A GUIDE TO EMERGENCY PLANNING & RESPONSIBILITIES

IN ONTARIO

by

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EMERGENCY AND RISK RESEARCH
Emergency and Risk Research is a series of Working Papers on research in progress. The papers are intended to be used as working documents by scientists in Canada and elsewhere involved in research on peacetime emergencies, and environmental risks, including those of natural and man-made origin.

The series also serves as a means of disseminating results and ideas quickly to interested groups in the public and private sectors, and as a means of communication between research workers and those involved with managing risks and planning for emergencies.

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PREFACE

This report is, in large part, the result of a series of interviews conducted by F. Christof Haussmann between July and November 1978, supplemented with material submitted by provincial ministries and other sources. In its first preliminary form, the document was resubmitted to the ministries and interviewees for comment or correction. As a result, we believe this to be a substantially accurate overview of provincial level emergency planning and policy in Ontario. This has entailed, in some cases, incorporating verbatim or almost verbatim material from some ministries; and we are, of course, ultimately responsible for the accuracy and the presentation of their material in this report.

A Guide to Emergency Planning and Responsibilities in Ontario is one of the activities undertaken by the Emergency Planning Project at the Institute for Environmental Studies in the University of Toronto. The work has been supported by Emergency Planning Canada, Ottawa.

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ABBREVIATIONS

SG  Ministry of the Solicitor General
MAF  Ministry of Agriculture and Food
ME(OH)  Ministry of Energy (Ontario Hydro)
MOE  Ministry of the Environment
MH  Ministry of Health
IGA  Ministry of Intergovernmental Affairs
ML  Ministry of Labour
MNR  Ministry of Natural Resources
MNA  Ministry of Northern Affairs
MTC  Ministry of Transportation and Communications

* * * * * * * * * * * * * * * *

EPC  Emergency Planning Canada
AEPO  Association of Emergency Planners of Ontario
OPP  Ontario Provincial Police
INTRODUCTION: AN OVERVIEW

This report contains information obtained in a series of interviews with politicians and senior civil servants in Ontario, charged with responsibility for emergency planning and policy. Information was compiled also from material supplied by the ten relevant provincial ministries, including all seven designated "Lead Ministries". Ministries with only occasional involvement in emergency response have not been included, most notably the Ministry of Community and Social Services (providing supplies and shelter), and the Ministry of Consumer and Commercial Relations – Energy Safety Branch (standards and investigation).

The report is organised on a ministry-by-ministry basis, under the following general subject headings:

1) Introduction
2) History
3) Policy and Programmes
4) Key Personnel
5) Communication
6) Monitoring
7) Resources and Capabilities.

These general discussions are supplemented by maps, figures, and tables.

Although what is intended here is an overview of the policies and resources available at the provincial level, the division of material presented here is a response to – and a reflection of – the
"Lead Ministry" concept (as outlined in Orders-in-Council 1484/75, 1487/75, and 178/79) now operating as the theoretical basis of the emergency planning structure of the provincial government. In brief, the lead ministry concept provides that in the case of an emergency beyond the capacity of private, local, or municipal agencies, a ministry of the provincial government, either specially competent or simply designated to handle the particular type of emergency, will become the "lead agency" or "lead ministry" - that is, it becomes the co-ordinating and controlling body of any provincial response to the emergency. This may entail the use of its own resources, or any other resources it may be disposed to call upon from other ministries. This designation is jurisdictional, not statutory.

This system of interlocking and overlapping ministry responses takes the place of the previous organisational structure which was based in large part on the central role of the Emergency Measures Branch (disbanded at the end of 1975). At the municipal and federal levels, elements of the old structure remain in place, and a brief outline of the development and elimination of the Emergency Measures Branch (EMB) may provide a useful groundwork for an understanding of what obtains today outside the provincial government per se.

Ontario's initial role in emergency planning was as part of the federal government's Civil Defence Programme, agreed to and adopted by the Province of Ontario in October 1950. In the course of the next ten years, federal and provincial agreements created and maintained a number of programmes--the most visible being the
Fire Pumper Programme under which Ontario bought 100 fire pumpers—aimed generally at training personnel, standardising equipment, and encouraging municipal governments to set up municipal emergency planning units. By 1960, 47 municipal planning units were preparing the plans for 271 municipalities and regional municipalities in Ontario. In January 1960, in response to an upgrading of Civil Defence on the part of the federal government, Ontario established (by Order-in-Council) an Emergency Measures Organisation in the Department of Justice. In April 1963, the Ontario Legislature passed the Emergency Measures Act, and created, in the Department of Justice, a central unit of the Emergency Measures Organisation (EMO), known as the Emergency Measures Branch (EMB).

The EMB was the administrator of a programme funded by both federal and provincial monies. At the municipal level, there was direct control over the local programmes, and an Emergency Planning Officer co-ordinated and standardised various municipal plans derived from the EMO's set up under municipal by-laws. Above this level, Ontario was divided into seven emergency planning zones, overseen by provincial field officers who provided liaison between the municipalities and the Emergency Measures Branch in Toronto. At the provincial level, the EMB was the agency providing the impetus for ministry planning before emergencies, and was envisaged as being the organisational or co-ordinating agency during emergencies. Beyond that, the EMB was the link between federal emergency planning and the other two levels of government.

In the late 60's and early 70's, interest shifted away from
Civil defence towards peacetime emergency management (a "Guide to Effective Planning for Peacetime Emergencies" was published by the Department of Justice in August 1971). Federal budget cuts and a reappraisal of provincial requirements led to the enunciation of the "Lead Ministry" concept—outlined above—whereby more efficient inter-ministerial response to emergencies could be expected. The Emergency Measures Branch was phased out at the end of 1975, and the individual ministries themselves have now taken over the emergency organisational and emergency operational roles on the provincial level.

Designated ministries and their special areas of responsibility (as of January 1979) are:

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<td>Energy</td>
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<td>Environment</td>
<td>Spills of chemicals, oil, or other contaminants or toxic agents; gas or oil pipeline break</td>
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<td>Health</td>
<td>Epidemic</td>
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<td>Intergovernmental Affairs</td>
<td>Funding and co-ordination of extraordinary provincial expenditures on emergencies</td>
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<td>Labour</td>
<td>Nuclear reactor accident with off-site effects; heavy water accidents with off-site effects</td>
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<td>Natural Resources</td>
<td>Flood; forest fire</td>
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<td>Solicitor General</td>
<td>Major air crash; snow emergency; other peacetime emergencies; war emergency</td>
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In addition, though not by Order-in-Council, the Ministry of Northern Affairs has been given a co-ordinating role for emergencies in Northern Ontario involving a response by more than one provincial ministry, and the Ministry of Agriculture and Food takes a lead role in cases of crop disaster and drought.

The present policy-making structure—as seen in the accompanying diagram (Figure I.1)—depends on the Emergency Planning Committee of Cabinet which steers the Lead Ministry Co-ordinating Committee made up of planning personnel and other interested parties from the relevant ministries. As may also be seen from the diagram, the policy-making structure is embedded in the Ministry of the Solicitor General, partly for the historical reasons sketched above (EMB going from the Department of Justice into the reformed Ministry of the Solicitor General), partly because of the Solicitor General's overriding responsibility for public safety, and partly because the initial emergency communication structure works up through the Solicitor General's Ministry. This part of the communication structure is presumed to function as follows: a private individual, or, more likely, a municipal official who feels that provincial assistance may be required (usually when municipal resources have first been utilised), contacts the nearest detachment of the OPP. They in turn relay the information to OPP Headquarters, where established procedures enable them to pass the communication to a contact person in the appropriate lead ministry. In some cases, the OPP detachment may get in touch directly with the field offices of the ministry.
FIGURE I.1 SENIOR POLICY MAKING STRUCTURE ONTARIO EMERGENCY PLANNING

SOLICITOR GENERAL

CABINET COMMITTEE ON EMERGENCY PLANNING

DEPUTY SOLICITOR GENERAL

Senior emergency advisor

ASSISTANT DEPUTY MINISTER - PUBLIC SAFETY

DEPUTY O.P.P. COMMISSIONER: OPERATIONS

COMMISSIONER O.P.P.

ONTARIO FIRE MARSHALL

CHIEF CORONER

DEPUTY CHIEF CORONER

LEAD MINISTRY CO-ORDINATING COMMITTEE

members

members

SG NS MAF MOE MH MNR MNA MD(OH) MTC IGA AEPO

Labour Agriculture Environment Health Natural Resources Northern Energy Transport Inter-
& Food Resources Affairs Affairs Government Affairs

*Association of Emergency Planners of Ontario
Although this report is organised around the provincial ministries, it is worth completing the emergency planning picture by noting the federal and municipal functions. The federal government is only involved in those contingencies which entail inter-provincial jurisdictions, specially designated federal emergency response, or in disasters of such a magnitude as to require military intervention or an extremely large expenditure of funds. In the planning field, however, the federal government has, in the absence of the EMB, continued its subsidisation of municipal EMO's; and the Regional Director of Emergency Planning Canada meets on a regular basis with representatives of municipal and regional planners, some of which are now organised into the Association of Emergency Planners of Ontario (AEPO). AEPO and the Regional Director of Emergency Planning Canada have input into the Lead Ministry Co-ordinating Committee, and provide liaison with the municipal emergency planning effort. Municipalities are encouraged to develop emergency plans through their local EMO's (the remnants of the Emergency Measures Programme), and may be funded and co-ordinated through the Zone Co-ordinators sponsored by EPC. Municipalities also come into the provincial planning framework in specific contingency planning, as in the case of the Pickering and Bruce Nuclear Station Contingency Plans. Many of the existing municipal plans and by-laws offer guidance in how to solicit aid from provincial agencies in case of emergency.
Introduction:

By virtue of its general responsibility for public safety and policing, and as the Ministry responsible for the Ontario Provincial Police, Ontario Fire Marshall and Office of the Chief Coroner, the Ministry of the Solicitor General acts as the central nervous system of the provincial emergency response capability. The Ministry also provides financing to municipalities for policing services. This central role of the Ministry in emergency response and planning for the Province of Ontario is reflected in the senior policy-making levels of provincial emergency planning, where the two key committees are chaired by personnel from the Ministry of the Solicitor General (see Introduction: An Overview: Figure I.1).

None of the legislation administered by the Ministry provides a definition of emergency or disaster or a procedure for declaring an emergency; however, the Disaster Procedures Manual of the Ontario Provincial Police defines a disaster as "a calamity caused by accident, by an act of war or insurrection, or by the forces of nature, and which results or may result in serious harm to the safety, health or welfare of people or in widespread damage to property". An emergency is considered a less severe event.

It is the responsibility of the Ontario Provincial Police to provide police protection and ensure public safety in all areas where there is no municipal force, and to render assistance to other jurisdictions upon request. The OPP is also responsible for wartime emergency planning, for the policing of most of Ontario's waterways and for the provision of protection (with the R.C.M.P.) from subversives and terrorists.
The Fire Marshall's Office (FMO) does not provide fire response and prevention services per se. Rather, its chief functions are to support local fire departments through the provision of fire investigation, statistical, technical, advisory, training, public information and administrative services. Although the FMO does not have any definition of "emergency" or "disaster", an indication of what is considered significant may be gleaned from the criteria set for involvement of the FMO Fire Investigation Service. This service investigates fires characterized by:

- suspected criminal cause;
- losses exceeding $250,000;
- fatalities;
- gaseous explosions.

The Chief Coroner's Office (CCO) becomes involved in an emergency or disaster only when deaths are involved, in which case it is the coroner's responsibility to remove and identify the bodies, and to determine whether deaths are due to natural causes, accident, suicide or homicide. A chief objective of the coroner's system is to determine all the facts pertaining to sudden or traumatic deaths, in order to provide the public with warnings about hazardous situations or trends. The CCO also does not have a documented definition of "emergency" or "disaster". The Deputy Chief Coroner, however, volunteered the opinion that any death due to unnatural causes may be considered an emergency, and a situation involving multiple deaths, a disaster.

**History:**

The first meeting of the Emergency Planning Committee of Cabinet took place on December 2, 1975, four weeks preceding the official end
of the Emergency Measures Branch. Federal funding which used to be provided through EMB to subsidize local Emergency Measures Organizations, continues to flow directly to some 26 local EMOs. This Ministry clearly underwent the largest changes associated with the demise of EMB, since EMB was located within the Public Safety Division of the Ministry of the Solicitor General.

Only a few emergency situations in which the OPP acted in a capacity other than communications facilitator were reported. The Niagara Peninsula-Prince Edward County snowstorm (January 1977) was not considered a disaster - only an emergency - in response to which the OPP carried out communications and search and rescue operations, as well as traffic control and public information services, notably in Prince Edward County, covered--at a distance--by the Emergency Planning Co-ordinator in Belleville. In May 1977, the OPP responded to the Cobalt fire, since it acts as the local police force for that municipality. The Fire Marshall's Office also responded to this emergency by investigating its cause. Also, Cobalt is party to a mutual aid agreement with neighbouring fire departments, and this agreement was activated during the emergency, Cobalt calling on five other fire departments for aid.

More recently, the OPP were alerted by the Regional Director for Ontario of Emergency Planning Canada, about the re-entry and crash of the U.S.S.R. nuclear-powered satellite Cosmos 954 (1978). OPP helicopters were used to assist in the evacuation of Kashechewan, the Indian village at Fort Albany which was threatened by flooding resulting from a combination of snowmelt and ice floe blockage at the mouth of the Albany River in Spring, 1978. In April, 1978 the Ontario Fire Marshall investigated the Oakville warehouse fire in which significant quantities
of pesticides were burned, giving off toxic fumes. The FMO received support from the Ministry of the Environment in this task. In 1977, there were 74 large-loss fires and explosions investigated.

Recent multiple-fatality incidents investigated through the coroner's system are the DC-9 crash at Malton International Airport (June 26, 1978) and the Timiskaming canoeing accident (June 1978).

A. The Ontario Provincial Police

Policy & Programmes:

The major implication for the OPP of the advent of the lead ministry approach, was the function it was given to provide a backup emergency communications system. In March 1976, the Provincial Treasurer, D'arcy McKeogh wrote to all municipalities advising them that under the lead ministry approach, municipalities should request emergency assistance, when needed, directly from the appropriate designated provincial ministry, or, alternatively, they should contact the nearest OPP detachment, whose staff would then alert the appropriate ministry. Thus, OPP detachments receive a considerable number of initial requests for assistance and advisements of emergency events, which they relay to the Supervisor, Telecommunications, at Headquarters (24 hrs. operation), who in turn notifies the appropriate federal or provincial official (see Communication). For instance, many of the toxic spill calls are first received by OPP detachments, and detachment commanders are encouraged to contact MOE on-scene co-ordinators directly.

While the OPP has responsibility for the protection of life and property,
it has no clear authority to evacuate people. Since there is no legislative base to the declaration of an emergency, there can be no curtailment of civil rights in the pursuit of emergency response. However, there is a clear potential conflict between the civil rights of privacy or freedom of movement, and the offence of obstructing a police officer in the course of performing his duties, when those duties involve unusual circumstances as are likely to be encountered during an emergency. This potential conflict is emphasized by a review of police emergency responsibilities as set out in Table SGI, taken from the OPP Disaster Procedures Manual.

It is OPP policy to provide assistance to municipalities upon request. Criteria for providing such assistance are threefold: where there is large-scale property damage; where there is loss of life; and where the necessary response is beyond a municipality's capability.

The OPP is also required to liaise with Regional Commanders and other supervisory personnel in instances where the Canadian Armed Forces are called in to assist. If the Armed Forces are requested to provide Assistance to Civil Authorities, this means they are requested to provide military assistance by the Provincial Attorney General in a civil emergency not declared a national disaster, such as in cases of explosions, fires, floods, etc. (see Canadian Forces Administrative Orders, 23-1). Aid of the Civil Power is a special case of Assistance to Civil Authorities, referring to the use of Canadian Armed Forces (CAF) to suppress riots or disturbances. Special requirements, such as the constant availability of a magistrate (the Attorney General's representative) to liaise with the commanding officer, are associated with Aid of the Civil Power. (see National Defence Act, Part IX). Nevertheless, it is clear that the
TABLE 5C.1

Police Responsibility at a Disaster Scene

At the scene of a disaster, responsibilities within the police function include:

.1 protection of life, property and exhibits;
.2 the initial rescue of injured and trapped persons, except at a fire upon the arrival of experienced fire fighters of a fire department;
.3 obtaining medical aid for the injured;
.4 preventing further injury and property damage;
.5 preventing unauthorized entry into the area;
.6 establishing a frozen area;
.7 maintaining order;
.8 controlling traffic;
.9 maintaining unimpeaded entrance to and exit from the area;
.10 caring for cadavers by safeguarding the scene, arranging transportation to the Morgue, identification and notification of next-of-kin;
.11 evacuation of unsafe buildings;
.12 investigating criminal aspects;
.13 prompt notification to government, public utility and other involved agencies;
.14 co-operation with all participating agencies; and
.15 preparation of required records and reports.

responsibility of first response in situations where the Armed Forces are eventually called in, rests with the OPP who will be called upon to co-ordinate their efforts closely with those of the CAF. For example, upon appraisal of a disaster, the OPP Deputy Commissioner, Field Operations, appoints a Police Control Officer to assume control of the disaster area, including egress and access to the area and associated relief, rescue and response functions. The Police Control Officer will establish temporary centres at the disaster site, as set out in Figure SGI. Thus, he will be required to co-ordinate closely with the CAF commander if troops become active at the disaster site.

