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Floods-Canada

REPORT
on the
1974 SPRING FLOODS

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EMERGENCY PLANNING CANADA

R E P O R T
on the
1974 SPRING FLOODS

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EMERGENCY PLANNING CANADA



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OTTAWA, ONTARIO

OTTAWA, Ontario
December 1974

REPORT ON THE 1974 SPRING FLOODS

Prepared by

Federal Provincial Arrangements Branch
Emergency Planning Canada

OTTAWA, Ontario.
December 1974.

EMERGENCY PLANNING CANADA

REPORT ON THE 1974 SPRING FLOODS

INTRODUCTION

This report on the 1974 spring flood operations has been prepared from information received from various Federal and Provincial authorities and is a consolidation of this data rather than an analytical study of the emergency measures implemented.

SUMMARY OF OBSERVATIONS

The following are the principal observations drawn from those made by Federal officials based in Ottawa and in the affected regions and by Provincial officials involved in the flood operations:

- a. Flood operations in all of the provinces affected by spring floods centered on their civil emergency planning organizations and the execution of their prepared disaster plans which proved very effective.
- b. For financial and other reasons a number of municipalities failed to implement preventive measures with adverse consequences in some circumstances.
- c. Improvements in forecasting and warning procedures were considered desirable in most provinces.
- d. In some communities the arrangements to provide for unified control of operations and information were found to be inadequate.
- e. Federal assistance was mainly technical and financial. The help given was reported as having been timely and effective.
- f. There was a marked decrease over previous years in the requirements for Canadian Forces participation in flood operations. The requirement was mainly for special equipment and expertise available in the Forces.
- g. Lack of permanent regional representation by some Federal departments proved to be a handicap in their participation in flood operations.

- h. Coordination of federal response was carried out through the EPC Regional Directors and through federal representatives on provincial emergency committees. In British Columbia DOE as "lead department" also set up coordinating machinery for federal response.
- i. The Peacetime Disaster Financial Assistance Guidelines were considered both restrictive and unclear especially with reference to eligibility for compensation of damaged small business enterprises and certain agricultural losses.
- j. Clarification is required concerning federal versus provincial responsibility for flood operations on Indian Reserves and National Parks, including costs pertaining thereto.
- k. Final settlement of the damage claims will not be reached for several months but present indications are that total damages caused by the spring flood were in excess of 100 million dollars of which at least half were agricultural losses and 15 to 20 millions were private sector claims, the balance representing public sector claims including flood fighting and administration costs.

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A. PREVAILING CONDITIONS WHICH LED TO THE 1974 FLOODS

Abnormally heavy snow fall and freezing of river systems at high water levels in the 1973-74 winter, followed by a late spring thaw and heavy spring rains resulted in widespread floods during the spring run-off period in New Brunswick, Quebec, Manitoba, Saskatchewan, Alberta and the Territories.

In British Columbia the spring thaw was gradual due to persisting sub-normal temperatures which resulted in minimal flooding except for the northern part of the province where a rapid rise in temperature in July caused an accelerated snow melt and flooding on a section of the Alaska Highway.

B. FORECAST OF FLOOD CONDITIONS

This Forecast was carried out in the various provinces as follows:

NEW BRUNSWICK

By the N.B. Electric Power Commission (NBEPCC) through the St. John's River Forecast Centre. This Centre operated from March 18th to May 21st and consisted of representatives from the N.B. Electric Power Commission, the Provincial Department of Fisheries and Environment, and the Federal Department of Environment, Atmospheric Environment and Water Survey Branch. Additional information was obtained from the Province of Quebec, the State of Maine, the Weather Bureau River Forecast Centre in Hartford, and other Canadian and U.S. Agencies. All the information was computerized at the University of New Brunswick and a St. John's River Forecast prepared therefrom.

The forecast was for normal run-off without serious flooding - but flooding did occur due to abnormal precipitation and rapid thaw. The initial warning bulletin was issued on May 1st. Warning and information bulletins and news releases were issued through the Public Information Centre of the N.B. Information Service. A telephone inquiry centre manned by RCMP auxiliaries was also established and the emergency number notified to the public by radio.

The early flood forecast reports showed normal flows and levels for the St. John River even though a considerable amount of snow was reported in the River Basin and in the Northern part of the Province, in the State of Maine and along the Quebec border. On April 29th normal spring run-offs were reported with rising water levels predicted. Heavy rain followed in the northern part of the Province swelling the streams and rivers flowing into the St. John River and flooding occurred in the Counties of Madawaska and Restigouche. By May 1st rains of 1½" to 1¾" raised the water level at Fredericton to 20.5 feet - one foot less than flood level. On May 2nd the water level was 24.5 feet. Aerial and ground surveys of the St. John River Basin revealed that there were 18" to 3 ft of heavy wet snow with a water equivalent of 1½ inches of water per foot of snow. Flooding was reported in the low areas of Fredericton, Maugerville and Sheffield.

QUEBEC

By the Hydrometric Branch of the Department of Natural Resources. This forecast is made in close cooperation with the Canadian and U.S. Weather Offices, Hydro Quebec and the international Great Lakes Water Control Authority.

The forecast was for moderate Spring flooding but due to heavy rainfall, serious flooding occurred especially in the western part of the Province. The severe property damages suffered in the Maniwaki area, due to repeated flooding associated with the Dam operations, has led the provincial government to review the procedures developed to warn and protect the communities involved. In the Montreal area the warning was given on March 4th and this period of alert lasted until May 10th.

ONTARIO

By the Conservation Authorities Branch, Department of the Environment, in close cooperation with the Atmospheric Environment Services and Water Survey Branch of DOE, the U.S. Weather Services, the St. Lawrence Seaway Authority and Ontario Hydro. In the Grand River watershed, the responsibility for warning the communities was assigned to the Grand River Conservation Authority.

The forecast was for minor flooding, however, high winds and thunderstorms precipitated flooding in the Great Lakes area and in the Grand River watershed.

MANITOBA

By the Resources Division, Department of Mines, Resources and Environment through the Manitoba Flood Forecast Committee which is chaired by the Director of Water Control and Conservation, Manitoba and on which representatives of Federal DOE and the City of Winnipeg also sit. The forecast was for serious flooding, which did occur throughout the Province compounded by local cloud bursts in the Winnipeg area, and wind tides in the Inter-Lake area. Warning to the public was transmitted through Manitoba EMO.

SASKATCHEWAN

By the Saskatchewan Department of the Environment in close cooperation with the Atmospheric Environment Service of DOE. The forecast was for serious flooding which did occur as a result of the run-off from the unusually heavy snow-pack to which were added cloud bursts in the Saskatoon and Prince Albert areas. Emergency dyking helped control water flows in urban areas, but farm lands were extensively flooded.

ALBERTA

By the Alberta Department of the Environment in close cooperation with the Atmospheric Environment Service of DOE (Prairie Weather Central) and other Canadian and U.S. agencies which provide weather forecast services and water and snow survey data. The forecast was for serious flooding but the widespread flooding which occurred mainly affected agricultural land. Warning was given to the threatened municipalities by the Alberta Disaster Services Agency by direct communication and to the public through the media.

BRITISH COLUMBIA

By the British Columbia Water Resources Service, in close cooperation with the Atmospheric Environment Service, Water Management Service and Fisheries Service of DOE, and the Provincial Department of Highways and B.C. Hydro and Power Authority.

The forecast was for serious flooding but only moderate flooding occurred due in part to the protective dyking and readiness program which ensured the control of the swollen rivers combined with prevailing below average temperatures at the higher mountain levels. The warning of the public at the local level was carried out by a cooperative effort of the Police and Fire Departments and Emergency Program directors and, where available, through the media. The first Snow Bulletin was issued February 1, 1974.

C. AREAS AND EFFECTS OF SPRING FLOODS

NEW BRUNSWICK

The flood period lasted 8 days (from April 30 to May 7th). The Upper St. John, Madawaska, Little and St. Francis Rivers and the Restigouche River were flooded from April 30th to May 6th, affecting several communities in the Counties of Madawaska and Restigouche, notably Connors, St. François, Wyers Brook and Robinsonville. The flooding caused damage mainly to basements, roads, bridges and lands. The lower St. John, Keswick, Oromocto, Jemseg and Tay Rivers and the Grand Lake area were flooded from May 2nd to May 7th affecting several communities including Fredericton, Maugerville and the Sheffield areas. One hundred families were evacuated and some 100 cattle removed to higher ground.

QUEBEC

The flood period lasted six months (from January 1st to June 30th). The Chaudière River overflowed its banks from April 16th to May 2nd. This was the usual Beauce area flooding experienced each year with the community of Ste. Marie the most seriously affected necessitating the evacuation of 20 persons. Similar annual flooding occurred along the St. Lawrence River, the Richelieu River and the Chateauguay River in early April with very limited damage resulting.

