCH-CCC

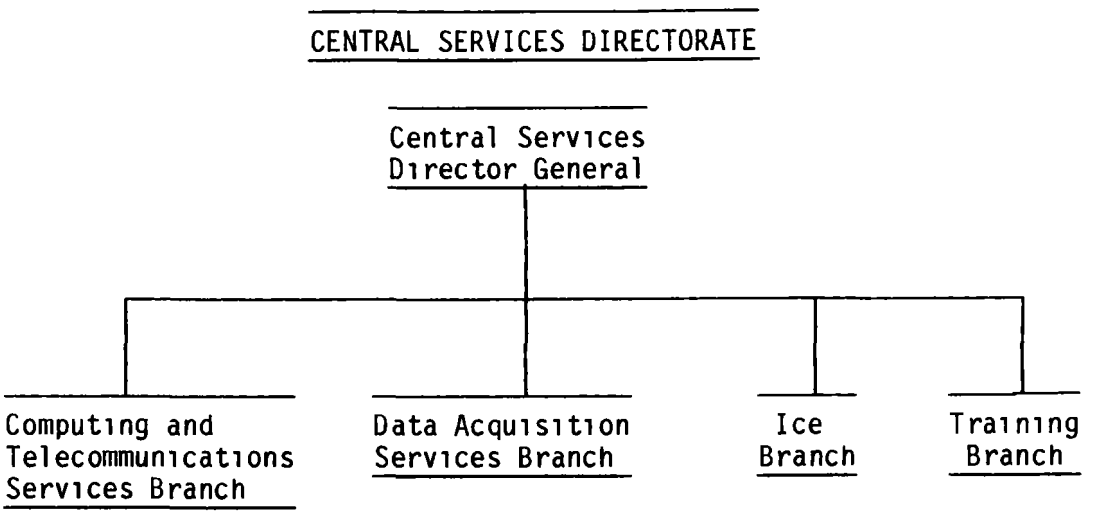
		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	94 0	4035 2	1175 7	824 3	0 0	6035 2
4100	CLIMATE SERVICES	94 0	4035 2	1175 7	824 3	0 0	6035 2
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
CLIMATOLOGICAL APPLICATIONS BRANCH-CCC - GRAND TOTAL		94 0	4035 2	1175 7	824 3	0 0	6035 2

1986-87 Budget by Sub-Activity (SA 1) and Sub-Sub-Activiy (SA 2)
($000)

CANADIAN CLIMATE CENTRE

5 5 6 BY ORGANIZATIONAL UNIT

	PY	SALARY	O&M	CAPITAL	G&C	TOTAL
OFFICE OF THE DIRECTOR GENERAL	11 0	521 3	928 0	94 1		1543 4
RESEARCH COMPONENT	22 0	996 0	70 0	75 0		1141 0
CLIMATOLOGICAL APPLICATIONS BRANCH	94 0	4035 2	1175 7	824 3		6035 2
CCC TOTAL	127 0	5552 5	2173.7	993 4		8719 6



5 6 1 FUNCTIONS CENTRAL SERVICES DIRECTORATE (333 0 PY, $64,590 8K)

This Directorate is responsible for information and advisory services on sea ice distribution, computing and telecommunications services, technical and professional training, and the centralized design, implementation and sustenance of data acquisition systems The Directorate has four Branches, each of which is responsible for one of the services listed above The Director General is the Chairman of the AES Capital Co-ordinating Committee and of the AES Program Advisory Committee on Computers and Communications

1) Computing and Telecommunications Services Branch
(105 3 PY, $28,424 9K)

- designs, plans and operates AES' national EDP and the telecommunications facilities,
- ensures that AES has the EDP and the information-processing, and the telecommunication services and facilities to meet current and future requirements

Within this Branch there were four divisions at the start of the year

The Telecommunications Management Division which manages, operates and maintains AES national telecommunications systems including the Canadian Weatherfax System, the Meteorological Teletype Collection and Distribution Systems, and the telecommunications portion of the radar data distribution system

The Centre d'Information Dorval, co-located with the Canadian Meteorological Centre, operates a CRAY IS 1300 computer system, along with extensive support computers and peripherals It provides centralized computing services to AES and other government departments

The Computing Centre in Downsview operates a National Advanced Systems AS-6 computer system It provides computing and user services primarily to support the Canadian Climate Centre and other users at AES Headquarters

The Planning Development Division develops plans, manages development projects and co-ordinates activities to ensure that AES' needs for EDP and telecommunications services are satisfied.