The OPP is also responsible for wartime planning, although apparently no such activity is taking place since the demise of EMB. There is established a Regional Emergency Government Headquarters at CFB Camp Borden, but it is not being exercised at the provincial level.

Key Personnel:

The most important OPP personnel operative in an emergency or disaster are:

Director, Central Records & Communications Branch:

- Responsible for maintenance and monthly validation of a telephone directory at Telecommunication Headquarters listing names and numbers of agencies to be notified;

Supervisor, Telecommunication Headquarters:

- Responsible for notifying appropriate agency upon notification of an emergency or disaster by detachment commander;
FIGURE SG.1
ESTABLISHMENT OF TEMPORARY CENTRES
DISASTER SITE
(Modify as Required)

O.P.P. ATTACHMENT ← TEMPORARY CENTRE → POLICE DEPARTMENT OFFICE

POLICE LINES

STAGING AREA

TEMPORARY POLICE HEADQUARTERS (Police Command Post at Site)

RADIO

INFORMATION CENTER

PRESS CENTRE

PROPERTY RECOVERY CENTRE

TEMPORARY MORGUE

FIRST AID CENTER

FROZEN AREA

SITE

PARKING AREA

AMBULANCE PARKING AREA

MESSING FACILITIES

SLEEPING ACCOMMODATION

PORTABLE TOILETS

Deputy Commissioner, Field Operations, or Executive Duty Officer:

- Assigns Police Control Officer, notifies Chief Coroner if warranted, and co-ordinates province-wide police resources;

Police Control Officer:

- Assumes overall command of police operations at the scene of the disaster;

First Constable or Supervisor at scene:

- Assumes command of police activities at the scene, notifies detachment commander and district headquarters of nature and seriousness of the occurrence and police requirements, until arrival of Police Control Officer.

Communication:

Figure SG2 sets out the major communications linkages among the key personnel listed above. The OPP is also linked to the Canadian Police Information Centre at RCMP Headquarters through 116 CPIC terminals. CPIC is a computerised teletype information communications system linking all major Canadian Police Forces.

Recently, the force has begun monitoring Citizens Band radio along certain stretches of Hwy. 401. Thus, at least in this portion of southwestern Ontario, the force has a communications capability to link up with the many thousands of CBers.

While the OPP does not take on the responsibility of educating the public about appropriate emergency response behaviour, it may be tasked to inform the public through the press of the progress and status of a particular emergency. In a disaster area or a seriously threatened area, an information circular of the type
TABLE SC.2
INFORMATION CIRCULAR FOR RESIDENTS OF AN ENDANGERED AREA

Modify as required

1. Brief description of the danger and of the action being taken.
2. Location of reception centres and accommodations outside the danger area.
3. Telephone number to call if transportation required.
4. Any special law or regulation that is in effect.
5. Statement setting out the action to be taken if evacuation becomes necessary.
   For example:
   
   (a) secure your home;
   
   (b) take a two day supply of food, clothing, drugs, as well as your drug prescriptions;
   
   (c) take one blanket per person;
   
   (d) take infant formula in a thermos as well as candy and toys for the children;
   
   (e) have an adequate supply of gasoline and oil for your vehicle;
   
   (f) keep all other personal possessions to an absolute minimum; and
   
   (g) fill out the attached form and hand it in at the first Check Point you encounter.

6. Any other pertinent information.

7. Signature.

**Source:** Disaster Procedures Manual of the Ontario Provincial Police, September, 1977, Appendix E.
described in Table SG2 is distributed. The OPP also maintains an active Community Relations Branch, which endeavours to present the force and its activities in a positive and informative way to the public.

**Monitoring:**

Situation reports on flooding are received from the Ministry of Natural Resources, and Atmospheric Environment Services weather warnings are monitored. Monthly crime and traffic accident statistics are provided to Statistics Canada, a summary of which is presented in the Annual Report of the Ministry of the Solicitor General.

**Resources & Capabilities:**

Each detachment office maintains a listing of private equipment and resources available on a fee for service basis in its area.

As of December 31, 1977 the force included 4,010 uniformed members and 478 auxiliary personnel. Included in these are five tactics and rescue units located at London, Downsview, Kingston, North Bay and Thunder Bay. Underwater search and recovery teams comprising 42 members are located in 15 of the 16 OPP districts. The force maintains two four-seater Bell Jet-Ranger helicopters and five pilots. Twelve canine search and rescue teams are located one each at London, Burlington, Barrie, Peterborough, Long Sault, North Bay, Thessalon, Cochrane, Thunder Bay, Dryden and two at Mount Forest.

The OPP has a radio system consisting of 112 fixed stations, 11 portable stations, ten automatic repeater stations and 1,565 mobile stations installed in cars, trucks, motorcycles, boats and
aircraft. A total of 1,962 vehicles, including land, air, water and snow transport vehicles were operated in 1977.

Each detachment office contains an OPP disaster kit, contents of which are listed in Table SG3. OPP Districts, Jurisdictions and Detachment locations are listed in Table SG4.

B. Fire Marshall's Office

Policy and Programmes:

The Fire Marshall's Office carries out a number of programs to fulfill its role of providing support, advisory and investigative services to municipal fire departments, and to improve fire protection services to the public. Most significantly, 44 regional, county and district Mutual Fire Aid Systems and Emergency Fire Service Plans have been developed in preparation for large-scale emergencies. Mutual aid is a reciprocal, no-charge agreement among fire departments that the fire station closest to an alarm location will respond to the call, regardless of boundary constraints. The Mutual Aid System has led to the establishment of Mutual Aid Associations to which any fire-fighter may belong. Of some 40 such associations, approximately 30 meet monthly on a social basis. This provides a basis for informal communications among fire fighters in a district. Approximately one-half of these Associations have established an advisory board consisting of fire chiefs who meet annually. In Sarnia and London, the advisory board has been expanded to include representatives of the police and utilities, effectively creating a core emergency planning committee.

Emergency Fire Service Plans are intended to set out county and
**TABLE SG.3**

**CONTENTS OF OPP DISASTER KIT**

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Disaster Procedures Manual</td>
</tr>
<tr>
<td>6</td>
<td>Crowd Control Manual</td>
</tr>
<tr>
<td>1</td>
<td>Resume Telephone Directory Of Vital Services</td>
</tr>
<tr>
<td>6</td>
<td>M.T.C. Road Map</td>
</tr>
<tr>
<td>1</td>
<td>Ontario Government Telephone Directory</td>
</tr>
<tr>
<td>200</td>
<td>Peak Cap</td>
</tr>
<tr>
<td>100</td>
<td>Coveralls</td>
</tr>
<tr>
<td>100</td>
<td>Rubber Boots (Pair)</td>
</tr>
<tr>
<td>300</td>
<td>Rubberized Cotton Gloves (Pair)</td>
</tr>
<tr>
<td>300</td>
<td>Plastic Full-Length Apron</td>
</tr>
<tr>
<td>250</td>
<td>Identification Badge (for Dymo Label)</td>
</tr>
<tr>
<td>2,000</td>
<td>Vehicle Pass Sticker (Fluorescent)</td>
</tr>
<tr>
<td>3,000</td>
<td>Linen Tag and Tie</td>
</tr>
<tr>
<td>1,500</td>
<td>10 lb. Plastic Bag (Clear)</td>
</tr>
<tr>
<td>1,500</td>
<td>100 lb. Plastic Bag (Clear)</td>
</tr>
<tr>
<td>100</td>
<td>Metal Pigtail Body Stake</td>
</tr>
<tr>
<td>12</td>
<td>Washbasin (Plastic or Aluminum)</td>
</tr>
<tr>
<td>12</td>
<td>5 gal. Collapsible Water Container (Plastic)</td>
</tr>
<tr>
<td>144</td>
<td>Waterproof Marking Pencil</td>
</tr>
<tr>
<td>50</td>
<td>Form LE78 &quot;Identification Questionnaire for Determining Identity Of A Deceased Person&quot;</td>
</tr>
</tbody>
</table>

---

Note: Disaster Procedures Manual of the Ontario Provincial Police, September 1977, Appendix A.
<table>
<thead>
<tr>
<th>District</th>
<th>Jurisdiction</th>
<th>Detachments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Chatham</td>
<td>Counties of Essex, Lambton and Kent</td>
<td>Chatham, Belle River(M), Blenheim(M), Essex, Forest, Gosfield South Twp.(M), Grand Bend(S), Malden Twp.(M), Merlin, Petrolia, Pelee Island(S), Pinery Park, Ridgetown, Ridgetown(M), Rondeau Provincial Park(S), Sombra, Tecumseh(M), Wallaceburg, Wheatley(M).</td>
</tr>
<tr>
<td>4 Downsview</td>
<td>Regional Municipalities of York, Peel, and part of Durham</td>
<td>Downsview, Brechin, Oak Ridges, Port Credit, Sibbald Point Provincial Park(S), Snelgrove, Whitby.</td>
</tr>
<tr>
<td>5 Mount Forest</td>
<td>Regional Municipality of Waterloo, Counties of Bruce, Grey, Huron, Perth and Wellington</td>
<td>Mount Forest, Exeter, Goderich, Guelph, Kincardine, Kitchener, Lion's Head, Listowel, Markdale, Meaford, Owen Sound, Sauble Beach(S), Seaforth, Sebringville, Tobermory(S), Walkerton, Wiarton, Wingham.</td>
</tr>
<tr>
<td>6 Barrie</td>
<td>Regional Municipality of Muskoka, Counties of Dufferin and Simcoe</td>
<td>Barrie, Alliston, Bala, Bracebridge, Bradford, Elmvale, Huntsville, Midland, Orillia, Shelburne, Stayner, Wasaga Beach.</td>
</tr>
<tr>
<td>7 Peterborough</td>
<td>Part of the Regional Municipality of Durham, Counties of Northumberland, Peterborough, Victoria and Haliburton</td>
<td>Peterborough, Apsley, Brighton, Campbellford, Campbeltown, Cobden, Cobourg, Lindsay, Millbrook, Minden, Newcastle.</td>
</tr>
</tbody>
</table>

(Continued)
No. 11 Long Sault
Regional Municipality of Ottawa-Carleton, Counties of Dundas, Glengarry, Prescott, Russell and Stormont

Long Sault, Casselman, Hawkesbury, Lancaster, Manotick, Maxville, Morrisburg, Ottawa, Rockcliffe Park (M), Rockland, West Carlton, Winchester.

No. 12 North Bay
Territorial Districts of Parry Sound, Nipissing and Timiskaming

North Bay, Burk's Falls, Elk Lake, Englehart, Haileybury, Kirkland Lake, Mattawa, McGarry Twp (M), Parry Sound, Powassan, Still River, Sturgeon Falls, Temagami, Virginiatown.

No. 13 Sudbury
Regional Municipality of Sudbury, Territorial Districts of Sudbury and Manitoulin Island


No. 14 Sault Ste. Marie
Territorial District of Algoma


No. 15 South Porcupine
Territorial District of Cochrane

South Porcupine, Cochrane, Hearst, Iroquois Falls, Kapuskasing, Matheson, Moosonee, Smooth Rock Falls.

No. 16 Thunder Bay
Territorial District of Thunder Bay

Thunder Bay, Armstrong, Beardmore, Geraldton, Kakabeka Falls, Longlac, Manitouwadge, Marathon, Nakina, Nipigon, Schreiber, Shabtakwa, Upsala.

No. 17 Kenora
Territorial Districts of Kenora and Rainy River

Kenora, Atikokan, Central Patricia, Dryden, Ear Falls, Emo, Grassy Narrows, Ignace, Minaki, Nestor Falls, Rainy River, Red Lake, Sioux Lookout, Sioux Narrows, Vermilion Bay, Shoal Lake and Islington sub-detachments.

(S) indicates a summer detachment.
(M) indicates a municipal detachment.

regional mobilization procedures in the event of a large-scale fire requiring widespread participation. These plans are usually prepared at the county level, and one of the county fire chiefs is named Fire Co-ordinator. For each community, a Running Assignment shows which outside fire departments should be called first, second and third, if the responsible fire department requires assistance. Equipment units to be assigned to cover wartime fires and backup coverage are also indicated. Where radio communication is used, all requests for assistance are directed through the Fire Co-ordinator. Where telephone communication is used, the requesting department will place the first help call directly, and successive help calls through the Fire Co-ordinator.

All apparatus and equipment at the disposal of the responsible fire department is also listed for each municipality in the Plan. (See Table SG.5).

The FMO has responded to recent fires involving pesticides and other toxic chemicals, by participating in discussions with the Ontario Ministry of the Environment and Ontario Hydro on ways to improve alerting and handling procedures in these fires. One result has been that Ontario Hydro now advises fire departments of all PCB locations, and labels PCB hazards in a manner similar to nuclear hazards. Thus, radioactive materials, PCB’s and, under the Pesticides Act, wholesaler volumes and locations of pesticides must be registered with fire departments. This still leaves a large quantity of toxic material, locations and flows uncharted, however.

The FMO engages in a great number of preventive, advisory and training activities, including:
- inspection of lightning rods;
- inspection of consumer product fireproofing;
- hotel inspection for compliance with the Hotel Fire Safety Act, 1971;
- advising provincial ministries and agencies on building design and construction;
- providing a 15-week Fire Protection Technology course, at the Ontario Fire College, Gravenhurst;
- providing Regional Fire Training and Regional Fire Prevention courses of one-week duration in various counties and regions throughout the provinces;
- providing basic-skills lectures and training meetings to fire departments.

The main emphasis in the operations of the FMO lies in fire investiga-
tion, where one third (36) of its total staff (112) are occupied.

In conjunction with the Ministry of Northern Affairs, the FMO conducts a program to upgrade fire protection services in Northern Ontario. The program includes providing auxiliary equipment and a pilot study of the effectiveness of smoke-detectors to prevent fire deaths in remote communities.

**Personnel:**

Key individuals involved in responding to a civil fire emergency are Fire Chiefs, County Fire Co-ordinators, the Fire Marshall and his office.

**Publication:**

The FMO carries on a press relations and public information program to publicize effective fire prevention and fire response. General information, fire prevention pamphlets, technical, legal and instructional literature is distributed to houses, schools and businesses through local fire departments which are encouraged to carry out prevention inspection programs.
FIGURE SG.3  EMERGENCY FIRE RESPONSE

(FIRE MARSHALL'S OFFICE)

ADDITIONAL HELP

NEEDED

THIRD BACKUP

SECOND BACKUP

FIRST BACKUP

LOCAL FIRE CHIEF

RESPONSIBLE DEPARTMENT

ALARM

Inter-County or Province-Wide Response

Fourth Response

Third Response

Second Response

First Response

HELP CALLS

tele: phone only
The FMO inherited some communications equipment from the Emergency Measures Branch. Since the demise of EMB, the FMO maintains the province-wide common county radio frequency at 154.07 MHz.

Figure SG3 sets out the communication sequence in an escalating response.

**Storage:**

FMO maintains a computerized fire statistical system, recording fires, fire deaths, injuries, fire loss cause and method of extinguishment in Ontario. The system provides each municipal department with a daily report of monthly and cumulative fire statistics. Detailed statistical relationships may be obtained on request. Very little analysis of these data is carried out, however. Efforts are being made to produce a standard fire data system across Canada.

Consumer product fire-testing laboratories report results to the FMO for approval prior to listing and labelling of products.

**Resources and Capabilities:**

Resources of each fire department are set out in the Emergency Service Plans (see Table SG.5). The FMO has three fire trucks from the Ontario Firefighting College, Gravenhurst. Laboratories at the College conduct consumer product fire tests when these are not done by private testing facilities.