The Lac-des-Deux-Montagnes, Lac St. Louis and the Mille-Iles and Rivière-des-Prairies water levels were raised by the ice jams and increased flows from the Ottawa and St. Lawrence Rivers, which forced the opening of the Carillon Dam and which flooded communities in the Montreal West area, at Laval and on Ile Bizard and Ile-Jesus from April 16th to June 28th, necessitating the evacuation of 75 families in Laval, 400 on Ile Bizard and 583 on the west end of the Island of Montreal. Property damages were extensive since urban areas were widely affected. On the Matapédia River, flooding occurred from April 30th to May 6th and 45 persons were evacuated. Flooding also occurred on the Matane River from May 2nd to May 6th, with similar results.

The overflow of the Gouin Reservoir necessitated the opening of the Dam with subsequent flooding downstream on the St. Maurice River. This flooding persisted from May 17th to May 31st, damaging some 500 houses.

The overflow of the Baskatong Reservoir also necessitated the opening of the Mercier Dam to relieve pressure on the Dam -

QUEBEC (Cont'd)

this was followed by serious flooding of the communities downstream on the Gatineau River and on the Ottawa River. Log jams occurred adding to the flood fighting problem. The town of Maniwaki was repeatedly flooded and some 1500 families evacuated while further downstream in Pte. Gatineau, Pte-Calumet and other communities along the Gatineau and Ottawa Rivers, some 1600 families were evacuated. This flooding persisted from May 14th to July 2nd.

A total of 301 municipalities were affected by the floods to various degrees throughout the province. More than 10,00 homes and 600 summer cottages were flooded and some 7000 persons were evacuated. While there were no dead or injured, a great number of persons were either partially or totally dispossessed.

ONTARIO

The combined high water and storms caused erosion and shore damage along the shores of Lake Erie in the Port Ryerson area on March 29th and in Malden Township, near Amherstburg on May 9th, resulting in flooding which necessitated the evacuation of 200 families.

As a result of heavy rain in the Cambridge (Galt) area during the period 16/17 May, the level of the Grand River rose rapidly creating a flash flood, cresting at 17 feet above normal river level and several communities in the watershed, including the Cambridge downtown area, were seriously flooded.

MANITOBA

Lake Winnipeg is the "basin" into which water from the Saskatchewan River and other Prairie Rivers drains - supplying approximately 32% of the Lake's water. The Winnipeg River supplies 39% from the Lake of the Woods district in Ontario and the Red and Assiniboine Rivers provide approximately 6% with the Winnipegosis, Manitoba and Dauphin lakes also flowing into Lake Winnipeg. The high flows from the West and from the States south of the border coupled with heavy rain-falls and exceptional run-off from the snow melt affected Manitoba severely and on a prolonged basis. The major flooding occurred on the Red River and its tributaries south of Winnipeg and along the feeder streams flowing into Lake Winnipeg in the inter-lake region. Twenty-six waterways were involved in flood damage.

The Spring flooding period lasted from April 11 to May 13th.

MANITOBA (Cont'd)

The flooded river systems and affected communities included the following:

- a. The Red River and its tributaries, the Morris, Roseau, Rat and Seine Rivers with resulting flooding of Rosenort, Morris, St. Adolphe and St. Norbert.
- b. The Assiniboine River and its tributaries, the Cypress and Oak Rivers.
- c. The Pembina River with resulting flooding in the Morden area and at Halbstadt where 60 families were evacuated on April 29th when a breach was made in the dyke.
- d. The Souris River with flooding in the Killarney area.
- e. The Boyne River with flooding in the Carman area which necessitated some evacuation of residential and farm buildings. Refusal by the municipality to undertake preventive works in the face of forecast flooding resulted in half the town being flooded.
- f. The Whitemud River with flooding in the Gladstone area.
- g. The Winnipeg, Whitemouth and Brokenhead Rivers flooded farm lands in S.E. Manitoba.
- h. The Carrot River with flooding in the Pas area.
- i. The Vermilion River with flooding in the Dauphin area which was partially evacuated.
- j. The Icelandic River with flooding in the Arborg/Riverton area which required the evacuation of 2 hospitals on April 23rd.
- k. The Fisher River with flooding in the Hodgson/Peguis Indian Reserve area which required the evacuation of 1100 residents by helicopter from the Fisher and Peguis Indian Reserves.

Torrential rain on May 18/20 added to the flooding in Winnipeg and southern Manitoba as the sodden land was unable

to absorb the deluge. Extensive damage to residential and farm properties located along the Red River in the suburbs south of Winnipeg as far as St. Norbert and St. Adolphe where some 140 dwellings which had been flooded in April, were again threatened. The water levels of Lake Winnipeg and accompanying wind storms caused flooding in the inter-lake region from June until the present time. In particular, the communities of Gimli, Winnipeg Beach and Grand Beach were affected also Indian Reserves along the whole shoreline of Lake Winnipeg up to and including Norway House and Cross Lake.

A Manitoba Water Resources official estimated that without the Red and Assiniboine River flood-way diversion, the water levels in Winnipeg in 1974 would have been 1.7 feet above the 1950 Winnipeg flood level.

SASKATCHEWAN

The exceptional run-off from the extremely heavy snow pack distribution, resulted in widespread flooding with the most serious conditions developing along the Qu'Appelle River and its tributaries in the Moose Jaw - Lumsden - Regina region where major damage and flood fighting efforts were concentrated.

The duration of flood conditions varied from south to north in the province as the spring thaw moved northward. In the northern third of the province the disaster period for river flooding extended from April 19th to April 26th, however, the lakes in the Qu'Appelle River basin continued to rise until early in June. In the northern half of the province water continued to rise in the river systems until early June, affecting scattered communities and Indian Reservations. Flash floods from thunderstorms caused basements to be flooded in Saskatoon on June 5th and Prince Albert on June 26th.

The following river systems and communities were affected:

- a. Souris River - This river peaked early with comparatively minor damage in the communities of Weyburn, Estevan and Roche Percee.
- b. Moose Jaw River - On 18-19 April the Moose Jaw River, Thunder Creek and Spring Creek tributaries of the Qu'Appelle River, all of which join within the city of Moose Jaw, overflowed their banks cutting the city in half and causing widespread flooding of commercial residential properties. On April 23rd, 1500 persons were evacuated from 500 homes in Moose Jaw. A section of the town, 25 blocks long and 5 blocks deep was affected. The floods started to subside on April 24th.

SASKATCHEWAN (Cont'd)

- c. Wascana Creek - On 20 April the Wascana Creek, a minor tributary of the Qu'Appelle River that passes through the centre of Regina, began to overflow its banks in the western half of the city, endangering residential properties in the low lying areas adjacent to the creek. Early action by the City of Regina in raising dyke levels prevented major damage in the area.

On April 23rd, 85 families were evacuated from their homes in Regina in addition to a number of families in low lying areas who had evacuated their homes earlier as a preventative measure.

- d. Qu'Appelle River - Both the Moose Jaw River and Wascana Creek, along with other smaller tributaries, contribute to the flow in this basin, upstream from the Town of Lumsden and the Qu'Appelle valley lakes. Lumsden, Craven, Fort Qu'Appelle, Lebret, Tantallon, a number of Indian Reservations and extensive park and resort areas were all affected in this basin.

Due to significant experience gained in fighting similar floods in 1969, the town of Lumsden, in anticipation of the problem had begun work on the construction of dykes in early April. The resulting three miles of 12 foot high dyking, although at times in danger of being washed out, did succeed in channeling the water through the town and avoided serious damage.

- e. Carrot and Red Deer Rivers - These rivers, along with the Saskatchewan River, drain the east central area of the province. There was extensive flooding of farm and ranch land in this area along with damage to roads and bridges; however, as this is a low lying, swampy area minor flooding is quite common.
- f. Assiniboine River - This river which rises in east central Saskatchewan mainly affected the Town of Kamsack and farms in the area.
- g. Beaver River - This river, which rises in Alberta, drains an extensive farm and ranch area north to the Churchill River. Communities of Pierceland, Dorintosh, Meadow Lake, and Green Lake together with surrounding areas were all affected.

ALBERTA

Flooding occurred from April 18th to May 1st on all rivers in central Alberta as a result of the spring run-off from the heavy snow-pack causing damage to farm lands, crops, roads and bridges and to dwellings in a number of communities. Similar flooding compounded by ice jams occurred in the northern area around Fort McMurray and Peace River. In the southern area flooding occurred from June 26th to July 3rd also causing damage to dwellings in a number of communities in the foothills of the Rockies and to agricultural lands.

The following river systems and communities were affected:

- a. The Paddle and Pembina River systems which began flooding on April 15th and peaked on April 24th affected largely agricultural areas and isolated the town of Barrhead. Livestock and feed had to be moved to higher ground. Ice jams aggravated the situation. Several roads and sectors of rail-road were closed. Some families were evacuated.
- b. The Vermilion River mainly affected agricultural areas and caused extensive flood damage to the towns of Vermilion, Vegreville and Two Hills, which were also threatened by ice jams on April 24th. Two hospitals and a Nursing home were evacuated on April 19th and patients were not returned until May 6th. Washouts and road cuts closed many rural roads.
- c. The Battle River which affected large areas of agricultural land and the towns of Wetaskiwin, Stettler and Camrose. The river crested on April 25th. Several section of rail lines and highways were closed.
- d. The Swan River which caused flooding in Kinuso.
- e. The Sturgeon River which caused flooding in St. Albert. (North Saskatchewan River basin).
- f. In the northern area the Clearwater-Athabasca-Slave River system caused flooding and ice jams in Fort McMurray and in Indian and Metis settlements in the Delta and the Wood Buffalo Park region. Several families were evacuated. There was also some flooding on the Peace and Hay Rivers.