During the course of the year, the operational elements at Downsview will be reorganized into an Operating Services Division, this will include the satellite receiving station which is now operated by the Atmospheric Research Directorate

2) Data Acquisition Services Branch (88 0 PY, $5,124 8K)

The Branch is responsible for the design, specification, acquisition, implementation and standards of instrumentation for the measurement of meteorological and related environmental conditions to be used in AES' national data collection networks There are four Divisions in the Branch and all are located in Downsview Most activities within the Branch are project-oriented and as a result many activities cross Divisional boundaries and become co-operative ventures The Quality Assurance Section and Major Project Managers report to the Director who is also the AES Program Area Manager for both Meteorological Instruments and for Meteorological Satellite activities This Branch is being reorganized in response to audit recommendations At the start of the year it consists of

Technology Support Division and Network Planning Standards Division
- designs, procures, and tests new and replacement instruments and systems,
- develops and evaluates prototype meteorological instrumentation for AES operational networks and research programs,
- establishes specifications, measurement standards and procedures to meet data requirements,
- investigates new technologies applicable to the AES data acquisition system, and
- plans and co-ordinates the development and implementation of data acquisition sytems, publication of technical manuals, logs and forms, and the provision of general and project inspection services

Maintenance Standards Division
- supports the installation of new systems and provides emergency maintenance services for field instrument systems, and
- develops national installation and maintenance standards for the Service's Data Acquisition Services equipment

Technical Services Division
- provides technical services in support of the development and acquisition of data acquisition systems,
- installs and maintains stores inventory, and
- provides a repair and exchange service for operational meteorological instruments

3) Ice Branch (66 5 PY, $27,033 1K)

- is responsible for the Canadian information and advisory service for sea ice and iceberg distribution and type,
- maintains an ice data archive,
- prepares ice climatology reports and supplies climatological ice information to users upon request,
- provides a daily and seasonal ice forecast service to shipping interests in ice waters, and
- conducts research into new and improved techniques for ice data collection and analysis

The Ice Centre in Environment Canada has three Divisions in Ottawa Ice Forecasting, Ice Climatology and Ice Research

The Ice Forecast Division provides analyses and forecasts of ice distribution, movement and developments The Ice Climatology Division maintains the data archive and advises on its application to related disciplines The Ice Research Division develops models, methods and procedures for making better use of remote sensing in the ice programs

The Director's office and the Ice Reconnaissance Division are located in Downsview Reconnaissance involves the provision of observations of the distribution and type of sea ice from aerial ice reconnaissance (approximately 2200 hours per year), ship reports (including about 1800 person-days per year logged on ice breakers), shore reports and satellite pictures in support of marine users in ice-congested waters during appropriate seasons

During the year, the Ice Branch will inaugurate an Iceberg Information Service as part of the Expanded Ice Information Services Program

4) Training Branch (69 0 PY, $3,170 4K)

- recruits and trains professional meteorologists and meteorological technicians to meet AES human resource needs, and
- establishes and maintains contact with Canadian universities and other educational institutions to encourage the training of atmospheric scientists and the development of studies in the atmospheric sciences

Professional Training and Development Division
- conducts professional training courses at Downsview (English) and in Montreal (French) for newly recruited meteorologists to qualify them for positions in operational weather offices,
- develops and conducts advanced and specialized training courses, including correspondence courses, in applied and operational meteorology, and
- sponsors workshops and seminars relating to environmental issues such as environmental emergencies, air quality, acid rain, etc

Technical Training and Development Division
- conducts technical training courses in both official languages at the Transport Canada Training Institute, Cornwall The courses presented include the following Basic, Advanced, Presentation and Aerological Technician courses, and Radar, Ice, Weatheradio and Maintenance courses

Training Co-ordination, Evaluation and Services
- recruits new meteorologists,
- liaises with universities and colleges concerning meteorological training,
- counsels student applicants,
- processes educational enquiries and evaluates educational and training requirements,
- provides French and English Technical Editing/Publishing services,
- prepares graphic art, and
- provides audio visual and computer services to Training Branch and AES clients