The joint FMO - Ministry of Northern Affairs program to upgrade fire protection services in unorganized communities (N. Ontario) now has vehicles and auxiliary equipment at its disposal.
### TABLE SG.5  EXAMPLE OF FIRE DEPARTMENT RESOURCES

#### RUNNING ASSIGNMENT

**Fire Department**: ALMONTE (TOWN)  
**Location**: ALMONTE  
**Tone Signal Key**: RADIO C/S XJK 368

<table>
<thead>
<tr>
<th>First Help Call</th>
<th>TONE SIGNAL KEY</th>
<th>PHONE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARLETON PLACE</td>
<td>XJJ 948</td>
<td>257-1144</td>
</tr>
<tr>
<td>Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cover**: NOT REQUIRED

<table>
<thead>
<tr>
<th>Second Help Call</th>
<th>TONE SIGNAL KEY</th>
<th>PHONE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>BECKWITH TWP. (BLACK'S CORNERS)</td>
<td>XJJ 932</td>
<td>257-2222</td>
</tr>
<tr>
<td>Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LANARK VILLAGE (OR)</td>
<td>XJJ 932</td>
<td>259-2232</td>
</tr>
<tr>
<td>SMITHS FALLS COVERS</td>
<td>XJJ 932</td>
<td>283-1234</td>
</tr>
<tr>
<td>BECKWITH TWP. (BLACK'S CORNERS)</td>
<td>XJJ 932</td>
<td>283-1234</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Help Call</th>
<th>TONE SIGNAL KEY</th>
<th>PHONE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAKENHAM TWP. (PAKENHAM)</td>
<td>XJJ 932</td>
<td>624-5221</td>
</tr>
<tr>
<td>Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEST CARLETON TWP. (KINBURN)</td>
<td>XJK 351</td>
<td>839-2121</td>
</tr>
</tbody>
</table>

### EMERGENCY FIRE SERVICE ASSIGNMENT (WARTIME)

<table>
<thead>
<tr>
<th>Pumpers Assigned</th>
<th>TONE SIGNAL KEY</th>
<th>PHONE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITS 50 &amp; 51</td>
<td>XJK 368</td>
<td>256-1234</td>
</tr>
<tr>
<td>Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOT REQUIRED</td>
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</tr>
</tbody>
</table>

CONTINUED
<table>
<thead>
<tr>
<th>CALL SIGNS</th>
<th>SELF PROP. PUMPERS</th>
<th>HOSE</th>
<th>LADDERS</th>
<th>OTHER APPARATUS AND EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALMONTE UNIT 1</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>182'</td>
</tr>
<tr>
<td>ALMONTE UNIT 10</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>ALMONTE UNIT 20</td>
<td>1 - 200</td>
<td>1200'</td>
<td>400'</td>
<td>36'</td>
</tr>
<tr>
<td>ALMONTE UNIT 50</td>
<td>1 - 1050</td>
<td>350'</td>
<td>2000'</td>
<td>400'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALMONTE UNIT 51</td>
<td>1 - 625</td>
<td>600</td>
<td>1800'</td>
<td>850'</td>
</tr>
<tr>
<td>ALMONTE UNIT 52</td>
<td>1 - 420</td>
<td>90</td>
<td>550'</td>
<td>---</td>
</tr>
</tbody>
</table>

Source: Lanark County Emergency Fire Service Plan, pp. 5-6.
C. Chief Coroner's Office (CCO)

Policy and Programs:

The Chief Coroner, with the assistance of a Deputy and eight Regional Coroners, supervises, directs and assists the 380 Coroners who are located throughout the Province. All Coroners are practicing physicians and work on a fee-for-service basis.

Coroners become involved in any emergency situation or disaster whenever a death has occurred. The Coroner's responsibility is to ensure that a complete investigation of the circumstances surrounding each death is carried out in order to determine the identity and when, where, how and by what means the deceased person came to his or her death. Another important objective of the investigation is to determine whether deaths under similar circumstances can be prevented.

The Investigating Coroner may make recommendations to the Chief Coroner, or determine that an inquest is warranted. When an inquest is held a Jury of five representatives from the community have an opportunity to answer the necessary questions and make Recommendations to prevent similar deaths. One of the Chief Coroner's duties is to bring these Recommendations to the attention of appropriate persons, agencies, and ministries of government.

Since every death constitutes a disaster or emergency situation for someone, similar investigative procedures are followed in every case. When multiple fatalities occur or there are complications, the local Coroner may be assisted by the Regional Coroner and/or officials from the Chief Coroner's Office.
Key Personnel:

The Coroner System consists of a Chief Coroner, Deputy Chief Coroner, Regional Coroners for eight regions and 380 part-time local Coroners. The Deputy Chief Coroner represents the System at meetings of the Lead Ministry Co-ordinating Committee. All medico-legal autopsies are performed under a Coroner's Warrant by approximately 200 hospital pathologists and one full-time Forensic Pathologist.

Communication:

When a fatality occurs the local Coroner is notified by the municipal or provincial police force or by hospital personnel. The Chief Coroner is advised of the more unusual (or exceptional) fatalities (as defined in the Coroner's Act), either by the local Coroner or the police agency involved.

The news media obtain information regarding deaths under investigation from either the local Coroner or the Chief Coroner's Office. The Chief Coroner's Office maintains communications with other ministries at all levels of government, medical and hospital associations, industrial/construction and automobile safety organizations, and the news media, in its endeavour to discover hazardous situations to life and to alert the public.

Co-operative studies are carried out with other Ministries, Agencies, and professionals, on such things as drug involvement in motor vehicle fatalities, suicides, anaesthetic deaths, occupational diseases and the effects of mercury on the health of Native People in Northwestern Ontario.
FIGURE 5G.4  ONTARIO CORONERS SYSTEM COMMUNICATION LINKS

ONTARIO PROVINCIAL POLICE

MIN. OF HEALTH
MIN. OF LABOUR
ONT. MEDICAL
ASSOCIATION
TRAFFIC INJURY
RESEARCH FDN.
FUNERAL ASSOC'NS.
QUEEN'S PARK
PRESS

CHIEF CORONER'S OFFICE

PATHOLOGISTS

REGIONAL & LOCAL CORONERS

PRESS & PUBLIC

CORONER'S JURY

fatality

report

assist

fatality

autopsies
Monitoring:

The Chief Coroner maintains files on all reportable deaths in the Province. The files contain investigative reports from Coroners, pathologists, police and regulatory agencies (Ministry of Labour, Transport Canada, Ontario Hydro, etc.). Each death is coded as to type (accident, suicide, homicide, natural), environment, cause and contributing causes, involvements and other categories found to be important. These files are open to bona fide researchers at the discretion of the Chief Coroner.

Resources & Capabilities:

In anticipation of disaster situations, the CCO has stockpiled equipment for handling cadavers in Toronto and Sault Ste. Marie.
Introduction:

The Ministry of Agriculture and Food is NOT designated a lead ministry for purposes of emergency response. According to Ministry representatives, however, this ministry does take a lead role on behalf of the province in response to crop disasters and drought. The Ministry also provides support to other government agencies in emergency response. There is no administrative or legal definition of an "emergency" at present being used in the Ministry. Rather, the Ministry relies on its network of 54 Agricultural Representatives and district offices throughout the province to bring to its attention any major problems. Response, such as seeding of clouds, is on an ad hoc basis.

History:

Examples of such response are:

(i) Cost of hay transportation for cattle feed was supplemented during the N/W Ontario drought in the summers of 1976 and 1977. Farmers wishing to establish new water sources were also subsidized.

(ii) Storm damage assistance, for damage to greenhouses, greater than $1000.00, was offered to operators suffering damage in the storms of November 1977 and January 1978. Assistance, in the form of a refund on loan interest for two years (100% in the first year, 50% in the second year) was first offered by the Federal government and agreed to by the Provincial government on a 50/50 cost-sharing basis.

Such subsidies are made under the authority vested in the Minister of Agriculture and Food by the Act Establishing the Ministry of Agriculture and Food.
Policy and Programmes:

There is a "general policy" that if a natural event (e.g. tornado) affects one or several families, the provincial government will match any relief funds raised by local people (this is part of the Disaster Relief programme - see section on ICA). Where producers without crop insurance suffer severe losses and are threatened with bankruptcy, the ministry may offer assistance in the form of guaranteed loans and partial interest refunds.

The Crop Insurance Act, 1966, offers insurance to producers against the natural hazards of hail, wind, frost, flood, drought, insect infestation and disease as well as other perils specific to certain crops. The insurance scheme includes a production guarantee, reseeding benefit and preplant insurance coverage. The Federal Government pays 50% of the premium costs and the Provincial Government covers all administrative costs of the program. In the 1977 crop year, approximately 1.5 million acres (18%) of an approximate total 8.5 million acres fruit, vegetable and grain crops in Ontario were insured.

The Farm Income Stabilization Act 1976 provides protection against large market fluctuations, ensuring the participating producer a crop or product price based on the mean price over the previous five years. Together with the Agricultural Stabilization Act (Canada R.S.C. 1970), farmers enrolled in this plan will be assured of receiving 95% of the base price for designated products. For each dollar contributed by participating producers, the Province contributes $2 to the plan. One of the most recent examples of the operation of this program is how it has stabilized beef production in Ontario despite wide market fluctuations.

Through its Extension Branch, the Ministry provides field specialists to advise farmers on best technology for improved production. Pesticides
experts are also available to advise producers. The Ministry maintains active liaison and co-operation with the Federal Department of Agriculture and Guelph University. There has been no change in emergency-related policies or programs since the advent of the lead ministry concept in December, 1975. The Ministry assists Ontario Hydro and the Ministry of Labour with planning around nuclear sites, particularly with respect to effects of radiation on crops (see relevant sections, this report).

There are no standing groups or committees in the Ministry dealing specifically with emergency preparedness.

Key Personnel:

The Ministry relies heavily on its Agricultural Representatives, Field Staff of all branches and Area Co-ordinators to communicate with producers and other government agencies in the field (Figures MAF 1,2). Area Co-ordinators liaise directly with the directors of branches providing emergency assistance related services: Extension Branch, Crop Insurance Commission, Livestock Branch, Soils and Crops Branch, and the Pesticide Residue Testing Laboratory.

Communication:

The Information Services Branch prepares press releases on an ad hoc basis as required. Branch directors have direct communication with 54 county and district offices via telephone and telex. In event of communication disruption, assistance from other provincial agencies with emergency communications equipment is "assumed". All county and district offices have a current listing of producers in their area according to product.

Also, the ministry has an opportunity to air essential information on the C.B.C. noon farm broadcasts. Some offices provide similar daily or weekly taped messages to local radio stations.
<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>AREA CODE</th>
<th>PHONE NUMBER</th>
<th>DIRECT LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.J. Hagarty (Jack)</td>
<td>413 Hibernia St. Stratford, Ontario - N5A 5W2</td>
<td>519</td>
<td>271-0280</td>
<td>849</td>
</tr>
<tr>
<td></td>
<td>Box 39-1700, Univ. of Guelph Guelph, Ontario - N1G 2W1</td>
<td>519</td>
<td>824-4120 Ext. 2764</td>
<td>816</td>
</tr>
<tr>
<td></td>
<td>Perth, Huron, Oxford Waterloo, Wellington</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R.F. Heard (Dick)</td>
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<td>Box 488, Winchester, Ont. KOC 2K0</td>
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<td>D.H. Miles (Doug)</td>
<td>O.M.A.F., 8th, 1200 Bay St. Toronto, Ontario - M7A 1B2</td>
<td>416</td>
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<td>267-1063</td>
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<td>M.J. Paulhus (Marcel)</td>
<td>222 McIntyre St., West North Bay, Ontario - P1B 2Y8</td>
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<td>Nipissing, Algoma, Cochrane N., Cochrane S., Kenora, Muskoka &amp; Parry Sound, Manioutin, Rainy River, Sudbury, Temiskaming, Thunder Bay</td>
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<td>J.J. Rose (Dan)</td>
<td>181 Toronto St., South Markdale, Ontario - N0C 1HU</td>
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In the event of an emergency, the local Agricultural Representative would initially assess the situation to determine if there is cause for this ministry to take action. Decisions by the Minister or senior staff would be based on the Agricultural Representative's reports.

**Monitoring:**

The Soils and Crops Branch carries on a pest monitoring program with the cooperation of farmers with orchards, and makes appropriate spraying recommendations. This information along with weather and crop disease information is conveyed to producers via a system of 11 code-a-phones (Table MAF.3). The ministry received temperature, precipitation and weather forecast information from Atmospheric Environment Services, but does not really analyse these data. Because of the great variability in soil types and therefore soil moisture retention, ministry officials rely heavily on the assessment of conditions by local individuals (Ag. Reps.).

**Resources and Capabilities:**

All ministry resources (primarily laboratory facilities) of use in emergency situations are located at the Pesticides laboratory, the Horticultural Research institute and the Colleges of Agriculture in Kemptville, Ridgetown, New Liskeard and Centralia.
Farmweather Forecast is Broadcast in detail on CFRB Radio at 8:25 AM and 5:25 PM daily
Also Gordon Sinclair uses a lot of it in his noon broadcast.

<table>
<thead>
<tr>
<th>Ontario</th>
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<tbody>
<tr>
<td>Ministry of Agriculture and Food Information Branch</td>
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<td>June 5/78</td>
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Since discontinuing our taped Farm Weather forecasts from Market Information Service (because of lack of use by radio stations) we are now transmitting the Farm Weather forecast to thirteen (13) of eighteen (18) locations on our T.W.X. network. This farm forecast will be used by Ministry staff in the field and put on code-a-phones for farmers to use at the various locations listed below:

<table>
<thead>
<tr>
<th>Soil and Crops Code-A-Phones - Seasonal</th>
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<tbody>
<tr>
<td>OMAF Office - County</td>
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<tr>
<td>Harrow-Essex</td>
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<td>Vineland-Niagara</td>
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<td>Smithfield-Northumberland</td>
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<td>Seasonal Only - Apr - Sept.</td>
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</table>
Introduction:

On October 26, 1977, the Minister of Energy was designated a member of the Emergency Planning Committee of Cabinet by Order in Council 2986/77. Specific responsibilities for provincial emergency response were not set out in the Order-in-Council, but Ontario Hydro has been designated the Ministry's representative at the working level inter-ministerial Lead Ministry Co-ordinating Committee. Ontario Hydro's Director, Distribution Systems Division, represents the utility on this committee.

Ontario Hydro responds in an emergency manner to all service disruptions of its own electricity delivery system, as well as to requests for recommending to the Energy Minister that an emergency be declared. The role of Ontario Hydro in emergency situations is perceived by the utility to be one of maintaining electric power supply in the affected area in accordance with established priorities (see below). Separate emergency plans for each nuclear facility are established (not reported upon here), which set out special responsibilities of Ontario Hydro in such an event. (See section on Ministry of Labour, this report).

History:

Ontario Hydro does not consider that it has any operational experience with the lead ministry concept; that is, the utility has not acted in the capacity of a lead agency in directing a provincial emergency response. It has, however, responded to several emergencies in recent years. Since the inception of the lead ministry concept,
the most severe emergency situation affecting power lines occurred as a result of storm damage in Southwestern Ontario on the weekend of March 5, 1976. Damage experienced by Ontario Hydro amounted to some $4 million and a further $2-3 million dollars damage was incurred by municipal utilities' distribution systems. The supply line to Grand Bend was affected, which imperilled the water supply for the City of London, which is pumped via pipeline from that Lake Huron community. Significant damage to fruit trees in the area was also reported.

The Niagara snowstorm (January 1977) presented a more localized problem for Ontario Hydro. Although not many supply lines came down, there was considerable difficulty experienced in getting to broken lines. To overcome this handicap, Ontario Hydro used double-truck convoys, snowmobiles and helicopters to reach the lines, and co-ordinated its activities with municipal ploughing operations to open roads where lines were down. The utility has not, to date, needed outside assistance in handling service interruptions in its bulk power generation (230 kV and up) and transmission system. When 24 towers were toppled along Hwy. 401 (Winter, 1977), an emergency replacement line (230 kV) was in place within seven days.

Ontario Hydro also operates a considerable number of hydraulic generating stations throughout the province. During the drought in Northwestern Ontario (summer 1977), the utility worked closely with the Ministry of the Environment to operate dams in such a way as to maximize water supply availability in the area. As a result of the downtown Toronto fire (Spring, 1978) in which a transformer containing PCBs was burned, Ontario Hydro, in consultation with the Ontario Fire Marshall's Office and the Ontario Ministry of the Environment,
revised its policy on identification of PCB sites and PCB fire response procedures. New procedures are set out in instructions (on file).

Policy and Programmes:

Ontario Hydro is currently (July 1978) in the process of reorganizing into what is known as a Matrix Organization, which complicates somewhat the delineation of policies, responsibilities of personnel and communications linkages. The following description is based on current practice which may be revised as reorganization progresses.

There are two key elements of Ontario Hydro's policy on response to emergency hazards causing power supply disruptions. First, the utility designs into its system a redundancy factor and line isolation capability so that a damaged line or area system can be isolated, the remaining provincial grid stabilized, and power supply to the affected area delivered via alternate transmission routings so that interruptions may be avoided, or at least minimized. Secondly, there is a policy of repair priorities working from major lines down. Higher voltage and greater load lines receive priority over lines of lower voltage and load. As a result, urban and industrial centres will normally receive priority over rural, lower density areas.

Response to a storm will depend on its severity and geographic coverage. As soon as a threat to the integrity of the system is recognized due to icing or high winds, the Regional Director for the affected region will assemble an emergency group in the regional control centre to direct response operations. This group may include the Operation Distribution Manager, a Lines Supervisor and Engineer and a public information
officer. Where major damage occurs, members of the Transmission Lines and Distribution Operations Departments also enter a control group in Head Office. It is the responsibility of Regional and Area staff to assess the nature and extent of any damage and transmit this information to the personnel in the Control Centre at Head Office.

