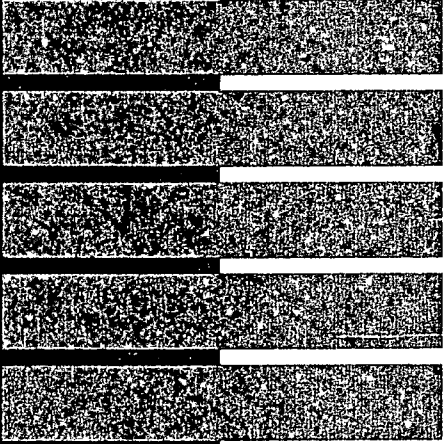


February 1998

98/06



1997 Red River Flood

Post Emergency Report - Part I

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02/10/98

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Executive Summary

Ernst & Young, with the support of Linnet Geomatics, was engaged on November 10, 1997 to review and evaluate the emergency preparedness and response of the Manitoba Emergency Management Organization (MEMO) to the Red River flood of 1997 by interviewing the municipalities, provincial departments and agencies involved in the emergency. The objective of the study is to provide recommendations for improvement of the provincial emergency preparedness and response programs to improve MEMO's response to future emergencies by evaluating the lessons learned during the 1997 flood.

The study is to be conducted in two parts. Part I studies the pre-emergency and emergency response phase of the flood. The findings are contained in this report. Part II will review and evaluate the post emergency operations. Specifically, part II of the study will analyze the management of the disaster financial assistance program and disaster relief efforts and will include recommendations for future actions related to the recovery process.

The 1997 flood was unquestionably the largest provincial emergency in the past several decades. In January 1997, Water Resources was predicting flood levels equal to the 1979 flood as a result of the heavy snowfalls in late 1996. Preparedness plans were set in motion as grain and livestock were evacuated to higher ground and information meetings were held in the larger communities of the Red River Valley.

On April 5th and 6th, a late season blizzard left 19 inches of snow ensuring one of the largest floods ever recorded. At the peak of the flood, over 1900 square kilometers of the Red River Valley were under water. In total, over 18,000 Manitobans were evacuated. In the end, two communities were severely devastated by the flood, along with several farms and rural properties.

The 1997 Red River Flood was the largest emergency response in recent Canadian history involving thousands of provincial and municipal civil servants, military personnel and volunteers. The lessons learned in preparing for and coordinating the response to this emergency are important and timely.

Interviews with the principal organizations involved in the flood response were the primary source of problem identification and recommendations to MEMO's emergency preparedness and response programs. The information gathered in the interviews was supplemented by a review of the Provincial Emergency Plan and the Emergency Act.

Interviews were conducted with 62 people from 35 organizations. Organizations interviewed include MEMO, the lead provincial departments, all the municipalities and other local authorities in the Red River Valley, the military and the non-government agencies involved in the flood response.

The following pages contain a high-level summary of issues identified by the organizations that were interviewed, and their recommendations. Also included are the initiatives currently being undertaken by MEMO addressing these issues.

<i>Issue</i>	<i>Description</i>	<i>Suggested Solutions</i>	<i>Current MEMO Initiatives</i>
1	Emergency Response Structure Civil Structure and Military Structure need better coordination.	<ul style="list-style-type: none"> • Outline roles and responsibilities, and lines of communication 	<ul style="list-style-type: none"> • Identify response structure • Identify information flow patterns
2	MEMO Structure and hierarchy unclear to stakeholders	<ul style="list-style-type: none"> • Communicate MEMO staffing structure during emergencies to stakeholders • Need better distinction between the different phases of an emergency (preparedness, response and recovery) 	<ul style="list-style-type: none"> • Reaffirm MEMO role • Organizational assessment
3	Structure of Central Task Team Loss of authority and effectiveness as emergency proceeded	<ul style="list-style-type: none"> • Clarify and hold to its role vis-à-vis Deputy Minister Committee • Ensure participation from appropriate level of departmental representatives 	<ul style="list-style-type: none"> • Identify response structure
4	Role - Provincial Executive Coordinator Overworked	<ul style="list-style-type: none"> • Public relations and emergency management role should be split into two separate positions 	<ul style="list-style-type: none"> • Identify response structure