- g. The Red Deer River flooding caused damage in the Drumheller area.
- h. The Bow River flooding caused the flooding of basements in some 600 homes in Cammore and Calgary.

BRITISH COLUMBIA

The combination of delayed snow-melt, followed by a sustained period of high temperatures causes flood-producing stages on major rivers. This year, although the snow-pack reached record depths the slow rise in temperature during the month of June permitted a gradual run-off with only limited flooding in the south, further contained by the patrolling and shoreing of dykes and other readiness measures during the whole period.

In the north, rising temperatures in early July increased the flow of a number of rivers and streams on the eastern slopes of the Rockies washing out several sections of the Alaska Highway along a 150-mile stretch between July 16th and 26th.

The following river systems and communities were affected:

- a. The Lower Fraser River and tributaries in the Mission and Hope areas.
- b. The Columbia River and tributaries peaked on June 28th.
- c. The Similkameen River peaked on June 20th, threatening the community of Kettle.
- d. The Thompson River and tributaries peaked on June 28th.
- e. Okawagan Lake and valley on June 17th.
- f. Shuswap Lake level rose and 24 homes and 5 businesses were flooded in Sicamous between June 24th and July 2nd.
- g. The Kootenay and Elk River crested between June 17th and 19th necessitating the evacuation of a few families in Elkford.
- h. The Liard River and Muncho Lake overflowed their banks and washed out sections of the Alaska Highway between July 16th and the 26th and stranded travellers had to be assisted.

THE NORTHWEST TERRITORIES

Rising water levels and ice jams on the Hay River and Rat River created flooding and damage to property in Hay River and Fisherman's Village where 100 persons were evacuated on May 3rd. Similar damage was caused on June 7th at Aklavik and Arctic Red River due to the flooding of the Mackenzie River.

D. GOVERNMENT ORGANIZATIONS INVOLVED IN FLOOD FIGHTING OPERATIONS.

Flood fighting operations were initiated and controlled in the various provinces by the following government organizations:

NEW BRUNSWICK

In keeping with the New Brunswick Flood Fighting Plan, a Flood Emergency Committee was convened on April 2nd to provide direction and control for the flood fighting arrangements.

The Committee was composed of provincial representatives from the Premier's Office, the New Brunswick EMO, the Departments of Natural Resources, Highways, Agriculture, Health, Social Services and Justice, and the New Brunswick Electric Power Commission, and federal representatives from the RCMP, EPC and DND (CAF).

On April 30th an Emergency Operations Centre (HQ) was established for the Province in Fredericton and was manned on a 24-hour basis until May 22nd. Flood Control EOCs were also established for the County of Madawaska, the County of Restigouche and the Municipality of Fredericton.

QUEBEC

The "Comité interministériel d'urgence du Québec" which is convened as required throughout the year to deal with emergency events, was convened in early May to deal with spring floods. This Committee was composed of representatives at the Deputy Minister level from the provincial departments of Natural Resources, Transport, Public Works and Supply, Social Affairs, Communications, Municipal Affairs and Justice. It was chaired by a representative of the Executive Council.

To this Committee were subsequently added representatives of the Departments of Intergovernmental Affairs, Environment, and Agriculture, and from Hydro Québec, Sûreté du Québec and Protection Civile du Québec.

The Comité interministériel d'urgence du Québec approved the execution of the provincial emergency flood plan. Under this plan the Minister responsible for Civil Protection (Hon. Jérôme Choquette) acts as coordinator of all government emergency action to ensure that the measures taken at the municipal level will be reinforced by that of

surrounding municipalities and by provincial government services as required and by requested federal assistance if needed. Each provincial department carries out tasks within its competence coordinated through the Comité interministériel d'urgence du Québec. The Committee is responsible for ensuring that "centres de coordination" (EOCs) are established at the municipal and regional level to keep it informed of developments.

EOCs were established at provincial and zone level and in most of the municipalities involved. There is no federal representation on the Comité interministériel d'urgence du Québec. The EPC Regional Director and CAF representatives keep in touch with the situation through close liaison with the Protection Civile du Québec. The Protection Civile controlled its operation from its Quebec HQ through its ten district HQs (Zones).

ONTARIO

The August 1971 "Guide to Effective Planning and Peacetime Emergencies" is the basic plan which was used to deal with the 1974 emergencies. This plan calls for the establishment of an Emergency Operations Control Group at the municipal level to permit the control and coordination of response by agencies, both governmental and private, under the direction of the appropriate elected officials. Responsibility for planning and taking initial action to deal with peacetime emergencies at that level falls upon the local government. Assistance to local municipalities, when requested and approved, may be given by individual departments of the provincial government, or if a major emergency is declared by the Attorney General under the Emergency Measures Act, by the Provincial Government as a whole. In the communities which were affected in the Lake Erie and Grand River areas, the flooding occurred so suddenly that action was mainly directed to rehabilitation rather than flood fighting and no EOCs were formed.

MANITOBA

In keeping with the provisions of the Manitoba Survival Plan, as a result of the prediction of spring floods which involved the evacuation of persons, livestock and property from threatened areas, the Premier, as Minister responsible for Emergency Measures, in consultation with the Manitoba Emergency Government Committee, promulgated the 1974 Flood Operations Order No. 1 outlining the organization and plan to meet the threat and activated the Manitoba Flood Plans and Operations Committee.

MANITOBA (Cont'd)

The Manitoba Emergency Government Committee is the permanent committee at Minister and Deputy Minister level, responsible for dealing with all emergencies, while the Manitoba Flood Plans and Operations Committee is the permanent committee composed of Departmental emergency planning officers and representatives from other concerned agencies responsible for carrying out the flood fighting measures. The Coordinator of the Manitoba EMO was designated as Chairman and was directed to institute action by Provincial Departments, agencies and utilities to meet the threat. Dyking operations were placed under the Director General of the Water Resources Division of the Department of Mines, Resources, and Environmental Management.

The Flood Plans and Operations Committee consists of representatives from the provincial departments and agencies, of Agriculture, Public Works, Highways Mines, Resources and Environmental Management, Emergency Health Services, Emergency Social Development Services, Attorney General, Finance, Industry and Commerce, Water Resources Branch, Manitoba Hydro and Manitoba Telephone System and such other members as may be necessary - among the latter are Federal representatives of the Canadian Forces, RCMP and EPC with observer status.

On March 11th, the Manitoba Flood Plans and Operations Committee set up a Flood Control Headquarters in Winnipeg which was staffed by a skeleton staff on a 24-hour basis. As the situation worsened, on March 22nd, the EPC RD established a Federal Desk in the Flood Headquarters. Canadian Forces support and other federal assistance was handled through the Manitoba EMO as well as rail and road transport support. Public Information was arranged through the Director of Information of the Information Services Branch of the Department of Consumer Corporate and Internal Affairs.

A limited state of emergency was declared by the Province on April 18th which provided for Provincial supervision and accrued support to the municipalities for flood fighting, public information, evacuation and welfare of personnel, evacuation of livestock, health safeguards and recruitment of volunteers.

SASKATCHEWAN

A Ministers Committee was convened to provide policy guidance for the Emergency Action Committee which was activated on March 8th. This Committee consisted of the Ministers of Agriculture, Municipal Affairs, Highways and Environment.

SASKATCHEWAN (Cont'd)

The Emergency Action Committee was chaired by the Director of Saskatchewan EMO and consisted of representatives from the Provincial Departments of Environment, Agriculture, Highways, Municipal Affairs and Natural Resources, and the Saskatchewan Power, as well as Federal representatives from EPC and the RCMP.

Subsequently, representatives from the following agencies were added: Government Information Services, Public Service Commission, Department of Government Services, Emergency Health Services, Department of Social Services and the Canadian Armed Forces.

A Provincial Emergency Operating Centre was set up in Regina staffed by senior government departmental officials which went on 24-hour duty on April 19th.

This EOC assessed the potential danger or disaster situation, reviewed resource lists of provincial government manpower and equipment available and committed such resources to municipalities through District and Municipal EOCs to assist them in combatting the emergency. The Committee also defined areas of priority in order to accelerate assistance to a disaster area.

Emergency Communications were established through Saskatchewan Telephone, Sask Amateur Radio League and the Canadian Forces. News briefings were conducted twice daily through the Government Information Services.