Where damage occurs which is beyond the capability of a Region to repair within 48 hours, or which affects several Regions simultaneously, the Head Office Control Centre becomes the recovery co-ordinating agency. It is a head office responsibility to co-ordinate movement of personnel and equipment among Regions, determine commitment of construction forces and procure repair materials in accordance with priorities established by System and Distribution requirements. In the event of a power shortage due to massive transmission or generation failures, a public appeal for reduction in the use of electricity would be issued, and a predetermined system of rotating cuts and/or load reductions would be implemented.

Ontario Hydro regions also co-ordinate information from the various municipal utilities within their region in terms of manpower, equipment and material available in order to recover from disasters. Inter-utility assistance and assistance provided by Ontario Hydro to Utilities is operated on a free-for-service basis.

Documentation of emergency response policy is reported in:
- memorandum of operations practice on "Procedure in Connection with Ice Storms, Wind Storms or Other Major Disturbances Affecting Lines", June 1978, 5 pages
- Duty Officers' Instructions
- Instructions on procedures related to PCB labelling and fire hazard, February 1978
- Region Emergency Response Plans.

**Key Personnel:**

Although there is no standing committee on emergency procedures within Ontario Hydro, or the Ministry of Energy, Branch Managers, Regional Managers and Head Office functional Managers (Nuclear, Thermal, Hydraulic & Transmission, Power Systems) meet regularly three times per year. The General Manager of the Association of Municipal Electrical Utilities (AMEU 350 members) also attends these meetings, and it is here where any difficulties associated with emergency response can be raised and discussed. At the meeting in July 1978, AMEU asked Regions to review their response plans, using the Southwestern Region's (London) plan as a standard. This committee appears to be the senior policy development group concerned with emergency response planning.

Key operational personnel identified as having a role in response are as follows:

**Regional Director:** - Directs the preparation of a Regional emergency response plan. Requests assistance to or from neighbouring Regions, with concurrence of the Manager of Transmission Lines in the case of the Bulk Powers System; or the manager of Distributive Operations in the case of lines under 50 Kv.
Operations Manager (Region):- Responsible for all bulk power transmission and transformer facilities (50kV) in the Region. Convenes emergency response group together with Distribution Manager to co-ordinate response from Regional Control Centre.

Distribution Manager (Region):- Responsible for all transmission and transformer facilities less that 50 kV, including rural systems and supply lines to municipalities. Participates in emergency response group, and shares responsibility with Operations Manager for informing Head Office, Manager of Transmission Lines, of status of emergency.

Senior Meteorologist & Staff (Power Systems, Head Office):- Responsible for 24-hour weather monitoring and advice to Regions and Manager of Transmission Lines.

Manager of Transmission Lines and Manager of Distribution Operations (Head Office):- Jointly responsible for alerting work forces in other Regions and in Lines & Stations Construction Department that assistance may be needed in an affected area. Consults with Manager, Operating Hydraulic & Transmission and with Manager Power System Operations as to restoration priorities. Directs repair activity and work force movements at inter-regional and provincial level. Establishes emergency co-ordinating centre at Head Office, when necessary.

Duty Officer, Communications Services: Responsible for alerting senior Hydro executives of emergencies, and for directing all response to media enquiries by the Communications Service Department.
Communication:

The lines of communication during a storm emergency among the key personnel listed above, are set out in figure 0H.1. It was also reported that information about lines down frequently is received from members of the public. For this purpose, and for information service to the public and press, Ontario Hydro maintains 24-hour telephone access.

Key operations personnel are on an on-call roster linked by a bellboy system and senior personnel and duty officers have emergency telephones in their offices and homes. The local control centres, seven regional control centres (see Table OH.1), system control centre and a Head Office Control Centre are linked by telephone and radio communication systems. Control centres are linked to the utility's fleet of trucks via a 24-frequency radio system. Operating control centres are staffed by crews on a 24-hour basis.

Other than to suggest back-up power supply systems to farmers, individuals and institutions with critical power needs, Ontario Hydro does not conduct any information programs to educate the public on emergency response and preparedness.

Monitoring:

A meteorology and hydrology group, located within the Power System Operations Department, monitors and interprets hydrometeorological data collected from the operating centres on a 24-hour basis. River flow prediction and storm tracking analyses are transmitted to the System Control Centre (Richview) and passed on to Regions from there.

Recently, a policy was instituted to inventory all PCB-containing materials and their location.
FIGURE OH.1 ONTARIO HYDRO STORM EMERGENCY COMMUNICATION FLOWS
Regional Storm Control Centre

Line MTC - Department - Head Office
May be via LMD or at Regional Storm Control Centre. Requests for manpower and transport & equipment assistance (incl. helicopters from outside the region).

Municipal Utilities

Area Co-ordinator
Damage Information - Crew & Equipment Requirements

T.S. Operators

Operating Representative - Priorities & Restoration Status

Communications Co-ordinator
P.B.C. Representative - Frequency Conversion & Radio Repair

Special Technical Assignments
Q. Lines Supervisor - Technician - Team

Maps Draftsman

Miscellaneous Duties as Req'd

Regional Co-ordinator
Assigns crews & equipment and delegates work as shown

Incoming Crews
Lines technician checking-in crews, obtaining crew data, etc.

Consumer Service Representative
Arranging assistance for municipal utilities

Clerical
Arranging accommodation for incoming crews, arranging for food & coffee, clerical duties, etc.

Information Recording
Listing area requirements, incoming crews on blackboard, etc.

Material
Material unit report to lines technician

Area Material Group
Stockkeeper/group supervisor

Central Stores

Other Areas

Source: Ontario Hydro Western Region Emergency Procedures Plan.
Resources & Capabilities

Ontario Hydro has perhaps the largest fleet of trucks, generators, helicopters, snowmobiles and specialized heavy-equipment in Ontario. All equipment is listed in computer data banks for accounting purposes, but lists are not readily available or suitable for location referencing of equipment. Such information can only be obtained from region and area offices. Included in its physical resource capability are seven helicopters, two stationed at North Bay and the remaining five at Malton. Two of these helicopters are large Sikorskys, capable of lifting large pre-assembled sections of EHV transmission towers.

As already noted, there is no procedure for determining Municipal Utility capabilities. Assistance to Municipal Utilities is provided on a fee-for-service basis upon request.
Introduction:

The Ministry of the Environment takes the lead in responding to events of air, land and water pollution, as well as providing support services to other lead agencies. Order in Council, 487/75 dated May 28, 1975, designates this Ministry as responsible for co-ordinating the Ontario Government response to "spills of chemicals, oil or other contaminants or toxic agents; gas or oil pipeline breaks". Although there is no legislation defining what a provincial emergency or disaster is, it is generally considered to be a situation where a municipality has expended all its combative resources and requires provincial assistance.

History:

The Minister of the Environment has never declared an emergency, nor has there been an official invocation of the Province of Ontario Contingency Plan for Spills of Oil and Other Hazardous Materials (on file) since December 1975. The last time this plan was invoked was apparently in December 1972. The Ministry's normal workload of approximately 600 spills annually is handled under the provisions of the Environmental Protection Act 1970, the Ontario Water Resources Act 1961, and the Pesticides Act.

When the International Joint US/Canada Marine Pollution Contingency plan was invoked on June 23, 1976, the Ministry of the Environment acted as a support agency. This call was in response to the spill of 300,000 gallons of bunker C resulting from the grounding of a barge (NEPCO) near Alexandria Bay and the Ivey Lee Bridge. Another example of MOE response was demonstrated during the Oakville Pesticides Warehouse Fire in April, 1978. The ministry collected air samples for analysis. When the following morning smoke from the smouldering ruins was moving laterally, trapped close to the ground, the
ministry advised people to leave the area. The Ministry of Labour and the Medical Officer of Health were contacted and advised of potential dangers. Late in the afternoon, the Medical Officer of Health ordered the area evacuated.

The first Air Pollution Index monitoring program operated by MOE went into effect in Toronto on March 23, 1970. Since then API programs have been established in Hamilton, Sudbury, Windsor, Welland, Niagara Falls, New Sudbury, Coniston, and most recently in January 1978 in Sarnia.

Policy and Programmes:

There was no substantive change in ministry policy or programmes resulting from the demise of the Emergency Measures Branch. References to the EMB were simply deleted from the Contingency Plan. Changes in communications procedures are discussed below. To date, the Contingency Plan has been interpreted to deal only with spills, and not with fires or other atmospheric releases. Also, a fire has never been interpreted as a "release" reportable under Sections 14 and 15 of the Environmental Protection Act 1970.

While this Ministry does accept some responsibility for environmental health concerns, it maintains that primary responsibility for environmental health rests with local health officials. Together with the Ministry of Labour, MOE acts as a support agency for local health authorities. The Ministry also supports the Canadian Coast Guard which annually investigates about 80 marine-related spill incidents primarily on the Great Lakes, the Federal Department of Fisheries and the Environment which annually investigates some 50 spill incidents involving strictly federal facilities in Ontario and the Ontario Ministry of Consumer and Commercial Relations - Energy Safety Branch, which each year investigates about 150 incidents dealing with potential safety hazards of petroleum products at commercial and retail gasoline and fuel oil facilities in Ontario. Each of these agencies may call upon MOE for assistance.
in responding to spills.

It is Provincial Government policy that those who had control of a pollutant immediately prior to its release to the natural environment are responsible for clean-up, containment and all associated costs.

The Environmental Protection Act, 1971 (Part II) requires all polluting spills to be immediately reported to the ministry, and empowers the Minister to order the polluter to repair the damage. New legislation strengthening the Environment Minister's powers to ensure polluter payment of costs incurred by regulatory agencies engaged in spill clean-up is pending. Government contingency plans are intended to augment private response capability in major spill incidents, to provide a response to mystery spills and to take over where the responsible parties default.

Figure MOE.1 sets out the interrelation of spill response mechanisms in Ontario. Each level of response jurisdiction has the flexibility to draw upon the collective response capability of preceding levels. Agencies to the right of point "B" also have in their contingency plans, provisions to draw upon resources of subsequent response levels. Participants in and signatories to the Provincial Contingency Plan are the Federal Department of the Environment, the Federal Department of Transport, and the Provincial Ministries of Environment, Natural Resources, Transportation and Communications, Health, Solicitor General, and Consumer and Commercial Relations.

The Ontario Petroleum Association has developed 18 oil spill co-operatives throughout the province which have purchased significant amounts of clean-up equipment and supplies. Four additional co-operatives have been formed: the Hamilton Spill Control Group with 18 members representing a variety of industries, the Lambton Industrial Society comprised of 17 members in the petrochemical industry, as well as the Kingston Environmental Protection Association and the Welland Spill Control Group. Also, the Canadian Chemical Producers Association provides advice to those at the scene of transportation emergencies.
involving chemicals, through its Transportation Emergency Assistance Plan (Table MOE.1).

The Ministry of the Environment also assists larger municipalities and regions in the preparation of their emergency plans, particularly where spills and pipeline breaks are involved. MOE is a participant in the Joint Canada-United States Marine Pollution Contingency Plan for Spills of Oil and Other Noxious Substances. The ministry reviews industry and municipal contingency plans, but does not conduct any systematic audits thereof.

The ministry does not have any power to evacuate an area in situations where an environmental contaminant threatens life or property. Under such circumstances, three possible actions are open to the Minister and his officers:

i) the Medical Officer of Health can be requested to evacuate the area;

ii) clean-up of the contaminant can be initiated, if necessary through invoking the Provincial Contingency Plan;

iii) a Stop Order can be issued under Section 7 of the Environmental Protection Act. Such an order would require a polluter to cease all activities causing or contributing to the environmental deterioration.

MOE is also responsible for implementing Ontario's air quality management policy, which is based on a complex series of standards, criteria and guidelines designed to protect human health, vegetation and property. An air monitoring network comprised of about 1400 air quality and meteorological instruments is operated by the MOE in about 100 areas. As part of its air management program, MOE has developed an Air Pollution Index and Alert system pursuant to Regulation 15 made under the Environmental Protection Act. The Index is computed on the basis of SO₂ concentrations and coefficient of Haze (suspended particulates) readings obtained in the major cities and industrialized centres of the Province. The alert system functions at four levels: 32 (advisory level); 50 (first alert), 75 (second alert) and 100 (air pollution episode threshold)
General Information

The RCC Technical Advisers are all management and/or technical personnel of chemical manufacturers. As such, they have had extensive experience in the safety aspects of chemicals as well as in handling emergency situations.

All Technical Advisers are provided with extensive technical reference materials, as well as information on the name, location and telephone number of all Canadian chemical manufacturers.

Many of the CCPA member companies have an emergency assistance plan designed for their own products. Notification from TEAP activates these plans.

Co-operative arrangements have been made with other emergency assistance plans to provide specialized assistance. Such arrangements have been made with the Chlorine Institute, the Canadian Agricultural Chemicals Association, the Propane Gas Association, and in the U.S.A. — "CHEMTREC".

In the U.S.A., the Manufacturing Chemists Association provides, through their operation of "CHEMTREC", a 24-hour-per-day emergency information and communication service.

Background

CCPA is a trade association of chemical manufacturers, large and small, representing more than 90% of the production capacity for basic industrial chemicals in Canada. It has been active in programmes to improve the safety of chemicals during shipping. Despite precautions taken, train derailments, truck upsets and collisions occur. Such emergencies must be handled well to minimize the consequences to life and property. Emergency services—fire and police—are normally well prepared to cope with common materials, including certain flammables such as fuel oil and gasoline. Often they are at a disadvantage when chemicals are encountered, specially since "what should be done"—and of equal importance, "what should not be done"—in the early stages may bear so heavily on the outcome. Emergency services need accurate and understandable information to help them evaluate hazardous situations and act with proper precautions for their own safety, as well as for the protection of the general public.

In the case of chemical products, this information can best be provided by experienced personnel from the chemical producers.
**What It Is**

TEAP is the Transportation Emergency Assistance Plan operated as a public service by the Canadian Chemical Producers’ Association through the co-operation of the member companies who operate the Regional Control Centres (RCC’s).

TEAP provides immediate advice to those at the scene of a transportation emergency, then contacts the shipper of the chemical involved for their more detailed assistance and follow-up. If the shipper cannot be contacted, on-scene assistance may be provided from the RCC.

TEAP provides complete coverage 24 hours per day, 7 days per week, at the RCC’s operated by the following companies:

<table>
<thead>
<tr>
<th>Company</th>
<th>RCC Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allied Chemical Canada Limited</td>
<td>Valleyfield, Quebec 514-373-8330</td>
</tr>
<tr>
<td>Canadian Industries Limited</td>
<td>Copper Cliff, Ontario 705-682-2881</td>
</tr>
<tr>
<td>Celanese Canada Limited</td>
<td>Edmonton, Alberta 403-477-8339</td>
</tr>
<tr>
<td>Cyanamid of Canada Limited</td>
<td>Niagara Falls, Ontario 416-356-8310</td>
</tr>
<tr>
<td>Dow Chemical of Canada Limited</td>
<td>Sarnia, Ontario 519-333-3711</td>
</tr>
<tr>
<td>Du Pont of Canada Limited</td>
<td>Maitland, Ontario 613-348-3616</td>
</tr>
<tr>
<td>Gulf Oil Canada Limited</td>
<td>Shawinigan, Quebec 819-537-1123</td>
</tr>
<tr>
<td>Hooker Chemicals Division</td>
<td>Vancouver, B.C. 604-929-3441</td>
</tr>
</tbody>
</table>

**What It Is Not**

Because chemicals find so many uses and have such a wide range of characteristics, there is much need for information about them—composition and purity, physical and chemical properties, effects on people and the environment, sources of supply, etc. It is important to understand that TEAP is not intended and is not equipped to function as a general information source. By design it is confined to dealing with chemical transportation emergencies.

**Operation**

Information about TEAP and the listing of the emergency numbers has been widely distributed to emergency service personnel, carriers, and to the chemical industry. Information has also been circulated in bulletins of government agencies as well as other associations. TEAP is an integral part of a number of government contingency plans dealing with hazardous materials.

A person phoning one of these emergency numbers should preface the message by the statement, “This is a transportation emergency.” The call-receiver at the RCC will record basic information on the emergency, obtain a call-back phone number and request that the call-back phone be attended until all emergency communications are complete. The call-receiver will notify one of the RCC Technical Advisers who will immediately respond to the original caller and obtain as much information as possible, e.g. the exact location of the emergency; the nature and status of the emergency—spill, fire, fumes, etc.; the name of the carrier; the name of the chemical involved and the name of the shipper, manufacturer or receiver.

If the field situation at the accident scene is urgent, the RCC Technical Adviser will provide preliminary information based on standard references for the protection of personnel and property.

The RCC Technical Adviser will communicate with the manufacturer or shipper of the chemical involved, briefing him on the emergency situation and request the manufacturer to have his expert call immediately to the authorities at the scene, using the call-back phone number. Through this means technical advice is provided rapidly.