<i>Issue</i>	<i>Description</i>	<i>Suggested Solutions</i>	<i>Current MEMO Initiatives</i>
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5	Emergency Operation Centre (EOC)	Effectiveness of routine operations	<ul style="list-style-type: none"> • Need procedures to second space and resources 	<ul style="list-style-type: none"> • Identify response structure
6	On-site Commanders	Not enough of them	<ul style="list-style-type: none"> • Ensure sufficient trained people are available for each impacted municipality or major emergency site • Develop a “skills database” to identify people with the province who can assist during an emergency. 	<ul style="list-style-type: none"> • Identify response structure
7	Municipal Emergency Coordinator	Often they were overworked	<ul style="list-style-type: none"> • Role of the Municipal Emergency Coordinator should be defined in the Provincial Emergency Plan <p>Procedures are required to provide support to the emergency coordinators and identify when their capacity is exceeded</p>	<ul style="list-style-type: none"> • Identify response structure

Coordination

8	Agency Interaction	Somewhat uncoordinated	<ul style="list-style-type: none"> • Advance planning of inter- 	<ul style="list-style-type: none"> • Reviewing multi
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<i>Issue</i>	<i>Description</i>	<i>Suggested Solutions</i>	<i>Current MEMO Initiatives</i>
and Coordination	In some cases, agencies had common goals but incompatible program/service delivery	agency delivery of services with municipalities	departmental involvement timing/ interrelationships
9 Coordination of Provincial Departments	Some limitations in information sharing	<ul style="list-style-type: none"> • Clarify roles of all agencies. Policy for open information sharing needs to be established Better use of computers to centralize and manage information 	<ul style="list-style-type: none"> • Reviewing departmental plans with current provincial plan
10 Relations and Coordination with Military	Seemed to erode local control	<ul style="list-style-type: none"> • Ensure military understands its support role • Ensure Municipalities understand the Military's role and understand the procedures for accessing the Military's help 	
11 Communications with Municipalities	Uncoordinated communication from municipalities to EOC	<ul style="list-style-type: none"> • Ensure full-time on-site commanders in every municipality impacted by the emergency with who can facilitate communication between the municipalities 	<ul style="list-style-type: none"> • Evaluation of telecommunications communications

<i>Issue</i>	<i>Description</i>	<i>Suggested Solutions</i>	<i>Current MEMO Initiatives</i>
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and the EOC

- | | | | | |
|----|---|---|---|---|
| 12 | Communications through News Media | MEMO overloaded with media inquiries | <ul style="list-style-type: none"> • Be proactive w/ the media • Have a separate media briefing facility | <ul style="list-style-type: none"> • Public Relations Strategy |
| 13 | Public Information and Public Relations | Sometimes public not clear on who to call | <ul style="list-style-type: none"> • Consistent list of contacts and numbers should be regularly broadcast via print and broadcast media | <ul style="list-style-type: none"> • Public Relations - Client Survey • Emergency Public Information Plan |

Improvements to MEMO Facilities

- | | | | |
|----|----------------------------------|--------------------------|---|
| 14 | Emergency Operation Centre (EOC) | Effectiveness of the EOC | <ul style="list-style-type: none"> • Ensure that the MEMO facilities can be expanded to accommodate a communication centre, media briefing centre, a public information centre and can provide space to agencies and provincial departments • Establish communication facility and media briefing centre • Separate public inquiry call centre • Improve aesthetics |
|----|----------------------------------|--------------------------|---|

Issue **Description** **Suggested Solutions** **Current MEMO Initiatives**

15	CTT Meetings	Structure of the CTT Meetings could be improved	<ul style="list-style-type: none"> • Keep written records and minutes of the meetings • Develop an agenda when possible • Schedule the meetings early in the day • Delegate a chairperson for the entire emergency 	
<i>Use of Technology</i>				
16	Emergency Operation Centre (EOC)	Effectiveness of routine operations	<ul style="list-style-type: none"> • Develop computerized Emergency Management system 	<ul style="list-style-type: none"> • Creating an information management model
17	On-site Commanders	Some lost authority as flood progressed	<ul style="list-style-type: none"> • Empower on-site commanders with reporting technology 	
18	Communications with Municipalities	Delays in MEMO faxes	<ul style="list-style-type: none"> • Install more fax lines at EOC 	
19	Communications among Provincial Departments and Agencies	Lack of written records	<ul style="list-style-type: none"> • E-mail and Web-based communication will be an effective addition • Develop procedures for the 	<ul style="list-style-type: none"> • Evaluation of telecommunications communications • Evaluation of future