Key roles in departmental assistance to municipal governments were played by: Department of Highways in providing equipment and manpower to assist in dyke building and engineering advice, Department of Agriculture, Conservation and Development Branch, whose engineers staked the forecasted water levels especially in the Qu'Appelle Basin, and assisted municipalities with advice on levels and drainage, Department of Social Services whose personnel were involved in evacuation, lodging and feeding of flood victims, the Public Service Commission and the Department of Government Services in the recruitment and transportation of volunteer flood workers to critical areas, the Canadian Forces for aerial reconnaissance and providing manpower for traffic control and general duties in assisting municipal governments, the RCMP in traffic control and security in flood damaged communities. As well, other government departments, such as Municipal Affairs, Natural Resources, Saskatchewan Telephone and Saskatchewan Power Corporation provided back-up support not only to other government departments and agencies but also at the municipal level.

SASKATCHEWAN (Cont'd)

Coordinated action between the Provincial Emergency Operating Centre and government departmental representatives manning municipal emergency operating centres, expedited departmental assistance in these areas. Municipal Flood Fighting Committees and emergency operating centres staffed by municipal services and volunteer agencies supported by some government departments were also in action at Weyburn, Moose Jaw, Regina, Lumsden, Fort Qu'Appelle and Estevan.

As three of the flooded communities in EMO District No. 4 were involved in major flood emergencies, District No. 4 Emergency Action Committee was activated. This Committee provided coordinated action, not only with the Provincial EOC, but also between municipal EOC's.

The CBC and ham operators in the field and at the flood control centres, backed up by a field communications system provided by the Canadian Armed Forces, including the militia, provided the emergency communications network for the flood fighting operations.

ALBERTA

On March 20th, the Executive Director, Alberta Disaster Services arranged for a meeting of representatives of Provincial Departments, the EPC RD and CAF representatives at which Alberta Environment officials gave a briefing on the flood threat and matters of flood forecasting and coordination of government actions were aired and resolved. This information was relayed to the other federal departments at a subsequent meeting of the Federal Flood Planning Committee convened by the EPC RD. This federal committee consisted of representatives of DPW, AGR, DREE, MOT, DOE and EPC. Several meetings of the Provincial Flood Planning Committee were held to coordinate inter-departmental activities and to review resources. The designation adopted for the Government's flood operations was "WETFOOT 74".

On April 18th, on authority of the Deputy Premier in consultation with the Cabinet Committee on Disaster Services, the Alberta Government Emergency Response Centre was established in Edmonton by the Alberta Disaster Services Agency and placed on a 24-hour operational basis. The Interdepartmental Task Team of the Government Emergency Response Centre consisted of Provincial representatives from the Alberta Disaster Services, Agriculture, Environment, Health and Social

Development, Highways and Transport, Lands and Forests, Municipal Affairs, Public Works, Treasury, Public Affairs Bureau, Alberta Government Telephone, and Federal representatives from the RCMP, CAF and EPC.

The Interdepartmental Task Team was heavily involved throughout the flood operation as a planning and coordinating organization, but the specialized tasks connected with flood surveys, rendering professional and technical advice, and obtaining operations equipment and supplies fell to the appropriate government departments.

All emergency activities were coordinated and managed by the Alberta Disaster Services Agency in keeping with the basic plan developed by the province for this purpose. (The Alberta Government Peacetime Emergency Plan).

Alberta Government information releases connected with the operation were coordinated by the Alberta Public Affairs Bureau. States of Emergency were declared in Wetaskiwin, Vegreville and Two Hills.

By April 29th the flood situation had eased and the 24-hour manning of the Government Emergency Response Centre was discontinued.

BRITISH COLUMBIA

Provincial preparation began in early March, as soon as snow bulletins indicated a trend towards a very heavy snow pack. On March 18th in anticipation of the likely Spring Floods, the Province convened an ad hoc Flood Disaster Committee, which was chaired by PEP, (Provincial Emergency Program), and attended by representatives from the Provincial Departments of Agriculture, Highways, Human Resources, Lands, Forests and Water Resources and by the EPC RD. On April 26th the Provincial Cabinet named a Ministerial Flood Emergency Policy Committee, composed of the Minister of Lands, Forest and Water Resources as Chairman, and the Provincial Secretary and the Minister of Highways as members, to provide policy guidance for the flood fighting organization. It also established an Interdepartmental Flood Disaster Committee comprised of the same representatives as the Ad Hoc Flood Disaster Committee and replacing it. The first responsibility was assigned to the municipal governments to involve their forces and equipment to the utmost to deal with the threat within their boundaries.

For the Fraser Valley a zonal organization of government agencies was set up at Abbotsford, under the direction of the PEP zone coordinator, to assist municipal forces as required.

Public Information Officers from the Department of Highways, Water Resources and PEP were designated to disseminate information to keep the media and public fully informed and information contact points were established at Abbotsford, Prince George, Kamloops and Nelson.

On May 9th, due to a strike of Civic Employees, the Government passed the Kamloops Emergency Flood Control Act which gave the Provincial Secretary "absolute power respecting flooding of the Thompson River and its tributaries in the City of Kamloops."

Several meetings of the Interdepartmental Flood Disaster Committee were held in April, May and June, to plan the necessary flood fighting measures, including preparatory and remedial works, observations, inspections, warning measures, stockpiles of essential material and information, including advice to the public and special meetings of provincial, municipal and federal officials.

Special provisions were made for dyke patrolling and repair and for the evacuation of livestock. Provision was also made for the Provincial Government declaration of a "disaster area", when the conditions of the Flood Relief Act would apply bringing operations under the direct control of the Minister of Highways. The coordinating role of PEP was centered on communications, evacuation, administration and manpower resources while the flood fighting operations were coordinated and directed essentially by the Water Resources Services, Highways and Agriculture. The EPC RD working in close cooperation with the Director of PEP, provided a focal point for the coordination of federal support, which involved federal regional representatives of AGR, CBC, DOE, INA, M&I, DND(CAF), DPW, MOT and RCMP.

The Federal Department of the Environment was subsequently named "Lead department" and a "federal coordinator" was appointed "to act as prime agency through which federal aid and assistance to support provincial operations would be provided and coordinated". Major General B.M. Hoffmeister was officially designated to this position on June 3rd. He was to act in the name of the Minister of the Environment and the EPC RD was to act as his principal coordinating staff officer. DOE arranged for an on-line computer system with a data storage bank giving the location and types of the nearest emergency material available in the event that local resources were inadequate. This information was obtained through DND, MOT and DOE. Funding arrangements for federal action taken and federal public information arrangements were also made and reporting procedures established.

BRITISH COLUMBIA (Cont'd)

Several meetings of Federal Department representatives were held to consolidate these plans and an office was set up in Vancouver to centralize provincial requests for federal assistance and to coordinate federal response. This office operated from early June until federal participation was de-activated on July 11th. The Province had already de-activated its organization on July 5th.

THE YUKON AND
NORTHWEST TERRITORIES

No special organization was created by the Territorial Governments to deal specifically with the Spring Floods. The Territorial Emergency Measures Organizations in Whitehorse and Yellowknife coordinated the response of the various agencies involved in the areas where flooding and ice-jamming threatened local communities.

E. FEDERAL DEPARTMENTAL INVOLVEMENT

Federal Departments assisted the provinces in their flood fighting operations Regionally and from Ottawa as follows:

NEW BRUNSWICK

AGR Assisted in the evacuation of livestock and the provision of damage assessment for farm property.

CBC Provided radio and TV coverage of the floods and emergency broadcast facilities in the Flood Control Centre. (24-hour broadcast service from May 1 to May 7 at Fredericton and St. John).

DND(CAF) Provided helicopter and engineering services. A CAF liaison officer was located at Flood Control Centre.

DOE Provided forecasting services, regular and special, re flood conditions for the St. John River Flood Forecast Centre and for the protection of fisheries installations. (Atmospheric Environment Service, Water Supply Inland Water Branch and Fisheries Services).

DPW Provided a liaison officer at Flood Control Centre and assisted in damage estimation in the public sector.

EPC Assisted in setting up the Provincial Flood Control Centre and participated in its activities as member of its Coordination staff. Coordinated federal response and assisted in damage assessment and in rehabilitation.

M&I Provided a Liaison Officer at Flood Control Centre and survey of manpower resources and registration.

MOT Provided an icebreaker to break an ice jam threatening the Campbellton Bridge.

RCMP Provided a Liaison Officer at the Flood Control Centre and assisted with communications, traffic control and maintenance of law and order.

QUEBEC

AGR Assisted in damage assessment of farm property.

CBC Provided radio and TV coverage of floods and broadcast emergency instructions.

DND(CAF) Provided liaison with the "Comité inter-ministériel d'urgence du Québec" and provided 25 men, 12 vehicles and 1 helicopter from May 18th to June 20th, with additional personnel and vehicles held on standby. Assisted in evacuation and water distribution services.

DOE Provided a weather forecasting service and flood reports.

DPW Assisted in damage assessment in the public sector.

EPC Maintained liaison with the Comité inter-ministériel d'urgence du Québec and with the PCP. Coordinated federal departmental response, and assisted in damage assessment. Assisted in manning the Provincial Control Centre.

M&I) Provided assistance to evacuees and people out of
UIC) work.