1986-87 BUDGET BY SA-1 TO SA-2 CENTRAL SERVICES DIRECTORATE

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	218 5	9733 9	15907 4	7526 1	0 0	33167 4
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	81 0	3507 9	497 7	1119 2	0 0	5124 8
3000	WEATHER SERVICES SUPPORT SYSTEMS	137 5	6226 0	15409 7	6406 9	0 0	28042 6
4000	CLIMATE SERVICES & RESEARCH	47 0	1461 3	1129 0	1800 0	0 0	4390 3
4100	CLIMATE SERVICES	6 0	0 0	0 0	0 0	0 0	0 0
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	41 0	1461 3	1129 0	1800 0	0 0	4390 3
5000	ICE SERVICES	66 5	3004 3	23258 8	770 0	0 0	27033 1
5100	ICE RECONNAISSANCE & DATA	31 5	1456 0	19127 4	480 0	0 0	21063 4
5200	ICE ANALYSIS & FORECASTING	21 0	897 3	1027 0	75 0	0 0	1999 3
5300	ICE CLIMATE SERVICES	4 0	203 0	199 4	0 0	0 0	402 4
5400	ICE SERVICES SUPPORT SYSTEM	10 0	448 0	2905 0	215 0	0 0	3568 0
6000	AIR QUALITY SERVICES & RESEARCH	1 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	1 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
CENTRAL SERVICES DIRECTORATE - GRAND TOTAL		333 0	14199 5	40295 2	10096 1	0 0	64590 8

1986-87 BUDGET BY SA-1 TO SA-2 OFFICE OF DIRECTOR GENERAL-CSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	4 2	797 7	30 9	9 0	0 0	837 6
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	4 2	797 7	30 9	9 0	0 0	837 6
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
OFFICE OF DIRECTOR GENERAL-CSD - GRAND TOTAL		4 2	797 7	30 9	9 0	0 0	837 6

1986-87 BUDGET BY SA-1 TO SA-2 COMPUTING AND TELECOMMUNICATIONS SERVICES BRANCH

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	64 3	2718 7	15065 8	6250 1	0 0	24034 6
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	64 3	2718 7	15065 8	6250 1	0 0	24034 6
4000	CLIMATE SERVICES & RESEARCH	41 0	1461 3	1129 0	1800 0	0 0	4390 3
4100	CLIMATE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	41 0	1461 3	1129 0	1800 0	0 0	4390 3
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
- GRAND	TOTAL	105 3	4180 0	16194 8	8050 1	0 0	28424 9

1986-87 BUDGET BY SA-1 TO SA-2 DATA ACQUISITION SERVICES BRANCH-CSD

		PY SALARY		O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	81 0	3507 9	497 7	1119 2	0 0	5124 8
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	81 0	3507 9	497 7	1119 2	0 0	5124 8
3000	WEATHER SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	6 0	0 0	0 0	0 0	0 0	0 0
4500	CLIMATE RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	1 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
6600	RESEARCH-OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SERVICE	1 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
DATA ACQUISITION SERVICES BRANCH-CSD - GRAND TOTAL		88 0	3507 9	497 7	1119 2	0 0	5124 8

1986-87 BUDGET BY SA-1 TO SA-2 ICE SERVICES BRANCH-CSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	66 5	3004 3	23258 8	770 0	0 0	27033 1
5100	ICE RECONNAISSANCE & DATA	31 5	1456 0	19127 4	480 0	0 0	21063 4
5200	ICE ANALYSIS & FORECASTING	21 0	897 3	1027 0	75 0	0 0	1999 3
5300	ICE CLIMATE SERVICES	4 0	203 0	199 4	0 0	0 0	402 4
5400	ICE SERVICES SUPPORT SYSTEM	10 0	448 0	2905 0	215 0	0 0	3568 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
ICE SERVICES BRANCH-CSD - GRAND TOTAL		66 5	3004 3	23258 8	770 0	0 0	27033 1

1986-87 BUDGET BY SA-1 TO SA-2 TRAINING BRANCH-CSD

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1000	WEATHER SERVICES	69 0	2709 6	313 0	147 8	0 0	3170 4
1100	PUBLIC WEATHER	0 0	0 0	0 0	0 0	0 0	0 0
1200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	0 0	0 0	0 0	0 0
3000	WEATHER SERVICES SUPPORT SYSTEMS	69 0	2709 6	313 0	147 8	0 0	3170 4
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
TRAINING BRANCH-CSD = GRAND TOTAL		69 0	2709 6	313 0	147 8	0 0	3170 4

1986-87 Budget ($000)