<i>Issue</i>	<i>Description</i>	<i>Suggested Solutions</i>	<i>Current MEMO Initiatives</i>
20	Municipal Access to Resources	<p>Coordination and distribution of resources could be improved</p> <ul style="list-style-type: none"> MEMO can provide some support by helping maintain lists of approved suppliers Potential for a consolidated Inventory Management System for key supplies and for tracking costs during an emergency 	<p>emergency communication systems</p> <ul style="list-style-type: none"> Consolidated Financial Reporting
<i>Provincial Emergency Preparedness Plans</i>			
21	Provincial Emergency Plan	<p>Outdated Last official revision in 1988</p> <ul style="list-style-type: none"> Update the revised plan developed in 1994 Continuously maintain the provincial emergency plan. 	<ul style="list-style-type: none"> Commitment to Emergency Plans Update Provincial plan
22	Coordination of the Municipal Emergency Plans	<p>Emergency plans of neighbouring municipalities and mutual aid agreements were uncoordinated</p> <ul style="list-style-type: none"> MEMO can assist in developing integrated emergency response plans for municipalities which include more than one municipality Ensure consistency among the emergency plans of the different municipalities 	<ul style="list-style-type: none"> Updating of plans is part of dike and floodway failure scenarios

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<i>Issue</i>	<i>Description</i>	<i>Suggested Solutions</i>	<i>Current MEMO Initiatives</i>
23	Development of Information Packages	Municipalities liked the general information, bulletins and check lists developed by the Province	<ul style="list-style-type: none"> • Prepare and provide the information to the municipalities as early as possible so that they may tailor it to the municipality
24	Develop Emergency Scenarios	Better understanding of emergency scenarios is required such as mass evacuations, dike breach, etc	<ul style="list-style-type: none"> • Prepare worst-case scenarios for emergencies • Evac Plan City of Winnipeg • Identify critical decision points and lead times for decisions • Emerg Plan Dike Breach • Emerg Plan Floodway/ Brunkild Dike Breach
25	Municipal Disaster Financial Assistance Programs	Municipalities were reluctant to spend money preparing for the flood for fear that the expenditures would not be reimbursed	<ul style="list-style-type: none"> • Clarify municipal financial assistance programs and their commencement
26	Emergency Declarations	The significance of a provincial emergency declaration with respect to control of the emergency needs was not clear.	<ul style="list-style-type: none"> • Clarify roles and responsibilities in the event of a provincial emergency declaration
27	Emergency Boundaries	Boundaries specified in the provincial emergency	<ul style="list-style-type: none"> • Develop definitive procedures for defining the

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Issue **Description** **Suggested Solutions** **Current MEMO Initiatives**

- a) emergency exceeds the capacity of an municipality
 - MEMO needs procedures for transferring authority, including procedures for communicating the transfer of authority and clear definitions of roles and responsibilities
- b) emergency escalates and involves several municipalities
- c) response involves many agencies, provincial and federal departments requiring a coordinated response

- 33 The Pass System
- Residents as well as provincial departments, media and agencies need controlled access to the emergency site
 - MEMO should consider jointly managing and coordinating the pass system with the municipalities.
 - Pass systems should be developed in advance of the emergency
 - Criteria for issuing the passes needs to be developed

Recovery - Preliminary Observations

- 34 Re-entry Procedures
- Comprehensive plans for re-entry were developed
 - Procedures for continuous maintenance of the re-entry

<i>Issue</i>	<i>Description</i>	<i>Suggested Solutions</i>	<i>Current MEMO Initiatives</i>
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35	Disaster Financial Assistance Programs	<p>Programs were not understood by claimants</p> <p>Suggested improvements suggested include</p> <ul style="list-style-type: none"> • Better coordinated programs • Proactive and defined compensation programs • Stronger communications • Earlier implementation of the programs • A reserve of trained resources to administer the programs • An information system to ensure equitable distribution of compensation 	<p>plans should be developed</p> <ul style="list-style-type: none"> • Criteria for re-entry need to be established <ul style="list-style-type: none"> • DFA Guideline review • Update DFA training program • Recovery (external) commun. Plan • DFA Claims Evaluation Statement • DFA Electronic Claims Tracking
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Part 1 Introduction

Ernst & Young, with the support of Linnet Geomatics, was engaged on November 10, 1997 to review and evaluate the emergency preparedness and response of the Manitoba Emergency Management Organization (MEMO) to the Red River flood of 1997 by interviewing the municipalities, provincial departments and agencies involved in the emergency. The objective of the study is to provide recommendations for improvement of the provincial emergency preparedness and response programs to improve MEMO's response to future emergencies by evaluating the lessons learned during the 1997 flood.

The Emergency Measures Act of June 1996 establishes MEMO's responsibilities.

MEMO is responsible for coordination of the overall provincial emergency planning, training and response operations, administration and delivery of the disaster financial assistance program, safety of the residents and protection of property and the environment before, during and after an emergency or disaster.