If direct contact cannot be made with the manufacturer or shipper, the RCC Technical Adviser will contact other manufacturers or users of that chemical to obtain expert assistance. If none of these is available, the RCC Technical Adviser will himself take action to provide additional technical assistance by telephone or at the scene. In addition, the RCC may be able to arrange emergency assistance in the form of trained men and special equipment.

After the emergency report has been turned over to the manufacturer or shipper, the RCC Technical Adviser will check back with the authorities at the emergency scene to confirm that direct communications have been established between them and the chemical producer’s representative. Having established this, he will cease active involvement in the emergency unless later requested to provide supplementary assistance.
level). At an API reading of 32, if meteorological forecasts indicate poor
dispersion conditions are to continue for at least six hours, operators of
major air contaminant emitters are requested to cut back emissions. At 50
or more, these operators may be ordered to curtail operations. At 100, the
Minister of the Environment can order all operations contributing to air
pollution not essential to public health or safety to close down. Where air
pollution discharges create immediate and serious dangers to public health,
the appropriate Regional Director of the Ministry of the Environment can,
under Section 7 of the Environmental Protection Act, order an immediate stop
to the responsible operations.

Key Personnel:

Mr. Garnett Kay, Supervisor of the Contingency Planning Section,
Ministry of the Environment, is chairman of the inter-ministerial Ontario
Task Force on Contingency Planning. This task force has not met for some two
years (see Table MOE.2). Mr. Kay is also the ministry's representa-
tive on the Lead Ministry Co-ordinating Committee.

There are 21 Response Teams throughout the province. Each is headed by an
On-Scene-Co-ordinator from the Ministry of the Environment located in district
and regional offices (see Figure MOE.2) and usually includes a representative from
each of the signatory agencies participating in the plan (see Annex II of
the Contingency Plan). Mr. P. Belling, MOE Contingency Planning Officer, is the
chairman of all Response Teams. Response Teams are listed in Annex II of
the Contingency Plan. 

District engineering officers located in MOE District Offices (see Fig.MOE.2)
are responsible for advising major industrial air contaminant emitters in their
district of cut-back requirements when API levels warrant such action.

Regional Directors are responsible for issuing Stop Orders.
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. G.H. Kay</td>
<td>Supervisor, Contingency Planning Section</td>
<td>1201 Wilson Avenue, Downsview, Ontario</td>
</tr>
<tr>
<td>Mr. G.R.H. Fern</td>
<td>Assistant Environmental Protection Co-Ordinator</td>
<td>95 St. Clair Avenue, W., Toronto, Ontario</td>
</tr>
<tr>
<td>Capt. C.J. Beckett</td>
<td>Regional Marine Emergency Officer</td>
<td>Toronto Star Building, 1 Yonge Street (20), Toronto, Ontario</td>
</tr>
<tr>
<td>Mr. P.G. Belling</td>
<td>Contingency Planning Officer</td>
<td>135 St. Clair Avenue, West, (7), Toronto, Ontario</td>
</tr>
<tr>
<td>Mr. C.J. Bradley</td>
<td>Manager, Imperial Oil Limited</td>
<td>1 Duncan Mill Road, Don Mills, Ontario</td>
</tr>
<tr>
<td>Mr. W.L. Canniff</td>
<td>Technical Director, Canadian Chemical Producers' Assoc.</td>
<td>Suite 2121, Tower &quot;A&quot;, Place de Ville, Ottawa, Ontario</td>
</tr>
<tr>
<td>Mr. H.T. Jones</td>
<td>Director, Energy Safety Branch</td>
<td>40C University Ave., (8), Toronto, Ontario</td>
</tr>
<tr>
<td>Mr. D.D. McLean</td>
<td>Supervisor, Division of Mines</td>
<td>880 Bay Street, Toronto, Ontario</td>
</tr>
</tbody>
</table>

**TABLE NO. 2**

**MEMBERS OF THE ONTARIO TASK FORCE ON CONTINGENCY PLANNING**

Chairman: Mr. G.H. Kay, Supervisor
Contingency Planning Section
Ministry of the Environment

Mr. A.E. Argue
Director
Maintenance Branch
Ministry of Transportation and Communications
1201 Wilson Avenue
Downsview, Ontario

Mr. G.R.H. Fern
Assistant Environmental Protection Co-Ordinator
Imperial Oil Limited
95 St. Clair Avenue, W.
Toronto, Ontario
M5W 1K1

Capt. C.J. Beckett
Regional Marine Emergency Officer
Central Region
Canadian Coastguard
Ministry of Transport
Toronto Star Building
1 Yonge Street (20)
Toronto, Ontario
M5H 1B7

The Commissioner
Ontario Provincial Police
Attn: Chief Inspector
J.A. Fullerston
Auxiliary Police Branch
Ministry of the Solicitor General
90 Harbour Street
Toronto, Ontario
M5J 2G9

Mr. P.G. Belling
Contingency Planning Officer
Contingency Planning Section
Pollution Control Branch
Ministry of the Environment
135 St. Clair Avenue, West (7)
Toronto, Ontario
M4V 1P5

Mr. C.J. Bradley
Manager
Ontario Distribution Region
Imperial Oil Limited
1 Duncan Mill Road
Don Mills, Ontario
M3B 1Z2

Mr. H.T. Jones
Director
Energy Safety Branch
Ministry of Consumer and Commercial Relations
40C University Ave. (8)
Toronto, Ontario

Mr. W.L. Canniff
Technical Director
Canadian Chemical Producers' Assoc.
Suite 2121, Tower "A"
Place de Ville
Ottawa, Ontario
K1R 5A3

Mr. D.D. McLean
Supervisor
Division of Mines
Petroleum Resources Section
Ministry of Natural Resources
880 Bay Street
Toronto, Ontario
M5S 1Y8
Members of the
ONTARIO TASK FORCE
(continued)

Mr. N. CZORNYJ
Co-ordinator, Environmental
and Energy Conservation
Ontario Region
Sun Oil Company Limited
56 Wellesley Street, W. (17)
Toronto, Ontario
M5S 2S4

Mr. N. VANDERKOY
Co-ordinator
Ontario Region
Environmental Emergency
Branch
Environment Canada
135 St. Clair Avenue, W. (2)
Toronto, Ontario
M4V 1P5

Dr. V.I. TITTLE
Acting Director
Occupational Health,
Protection Branch
Ministry of Health
15 Overlea Boulevard (5)
Toronto, Ontario
M4H 1A9

Mr. G.M. WOOD
Head, Solid Waste Unit
Municipal & Private Section
Pollution Control Branch
Ministry of the Environment
135 St. Clair Avenue, W. (6)
Toronto, Ontario
M4V 1P5
Communication:

MOE relies primarily on an informal communications network based upon wide distribution of the contingency plan and associated contacts lists. Once a response team member (under the Contingency Plan) has been made aware of a situation, the normal channel of communication would be from the On-Scene Co-ordinator to the MOE Contingency Planning Section (Toronto) to the Minister. Simultaneously, the On-Scene Co-ordinator should advise the MOE Regional Director whose responsibility it is to invoke the plan if necessary.

In most instances, however, spills or other pollution-associated emergencies will not directly come to the attention of someone with access to the Contingency Plan. Municipal officials or Provincial Police officers are usually first to become aware of the incident. In such cases, a more formal communications procedure has been established. Police officers and municipalities are instructed to contact the local OPP detachment when provincial assistance is required. Detachment commanders in turn notify OPP headquarters who notify the appropriate provincial ministry officials. This official network, set out in Figure MOE-1, is a direct result of the lead ministry concept implementation, and was designed to replace the communication network previously in place under the Emergency Measures Act. Discussions are now underway to improve this network by having OPP detachments contact designated On-Scene Co-ordinators directly, as per the dotted arrow in Figure MOE-3.

In addition to the contacts lists in Annex I, II and III of the Provincial Contingency Plan, the ministry publishes a supplement of municipal contacts and of independent contractors who have clean-up capabilities. MOE headquarters, regional offices and some district offices are linked by telex, and all offices are equipped with emergency radio communications equipment.
FIGURE NOE.1 COMMUNICATION NETWORK UNDERLYING CLEANUP OF
NOXIOUS CONTAMINANT SPILLS,
PROVINCE OF ONTARIO

Citizen or Police Officer

SPILL

Responsible Party

Industrial or Municipal Clean-up Cooperatives

ON-SCENE CO-ORDINATOR

Response Team
(Invoke Provincial Plan)
Regional Director (MOE)

OPP Detachment Office

OPP Headquarters

MOE Headquarters, Regional Office or District Office

CLEAN UP
Monitoring:

MOE collects data on spill type, source, cause, region and frequencies in a view to spotting trends and problem areas (copy of annual spill report is on file).

MOE operates a network of monitoring stations obtaining air quality for including levels of carbon monoxide, sulphur dioxide, hydrogen sulfide, nitrogen oxide, hydrocarbons, ozone, suspended particulate matter, lead and for heavy metals, dust fall, sulphation and fluoridation rates, etc., in 100 areas in the province. The data for each contaminant are assessed in respect to the maximum desirable criteria listed in the Ontario regulations.

The Air Pollution Index Alert System is established in the major cities and industrial centres. The Index is based on concentrations of $SO_2$ and particulate matter.

MOE provides Environment Canada with a copy of all spill reports made for input to their NATES (National Trends in Environmental Spills) system.

$SO_2$, suspended particulate, and meteorological data are gathered for over 100 areas in the province for Air Pollution Index Computation.

Sources and Capabilities:

MOE itself has no spill cleanup equipment. Annex III and Supplement of the Contingency Plan set out type and location of equipment available for spill cleanup throughout the province of Ontario including out-of-province reserves.
Ministry of Health

Introduction:

The Ministry of Health (MH) is responsible for co-ordinating provincial emergency response to epidemics, and, by implication, supports health resource contingency planning. According to the 1976 report of the Ministry's Task Force on Emergency Planning (Appendix 1), "the Ministry of Health is equally responsible for assurance of emergency medical care ... whether or not it acts as the co-ordinating ministry".

From a functional viewpoint, in emergencies MH has only very limited direct responsibilities in the areas of laboratory services, ambulance services, and co-ordination of response to epidemic and dangerous communicable diseases. This is only a small part of the Ministry's prime responsibilities for health insurance and health services planning.

The Ministry carries out its emergency related programmes and activities under authority of the Public Health Act, the Public Hospitals Act and the Ambulance Act, though the specific Ministry response to health contingencies is not codified by legislation. As is the case for other ministries, there is no single definition of an emergency and no procedures set out for declaring an emergency in any legal or administrative documents of the MH (though operational mechanisms are being defined). There is, however, a very clear meaning attached to the concept of an epidemic or communicable disease "contingency". Prompted by the Lassa fever case in 1977, a federal-provincial Working Party on Co-ordinated Response to National Communicable Disease Emergencies developed a contingency plan which has now (Nov 1978), been accepted by...
MH as the Basic Ontario Contingency Plan for Exotic Dangerous Communicable Disease (the provincial co-ordinator being Dr. John Joshua, Sr. Medical Consultant).

History:

During the snowstorms of 1976 and 1977 in London and Niagara, Federal emergency medical stockpile units were made available through MH. Through its local Medical Officers, MH has played a support role and an active part in various incidents, including the Oakville Pesticides Fire in Oakville 1978. Most recently, MH took part in the response to the crash of a DC-9 airliner at Toronto International Airport in July 1978, through the Provincial Services. In response to this experience, the Ambulance Services Branch has developed a prototype disaster plan document for the peripheral Ambulance Services surrounding Metro Toronto complementary to the Metro DAS (Department of Ambulance Services) plan. Further operational details are being addressed by the working group chaired by Mr. W. O'Brecht of Ambulance Services Branch.

Policy and Programmes:

Following the demise of the Emergency Measures Branch, a Task Force on Emergency Planning of the Ministry of Health was established (Table MH.1), Dr. W.A. Reed, Sr. Medical Consultant EHS, being the Chairman. The Task Force presented its report in September 1976. As a result of this and related reports, Dr. R.J. MacBride, Principal Programme Advisor EHS, has been appointed MH's representative to the Interministerial Emergency Co-ordinating Committee. An internal Ministry Planning Team on EHS is attempting to improve co-ordination and liaison with key interest and response groups inside and outside of government.
### TABLE MH.1


**Task Force Membership**

<table>
<thead>
<tr>
<th>Chairperson</th>
<th>Consulting Services Branch</th>
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</thead>
<tbody>
<tr>
<td>Dr. W.A. Reed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Core Members</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. E.W.R. Best</td>
<td>Community Health Protection Branch</td>
</tr>
<tr>
<td>Mr. P.C. Bryden</td>
<td>Institutional Planning Branch</td>
</tr>
<tr>
<td>Dr. M. Fitch</td>
<td>Occupational Health Protection Branch</td>
</tr>
<tr>
<td>Mrs. J. Jonescu</td>
<td>Personal Health Division</td>
</tr>
<tr>
<td>Mr. O.J.F. Rankin</td>
<td>Occupational Health Protection Branch</td>
</tr>
<tr>
<td>Dr. G.W. Reid</td>
<td>Program Development Branch</td>
</tr>
<tr>
<td>Mrs. J. Roberts</td>
<td>Institutional Operations Branch</td>
</tr>
</tbody>
</table>

The Task Force acknowledges the assistance given by:

<table>
<thead>
<tr>
<th>Mr. L. Bithel</th>
<th>Occupational Health Protection Branch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. T. Cummings</td>
<td>Occupational Health Protection Branch</td>
</tr>
<tr>
<td>Chief Inspector</td>
<td>Chairman, Lead Ministry Committee</td>
</tr>
<tr>
<td>J.A. Fullerton, O.P.P.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mr. R. Hickey</th>
<th>Ambulance Services Branch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. H.J. Killikelly</td>
<td>Quarantine Immigration Medical Service, Toronto International Airport</td>
</tr>
<tr>
<td>Dr. G.K. Martin</td>
<td>Community Health Division</td>
</tr>
<tr>
<td>Dr. A.J. Rhodes</td>
<td>Laboratory Services Branch</td>
</tr>
<tr>
<td>Mr. F.A. Skelton</td>
<td>Ambulance Services Branch</td>
</tr>
<tr>
<td>Mr. G. Ventura</td>
<td>Ambulance Services Branch</td>
</tr>
<tr>
<td>Mr. C.E. Walters</td>
<td>Government Pharmacy, Supply Services</td>
</tr>
</tbody>
</table>

*This committee is no longer operational. Its role has been taken over by the task force listed in Table MH.2.*
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. R.J. MacBride</td>
<td>Principal Program Advisor EHS, Program Advisory Branch</td>
</tr>
<tr>
<td>Dr. J.C. Deadman</td>
<td>Senior Psychiatric Consultant, Program Advisory Branch</td>
</tr>
<tr>
<td>Mr. P.W. Wilmott</td>
<td>Chief, Public Health Inspection, Public Health Branch</td>
</tr>
<tr>
<td>Miss F. Louise Jamieson</td>
<td>Nursing Consultant, Inst. Operations Branch</td>
</tr>
<tr>
<td>Dr. W.J. Macpherson</td>
<td>Principal Advisor, Special Services, Program Advisory Branch</td>
</tr>
<tr>
<td>Dr. J.E. Moore</td>
<td>Principal Program Advisor, Alcohol &amp; Drug Abuse Detoxification</td>
</tr>
<tr>
<td>Mr. E. Nowina</td>
<td>Project Development Officer, Program Development Branch</td>
</tr>
<tr>
<td>Dr. W.A. Reed</td>
<td>Senior Medical Consultant EHS, Program Advisory Branch</td>
</tr>
<tr>
<td>Mrs. Dawn Straka</td>
<td>Nursing Practices Program Consultant</td>
</tr>
<tr>
<td>Mr. J. Bahr</td>
<td>Manager of Administration and Supply Services, Ambulance Services Branch</td>
</tr>
<tr>
<td>Mrs. K. Pagonis</td>
<td>Project Officer, Program Development Branch</td>
</tr>
<tr>
<td>Mr. D. Brown</td>
<td>Research and Training Development Officer, Ambulance Services Branch</td>
</tr>
</tbody>
</table>
This committee is focusing on four areas:

1. community disaster planning,
2. pre-hospital emergency care,
3. institutional emergency care, and
4. information needs to support emergency planning.

While hospitals and other health agencies are encouraged and assisted in the development of their own emergency plans, there is no legislative requirement to this effect. The 1976 Task Force found that some 90% of hospitals do have such a plan, but that "disaster plans drawn up by hospitals are mainly obsolete, or have never been tested . . . "(p. 6). There is no formal audit of Hospital Emergency Plans by government, although comments and recommendations may be offered when plans are submitted. Hospitals are assisted with exercising plans where possible. Appropriate plans are required for peer group hospital accreditation through the Canada Council on Hospital Accreditation. A Hospital Emergency Planning Manual is available to all facilities through MH.