5 6 8

CENTRAL SERVICES DIRECTORATE

BY ORGANIZATIONAL UNIT

	PY	SALARY	O&M	CAPITAL	G&C	TOTAL
OFFICE OF DG	4 2	797 7	30 9	9 0	0 0	837 6
COMPUTING AND TELECOMMUNICATIONS SERVICES BRANCH	105 3	4180 0	16194 8	8050 1	0 0	28424 9
DATA ACQUISITION BRANCH	88 0	3507 9	497 7	1119 2	0 0	5124 8
ICE BRANCH	66 5	3004 3	23258 8	770 0	0 0	27033 1
TRAINING BRANCH	69 0	2709 6	313 0	147 8	0 0	3170 4
CSD TOTAL	333 0	14199 5	40295 2	10096 1	0 0	64590 8

5 7 Organization FINANCE AND ADMINISTRATION BRANCH

5 7 1 FUNCTIONS FINANCE AND ADMINISTRATION BRANCH (100 0 PY, $10,413 3K)

This Branch provides functional direction, advice and services to AES headquarters elements, Regions, and those organizations whose central elements interface with AES headquarters There are four Divisions

1) Finance Division
   - develops AES financial policies procedures and systems,
   - develops and modifies AES Work Planning policy, procedures and processes,
   - provides guidance and advice on financial matters to senior management,
   - processes and pays all invoices and bills for AES-HQ units and DMetOc,
   - confirms and submits Treasury Board Multi-Year Operational Plan and Main Estimates financial data and provides a functional lead for MYOP-Update and Estimates,
   - prepares budget data and allocations and recommends changes to ADM,
   - analyses and outlines the financial status of AES and recommends, to ADMA and AMC, corrective actions required, and
   - ensures accounting systems function effectively (AFMAS/DRS)

2) Materiel Management Division
   - develops related Service policies, procedures and systems,
   - provides procedural recommendations and advice on supply matters,
   - provides a functional lead for the Materiel-In-Use system, Stores Inventory Management system, and Fleet Management,
   - provides policy advice and guidance as well as services to AES on contracts,
   - requisitions, stores and distributes special meteorological instruments, equipment and supplies, and
   - co-ordinates the annual Eastern Arctic Resupply for Environment Canada

3) Library Services Division
   - provides policies, procedural recommendations and advice on library matters, and information retrieval systems,
   - acquires and makes available for reference and loan a collection of books, journals and other resource material,
   - provides information services to AES, other libraries and the general public,
   - orders library materials for retention in the Directorates, Branches, Regions of AES and DMetOc, and
   - arranges for interlibrary loans and translation from foreign languages

4) General Administration Division
   - provides policy, procedural and systems recommendations and advice on general administrative matters,
   - serves as a Program Area Manager for Facilities Non-Meteorological Equipment and Vehicles,
   - provides the support services to AES in facilities management, real property management, communication, records management, mail and distribution,
   - provides services relating to health, safety and security,
   - co-ordinates the planning, implementation (as appropriate) and monitoring activities for the AES Affirmative Action Programs (EOW and Handicapped Programs)