NH&W(EHS) Provided 210 beds and 490 blankets from their Ottawa Depot.

ONTARIO

DOE Provided weather forecasting services.

EPC Liaison with the Ontario Emergency Measures Branch (EMB).

MANITOBA

AGR a. Health of Animals Officials carried out special inoculations and Agriculture Officials in rural areas were nominated as special contacts for EPC and the Federal Desk at Flood Control HQ.

a. Assisted in damage estimation of agricultural property.

MANITOBA (Cont'd)

CBC Provided radio and television coverage of the flood through normal Corporation facilities.

CMHC Provided lists of available homes and accommodation to Flood HQ for emergency housing.

- CNR
&
CPR
- a. Made crash provision of rolling stock for evacuation of grain, stock, seed, etc.
 - b. Provided emergency maintenance of right-of-ways and daily sitrep on available operational trackage.
 - c. Provided resource reports, e.g., pumps, special rail car, etc.

CWB (Canadian Wheat Board)

- a. By cooperating with the Provincial Department of Agriculture, the Board of Grain Commissioners and the Railroads enabled the movement of grain and seed grain in flood-threatened areas to safety.
- b. Through upward revision of quotas per specified acre to farmers in the anticipated flood areas, enabled the emergency grain movement.

- DND(CAF)
- a. At the request of Provincial authorities, supplied men, equipment and supplies at flooded and flood-threatened areas of the Province.
 - b. Maintained and staffed a desk in the Flood Control Headquarters during the existence of that organization.
 - c. Provided an emergency air-lift service within the Province and the flood areas using Canadian Forces helicopters, trucks and manpower.
 - d. Provided special road and air resources to EPC for operational task.

DOC Provided special communications for interchange of information between EPC, RD and the Federal Desk at Flood Headquarters to Ottawa.

MANITOBA (Cont'd)

DOE

- a. Atmospheric Environment Services supplied regular and special meteorological report services to appropriate provincial and federal agencies. (The Regional Meteorologist is a member of the Manitoba Flood Forecast Committee). Arranged concentrated and specific interchange of MET services information with US Weather Bureau - with reference to watersheds affecting Manitoba.
- b. Environmental Protection Services maintained liaison with EPC and the Federal Desk at Flood HQ and provided special advice on environmental problems on Indian Reserves.
- c. The Fisheries Branch provided their Emergency Planning Officer (Central Canada Region) for duty on the Federal Desk in Flood Control Headquarters. In addition, this officer acted as special assistant to RD, EPC and also provided resources, boats, motors, etc., to the Province and special advice on Lake Winnipeg fishing matters.
- d. Water Survey of Canada provided services throughout the winter, early spring and the flood period through the District Engineer, Water Resources Branch (who is a member of the Manitoba Flood Forecast Committee), and co-operated with the Provincial Hydrologist on a daily basis over many weeks in the supply, co-ordination and analysis of hydrometric information through its Hydrometric Office.

(Field personnel of the Water Resources Branch (Hydrometric) were redeployed to concentrate on the Red, Assiniboine, Souris and Pembina Rivers to ensure most complete service to their counterpart provincial officers. An intensive hydrometric and sediment program was also established in connection with the operation of the Red River Floodway.)

DPW

- a. Maintained contact with EPC and the Federal Desk to ascertain flood threatened areas so protection of federal buildings could be effected.
- b. Provided resource holdings lists and location state.

MANITOBA (Cont'd)

- c. Repaired docks and wharves on Lake Winnipeg.
- d. Controlled dams on certain waterways.
- e. Assisted in damage assessment in the public sector.

DREE (PFRA - Prairie Farm Rehabilitation Administration)

- a. At the request of and in liaison with the Federal Desk and provincial authorities, instituted special control measures of gates at the Shellmouth Dam on the Assiniboine River near the Saskatchewan border and maintained PFRA dykes.
- b. Opened community pastures for displaced cattle.

DSS

- a. Supply
Established critical resources inventories and suppliers lists.
- b. Security Services
Chief, Security Services participated in support and maintenance of the Federal Desk in Flood Control Headquarters.
- c. Audit Services
 - i. Participated in joint meetings on federal provincial cost-sharing as advisor to RD, EPC.
 - ii. Will be carrying out federal audit of items considered for the cost-sharing program.

DVA

Provided accommodation and certain care services for evacuees from evacuated nursing home for several weeks at Deer Lodge Hospital.

EMR

(CCRS)
Through EPC provided special CCRS over-flight of Manitoba during flooding and dispatched films to Province for use in damage analysis, map making, road and bridge studies, etc.

- EPC
- a. Co-ordinated support by federal departments and agencies, (excluding the RCMP and the Canadian Forces) throughout the buildup, flood and post-flood period.
 - b. Maintained a flood information service to all federal departments and agencies at the Ottawa and Regional (Manitoba) levels.
 - c. Maintained a Federal Desk at Flood Control Headquarters to provide on-the-spot advisory and co-ordination services - Federal/Provincial.
 - d. Co-ordinated plans for evacuation and return of displaced Indian Bands and was involved in other pre and post-flooding Reserve matters.

INA (Indian Affairs Branch)

- a. Provided counsel and advice to the Chief and Council of threatened Indian Bands in flood preparations.
- b. Assisted in agreements with the Government of Manitoba on emergency measures for protective measures.
- c. Co-operated with the Federal and Provincial departments of health in sanitary, public health, rodent control arrangements at the Reserves.
- d. Liaised and worked with Provincial officials of EMO, and Health and Welfare in details occasioned by the major evacuation of Reserves.

INA (Parks Canada)

Provided resource holdings lists to meet emergency needs.

- M&I
- a. Provided their Emergency Planning Officer (Prairie Region) for duty on the Federal Desk in Flood Control Headquarters.
 - b. Coordinated arrangements for manpower with various Manpower Centres to meet Provincial needs.

- MOT
- a. Flew Department of Transport aircraft on special missions for Agriculture, Provincial Water Control Branch and emergency reconnaissance, supplementing the service of military and Manitoba Government Air Services aircraft.

MANITOBA (Cont'd)

- b. Monitored air space in threatened areas and provided special control arrangements for emergency flights in evacuation, recce and resources movements.
- c. (Marine Services - Selkirk, Manitoba). Supplied a boat and motor for emergency operations.
- d. Provided their Emergency Planning Officer for duty on the Federal Desk in Flood Control Headquarters.

NFB Took special films of flood disaster areas, HQs, etc.

NH&W (EHS)

- a. Indian Health Services and Public Health Engineering developed a comprehensive health care and sanitation program for institution at the many flooded Reserves and co-operated in its implementation with Indian Affairs and relevant Provincial Departments.
- b. Assisted Indian Affairs and Provincial Departments in the evacuation of Reserves and instituted immediate health care and sanitation measures and operational support.
- c. EHS emergency stocks provided accommodation stores for evacuation centres.

NH&W (EWS)

- a. A representative from Emergency Welfare Services, Ottawa carried out liaison and advisory duties in the Flood HQ.
- f. Provided through EPC, welfare centre kits to evacuation Centres.

PO

By daily liaison with EPC and later at Flood Headquarters, the Director of Operations, Post Office, was able to anticipate the need for revisions of rural mail delivery routings. By so doing postal services were provided throughout the province on a near normal basis.

MANITOBA (Cont'd)

RC-CE Customs and Excise

Provided special assistance in customs clearance for trans-border shipments of emergency resources from U.S.

- RCMP
- a. Provided extraordinary services by stand-to of much of "D" Division in the duties of traffic control, evacuation assistance, maintenance of law and order and patrol of waterways by marine service officers.
 - b. Maintained liaison staff in Flood Control Headquarters and as required in the threatened rural areas.
 - c. Provided special resources.
 - d. 123 persons involved.

OTHER Other Departments and Agencies, e.g., Canadian Transport Commission, Federal Penitentiary, Air Canada, UIC, AECL (Whiteshell Nuclear Estb) Manitoba - Saskatchewan Regional Office DSS (Cheque Issuer), Information Canada, etc., were all aware of the general situation and participated in varying degrees within normal day-to-day arrangements - nevertheless when contacted or when involved they reflected credit to the whole federal effort.

SASKATCHEWAN

AGR Provided technical services and advice and assisted in damage estimation regarding agricultural property.

CBC Provided radio and TV coverage of the floods and broadcast emergency instructions from April 19th to the 25th on a 24-hour broadcast service.

DOE Provided weather forecasting services and flood reports.

DND (CAF)
Provided personnel for flood fightings, command and control, traffic control, evacuation and police duties, as well as helicopters for airlift and recce, trucks and boats for emergency transport and radios for emergency communications.

SASKATCHEWAN (Cont'd)

DREE (PFRA)

Provided personnel and equipment for flood fighting.

EPC Located sources of sandbags, coordinated federal response to provincial requests for federal assistance, including CCRS aerial photography, participated in meetings and operations of Emergency Action Committee.

INA Relayed information on flood forecasts to the Chiefs and Councils of Indian Bands and coordinated flood assistance for Indian Reserves.