There are four major components of response to a communicable disease:

1. laboratory detection of the pathogen,
2. epidemiological surveillance,
3. enforcement of control measures, and
4. isolation and care.
The Laboratory Services Branch of MH has twelve Regional Public Health Laboratories located throughout the province (Table MH.3) plus the Central Public Health Laboratory in Etobicoke. Regulation 483/72 under the Public Health Act requires all laboratories in Ontario to report results indicating the presence of any communicable disease to the Medical Officer of Health for the area whence the specimen originated. Section 1(a) and Regulation 426/78 under the Public Health Act designate which diseases must be reported. The Medical Officer of Health (MOH) supported by the Epidemiology Service of MH provide the necessary surveillance through this reporting mechanism. Reporting of venereal disease is required under the Venereal Diseases Prevention Act, R.S.O. 1970.

The MOH has extensive authority under the Public Health Act to enforce epidemic control measures (isolation, evacuation). However, there is no legislation requiring the provision of isolation and acute care facilities. According to the Task Force Report (1976; p. 10) "Ontario has no adequate facility for the isolation and acute care of cases of highly infectious and dangerous communicable diseases such as smallpox, Lassa fever, Marburg disease and pneumonic plague."

The ministry's involvement in pre-hospital emergency care centres around the Ambulance Service. MH maintains direct operational control over ten of Ontario's ambulance services (there are a total of more than 170 services of various size, some with only one vehicle). The development of district ambulance services is being promoted (e.g. Halton-Mississauga).
MH has established a pilot helicopter ambulance project, in cooperation with the Sunnybrook Trauma Centre and other district hospitals.

Because of the need to co-ordinate health services and facilities over a wide geographical area in case of mass casualty situations (25% of Ontario could handle up to 25 emergency intakes at one time, and there are some that could take more), co-ordinated planning efforts are vital. The Ministry works with the Federal Emergency Health Services Branch in managing and placing units of the National Emergency Medical Stockpile (for description and placement, see Task Force Report, 1976, Appendix 3). Some units have been placed at Toronto International Airport. The Department of Ambulance Services of Metro Toronto and the Ambulance Services Branch have developed an operational plan with special vehicles to respond to all emergency situations in Metro Toronto, as well as lend support and assistance to surrounding regional ambulance services. Beyond these programmes, there is no documented capability at present within the Ministry to co-ordinate response at a regional level.

The Ministry has a policy of encouraging district health councils to co-ordinate community health disaster plans. There are 21 such councils at the present time in various districts of the province. These councils are non-government agencies with an advisory role to the Ministry of Health on aspects of district health programmes. There are also Mutual Aid agreements with other provinces and across international borders (e.g. National Defence speeding material upon request).
The ministry has a policy of encouraging district health councils to co-ordinate community health disaster plans. There are 21 such councils at the present time in various districts of the Province. These councils are independent, and have no formal structuring and reporting links to the Ministry of Health.

**Key Personnel:**

- see Table MH.2: MH planning committee.
- District Health Councils, in instances where they have taken on disaster response co-ordination function.
- Hospital committees: hospitals are responsible for invoking their own emergency plans.
- Ontario Medical Association: has an ongoing committee on accidental injuries, as well as a section on emergency medicine.
- Federal Emergency Health Services Branch: controls National Emergency Medical Stockpile.
- Medical Officers of Health: front-line combatants in control of epidemics and communicable diseases.

**Communication:**

Figure MH.1 sets out communication lines in cases where a dangerous communicable disease or epidemic is suspect. It is through these lines that the ministry would first become aware of a case of suspected communicable disease. In other emergencies requiring a health care response, MH is most likely to be advised through its Ambulance Services Branch, which has a sophisticated telephone and radio communication system with central dispatch located in Concord, near Uxbridge.

The Task Force (1976) considered that existing emergency communication facilities of police, fire and ambulance were adequate, but needed improved co-ordination.
FIGURE MH.1  LINES OF COMMUNICATION FOR URGENT NOTIFICATION OF
SUSPECTED CASE OF
EXOTIC DANGEROUS COMMUNICABLE DISEASE

In the Community

In Hospital Ward
OR
"Emergency"

In Home, Hotel
OR
Doctor's Office

Physician ➔ Hospital Administration

Medical Officer of Health

Provincial Medical Health Officer
in charge of
Communicable Disease Control

Director
Bureau of Epidemiology
Laboratory Centre for Disease Control
Health & Welfare Canada

Enroute to, or at, Canadian
Port of Entry

Chief Customs Officer OR
Primary Inspection Line Officer

Health Secondary

Quarantine Medical Officer

Senior Consultant
Quarantine & Regulatory
Medical Services Branch
Health & Welfare Canada

OTHER RESPONSE COORDINATORS ➔
Monitoring:

With the exception of the reportable disease programme for communicable diseases, there is no formal monitoring or warning system in place. Chickens are regularly monitored for encephalitis. Further information on public health monitoring is available from the Health Programmes Division.

Resources and Capabilities:

In 1977 there were 174 accredited general hospitals in Ontario. There is no comprehensive resource inventory of medical facilities in the Province. Appendix A of the report of the Project Team on Emergency Services and Primary Care (1975), provides a breakdown of number of hospitals and active treatment beds for all 27 districts and Metro Toronto. Also, the 1976 Task Force Report provides a listing of type of Federal Emergency Medical Stockpile units in place in Ontario.
Introduction:

The Ministry of Treasury, Economics and Intergovernmental Affairs was designated a lead ministry (May 28, 1975; OC 1487/75) with the responsibility for "funding and co-ordination of extraordinary Provincial expenditures on emergencies". This role has been continued by the Ministry of Intergovernmental Affairs after TEIGA was split in 1978. Thus, this Ministry's role is concerned exclusively with facilitating reconstruction and recovery after an emergency, and has no involvement with primary response during an emergency.

Although the Ministry has no definition of emergency or disaster per se, it does have a procedure whereby an area may be designated a Disaster Relief Area. In effect, a municipality or group of municipalities must request disaster relief assistance from the Cabinet via the Minister of Intergovernmental Affairs or other Cabinet minister; the Subsidies Branch makes a recommendation to their Minister, who makes a submission to Cabinet on whether to declare the area a Disaster Relief Area. If the Cabinet concurs, funds are made available to the municipalities in accordance with established guidelines.

History:

The Disaster Relief Assistance Fund has been administered by the Provincial Treasury since the early 1950's. Funds used to be available under the Emergency Measures Act, to compensate municipalities for the cost of emergency assistance rendered out of the Consolidated Revenue Fund.
With the advent of the lead ministry concept, provincial ministries also became directly responsible for providing and paying for emergency response activities in their designated area of responsibility. In order to avoid the need for emergency budgets in each ministry, the estimates of the Subsidies Branch were increased, and individual ministries were instructed to apply to the Subsidies Branch for compensation of extraordinary emergency-related expenditures which they incurred. In fiscal year 1976-77, however, nominal funds ($500,000) for compensation to provincial ministries rendering emergency assistance were transferred to the Ministry of the Solicitor General. An additional $300,000 remained with the Subsidies Branch in the Disaster Relief Assistance Fund.

At present, the Solicitor General’s emergency assistance fund consists of only a nominal $1,000. This amount may be increased at any time when needed, by Management Board and Cabinet.

One of the most significant emergency responses in which this ministry has been involved since the advent of the Lead Ministry Concept, was the Cobalt fire of May, 1977. Immediately following the fire, the Minister of Northern Affairs, Leo Bernier, went to the site of the disaster and committed an unconditional one-half million dollars in provincial assistance. There was no precedent for such a commitment and so a special warrant requesting the funds had to be prepared. Funds of a significant magnitude, and not included in the Estimates, can only be obtained by special warrant approved by Management Board and Cabinet, when the Legislative Assembly is not in session. When it is in session, a request for these funds would need to be submitted
as supplementary estimates to the Legislative Assembly for approval by the Committee of the Whole. Sums less than $1 million may be approved by the Management Board. Once the Cobalt commitment had been made, it was up to the Director, Subsidies Branch, to co-ordinate and allocate these funds, working directly with municipal officials from the affected area and representatives of other ministries involved in relief and reconstruction activities.

In addition to the one-half million dollars in assistance promised by Mr. Bernier, some $2 million were made available to Cobalt through the Ontario Disaster Relief Assistance program. To meet this need, the Subsidies Branch had to submit supplementary estimates to the Legislature for approval, since its original estimates allocated only $300,000 to this fund. The additional funds were approved by October, 1977.

Policy and Programmes:

Under the Lead Ministry programme, the Emergency Assistance Fund, administered by the Ministry of Solicitor General, is the fund from which provincial ministries may be reimbursed for unusual expenditures resulting from a provincial response to an emergency situation. Such unusual expenditures would include extra operating costs (e.g. staff overtime in 24-hour operations), costs of sub-contracting to private operators or other government agencies (e.g. helicopters, pumper trucks, armed forces), and also costs of reimbursing individuals inconvenienced by emergency response measures (e.g. evacuation and billeting). Intergovernmental Affairs acts as the "accountant" and assessor of ministerial claims.

The Ontario Disaster Relief Assistance Fund is the major Intergovernmental Affairs programme to provide post-disaster financial assistance to private individuals suffering damage to properties as a result of civil disasters. Damage
to year-round residences, furnishings, essential household equipment, buildings and equipment of small businesses and farms which is not covered by insurance may be compensated under the program. Damages sustained must be beyond the capacity of the community to cope, in order for it to be eligible. If an area is declared a Disaster Relief Area by Cabinet (procedure described above), the Council of the municipality affected must appoint a Disaster Relief Committee composed of one member of Council, a municipal treasurer, and volunteer citizens. It is the role of this Committee to establish a relief fund, solicit contributions from citizens, corporations, and other municipalities, appraise damages and settle claims. Funds collected by the Committee are matched by the Province, usually on a dollar for dollar basis, but sometimes in a ratio as high as 3 or 4 to 1. 4 to 1 matching was most recently announced for the Field and Dowling flooding in April-May 1979. Funds from federal government grants are related to a population formula, and the level at which grants would be forthcoming has never been reached. The Canadian Disaster Relief Fund may also provide money on occasion. Damages to public property are also not eligible.

Key elements of the policy governing relief assistance are:

- that the municipality make an official request for assistance to the Minister of Intergovernmental Affairs

- that Cabinet declare the affected area a disaster relief area;

- that a local Disaster Relief Committee be established to manage a Disaster Relief Fund;

- that only principal residence, farm (excluding crops and livestock) and small business (up to 50 employees)
damages be eligible for compensation;
- that monies collected from private and municipal sources by the Disaster Relief Committee will be matched by the Province
- that interest on bank loans taken out by the Committee until payment of Provincial assistance can be processed, shall be paid by the Province.
- payments are assessed on equivalent replacement criteria

Figure IGA1 sets out the decision flow related to disaster relief funding.

Key Personnel:

Key individuals involved in providing provincial financial disaster relief are the Minister of Intergovernmental Affairs and his Cabinet colleagues, and the Director, Subsidies Branch. Their roles have been previously described. Assistance is also available from all lead ministries in the form of compensation to individuals and municipalities for out-of-pocket expenses incurred as a result of provincial emergency response. Funding for these expenses is controlled directly by the Solicitor General. Also, as demonstrated in the April 1977 Cobalt Fire case, a member of Cabinet may make commitments of financial assistance.

Monitoring:

Documentation of all requests for disaster relief assistance is collected as follows:
- names & addresses of all Disaster Relief Committee members;
- cause of damage;
- date of occurrence;
- loss appraisals;
- applicable insurance and net loss not covered by insurance;


FIGURE 1CA.1: DISASTER RELIEF ASSISTANCE DECISION FLOW
- amount of assistance assessed;
- sources and amount of relief fund revenues;
- date, amount and interest rates of relief fund bank loans.
Ministry of Labour

Introduction:

Responsibility for radiation protection was transferred to the Ministry of Labour (ML) from the Ministry of Health at the same time that all occupational health and safety functions were centralized under this ministry. By Order-in-Council 2118/77, dated July 27, 1977, Labour was designated a lead ministry responsible for provincial response to off-site radiation hazards from nuclear generating stations and heavy water plants. Given this capability, the ministry's Radiation Protection Service also responds to other radiation hazard incidents.

There is no definition of 'emergency' or 'disaster' given in the legislation administered by ML, nor is there any mention of how an emergency may be declared or what this means. Contingency plans drawn up by the ministry in conjunction with Ontario Hydro (see section on Ontario Hydro, this report) do set out different levels of emergency and concomitant response, as follows:

Category 1 - permissible 7-day release limits from the station have been exceeded in a short period; however the yearly dose limits to members of the public probably will not be exceeded, even if both external irradiation and the dose commitment due to inhalation and to ingestion of radionuclides in food and water are taken into account.

Category 2 - the doses and dose commitments received by members of the public exceed those specified for category 1, but the release of radioactivity will not cause the yearly dose limit to be exceeded, either by external irradiation alone or by the dose commitment resulting from inhalation. The intake of radioactivity through water and the food chains will, however, if permitted to continue, lead to a dose commitment exceeding the yearly dose limit.
for members of the public.

Category 3 - the dose from external irradiation and/or the dose commitment from inhalation will by themselves, if no action is taken, significantly exceed the yearly dose limits for members of the public, without taking into account the additional dose commitments received through water and food chains.

Liquid Releases - an **exclusively** liquid release of radioactivity is considered serious if, over a period of one day, the release exceeds the total release of radioactivity permitted for a period of one month.

**History:**

Most calls received by the Radiation Protection Service are treated on an emergency basis, requiring fairly quick action. Most recently (June 1978) the Service was called to the University of Toronto to take radioactivity measurements in a case of personal contamination.

This incident illustrates the great variety of calls to which the Service may be required to respond, many of which are not related to nuclear generating facilities.

During the last snowstorm in January 1978, the Radiation Protection Service received a call from OPP headquarters to advise that the Belleville OPP detachment had sent a telex indicating a 30 Ton cylinder of Uranium Hexafluoride from Eldorado had dislodged from a flatbed truck and was lying in the ditch. The call was received at 4:30 p.m. on a Friday. A radiation monitor was brought to the site from Trenton Air Force Base and OPP officers guarded the site all night long. The next day, a crane was used to remove the cylinder. The following week, two more truck-borne cylinders were dislodged and the exercise was repeated.
No releases requiring activation of an Off-Site Contingency Plan have yet occurred.

Policy and Programmes:

The Radiation Protection Service and Radiation Laboratory (ORL) of the Ontario Government has been in operation for many years, although not always under the Minister of Labour. The only change resulting from the demise of Emergency Measures Branch in 1975, was the addition of Mr. Rankin to the Service. He had formerly been with EMB. The Service did on occasion rely on personnel in the EMB network to take readings in remote locations. Under the present system, the Service will try to contact municipal Emergency Planning Officers directly, where they exist, for such first-response assistance. The Service itself consists of about twenty professionals to serve the entire province.

The major emergency planning effort of the ministry focuses on the development of contingency plans for a provincial response to radiation release at nuclear generating stations leading to off-site contamination. Plans and Procedures Manuals have been developed for the Pickering Nuclear Generating Station and Bruce Nuclear Power Development; these will be discussed in some greater detail below. A draft response plan for the Bruce heavy water plant is also under preparation, and the service has at its disposal copies of Ontario Hydro contingency plans, the Eldorado Nuclear contingency plan and the OPP Port Hope cleanup contingency plan. MCL contingency plans are closely linked to and dependent upon contingency plans of Ontario Hydro and respective municipalities.
<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Ministry</th>
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<tbody>
<tr>
<td>M. Pitts</td>
<td>Head of Control Group</td>
<td>Ministry of Labour</td>
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<tr>
<td>J. H. Aitken</td>
<td>Agriculture Laboratory (Guelph) Extension Branch</td>
<td>Ministry of Agr. &amp; Food</td>
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<tr>
<td>D. Marsden</td>
<td>Central Region</td>
<td>Ministry of Environment</td>
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<td>J. Muller</td>
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<td>R. Frank</td>
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<tr>
<td>J. R. Nodwell</td>
<td>E.H.S. Area M.O.H.</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>L. B. Leppard</td>
<td>Radiation Protection Service</td>
<td>Ministry of Labour</td>
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<tr>
<td>T. Armstrong</td>
<td>Radiation Protection Service</td>
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<td>D. Ogmar</td>
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<td>S. Singh</td>
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<td>O. J. F. Rankin</td>
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<td>V. Quigley</td>
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<td>D. Nagata</td>
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<td>R. Wilson</td>
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<tr>
<td>S. H. C. Campbell</td>
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<td>J. G. S. Gray</td>
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<td>J. Joan Harrison</td>
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<td>K. G. McNeill</td>
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<td>H. Paul</td>
<td>Faculty</td>
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<tr>
<td>E. V. Abbott</td>
<td>Scarborough</td>
<td>Medical Officer of Health</td>
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<tr>
<td>T. Gray</td>
<td>Durham</td>
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<td>S. W. Moss</td>
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<td>Medical Officer of Health</td>
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<td>K. K. Fitzgerald</td>
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<td>Depy. Medical Officer of Health</td>
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<td>A. W. Mitchell</td>
<td>Toronto</td>
<td>Depy. Medical Officer of Health</td>
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<tr>
<td>J. W. Watt</td>
<td>Durham Region</td>
<td>Director of Environmental Health Services</td>
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<tr>
<td>S. Robertson</td>
<td>Liaison Member</td>
<td>Durham Region</td>
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(New edition Jan 78)
Primary responsibility for regulating nuclear facilities and materials rests with the Atomic Energy Control Board, which has been playing an increasing role in investigating radiation hazard incidents. Thus, AECC will investigate and respond to many events such as those described under "History" above.