986-87 BUDGET BY SA-1 TO SA-2 FINANCE AND ADMINISTRATION BRANCH

		PY	SALARY	O&M	CAPITAL	C&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	66 0	1907 2	975 7	126 .	0 0	3009 0
0810	MANAGEMENT	2 0	92 0	61 4	20 0	0 0	173 4
0830	COMMON SUPPORT SERVICES	64 0	.815 2	914 3	106 .	0 0	2835 6
.000	WEATHER SERVICES	34 0	.370 0	2008 0	450 0	748 0	4576 0
1100	PUBLIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
.200	MARINE WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
.300	AVIATION WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
.400	ECONOMIC WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
1500	CANADIAN FORCES WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
2000	DATA	0 0	0 0	1035 8	450 0	0 0	1485 8
3000	WEATHER SERVICES SUPPORT SYSTEMS	34 0	1370 0	972 2	0 0	748 0	3090 2
4000	CLIMATE SERVICES & RESEARC	0 0	0 0	184 0	512 3	80 0	776 3
4100	CLIMATE SERVICES	0 0	0 0	.45 1	0 0	0 0	.45 1
4500	CLIMATE RESEARC	0 0	0 0	0 0	0 0	0 0	0 0
4600	CLIMATE SERVICES SUPPORT SYSTEMS	0 0	0 0	38 9	512 3	80 0	631 2
5000	ICE SERVICES	0 0	0 0	1170 0	0 0	0 0	.170 0
5100	ICE RECONNAISSANCE & DATA	0 0	0 0	0 0	0 0	0 0	0 0
5200	ICE ANALYSIS & FORECASTING	0 0	0 0	0 0	0 0	0 0	0 0
5300	ICE CLIMATE SERVICES	0 0	0 0	340 6	0 0	0 0	340 6
5400	ICE SERVICES SUPPORT SYSTEM	0 0	0 0	829 4	0 0	0 0	829 4
6000	AIR QUALITY SERVICES & RESEARC	0 0	0 0	.90 0	0 0	692 0	882 0
6100	AIR QUALITY SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6300	AIR QUALITY RESEARC	0 0	0 0	1.6 5	0 0	0 0	116 5
6600	RESEARC -OTHER	0 0	0 0	0 0	0 0	0 0	0 0
6700	AIR QUALITY & RESEARCH SUPPORT SYSTEMS	0 0	0 0	73 5	0 0	692 0	765 5
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
FINANCE AND ADMINISTRATION BRANC - GRAND TOTA		.00 0	3277 2	4527 7	.088 4	1520 0	10413 3

5 8 1 HUMAN RESOURCES MANAGEMENT BRANCH (32 0 PY, $1,495 1K)

This Branch provides Human Resources Management services to the AES Headquarters components, Regions and Canadian Forces Weather Service It is composed of two separate entities - Corporate Personnel and Personnel Operations Corporate Personnel consists of four divisions which are responsible for co-ordinating national programs and activities and providing specialist advice and functional direction to Regional Personnel Offices

1) The Human Resources Division
   - co-ordinates all senior managers/executive staffing, re-deployment and development,
   - recruits meteorologists,
   - establishes recruitment policies for meteorological technicians, meteorologists and computer scientists,
   - co-ordinates Employment Equity programs,
   - co-ordinates summer employment programs, and
   - co-ordinates and provides advice and guidance on workforce reduction and human resource priorities and issues

2) The Staff Relations and Compensation Division
   - co-ordinates Service input to collective bargaining and serves as a member of MT negotiating team,
   - investigates and co-ordinates replies to final level grievances and referrals to adjudication,
   - provides advice and guidance and ensures conformity in interpretations of collective agreements,
   - is the focal point for the occupational safety and health,
   - acts as the AES focal point on conflict of interest questions, and
   - is responsible for the integrity of pay and benefits administration in AES

3) The Classification and Organization Division
   - co-ordinates activities related to AES classification policy and guideline development,
   - co-ordinates activities related to classification of positions, monitoring and control, the audit program, grievance administration, and classification training,
   - ensures the consistent application of the delegation of classification authority

4) The Official Languages Division
   - administers the Official Languages Program by providing advice and guidance to line managers,
   - develops action plans to attain the objectives of official languages,
   - conducts audits and studies,
   - investigates complaints,
   - supervises revision and auditing services, and
   - co-ordinates translation services

Personnel Operations provides personnel services to managers and employees at AES Headquarters and to the Canadian Forces Weather Service across Canada The operational divisions are organized on a generalist basis Services provided include staffing, classification, pay and benefits and staff relations The focal point for the Employee Assistance Program resides in Operations

1986-87 BUDGET BY SA-1 TO SA-2 HUMAN RESOURCES BRANCH

		PY	SALARY	O&M	CAPITAL	G&C	TOTAL
0800	MANAGEMENT & COMMON SUPPORT SERVICES	32 0	1195 1	290 0	10 0	0 0	1495 1
0810	MANAGEMENT	0 0	0 0	0 0	0 0	0 0	0 0
0830	COMMON SUPPORT SERVICES	32 0	1195 1	290 0	10 0	0 0	1495 1
1000	WEATHER SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
4000	CLIMATE SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
5000	ICE SERVICES	0 0	0 0	0 0	0 0	0 0	0 0
6000	AIR QUALITY SERVICES & RESEARCH	0 0	0 0	0 0	0 0	0 0	0 0
7000	DEPARTMENTAL INTEGRATED PROGRAMS	0 0	0 0	0 0	0 0	0 0	0 0
HUMAN RESOURCES BRANCH - GRAND TOTAL		32 0	1195 1	290 0	10 0	0 0	1495 1