RCMP Assisted in flood fighting and carried out police duties, including traffic control and security of property.

USA DCPA Region 6 provided advice on sandbags sources.

ALBERTA

AGR Assisted in damage assessment for farm property.

DND (CAF)
Personnel and trucks were placed on standby but were not used.

DOE Provided weather forecasting services and flood reports.

DPW Assisted in damage assessment in the public sector.

EPC Liaised with the Alberta Disaster Services Agency. Participated in provincial air-reconnaissance and coordinated support by Federal Departments and Agencies.

INA Relayed information on flood forecasts to the Chiefs and Councils of Indian Bands and coordinated assistance to flooded Indian Reserves and National Parks.

BRITISH COLUMBIA

DOE Coordinated federal response. Provided weather forecasting services and a data bank on federal sources of emergency equipment.

BRITISH COLUMBIA (Cont'd)

- DPW Restored washed-out highway and damaged bridges on the Alaska Highway and liaised with the Territorial Government of the Yukon.
- EPC Provided staff assistance to the DOE Coordinator and liaised with the PEP Coordinator.
- RCMP Provided boat patrols, protection of buildings and communications.

OTTAWA

- CCRS Carried out remote sensing of Prairie flood areas.
- DOE Monitored flood forecasts. Supervised DOE lead department role in B.C. and computerized data on available emergency resources. Set up coordinating machinery for federal response.
- DND Coordinated the total force response and authorized as required Canadian Forces participation as requested by Provinces. Tasked functional commands at the request of Regional Commanders to provide assistance beyond the capability of regional resources. Provided DOE with the location of various stocks of emergency equipment for inclusion in their computer program.
- DPW Coordinated DPW representation on provincial damage assessment teams.
- DSS Identified sources of sandbags and provided guidance to regional services personnel.
- EA Investigated the USAF authorization for their cross-border air lift operations to assist US Service personnel stranded on the Alaska Highway.
- EPC Monitored the flood forecasts and operations and prepared daily reports thereon. Assisted in the coordination of a CCRS survey of Prairie floods. Participated in arrangements for federal cost-sharing of provincial damage claims, and advised provincial officials and EPC RDs thereon. Assisted in locating sandbag sources.

OTTAWA (Cont'd)

INA Reviewed responsibility for expenditures incurred in assisting Indians on flooded reserves.

NH&W (EHS)
Provided emergency medical equipment and advice.

NH&W (EWS)
Provided emergency welfare equipment and advice and provided one HQ Officer for duty with the Manitoba EOC.

PCO (EPS)
Informed the Prime Minister and Cabinet of events and problems. Convened an Interdepartmental Meeting on April 17th to discuss federal response to potential flood emergencies.

RC-CE (Customs and Excise)
Promulgated an order providing for the remission of Customs Duty and Excise Tax on goods temporarily imported in Canada, required for the emergency, and advised their Regional staff thereon.

UIC Ruled on administrative provisions for unemployment insurance in flood areas.

F. DAMAGE ASSESSMENT AND CLAIM PROCESSING

Damage assessment and claim processing were carried out as follows:

NEW BRUNSWICK

By a Provincial Cabinet decision dated June 5, 1974, a program of compensation for damages arising out of the 1974 floods was approved.

The preliminary total damage cost was estimated at \$10,000,000 of which \$1,602,400 was considered eligible for cost-sharing. A request for an advance reimbursement of \$472,200 was made to the federal government on July 2nd 1974. (Damage to private property was estimated at \$1,090,000 and to farm property at \$115,000).

The cost of flood operations was estimated at \$75,000, and included 4 EOCs, transportation, lodging and feeding of evacuees, transportation and feeding of livestock, rental and supply of special equipment (pumps, generators, sandbags, etc.), adjusters fees and expenses, Armed Forces helicopters and engineering services, payrolls and miscellaneous emergency expenses.

A Flood Compensation Committee was formed on June 12, composed of representatives of Provincial Departments of Finance, Provincial Comptroller's Office and EPC Regional Director. A Flood Compensation Office was set up in Fredericton to receive and process claims. The deadline for claim submissions was set at July 15th. Newspaper and radio announcements were used to advise prospective claimants of compensation arrangements. 270 claims were received and are being processed. (Approved expenditures in the first 195 claims amounted to \$486,500).

Federal-Provincial Inspection and Assessment Teams were formed. Private and agricultural sector evaluation of damage is being carried out by appraisers for the Maritime Independent Adjusters Association and the Canadian Independent Adjusters' Conference and by federal and provincial agriculture specialists. Public sector evaluation of damage is being carried out by teams of specialists of the Provincial Departments concerned and Federal DPW representatives.

QUEBEC

By Order-in-Council 2013-74 of 29 May 1974, the Provincial Government undertook to compensate persons who had suffered damage resulting from the floods which occurred between Jan. 1st and June 30th, 1974 and set up a "Bureau d'aide financière -

QUEBEC (Cont'd)

inondation 1974" to evaluate damages and process claims relating thereto. 98 municipalities were identified as being affected.

This list was subsequently revised upward to include 301 municipalities. Newspaper ads and radio announcements were used to inform prospective claimants. By Order-in-Council 2079-74 of 4 June '74 and 2210-74 of 19 June 1974, the Province undertook to cover 100% of costs in the public sector and the cost of all flood operations, and set maximum limits of compensation in the private, small business and farm sectors.

On June 5th 1974 the Provincial Premier advised the Prime Minister that the Government of Quebec would be requesting that damage costs be shared by the Federal Government in keeping with the established federal formula. This was agreed to in the Prime Minister's reply of June 24th 1974 in which he outlined the terms and conditions of the cost sharing arrangement.

Damage assessment teams composed of Provincial and Federal representatives were set up to estimate damages to municipal public property and farms, small business and private property.

The deadline for Claims submission was set at July 31st. Some 10,000 claims are being processed.

Original total damage cost was estimated at \$100,000,000 and is now estimated at \$24,500,000 with a tentative breakdown as follows:

Private sector claims	\$7.0 million
Small business	\$1.5 million
Farm	\$2.0 million
Public Sector	\$9.5 million
Emergency Operations	\$2.5 million
Administration	\$2.0 million
	<u>\$24.5 million</u>

ONTARIO

Assistance for flood and storm damages along the Great Lakes Shorelines was extended by the province on March 21, 1973 to complement the arrangements already made by the Emergency Measures Branch of the Ministry of the Solicitor General for disaster assistance during the emergency period. This involves financial cost-sharing on an 80 - 20 cost-sharing basis with municipalities, for damages in the public sector; provincial disaster relief assistance for individuals "matching dollar for dollar" the contributions to the local Disaster Relief Fund, other than those made by the Federal Government and by the Canadian Disaster Relief Fund Committee, where the area is declared a Disaster Relief Area by the Ontario Cabinet; and assistance for the Protection of Agricultural lands in designated areas by sharing costs of dykes.

On June 4th, 1974, the Federal Government offered the province financial assistance in accordance with the per capita cost-sharing formula for the flooding in Southern Ontario (Cambridge area). A counter proposal was made by Ontario involving matching local disaster relief funds by the Provincial and Federal Governments. This proposal was turned down by the Federal Government in favour of maintaining the established per capita formula approach.

As the damage costs did not reach the threshold figure - no federal cost-sharing was involved in the 1974 Great Lakes and Grand River floods.

In the Cambridge area, the province offered to match the contribution to the Local Disaster Relief Fund. The Grand River Disaster Relief Committee processed some 1200 claims and collected some \$500,000. Private claims amounted to approximately \$6,735,000 and damages in the public sector were estimated at \$4,000,000. According to the provincial compensation formula this would provide only \$1,000,000 to cover damage costs in excess of \$10,000,000.

On September 5th, Premier Davis announced that the province would revise its compensation policy and give \$4 for every \$1 of local contribution. A provincial spokesman also advised that the province was preparing a new formula to cover future disasters.

MANITOBA

Federal financial assistance was offered by the Prime Minister on April 22, 1974. By Order-in-Council dated April 30, 1974, the Manitoba Flood Assistance Board was established including the terms of reference, the identification of costs eligible for compensation and the extent of such compensation. Cost-sharing on the basis of the per capita formula was proposed by Ottawa. More generous terms were sought by the Province.

The public was advised through press and radio of the provincial compensation program. Municipalities were provided with detailed instructions on procedures in damage assessment, in a letter dated May 17, 1974.

On June 14th the province requested that Ottawa include the Winnipeg rainstorm damages of May 19 - 20 in the cost-sharing. This was agreed to by the Prime Minister, and the cost-sharing formula was maintained without change. Details of procedures to follow and the limits set for various categories of costs were communicated by the Premier to Mayor Stephen Juba of Winnipeg, on June 26th.

The preliminary total damage cost was estimated at \$18,000,000. The Manitoba Flood Assistance Board received over 10,000 claims for

structural damage including claims from municipalities, Indian reserves, the private sector and farms. Fifty-two inspectors were involved in the damage estimation including representatives from Federal Agriculture and DPW and estimators appointed by the Board.