MEMO is comprised of four sections:

- ***Training and Education*** which provides emergency management training and education packages
- ***Planning and Research*** which provides on-going development and review of emergency plans and guidelines. Planning and research is also involved in the review and amendment of legislation and regulations.
- ***Community Services*** which assists communities in developing their emergency preparedness plans and programs. This includes the preparation of emergency response plans and the education, training and community exercise programs.
- ***Disaster Financial Assistance*** which provides for the assessment and compensation for those municipalities, persons or small businesses who experience property loss due to a declared emergency or disaster. Previous to the amendments to the Emergency Measures Act of 1987, compensation programs were administered by a Disaster Financial Assistance Board which was appointed by the Lieutenant Governor in Council.

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Downtown Winnipeg			
	Peak unregulated discharge (cfs)	Previous peak unregulated levels City Datum (feet)	Geodetic (feet above sea level)
1826	225,000	36.5	764.07
1852	165,000	34.5	762.07
May 4, 1997	162,000	34.3	761.87
1861	125,000	32.2	759.77
1950	108,000	30.3	757.87
1996	108,000	30.3	757.87
1979	107,000	30.1	757.67

Unregulated discharge or level is that flow or level which would occur in the absence of the flood control works on the Red and Assiniboine Rivers in Manitoba

Source Department of Natural Resources, Water Resources

02/10/98

Since its inception, MEMO has been instrumental in managing and coordinating the Provincial response to major floods (including flash floods), forest fires, dangerous goods emergencies, tornadoes, snowstorms and blizzards, drought and many other emergencies

MEMO's review of the Red River Flood is being conducted in two parts. Part I is the review of the pre-emergency and emergency response phase of the flood. The findings of part I are contained in this report. Part II will review and evaluate the post emergency operations. Specifically, part II of the study will analyze the management of the disaster financial assistance program and disaster relief efforts and will include recommendations for future actions related to the recovery process. Part II of this review is expected to be conducted in the spring/summer of 1998.

1.1 Background

The 1997 flood was unquestionably the largest provincial emergency in the past several decades. In January 1997, Water Resources was predicting flood levels equal to the 1979 flood as a result of the heavy snowfalls in late 1996. Preparedness plans were set in motion as grain and livestock were evacuated to higher ground and information meetings were held in the larger communities of the Red River Valley.

However, on April 5th and 6th, a late season blizzard left 19 inches of snow ensuring one of the largest floods ever recorded. As Manitoba communities fortified their ring dikes, other communities and property owners built temporary sandbag structures.

On April 19th, flood waters consumed the city of Grand Forks, North Dakota. The week of April 21st contained several significant events in Manitoba including the deployment of the Canadian Military to assist with the flood fighting activities, declarations of local states of emergency by several Manitoba municipalities, continuing voluntary evacuations of the Red River Valley and the start of construction of the 40 kilometer long Brunkild dike (Z-dike).

At the peak of the flood, over 1900 square kilometers of the Red River Valley were under water. The 1997 flood water discharges were surpassed by only the 1826 and 1852 floods and had a return period of once in 110 years (see opposite page). In total, over 28,000 Manitobans were evacuated. In the end, two municipalities were severely devastated by the flood, along with several farms and rural properties.

The 1997 Red River Flood was the largest emergency response in recent Canadian history involving thousands of provincial and municipal civil servants, military personnel and volunteers. The lessons learned in preparing for and coordinating the response to this emergency are important and timely.

1.2 Methodology for Part I

1.2.1 Documentation of MEMO's Emergency Preparedness and Response

A chronological summary of the flood emergency was compiled which includes the flood characteristics and highlights of the significant actions and activities by the province and municipalities. The period covered is from February 1, 1997, when early predictions were being made, to May 30, 1997, when the water levels were receding and the re-entry phase was underway. This list was compiled from information made available by the Manitoba Emergency Management Organization which includes news releases, briefing notes, weather reports, and faxes from communities and regional municipalities. The list also includes information from news items printed in the Winnipeg Free Press.

1.2.2 Review of MEMO's Emergency Preparedness and Response

The review and evaluation of MEMO's emergency preparedness and response includes the following:

- a) pre-emergency mitigation measures,
- b) emergency response phase including the response structure and the interaction and coordination of the organizations involved in the flood,
- c) roles and responsibilities of the agencies involved in the flood, and
- d) decision making processes during the flood response,

Interviews with the principal organizations involved in the flood response were the primary source of problem identification and recommendations to MEMO's emergency preparedness and response programs. The information gathered in the interviews was supplemented by a review of the Provincial Emergency Plan and the Emergency Act.