Under the Nuclear Liability Act (Canada) there is provision for some compensation for damages suffered due to irradiation. There is no sister legislation of this type at the provincial level in Ontario, even though farm produce (e.g. milk) may be ordered dumped if monitoring shows unacceptable levels of radionuclides present; it is unclear how federal and provincial programs would combine to compensate the farmer in this instance.

Although there has been no release activating an off-site contingency thus far, the Service has as an objective to carry out one simulation exercise annually at each nuclear station site.

**Pickering and Bruce Off-Site Contingency Plans:**

At present, contingency plans for off-site radiation hazard resulting from a release at Pickering or Bruce (includes Douglas Point) nuclear plants are the main emergency response programs of ML. Plans are being developed for the Bruce heavy water plant, and AECC has requested that the province develop an off-site contingency plan for the Rolphoton (OJR) facility.

These plans centre upon two emergency response groups - the Control Group and the Survey Co-ordinating Group (Tables M11, M12). First response to a release is provided by the joint plan of Ontario Hydro and the local municipality. If the Ontario Hydro on-site Shift Supervisor declares a
<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Institution</th>
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<tbody>
<tr>
<td>Mr. J. Tai-Pow</td>
<td>Head of SCG</td>
</tr>
<tr>
<td>Mrs. J. Bitanga</td>
<td>Ministry of Labour</td>
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<tr>
<td>Mr. J. Lee</td>
<td>Ministry of Labour</td>
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<tr>
<td>Mr. H. Henry</td>
<td>Ministry of Ag. &amp; Food</td>
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<td>Mr. G. Driver</td>
<td>Ministry of Ag. &amp; Food</td>
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<td>Mr. E.H. Smith</td>
<td>Ministry of Ag. &amp; Food</td>
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<tr>
<td>Dr. R. Walker</td>
<td>Ministry of Ag. &amp; Food</td>
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<tr>
<td>Mr. J. Kawasaki</td>
<td>Ministry of Environment</td>
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<td>Mr. W. Lammers</td>
<td>Ministry of Environment</td>
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<tr>
<td>Mr. G. Nelson</td>
<td>Ministry of Environment</td>
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<tr>
<td>T.R. Clarke</td>
<td>Ontario Hydro</td>
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<td>Mr. J. Stephenson</td>
<td>Ontario Hydro</td>
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<tr>
<td>Mr. M.L. Walsh</td>
<td>Ontario Hydro</td>
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<td>Mr. W.H. Ridge</td>
<td>University of Toronto</td>
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(New edition Jan 78)
Station Emergency, he immediately advises the Head of the Control Group (Dr. M. Fitch) and alerts the local municipalities, Health and Welfare Canada, and AECL. Upon receiving the report of the Shift Supervisor, which includes an assessment of the severity of the release to the extent possible, the Head of the Control Group determines, at his discretion, the extent of alert procedures to implement. In any event, regardless of the level of alert, an investigation of the release by Federal and Provincial governments will be carried out. The fan-out alert network initiated by the Head, Control Group (see Table ML.1 and Figure ML.1) includes local Medical Officers of Health and the Survey Co-Ordinating Group (SCG) which functions out of the Radiation Protection Laboratory, 360 Christie St., Toronto (See Table ML.2 and Figure ML.2).

Upon the direction of the Control Group, co-ordination of off-site response is transferred from Ontario Hydro or the municipality to the Control Group (CG), which is then officially assisted by the Ministry of Health, Ministry of the Environment, Solicitor General of Ontario, Ministry of Agriculture and Food and Ontario Hydro. Responsibilities are as follows:

- **Ministry of Labour**
  - prepare operating procedures and guidelines for the Control Group, Survey Co-ordinating Group, Radiation Protection Laboratory, Survey and Sampling Teams.
  - determine release severity and institute off-site remedial measures
  - arrange training seminars and exercises
  - annually review state of preparedness of all groups and agencies
  - provide necessary administrative support to the Control Group, survey, sampling and laboratory teams, including the establishment of an Emergency Control Centre.
FIGURE ML.2 MINISTRY OF LABOUR
SURVEY CO-ORDINATING GROUP ALERTING PROCEDURE:
OFF-SITE CONTINGENCY PLAN

(adapted from ML document, Jan 78)
- maintain contingency plans up to date.

Ministry of the Environment
- conduct water, air and soil samples.
- predict radiation dispersion rates and patterns.
- advise the Control Group on meteorological data.

Ministry of Health
- determine the nature and extent of any public health problems which have arisen.
- advise and assist Medical Officers of Health in affected areas.
- assist the Control Group with telecommunications.

Ministry of Agriculture and Food
- determine foodstuff sampling procedures and locations, and carry out sampling where necessary.
- in conjunction with MOE, determine disposal methods and locations for contaminated food, and carry out disposal where necessary.
- arrange for alternative food supplies where needed.

Ministry of the Solicitor General
- provide direct policing services in affected area or liaison with local police forces.

Ontario Hydro
- direct and carry out urgent first response.
- maintain an off-site survey and sampling team at all times during an emergency.
- alert Control Group Head and municipal authorities.
- provide support sample analyses.
- provide technical expertise on request.
- keep Control Group informed of on-site developments.
- advise public re: initial off-site conditions, on-site activities and compensation provisions

Responsibilities of the Control Group and Survey Co-ordinating Group are set out in the contingency plans.

Key Personnel:

Key individuals involved in an emergency response are members of the Control Group and Survey Co-ordinating Group (Tables ML.1, ML.2, the local emergency planning co-ordinator (when there is one), and in the case of a Generating Station release, the Ontario Hydro Shift Supervisor and the AECB representative at the site.

In addition to the inter-agency links indicated in the Control Group composition (Table ML.1), two further links are of importance:

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Outside Membership</th>
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<tbody>
<tr>
<td>Dr. J.H. Aitken, Ministry of Labour</td>
<td>AECB Reactor Safety Committee</td>
</tr>
<tr>
<td>Dr. J. Mullen, Ministry of Labour</td>
<td>AECB Heavy Water Safety Committee</td>
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</table>

Since the Ministry of Labour has a small sampling staff, reliance is placed upon samplers drawn from MOE, MAF, and Ontario Hydro.

Communication:

In the event of a release from a nuclear facility, ML would be advised by the Shift Supervisor on the site as per the Contingency plan. In other instances, such as spills of hazardous radioactive materials, ML will be either advised directly by the carrier in accordance with the AECB "Guidelines for Carriers of Radioactive Materials", or by OPP or MOE personnel. The Radiation Protection Service has issued a manual on how to treat heavy
water spills, to OPP and ambulance services. Concern was expressed, however, about the lack of a universally known communications link through which information could be received and a call for assistance placed.

**Monitoring:**

The Radiation Protection Service and supporting provincial agencies carry out a monitoring programme around the Bruce and Pickering nuclear plant sites. The Service has seven of its own stations around the Bruce site and six around the Pickering site. Data collected include results of:

- Hi Vol air samples
- Thermo Luminescent Dosimeters (TLD-gamma)
- Water samples
- Urine samples (from Ajax hospital)
- Milk samples (from 9 farms surrounding Pickering G.S.)

Ontario Hydro also conducts environmental monitoring around its nuclear facilities, results of which are sent to AECB. Dr. J.H. Aitken, Chief of the Radiation Protection Service, receives copies of Ontario Hydro's quarterly safety reports.

Results of analyses conducted at the Radiation Protection Laboratory are sent to Dr. Aitken, MOE (water and air sample results only) and to the Radiation Protection Division, Health and Welfare Canada.

**Resources and Capabilities:**

There is no centralised listing of trained personnel and equipment throughout the province capable of responding at any level to a radiation hazard. The Chief of the Radiation Protection Service indicated that his Service was quite familiar with the Federal Government's capability and did have a rudimentary list of the remaining EMO instrumentation for
radiation monitoring which was available. Another source for trained personnel and instrumentation would be universities and hospitals with nuclear physics or nuclear medicine departments.

In the development of nuclear site plans, local communities were brought into the planning of off-site reaction to possible events. Local police, locally generated emergency councils, and the preparation of evacuation procedures and sites are part of this procedure, incorporated generally into the municipal emergency plan. Local response, in the first instance, is activated by the Shift Supervisor at the nuclear plant, as per the arrangements for the immediate response discussed earlier. There have, as yet, been no joint on-site and off-site exercises: the feasibility of involving the public in evacuation procedure exercises is in some doubt.

Mining Health and Safety: The Mine Rescue Programme

The Mining Health and Safety Branch of the Occupational Health and Safety Division administers Part IX of The Mining Act and The Employees' Health and Safety Act (soon to be superseded by The Occupational Health and Safety Act, 1978); and, as such, is responsible for the reduction of hazards to the safety and health of workers in Ontario's mining industry. This responsibility includes the promotion of mine rescue training and the provision of Mine Rescue Training Officers and equipment.

History:

Mine rescue was introduced in Ontario after the Hollinger
Fire in 1928, when the lack of trained men and rescue equipment forced the authorities to request the dispatch of a special train from the U.S. Department of Mines in Pittsburgh. Following a Royal Commission inquiry, Mine Rescue stations were set up, first in Timmins, and then at Sudbury and Kirkland Lake. Responsibility and liability in the case of a disaster were placed with the individual mine management. Section 163 of The Mining Act stipulates that the Mine Rescue Programme be funded from revenues assessed and levied on the industry.

Policy and Programmes:

Local mine rescue teams are the focal point of the programme, a large part of the effort being the setting up and training of local (i.e. individual mine) rescue teams, usually consisting of five men – though some larger mines have as many as six teams. Supervisory personnel and management are also given training.

Initial response to an emergency is made by the local mine rescue team. Should further assistance be required, the Mine Rescue Branch could be called in to help. Ontario has been divided into eight districts, covered by the eight Mine Rescue Officers. This translates into seven Mine Rescue Stations—Elliot Lake, Manitouwadge, Onaping, Red Lake, Schumacher, and Sudbury—Southern Ontario being covered from the Sudbury station.

Upon request, the closest Mine Rescue Officer would bring emergency equipment on-site, reporting to the mine Briefing Officer, an industry official in overall control of the mine rescue
effort. The Mine Rescue Officer then acts as a liaison between the Briefing Officer and the crews, generally overseeing the rescue effort. In the last year, there were fifty-two fires, only ten of which required the attendance of a Mine Rescue Officer, the local teams being able—and encouraged—to deal with the emergency themselves.

**Communication:**

Part of the role of the Mine Rescue stations is the alert of back-up stations in the area in case of need. After arriving on the scene, the Mine Rescue Officer determines whether or not further assistance may be required from the nearest mine. He contacts the Senior Mine Rescue Officer in Sudbury (Mr. Eveson), who, in turn, notifies the District Engineers and the Director of the Mining Health and Safety Branch. Meanwhile, the Officer on the scene will contact the nearest station to act as back-up. This contact is subsequently confirmed by the Senior Mine Rescue Officer. Further stations are notified as required.

Should the local Officer not be at the station, the established procedure is for the mine to send supervisory personnel to the station for the equipment, and information as to the whereabouts of the local Officer or his stand-by is required to be left at the station during absences of fifteen minutes or more. As a further precaution the Sudbury central office may be called, and an automatic paging service automatically alerts one of three duty personnel.
Extra-ministry or international assistance is requested through the Sudbury Office and the Mining Health and Safety Branch.

Monitoring:

Monitoring in this programme comes under the general headings of continuous inspection and pre-development review, both dealt with by the Mining Health and Safety Branch. Continuous inspections are conducted on electrical, mechanical and other equipment; atmospheric conditions are regularly monitored. Pre-development review is developing out of the voluntary service provided up to now by the Branch, a service which reviews new mining plans and proposals. In the near future, legislation will give the Branch power to "engineer the hazard out" of new mines by careful auditing of new plans, and through the use of the concept of the necessary "competence" of workers in mines, worker-training will be strengthened. One proposed part of the new system is accident analysis, a computerised attempt to match an accident profile to a company profile in order to spot potential hazard patterns.

Key Personnel, Resources & Capabilities:

The Senior Mine Rescue Officer (also Inspector of Mine Rescue Training) works out of the Sudbury station. Under him are two Mine Rescue Officers in Sudbury, and six other Officers in the other stations around the province.

It is the policy of the Mine Rescue Programme to have a station and equipment within fifteen minutes' drive of a mine; and, if this is not possible, equipment is placed at the mine itself. Much of the equipment supplied under the programme is also in place at various
mines, most of it being used as part of the continual training operations. Each station has a list of equipment and personnel available in the area. Available equipment from the programme includes 326 Drager BG174 four-hour breathing apparatus, 100 thirty-minute breathing apparatus, 200 gas masks, and assorted gas-dusting and fire-fighting equipment.

In addition, Mine Rescue has 14 High Expansion Foam Generators, capable of producing 6000 cu. ft. per minute, and 11 mine rescue trucks (four more than absolutely necessary, to serve as back-up). If driving is impossible, other measures have been known to be undertaken: in August 1978, a fire at the Umex Thierry mine at Pickle Lake, six hundred miles from the nearest station at Red Lake, prompted the chartering of a plane to take personnel into the area.

Mine Rescue can call upon 1,000 trained men who undergo at least forty hours of training a year each, under the programme. They have been known to assist in accidents that occur in other provinces; and, in the past year, one officer was called upon to advise on the fighting of tunnel fires by the California government.
Introduction:

The Ministry of Natural Resources is designated by O.C. 178/79 as the ministry responsible for leading and co-ordinating a provincial government response to flood and forest fire emergencies. The Ministry—and its predecessor the Department of Lands and Forests—has had a wealth of experience in its historic and traditional role in the prevention and suppression of forest fires and has a well developed field organisation for this purpose. While the Conservation Authorities Branch has long experience in flood emergencies, particularly in providing flood warnings, the provincial response—until recently—was an EMO responsibility. Ministry field staff reacted to flood emergencies on various occasions, but these actions were spontaneous and without policy to support them. As a consequence of the altered structure, it was necessary for the ministry to examine their new responsibility so as to establish policy and procedures for the organisation and delivery of a provincial response to flood emergencies.

Roles and responsibilities have been specified at various levels in the Ministry. The Ministry has appointed a Provincial Co-ordinator for flood and forest fire emergencies. It is his responsibility to establish and interpret programme policy, co-ordinate programme development, monitor the state of emergency preparedness of the Ministry, and expedite the declaration of a provincial emergency. Specific responsibilities of Regional Co-ordinators and local Ministry Response Co-ordinators are
also set out (see below). In sum, the Ministry has the responsibility to organise, deliver and co-ordinate a provincial response to flood or forest-fire emergencies, maintain provincial flood and fire hazard warning systems, and appoint local response co-ordinators who will respond to a request by a municipality for provincial assistance, provided certain criteria are met.

MNR considers a provincial emergency to be a situation where a municipality has declared an emergency, has committed all its resources to combating the emergency, has requested provincial assistance and where, as a consequence of these preceding events, the Minister of Natural Resources has declared a provincial emergency. As noted above (see Introduction: An Overview), there is no statutory authority for the carrying out of emergency response programmes. Conservation Authorities, which are autonomous corporate bodies, are responsible for water management in areas under their jurisdiction. These areas are usually delineated along watershed boundaries. Membership of the Authorities consists of members municipal councils' appointees and several provincial government appointees. The Conservation Authorities Act provides a framework for the relationship between Conservation Authorities and the Province. The Ministry also administers the Forest Tree Pest Control Act, and the Endangered Species Act.

The Forest Fires Prevention Act, which predates the lead ministry concept by many years, is applicable within the Fire Districts designated in the Regulations passed under the Act. The Act provides the Ministry with broad statutory authority with respect
to prevention and suppression of forest fires within the Districts. The Ministry's responsibilities under its lead ministry programme for forest fire emergency response supplements this Act, and also provides for a response outside designated Districts.

History:

At the end of April, 1979, flood emergencies were declared at Field, Springer, and the communities around Lake Nipissing; and after a tour of the area, James Auld, the Minister of Natural Resources and Energy declared the flooded communities west of North Bay a disaster area (thus setting in motion the matching funding process outlined in the section on Intergovernmental Affairs). In the fall of 1976, the town of Dryden was evacuated due to the threat from the Dryden "17" Fire. Evacuation was undertaken under the Forest Fires Prevention Act, and not as part of the forest fires emergency response programme, and was therefore not declared a forest fire emergency under the lead ministry programme.