SASKATCHEWAN

Federal financial aid was offered by the Prime Minister on April 22, 1974. The Saskatchewan Flood Compensation Committee which had been established in 1972 was convened. This consisted of a Committee of Ministers and a Working Committee, the latter chaired by a representative of the Sask. Govt. Insurance Office, with a representative of the Department of Finance acting as secretary and composed of members from the following departments:

Municipal, Highways, Agriculture, Environment, Finance, EMO, Information Services, Health, Social Services and the Executive Council.

Under the direction of the Working Committee a task force of 20 SGIO adjusters was established in Moose Jaw, assisted by 12 independent adjusters (representatives of the Sask. Association of Insurance Adjusters).

A proposal for a Flood Compensation Agency was prepared by the Deputy Minister of Finance and submitted on April 30th, 1974. This Agency was subsequently established by the Cabinet Decision of May 2nd 1974, to coordinate immediate disaster assistance during the emergency and post disaster assistance to local government authorities, to private individuals, to hospitals and charitable institutions, to agricultural enterprises and to small businesses.

Eligible items and assessment procedures were spelt out in "Guidelines for Financial Assistance to Victims of the 1974 Saskatchewan Flood" dated May 2, 1974.

On July 3rd the province requested that the Prince Albert and Saskatoon flooding, as a result of rainstorms on June 26th, also be considered eligible for cost-sharing and Federal officials agreed to this.

Subsequently considerable pressure was placed on the province to give a broader interpretation to the small businesses which were considered eligible for compensation - but this received no support from the Federal Government on whose Guidelines the province had based its definition.

Preliminary total damage costs were estimated at \$20,000,000 but this estimate was subsequently reduced to \$8,471,000.

ALBERTA

On April 29th, 1974 the province officially notified the federal government of its intention to request Federal assistance in compensating victims of the spring floods, and on May 30th the federal government outlined its terms and conditions of such cost-sharing.

The preliminary total damage costs were estimated at \$30,000,000 and then revised to \$10,874,000 of which private claims were set at \$200,000, Agricultural claims were estimated at \$4,130,000 and Public sector claims at \$6,544,000.

Damage assessment teams of private insurance adjusters supervised by the Department of Municipal Affairs, Assessment Branch, made assessments of damages to individuals, small businesses, farm homes, and municipal buildings. Damages to public sector were handled by the Department of Highway, the Department of Environment and the Department of Municipal Affairs engineers.

Agricultural damage was assessed by the Department of Agriculture representatives. The Federal Departments of Public Works, Agriculture, Indians Affairs, and the Audit Services Branch of DSS assisted in these assessments.

On October 9th, 1974 the province submitted to the Federal Minister of Finance an estimate of the damage compensation costs incurred amounting to \$38.9 million. This consisted of \$8.6 million for payments in respect of private property damage and restoration of public works, \$28 million for crop losses and \$2.2 million for unseeded acreage compensation. This would represent a federal share of \$31.5 million if the cost-sharing formula were applied to the total amount. The province was advised on November 5th that only the \$8.6 million would qualify for cost-sharing subject to federal audit.

BRITISH-COLUMBIA

The Province announced on August 9, 1974, that it would provide financial assistance to individuals and small businesses for flood and severe rainstorm damages from January through July and provided a list of eligible items and the corresponding flood damage coverage offered. The Canadian Independent Adjusters Conference was named as the agency responsible for examining all claims and making recommendations to the Provincial Government in respect of payment.

Preliminary total damage cost has been estimated below the threshold of the federal per capita cost-sharing formula and no claim for actual federal assistance is at present contemplated.

THE NORTHWEST TERRITORIES

No cost-sharing arrangements were concluded between the Territorial Governments and the federal government for 1974 flood damages.

In the N.W.T. claims for damages to private dwellings in Hay River amounted to \$40,000 and in Artic Red River to \$2,500. No compensation was made for damage to commercial property. Evaluation was carried out according to the Federal Guidelines. Flood operation costs were estimated at \$15,000.

THE YUKON

Damages to the Alaska Highway and bridges were covered by the DPW highway maintenance budget. Restoration and repair costs were estimated at \$1.4 million.

G. INQUIRIES AND REVIEWS

The following inquiries and reviews were initiated as a result of the spring floods:

FEDERAL-PROVINCIAL INQUIRIES

QUEBEC

A two-year joint study has been recommended by the standing Canada-Quebec Consultative Committee on Water - on methods to alleviate the perennial flooding in the Montreal area, involving Federal DPW and MOT, Quebec's Environmental Protective Service and Hydro-Quebec. The Study-Board is to be co-chaired by Harry Rosenberg, DOE and Claude Triquet, Quebec Ministry of Natural Resources. The study will consider amendments to regulations covering the outflow of the Ottawa River and Lake Ontario along with possible changes in flow channels around Montreal and dyking in flood-prone zones. The study will be conducted as part of regular departmental operations.

PROVINCIAL INQUIRIES

QUEBEC

1. The Protection Civile du Québec proposed the carrying out of a pilot study on emergency measures required when a community is threatened and subjected to a flood, using Maniwaki's recent experience for this purpose. This project has received the approval of the Chairman of the Comité interministériel d'urgence du Québec. The research data is to be obtained through interviews and questionnaires.
2. The town of Maniwaki retained the services of Woods Gordon and Co. to prepare a report on the flood that struck this town.
3. The Comité interministériel d'urgence du Québec also established three sub-committees as a result of the failures of the plan to meet the flood situation adequately. These sub-committees are to study and make recommendations concerning the following:
 - a. Emergency planning in the Province of Quebec; The effectiveness of the existing emergency measures structure and the required corrective measures. Chaired by the Director General, Civil Protection.

- b. Administrative and legislative measures in relation to emergencies. - Chaired by the Deputy Director, Social Affairs.

- c. Long-term preventive measures to prevent future floods. Chaired by the Director General, National Resources.

The first two sub-committees have already drafted their recommendations and submitted them to the Comité interministériel d'urgence du Québec for consideration.

ONTARIO

- 1. On June 26th, 1974, as a result of the severe property damage experienced in the Grand River area as a result of the flooding of the river on May 16/17, an official enquiry was instituted into the dam operations and flood warning and communications systems involved.

The Government of Ontario by Order-in-Council 1600/74 appointed Judge W.W. Leach to carry out the inquiry.

- 2. The management consulting firm of Price Waterhouse Associates was retained some months ago by the Government of Ontario to study the current government structure to deal with emergencies and to recommend appropriate changes. This report should be completed in the near future. (This inquiry was not, however, initiated as a result of the Spring floods but the problems raised by the floods would have a bearing on the study).

MANITOBA

- 1. Due to the extensive and excessive flooding which occurred in the major and minor watersheds of the Province it was decided to undertake an overall evaluation of the various aspects of the total flood forecasting, emergency protection and assistance program, as well as the government organizational structure supporting the flood fighting program. Accordingly, the Minister of Mines, Resources and Environmental Management requested that the Manitoba Water Commission review and evaluate Manitoba's flood fighting and control program and make recommendations on:

MANITOBA (Cont'd)

- a. flood-forecasting;
- b. flood warning;
- c. emergency organization;
- d. current preventive works;
- e. future control constructions.

The Manitoba Water Commission issued its draft report in October 1974. It had come to the following conclusions:

- a. The flood forecasting procedures were found satisfactory for the major watersheds. Forecasting procedures should, however, be expanded and improved in the smaller watersheds. Steps should also be taken to decrease the time required to obtain precipitation and streamflow data during spring run-offs. There is also a need to increase the accuracy of measuring soil moisture and in measuring the water contained in the snowpack.
 - b. More effort should be made to publicize flood forecasts.
 - c. Better communications networks should be established and financial means provided the Water Resources Branch supported by the Emergency Measures Organization to set up and man EOCs and other operational facilities as required.
 - d. The operating procedures adopted for the Winnipeg Floodway, Shellmouth Reservoir, Seine River Diversion and Fish Lake Detention Basin were considered satisfactory and no changes were recommended.
 - e. The Commission recommended that future flood control works be evaluated in terms of their social and economics impact and observed that the ultimate decision on flood control projects should not rest with the technicians but with the policy makers. It also recommended that local governments share in the costs, and that zoning regulations be implemented to control development on the flood plane.
2. A new Manitoba Survival Plan is now being drafted in which the two main government committees are identified as the Manitoba Cabinet Civil Defence Committee and the Emergency Planning and Operations Committee.

H. OBSERVATIONS AND RECOMMENDATIONS

The following observations and recommendations were made concerning the methods employed in dealing with the 1974 spring floods:

By FEDERAL DEPARTMENTS

DND re: QUEBEC

The Protection Civile du Québec was the main organization concerned with the floods and operated very efficiently.

re: PRAIRIE REGION

a. Provincial organization and planning.