An *Interview Guide* was developed and reviewed by MEMO at the outset of the project to facilitate the information gathering, determine the interested agencies' understanding of the different parties' roles and responsibilities and provide

recommendations to the province's emergency preparedness and response plans and programs. The *Interview Guide* is contained in appendix C. Where possible, the conclusions have been cross-referenced to the provincial emergency plan.

Interviews were conducted with 62 people from 35 organizations. The shortest interview was one hour and the longest was 4 hours with the average duration being about 2 hours.

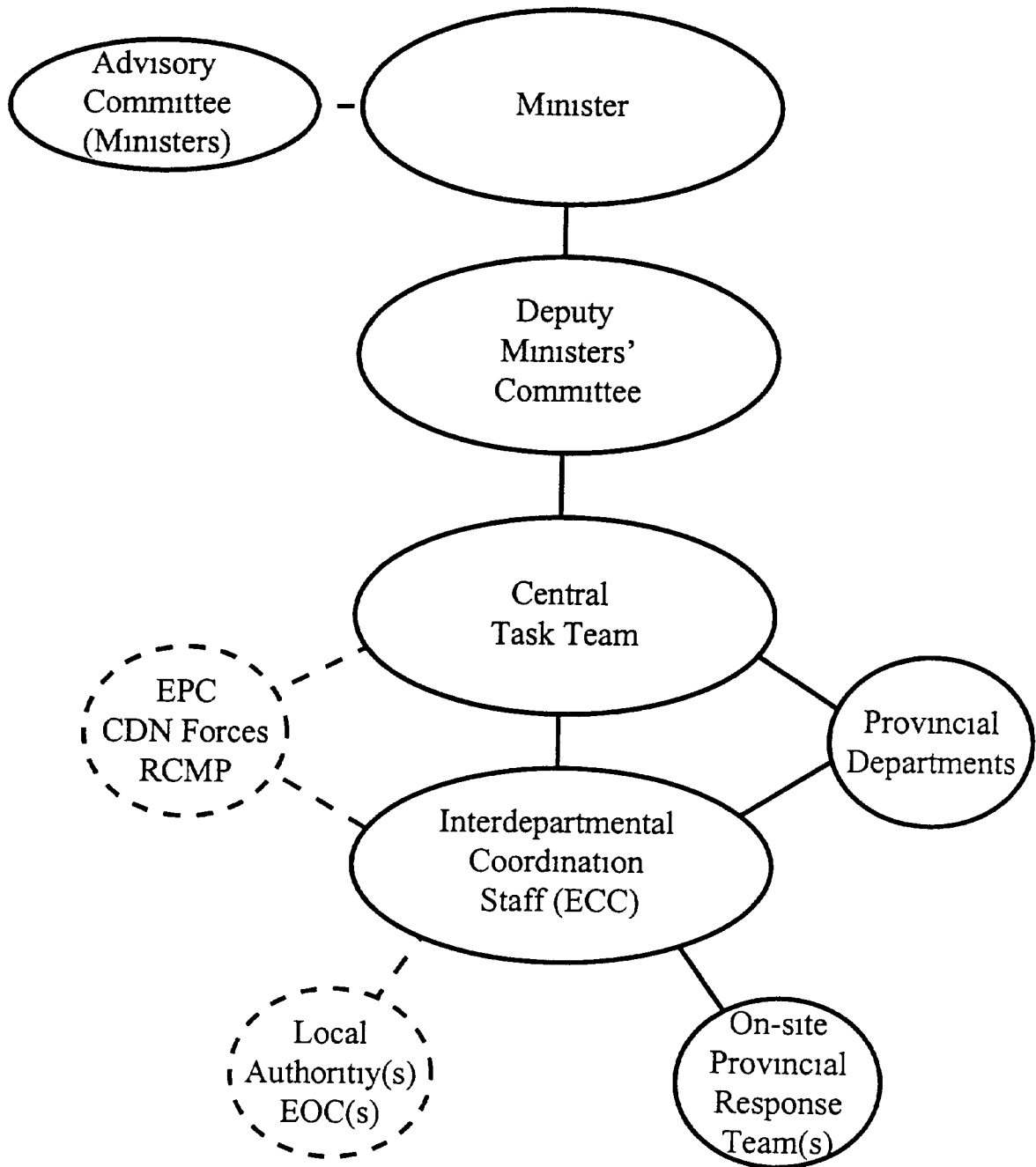
Organizations interviewed include MEMO, the lead provincial departments, the municipalities and other local authorities in the Red River Valley, the military and the non-government agencies involved in the flood response. A complete list of the people interviewed and the organizations they represent is contained in appendix B. The majority of the interviews were conducted from November 20, 1997 to December 23, 1997.