Policy and Programmes:

Flood: MNR policy concerning provincial response to flood emergencies is in a continuing process of development and interpretation. The policy is generally set out in a booklet "Planning for Flood Emergencies", published by the Ministry in March 1976. A copy of this booklet was forwarded to every municipality and Conservation Authority in the province, and provides guidance for municipalities preparing flood contingency plans.
By ministry policy, district managers were appointed as Ministry local response co-ordinators and assigned responsibility for developing plans for mobilization, co-ordination and delivery of the resources of the Ministry and other ministries within their respective districts. Local response co-ordinators have exclusive responsibility for implementation of their flood emergency response plans. These plans include provision for emergency evacuation of residents including transportation, shelter, feeding, etc. The district response plans also provide for other forms of physical assistance to municipalities. The safety and welfare of residents have top priority in the programme.

Also by policy, a provincial response will not be delivered unless the minister has made a declaration of a flood emergency, or it is assured that he will make a declaration. The declaration is required as a device to inhibit unjustifiable expenditure commitments. Under ministry policy, the minister will make a declaration of a flood emergency at the request of a municipality following the request of the Ministry local response co-ordinator and upon the advice of the provincial co-ordinator. The provincial response is viewed by the Ministry as an extension of the response of the municipality under its contingency plan, and responsibility for effective use of the provincial response rests with the municipality.

In communities without municipal organisation, ministry local response co-ordinators discuss the programme at meetings with local residents. They suggest preparation of community and household flood contingency plans and provide guidance for community planning. In
addition, they identify local contacts and provide the names and emergency telephone numbers of the Ministry staff. When flooding occurs in such a community, the Ministry local response co-ordinator organises and delivers the response, and is fully responsible for all action taken.

There is a Response Co-ordinator appointed by the Ministry in each of its forty-nine district offices (see MAP MNR.1). There are, in addition, eight regional offices whose responsibility is to co-ordinate district response planning, to support district staff in emergencies, to co-ordinate multi-district responses, to liaise with other ministries at the regional level, to monitor and ensure 24-hour emergency preparedness in each of the forty-nine districts, and to forward to the Provincial Co-ordinator (Toronto) a report on any provincial emergency response.

Where a Conservation Authority has been formed pursuant to The Conservation Authorities Act, it has power to construct dams, to create reservoirs, to control or divert the flow of surface waters to prevent flooding or pollution, to regulate the use of water from rivers, streams, inland lakes, etc., to regulate the dumping of fill which may incur flooding or pollution, and to regulate the setting and extinguishment of fires in all areas under its jurisdiction. Following on from these powers, it is the Conservation Authorities' responsibility, in their respective areas (see MAP MNR.2), to:

1) maintain a flood warning system for alerting municipalities,
FIGURE MNR.1 ADMINISTRATIVE DISTRICTS (MAP)

ADMINISTRATIVE DISTRICTS OF
THE MINISTRY OF NATURAL RESOURCES

LEGEND
- REGIONAL BOUNDARIES
- DISTRICT BOUNDARIES
- DISTRICT OFFICES OF THE MINISTRY

SCALE 1:1,000,000
CONSERVATION AUTHORITIES IN ONTARIO
AS OF DECEMBER 1974

FIGURE MNR. 2 CONSERVATION AUTHORITIES (MAP)
media, police and the ministry;

ii) promote co-ordinated contingency planning among municipalities, as well as providing guidance and pertinent information;

iii) liaise with the MNR Response Co-ordinator concerning status and adequacy of municipal response and need for provincial response.

The Ministry has developed an understanding with the Federal Department of Indian Affairs and Northern Development (Ontario Regional Director), whereby DIAND resources are made available if an emergency involves Reserve lands, and MNR is compensated for emergency response related expenditures on such lands.

Forest Fire: The programme for provincial response to forest fire emergencies was established under the lead ministry concept, and not under the Forest Fire Prevention Act, and is similar to the policy under the flood emergency response programme. The programme is administered by the Director of the Aviation and Fire Management Centre at Sault Ste. Marie. He acts as an alternate and advisor to the provincial co-ordinator with respect to forest fire emergencies. Appendix A of the Forest Fires Prevention Act sets out boundaries of the seven designated Fire Regions of the Province. Forests in these regions, covering some 200,000 square miles of forest lands (all of the tree-covered areas in the Province north of a line from Ottawa to Southampton) are patrolled by the
Ministry. Each MNR district is required to have its own forest fire contingency plan. In the event a district or region does not have the capacity to contain a fire, the Fire Management Centre will provide back-up and inter-regional response co-ordination. The Centre is also responsible for training fire-fighting personnel and assessing fire-fighting equipment.

Other: Under the Forest Tree Pest Control Act, an officer of the Ministry may enter upon any lands to inspect the trees and forest products, and may take any measures he considers necessary in the public interest to control an infestation. It is not known whether any regulations stipulating the type of pests or infestations to be controlled have been made.

The Endangered Species Act, 1971, provides for regulations to be made designating "any species of fauna or flora to be threatened with extinction". Conservation Officers appointed under the Game and Fish Act have extensive powers to enforce this Act, which provides for a fine of up to $3,000 and imprisonment of up to 6 months upon summary conviction of an offence.

The flood warning program is discussed under "Monitoring" below.

Key Personnel:

- Provincial Co-ordinator
- MNR local response co-ordinators (49)
- MNR regional co-ordinators (8)
- MNR Stream Flow Forecast Centre
- Conservation Authority Resource Managers or General Managers
- Municipal Flood Co-ordinators
- OPP Flood Co-ordinators
- MNR local contacts in support ministries

Provision is made for alternates for all key MNR personnel.
to ensure availability.

**Communication:**

MNR maintains a business telex system linking all regional and district offices with each other and with the Main Office during business hours. The Ministry also maintains a radio network on a regional basis during business hours. This system links regions with their respective districts and with adjacent regions. It also links districts with their mobile units. During the forest fire season, ministry Fire Centres maintain extended radio capability beyond business hours.

Ministry radios cannot communicate with radios in the systems of other ministries because different frequencies are used. (e.g. OPP, MTC). However, many districts have supplied an MNR radio to local OPP to provide direct emergency communication. In addition, an MNR mobile unit parked with an OPP mobile unit can relay messages from one system to the other.

Many district and regional offices provide for telephone communication nights, weekends, and holidays through answering services, duty officers, and paging systems.

The Aviation and Fire Management Centre in Sudbury is responsible for co-ordination of all unscheduled provincial government flying, and handles telex and radio communication for MNR.

In the event of flood emergencies, the Ministry has advised all municipalities to contact local Response Co-ordinators and Conservation Authorities (where they exist). It has also advised OPP officials that the first response for such emergencies rests with municipalities and Conservation Authorities. Where
municipalities require provincial assistance, they are to make the request through MNR local Response Co-ordinators or, should this prove impossible, through the OPP detachment and OPP headquarters.

Co-ordination of response among different provincial ministries is delegated to the District and Regional levels, Main Office having established initial liaison, and the provincial co-ordinator being prepared to contact other ministries at any time regarding flood emergencies (he maintains an emergency telephone list for that purpose). Local Response Co-ordinators are required to meet at least annually with representatives from all support ministries.

Copies of Planning for Flood Emergencies have been sent to all municipalities, and are widely available from MNR.

Monitoring (Provincial Flood Warning System):

The Provincial Flood Warning System includes a flood forecast service provided by the streamflow Forecast Centre in the Conservation Authorities Branch (Mr. W.C. Thompson, hydrometeorologist), the flood warning systems maintained and operated by individual conservation authorities, MNR local Response Co-ordinators outside of Conservation Authorities, and the regional weather forecast service provided by the Atmospheric Environment Service through MNR regional offices. Each Conservation Authority maintains a flood warning system for receiving and fanning out flood forecasts to municipalities; local Response Co-ordinators fan out flood forecasts to municipalities outside Conservation Authorities.
and communities in unorganised territory.

Messages are distributed within Conservation Authorities to both the affected Conservation Authority and the region; outside Conservation Authorities, messages are distributed to the affected regions, which immediately relay flood forecasts to local Response Co-ordinators. Within Municipalities, the responsibility for fanning out flood forecasts to residents rests with the council of the municipality, and procedures should be included in the municipal flood contingency plan (see Figures MNR. 4 & 5).

The Flood Forecast Centre issues two types of forecast:

a) Flood Advisory – intended for staff of MNR and individual Conservation Authorities – will be released to Regional Offices during normal working hours to take advantage of MNR telex facilities and enable district staff to make advance preparations to meet flood responsibilities.

b) Flood Warnings – will be issued immediately (at any time of night or day) when the forecaster is confident that flooding will occur. The time of issue is likely in many instances to be less than 24 hours in advance of flooding.

In addition, two types of modifying forecast may be used:

c) Amended Forecast – will be issued when a significant change has occurred or is expected to occur in flood conditions from those indicated in original flood warning.

d) Flood Recession Forecast – may be issued to indicate the recession pattern of the runoff, if not already given in previous warnings.
FIGURE MNR.3 - FLOOD FORECAST SYSTEM OF THE CONSERVATION AUTHORITIES BRANCH

Flow of forecasts, advisories and warnings.

Flow of data.
Communities without municipal organization.
The Flood Forecast Centre collects data on streamflows, snowpack and precipitation levels from several sources including the Atmospheric Environment Service, the Conservation Authorities and Regional and District Offices. These data are used to compute the streamflow forecasts upon which are based the flood advisories and flood warnings (see Figure MNR 3).

**Resources and Capabilities:**

District Response Plans include, for their respective districts:

- listings of staff, equipment and supplies including location maps for communication equipment, trucks, cars, tractors, boats and fire equipment.

- details of availability, location and access of staff, equipment and supplies available to MNR from MTC, the Solicitor General (OPP), MOE, Ministry of Community and Social Services, and Ministry of Health.

The Aviation and Fire Management Centre includes a hangar for carrying out major repairs and overhauls of ministry aircraft. The Province's seven Fire Regions are patrolled by 140 five-man crews using 37 fire-fighting and four transport aircraft. Helicopters used to transport crews to the scene of a fire are contracted from private companies.
Introduction

On March 7, 1978 the Cabinet Committee on Emergency Planning decided, "if more than one Ministry was required to deal with the natural emergencies (in the North), such as the Cobalt fire, then the Ministry of Northern Affairs would have a co-ordinating capacity", and a Ministry representative has subsequently been appointed to the Lead Ministry Co-ordinating Committee. The ministry is active only in northern Ontario, its southernmost offices being located in Sudbury and Sturgeon Falls. (See Figure MNA.1)

Although the function of a lead ministry is "to take responsibility for co-ordinating the response of the Government of Ontario..." in emergency situations assigned to it, the Ministry of Northern Affairs has not to date (October 1978) been designated a lead ministry by order-in-council. This leaves the status and role of the ministry in an emergency very uncertain.

At this time, the ministry has no definition of "emergency" in either a conceptual or operational sense.

History:

The first, and apparently only emergency response in which the Ministry of Northern Affairs has to date been involved, is the response to the Cobalt fire in April, 1977. The minister of the then newly created ministry, Leo Bernier, immediately went to the scene of the fire and offered one-half million dollars ($500,000) in provincial assistance to the town. There were no pre-arranged funding procedures established for this type of commitment, and a special warrant requesting the funds had to be prepared. Once released, the funds were actually administered by the provincial Treasury.
Key Personnel: Communication; Resources:

The Ministry of Northern Affairs is a small ministry employing approximately 80 professionals, including administrative and senior management personnel. It has no physical resources at its disposal, with the exception of a few cars and teletype communication facilities linking its offices. Regional offices are located in Sault Ste. Marie and Kenora, with sub-offices located in Thunder Bay, Sudbury and Cochrane. Northern Affairs Officers are stationed in the following communities:

**Northeastern Ontario**

- Blind River
- Chapleau
- Cochrane
- Elliot Lake
- Espanola
- Hearst
- Iroquois Falls
- Kapuskasing
- Kirkland Lake
- Mindemoya
- Moosonee
- New Liskeard
- North Bay
- Sault Ste. Marie
- Sturgeon Falls
- Sudbury
- Timmins
- Wawa

**Northwestern Ontario**

- Atikokan
- Dryden
- Fort Frances
- Geraldton
- Ignace
- Kenora
- Marathon
- Rainy River
- Red Lake
- Sioux Lookout
- Thunder Bay

Northern Affairs Officers are trained to advise small unorganized communities and Indian Bands on how best to take advantage of government programs, and to relay northerners' needs back to appropriate government agencies, federal or provincial.
Ministry of Transportation and Communications

Introduction:

Although not officially designated a lead ministry, it was recognized from the outset that the Ministry of Transportation and Communications (MTC) is a key support ministry by virtue of its size, equipment and province-wide presence, for which reason meetings of the lead ministry co-ordinating committee are attended by the Director of the Maintenance Branch. Under the Highway Transportation and Improvement Act, MTC has responsibility to maintain provincial highways, and in cooperation with the O.P.P., has the capacity to close the same where necessary. MTC has no role itself in declaring an emergency, this being the responsibility of ministers, or at least of lead ministries. The ministry also provides support road maintenance services to municipalities, particularly in Northern Ontario.

The dissolution of the Emergency Measures Branch has had little effect upon MTC, other than to strengthen its communications with the Ministry of Natural Resources. It is this latter ministry with which MTC has a significant defined support role in flood response to provide sandbags.

History:

The ministry has never responded in a support role to a lead ministry as such. It has, however, provided support services to municipalities in what may be considered emergency situations, such as when a tornado struck Sudbury and Field (Aug., 1970) or during the Niagara blizzard (Jan. 1977). In the latter case, the Region of Niagara requested and received assistance from MTC. Under the supervision of the Assistant Deputy Minister, Operations and co-ordinated by the Director, Maintenance Branch, MTC equipment was moved around within and between regions to meet
the request.

Because most requests for assistance from municipalities are handled directly at the District Office level, very little information on these support activities of the ministry is available unless direct communication with these offices is entered into.

Policy and Programmes:

It is MTC policy to provide support services to municipalities in need, on a fee for service basis. The decision to provide such assistance rests with the District Engineer. Small municipalities have historically relied heavily upon MTC for such assistance; but there is now underway an effort to discourage municipalities from relying too heavily on MTC, and to encourage more use of private contractors for emergency or supplementary snow removal and for road repair and maintenance.

It is MTC policy that, in the event an emergency is declared and a lead ministry co-ordinates provincial government response, the District Engineers for the area affected will report directly to the appropriate lead ministry offices.

Key Personnel:

Key operations personnel in this ministry are the District Maintenance Supervisors and their immediate supervisors, the District Engineers for all eighteen districts. These individuals direct work crews and vehicles within their districts. Their counterparts at the five Regional levels are the Regional Directors and Regional Maintenance Engineers who co-ordinate work crews and vehicles within their regions when a response from more than two districts is required. Where an inter-regional response is called for, the Assistant Deputy Minister, Operations and the Director, Maintenance Branch (Head Office) direct the ministry
response. A list of Regional Directors, Regional Maintenance Engineers, District Engineers and District Maintenance Supervisors is attached (Figure MTC.1).

At the outset of the lead ministry concept implementation, the Ministry of Natural Resources established an emergency planning committee under the chairmanship of Mr. Cleavey, then Executive Co-ordinator of Lands and Waters. The Director, Maintenance Branch (MTC) was a member of this committee when it met in mid 1977.

**Communication:**

Figure MTC.1 outlines the hierarchy of response to highway obstruction and damage, and indicates flows of information and assistance requests. It is clear that the District Engineer is the key first response individual for the ministry. It is also important to note that the lead ministry, where applicable, communicates directly with the District Engineer.

A list of district and senior officers of MTC is distributed annually to Assistant Deputy Ministers, Directors, District Engineers and Managers and Section Heads. The list includes home phone numbers for use in "emergencies" (Nov. 1977). Key people in the Ministry of Natural Resources also receive this information.

The Public Information and Safety Office of MTC (Head Office) issues five road advisories per day across the province during winter months in a fashion similar to the OPP. District Engineers issue advisories to the local media. The ministry also makes available to municipalities all research findings and information regarding road operations eligible for subsidy.
Figure MTC.1  Ministry of Transportation and Communications
Highway Obstruction and Damage Response
Monitoring:

MTC receives weather reports from Atmospheric Environment Services and flood warnings from the Ministry of Natural Resources. District offices report local problems (e.g. washout) to Region and Head Office by teletype.

Resources & Capabilities:

MTC maintains a stockpile of emergency designated sandbags throughout the province.

During winter, a two-way radio communications system linking each District Office with its field of operations is manned 24 hrs./da.

An inventory of all MTC equipment by District is kept at head office (Equipment Engineer's Office) and updated annually.
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<th>SOUTHWESTERN REGION</th>
<th>LONDON</th>
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<tr>
<td>Regional Director</td>
<td>E.J. McCabe</td>
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<td>Regional Municipal/ Maintenance Engineer</td>
<td>F.C. Brown</td>
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<th>DISTRICT #1 - CHATHAM</th>
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<td>District Maintenance Engineer</td>
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<td>District Maintenance Supervisor (Freeway)</td>
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<td>District Maintenance Supervisor (Rural)</td>
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<td>Regional Maintenance/ Municipal Engineer</td>
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