Provincial Level - The three prairie provinces have established positive and effective measures to provide the necessary organized assistance during flood emergencies. All have active emergency measures organizations and provincial cabinet level committees that have developed through previous flood fighting experience. Provincial authorities have called on very large quantities of manpower support, heavy equipment and communications and therefore should less often find it necessary to request military support in those tasks requiring only labour and vehicles. There are, however, deficiencies in the provincial legislation of at least two of the three provinces, in that the provincial EMO is established as a coordinative body, with no executive powers over the resources of the other departments. This precludes, in the event of a sudden crisis and immediate and automatic provincial response. This deficiency has now been recognized by the Province of Manitoba which is studying necessary legislative changes. The provincial pre-flood preparations were generally good, in that provincial EMO organizations carried out active briefing programs at the municipal official/EMO representative level in flood prone areas, to ensure that all understood the chain of responsibility in an emergency (individual, municipality, province and finally federal assistance as a last resort).

Municipal Level - The emergency organization at the municipal level was less effective than at the provincial level. The larger municipalities were, by and large, competent to handle the situation with a minimum of advice and assistance. Smaller municipalities and rural municipalities, on the whole lacked the expertise, resources and plans to effectively cope with the floods.

b. Command and Control

Restricted EMO permanent personnel strengths made it necessary to obtain additional provincial personnel for a full three-shift operations centre capability. Without an opportunity to run training exercises, the provincial operations centres also needed a "shakedown" period before they became fully operational.

The command and control weakness is evident in that, again through a shortage of permanent EMO personnel, there is a general inability to simultaneously deploy a number of knowledgeable and trained field teams to control widely separated operations. This can well result in a lack of co-ordination of resources at the lower levels of authority and is most noticeable at the actual flood site operations.

In some cases, the lack of a properly manned field command post facility hampered operations, caused undue delays in accepting and completing tasks, made monitoring of activities and allocation of resources difficult, and was confusing to the citizens involved in the emergency.

Of further interest may be a direct quote from the Commander of TCHQ Detachment (Alta Ops) as regards the province of Alberta.

"This detachment has nothing but praise for provincial capabilities in handling such an emergency as this one. This was proven by their not actually needing DND assistance in spite of the magnitude of the situation (estimated \$30,000,000 damage)".

c. Conclusions

The most salient observation is that concerning the provincial capabilities, resources and intentions. All three prairie provinces are determined to

continue to develop an effective self-contained emergency response capability using provincial and municipal resources. These resources are, quite literally, enormous and are well beyond the level of resources which can be mustered by the CF from within Prairie Region. In this context, the CF involvement in the 1974 flood operations on the prairies, while sizeable, was only a fraction of the total effort.

The CF equipment holdings proved, generally speaking, adequate during these operations.

The CF Regional Information Officers played an important role in these operations. It was essential that CF participation, level of authority and inter-relationship with the civilian officials be made clear to the media and the general public.

The role of EPC, and the EPC Regional Directors in each province, must be clarified and publicized. It is a clear policy tenet that the CF emergency assistance activities are not coordinated by EPC and that the CF work directly with the provinces concerned.

Weaknesses in the civilian flood fighting capability were threefold:

- i. A legislative deficiency at the province to municipality interface as to who has the authority and who is to pay.
- ii. A lack of sufficient number of trained personnel in the provincial emergency organization (EMO) to rapidly cope with both the 24/7 operation of a Flood Control HQ and the development of a number of one-site field HQ. Where we were capable of it, the CF provided some assistance in the form of liaison/duty officers, amalgamation of CF/civilian HQ, etc.
- iii. A general weakness in the rural municipalities in terms of engineering expertise, money and equipment.

A statement of the representative of the Manitoba Department of Water Resources indicates that the frequency of floods is likely to increase because of:

c. Conclusion (Cont'd)

- i. improved agricultural drainage systems which increase the rapidity of water run-off; and
- ii. such projects as the Garrison River Division in North Dakota which will increase water run-off into Canada.

NH&W(EWS) Federal EWS did not have an effective prediction communication line with either EPC, Federal or Regional, or with any provincial headquarters, nor were they able to obtain accurate details of EWS operations. This was due mainly to a lack of departmental regional representation.

When evacuation is a real potential, as it is in most disasters, or when welfare facilities are threatened, Federal EWS should be alerted from the very first and this Service should participate in the earliest disaster committee meeting on to operations and recovery. In current circumstances this kind of commitment is impossible to make.

EPC

REGIONAL DIRECTORS

NEW BRUNSWICK

This year, due to experience gained in last year's flood, a briefing and a short exercise before the flood, the operations and administration of the various operations centres and activities were easier to control.

More training at regional and municipal levels, and completion of emergency plans in this field of activity, will simplify control, decentralization and understanding of responsibilities at all levels.

The regional Federal response to Provincial assistance was good, and when contingency planning and liaison is further developed between Federal and Provincial Departments at regional level, better coordination of efforts and use of resources will be accomplished.

QUEBEC

Public information has to be centralized in one agency if it is to be complete and reliable, otherwise, it is a source of misinformation and can create considerable confusion.

QUEBEC (Cont'd)

General information concerning departmental and civil protection emergency measures should be provided to MNAs by the Minister responsible for Civil Protection during an emergency.

Presence at control centres of senior representatives or liaison officers from key provincial and federal departments and agencies, and in some cases of private industries, is necessary for efficient functioning and reliable information.

Small municipalities should be directed to have a least a basic emergency plan (as a minimum a list of telephone numbers of persons to contact or to be contacted in an emergency). Without a plan and because of their limited resources, they soon become unable to cope with the situation. It is apparent that the better the emergency plan a municipality has, the better it is able to take care of its population.

Implementing an emergency plan costs money, and some municipalities hesitate to do so. If a state of emergency is declared by a senior level of government (with the necessary financial implications) considerable suffering and losses could be avoided.

Voluntary Agencies (Red Cross, St. John Ambulance, Salvation Army) are much more useful when they work within the framework of a municipal emergency measures organization.

SASKATCHEWAN

Emergency operations at all levels were quite successful. False lessons, however, should not be taken from this situation as the long warning time and early action taken to alert departments and agencies at all levels of government contributed a great deal to this success. No real problems developed as everyone seemed to be aware of where to refer them for the easiest solution. The result of these emergency operations serves to substantiate the fact that:

SASKATCHEWAN (Cont'd)

- a. an EOC is required at each level of operations so that:
 1. emergency actions can be coordinated; and
 2. problems beyond their resources can be immediately referred to the next higher level for action;
- b. periodic review of departmental and agency plans is necessary to ensure that they are up-to-date; and
- c. departmental staffs should be exercised in their emergency functions periodically.

ALBERTA

Due to the way the whole flood situation was handled by Alberta Disaster Services Agency from the point of view of warning, operations, damage assessment, and compensation, it is felt that there could be little improvement in the whole operation.

By PROVINCIAL EMOs

NEW BRUNSWICK (EMO)

Difficulty was experienced in controlling traffic on flooded roads. Additional personnel from the Provincial Secretary's Department will be assigned this responsibility. Difficulties were also experienced in EMO HQs regarding the control of resources. DPW will take on the responsibility for resource control and emergency telephone services. The contingency plan will be amended accordingly.

QUEBEC (PCP)

A comprehensive report on the spring flood operations is being completed by the Protection Civile du Québec which will be available at a later date.

ALBERTA (ADSA)

The prior knowledge of flood potential and areas likely to be affected proved invaluable, permitting timely action

ALBERTA (ADSA) (Cont'd)

to determine the government's operations concept and procedures, and to disseminate advisory bulletins to municipal authorities concerned.

Despite their obvious value from a warning aspect, advisory bulletins appeared to meet mixed reception at municipal level. In most cases the authorities reacted positively to organize and prepare for flood control operations; however, in a few cases it seemed that municipal officials were not ready to assume responsibility for local preparedness measures, and waited until it was too late to take action to minimize flood effects.

The concept of central emergency operations control at the government Emergency Response Centre was validated during "Wetfoot '74". Not only did the Centre ensure that optimum use was made of government resources; because of requirements for operations data and status reports, the centre also was the focal point for information for use by government and for release to the public.

It became evident in the early stage that insufficient attention had been given to developing and maintaining lists of available resources. No doubt this defect was partly due to the lack of knowledge of actual requirements for such diverse items as portable radios, pumps, sand, all-terrain vehicles, etc. Shortages of certain essential emergency resources suggested that government stockpiles of relatively non-perishable emergency operations material should be maintained at an optimum level.

There were also minor defects in the basic emergency plans particularly in the assignment of tasks and responsibilities to various departments and agencies.

BRITISH COLUMBIA (PEP)

Favourable weather conditions prevailed and actual flooding problems remained relatively minor.

Perhaps, the most significant feature to emerge out of the rather extensive preparations undertaken this year to deal with flood conditions was the establishment of the inter-departmental emergency committee system which provided effective liaison and coordination from the very inception of activities and to an extent which could not

BRITISH COLUMBIA (PEP) (Cont'd)

otherwise be realized. Furthermore, and no less important, it provided for an exchange of useful information by participants and for an orderly dissemination of accurate, authentic and up-to-date information to the public.

The Committees functioned well in all the zones and at the local level and hopefully will become the established method of operation in all emergencies requiring Provincial Government participation.