During the interviews, preliminary information was gathered for part II of the study. The information gathered has been summarized as preliminary observations and may be investigated further when the disaster financial assistance (DFA) program has been completed later in 1998.

Where evident, different points of view among the municipalities and the provincial departments will be presented as well as the relevant clause(s) of the provincial emergency plan and any actions being undertaken by MEMO to address the issue.

The following sections present the problems identified by the organizations that were interviewed, and, their recommendations. Therefore, the primary focus is on areas that could be improved, with minimal discussion of the processes and procedures that worked well. *It is important to note that overall, the municipalities and provincial departments believe that MEMO's emergency preparedness and response was excellent given the size of the flood and resources available to MEMO. More importantly, the agencies involved in the emergency are all proud of their achievements in fighting the flood.*

Emergency Response Structure Major Emergency



Part 2 Emergency Response Structure

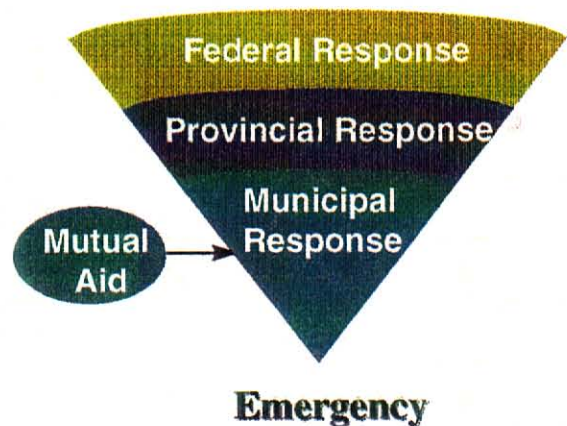
2.1 Introduction

According to MEMO training manuals,

Responsibility to respond is at all levels starting with those closest to the emergency.

As the magnitude of the event surpasses the capabilities of a particular individual, organization or level of government to respond, responsibility moves to the next logical level.

Involvement of the next level does not remove the responsibility or authority of those levels closer to the emergency.



Once the emergency escalates to a major emergency, layers of experts and coordinators are added until the emergency response structure closely resembles the structure presented on the opposite page. (Manitoba Emergency Plan, Page I-B-3)

The response structure supports the local authorities by coordinating the provincial and federal resources. This model is often referred to as a “coordination model”.

On the opposite pages, the “command model” for emergency management is presented and compared versus the coordination model. A key finding of the interviews was that during the emergency response, the emergency management structure shifted from the coordination model towards the command model.

The interviewees had differing views as to whether this was advantageous or not, but all agree that the two models do not dovetail well together. The two models have different decision making processes, different lines of authority and the people involved have different roles and responsibilities.

Most believe that the shift from the coordination model (decentralized) to the military model (centralized) occurred around April 22, 1997. Some believe that this was for

One provincial department provided the following which defines two emergency management models

	Civilian or Coordination Model	Military or Command Model
1	Emergencies may create some degree of confusion and disorganization at the level of routine organizational patterns, but to describe that as social chaos is incorrect	It assumes social chaos during the emergency
2	Emergencies do not reduce the capacities of individuals or social structures to cope. They may present new and unexpected problems to solve	It assumes the reduced capacity of individuals and social structures to cope
3	Existing social structure is the most effective way to solve those problems. To create an artificial emergency-specific authority structure is neither possible nor effective	It creates artificial social structures to deal with that reduced capacity
4	Planning efforts should be built around the capacity of social units to make rational and informed decisions. These social units need to be seen as resources for problem solving, rather than as problems themselves	It expresses a deep distrust of individuals and structures to make intelligent decisions in emergencies
5	An emergency, by its very nature, is characterized by decentralized and pluralistic decision making, so autonomy of decision making should be valued, rather than the centralization of authority	It places responsibility in a top-down authority structure to make the right decisions and to communicate those "right" decisions in official information to ensure action
6	An open system of coordinated effort be created in which the premium is placed on flexibility and initiative among the various social units at the same time of the emergency. The goals should be orientated toward problem solving, rather than avoiding chaos	It creates a closed system intended to overcome the inherent weakness of "civil" society to deal with important emergencies

Source: Author R R Dynes, Page 184

the best; others believe this should not have happened. Nonetheless, they all agree that if a shift of authority is going to happen then a procedure must be in place for managing the shift (i.e. procedures to deal with communications, decision making, etc.)

The following sections outline the roles and responsibilities of the major players and the challenges they faced

2.2 Roles and Responsibilities

2.2.1 MEMO

According to the Manitoba Emergency Plan, the role of MEMO is as outlined as follows

8.9 In an emergency, the headquarters staff of EMO will provide the necessary co-ordination for the provincial support of municipal emergency operations. When it is deemed appropriate, an EMO Municipal Advisor from the respective region will be dispatched to advise and assist the local authority in the implementation of their municipal emergency response.

8.9.1 In a major emergency, designated members of the EMO headquarters staff will perform allotted tasks in the Emergency Operations Centre. EMO Municipal Advisors will normally be designated to control and co-ordinate the provincial/federal response in support of the municipal emergency operation.

In theory, the role of MEMO is to advise the municipalities during an emergency and to control and co-ordinate the provincial and federal response. In practice, the municipalities, provincial departments and agencies have varying understandings of MEMO's role. The larger municipalities appreciate MEMO's role in an emergency, while the smaller municipalities (and much of the public) believe that MEMO is in charge and look to MEMO for leadership and expert guidance rather than relying on their own municipal plans.

Some of the smaller municipalities think that MEMO should be monitoring the municipality's emergency preparedness and response and should be proactive in supplying support, but without assuming authority for the emergency response. In essence its role is of the "mother" to smaller municipalities. The table following provides a continuum of the varying viewpoints received in the interviews. The

1997 Red River Flood
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The fundamental principles of the opposing models for emergency management are summarized below

Assumptions	Civilian or Coordination Model	Military or Command Model
Characteristics of emergency behaviour	Continuity	Chaos
Character of emergency response	Coordination	Command
Character of involvement	Cooperation	Control
	Plan for (and with) continuity	Plan for dramatic change
	Plan for unexpected problems	Plan for reduced social capacity
	Utilize existing structures	Create new structures
	Utilize pre-emergency authority	Predetermine new authority
	Utilize decentralized decision making and coordinate	Create centralized decision making
Consequences of planning	Anticipate extensive helping behaviour Anticipate importance of family support systems	Expect problems of role abandonment
	Emphasis on organizational intelligence and keeping public informed	Emphasis on providing authoritative public announcements
	Emphasis on improvisation based on preparedness and alternative solutions	Emphasis on standardizing scenarios and operating procedures
	Emphasis on mobilizing social resources	Emphasis on creating paramilitary structure
	Utilization of a wide variety of organization forms, including emergent groups	Primary dependence on established organizations
	Emphasis on effectively utilizing volunteers	Emphasis on minimizing volunteer assistance
	Emphasis on maintaining a flexible open system	Emphasis on maintaining a closed system

Source Author R R Dynes, Page 185 and 186

authority of MEMO in an emergency is discussed in section 5.3 Authority During an Emergency Response

MEMO's Role in a Major Emergency Response as Perceived by:		
<i>Larger Municipalities</i>	<i>Smaller Municipalities</i>	<i>Provincial Departments and Other Agencies</i>
Coordinate the Provincial and federal response Track resources	More action from MEMO required Certain activities should be managed centrally such as purchasing	Control the emergency response
Provide information and expertise as required	Assist in the decision making Explain all the risks and provide options	Make high-level decisions

MEMO has 14 regular staff of which 3 people are in the DFA area. At the height of the flood, MEMO had seconded staff from other provincial departments to increase the size of MEMO to over 100 people. The challenges MEMO faces are twofold. Firstly, MEMO needs a reserve of trained and capable human resources to call upon. The department's ability to be flexible and grow rapidly depends on the reserve of resources available. Secondly, MEMO needs to continually provide the stakeholders with MEMO's organizational structure. At times other organizations were confused about who to call at MEMO. MEMO's structure and hierarchy is not clear to other agencies. MEMO needs to assign specific roles to staff members and communicate this with other stakeholders.

2.2.2 Structure of the Central Task Team

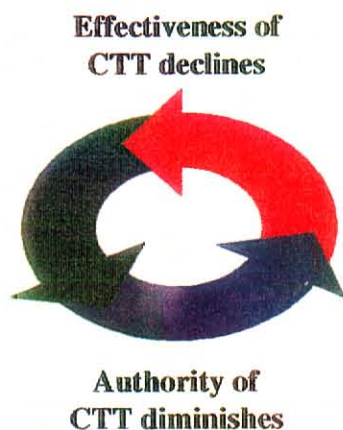
According to the Manitoba Emergency Plan of January 1988,

8.5 Central Task Team (CTT) The team, chaired by the Executive, will be comprised of representatives of the key departments involved in the emergency and the EMO Communications Officer (Media Liaison). It may include federal or other agency representatives as necessary. The CTT may be required to function in a limited emergency when the Emergency Operations Centre has not been activated. The CTT may be assembled by the Executive before, during or after an emergency or disaster for the purpose of

- a. *assessing a potential emergency situation,*
- b. *reviewing response plans and procedures,*
- c. *recommending the activation of the Emergency Operations Centre,*
- d. *dispatching on-site response team(s), the designated On-Site Commander and designated liaison officers,*
- e. *monitoring operations and providing direction to departments, the On-Site Commander and on-site response team(s),*
- f. *providing situation reports and making recommendations to the Deputy Minister Committee,*
- g. *referring major problems for resolution to the Deputy Minister Committee,*
- h. *implementing the direction of the Deputy Minister Committee.*

During an emergency response, the CTT is the central coordinating body that is chaired by MEMO. The interviewees from the provincial departments identified three primary concerns with the:

- purpose of the task team;
- departments and people participating in the task team; and
- the structure of the meetings.



Firstly, the purpose of the task team diminished as the emergency progressed. Their understanding is that the CTT should coordinate and task the provincial response. At the initiation of the CTT, interviewees agree that this purpose was achieved. However, as time passed, the purpose of meeting changed to discussing and making tactical decisions (micro managing) and eventually sharing information. Many felt that MEMO used the CTT meetings to gather information and make decisions at a higher level. Eventually, many believe that authority of the CTT transferred to the Deputy Minister Committee.

As authority transferred to the Deputy Minister Committee, key people no longer attended the CTT meetings, partly because the cabinet meetings were at the same time and partly because the effectiveness of the CTT meetings was reduced.

Two solutions were suggested by interviewees.

- a) Some believe that the transfer of authority from the CTT should never happen. The Deputy Minister Committee should not usurp authority of the

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Key Provincial Departments and Agencies in an Emergency Central Task Team

	Flood	Forest Fire	Dangerous Goods	Health	Severe Weather
Agriculture	X	S	X	X	X
Chief Medical Examiner	S	S	X	X	X
Culture Heritage & Citizenship	X	X	X	X	X
Education	S	S	S	S	X
EMO	S	S	X	X	L
Environment	S	S	L	X	X
Energy & Mines					
Family Services (ESS)	X	X	X	S	X
Finance	X			S	
Fire Commissioners Office		X	X	S	X
Government Services	X	S	S	X	X
Health (EHS)	X	X	X	L	X
Highways & Transportation	X	X	X	S	X
Housing	S	S	S		X
Hydro	X	S	S		X
Justice				S	
Natural Resources	L	L	X		X
Northern Affairs	X	X		X	X
RCMP	X	X	X	S	X
Rural Development	X	S		S	
Telephone System	X	S	S	S	X
Workplace Safety & Health	S	S	X	X	X
Atmospheric Environment Services	S	S	X		X
Canadian Inter-Agency Fire Centre		S			
Emergency Preparedness Canada	S	S	S	S	X
Environment Canada	S		X	S	
Health & Welfare Canada			S	S	
Indian & Northern Affairs Canada	S	S	S	S	
National Defence	S	S		S	X
Parks Canada		S			
Transport Canada	S	S	X	S	
Water Survey of Canada					X
City of Winnipeg			X	X	

NOTE

S - Support Department or Agency

X - Key Department or Agency

L - Lead Department or Agency

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CTT In addition to advising the ministers, according to the provincial emergency plan, the Deputy Minister Committee is responsible for implementing the direction of the minister and provide direction to the departments and subordinate elements of the response organization. The Deputy Minister Committee should set the policy direction for managing the emergency and then step aside. For example, the Deputy Minister Committee should have established priorities for preserving life versus protecting livelihood, and the CTT can establish criteria for evacuation.

- b) Others believe that the emergency response structure should be flexible and allow authority to change as required to respond to the emergency. However, protocols and procedures should be developed to communicate and manage the changes in authority.

Secondly, the composition of the CTT caused concern for many. The provincial departments believe that the CTT's role is not only to coordinate the provincial response, but also to make decisions regarding resource allocations given limited resources. To serve these two purposes, it was suggested that the CTT organize into two groups—one for managing the response to the emergency (decision making) and another for coordinating the response (tasking the work).

The majority believe that the CTT was impeded from making effective decisions because it was

- too large, and
- some key departments did not attend the CTT meetings or more junior staff attended the meetings in the place of senior officials.

As the effectiveness declined, members of the CTT noted that groups of organizations started to form and work together, and many organizations relied on their internal communication and departmental decision making processes. Essentially MEMO's coordination role was eroded.

Many organizations suggested that the CTT needs to be focused in order to make decisions. The major stakeholders required to fulfill the objectives of the CTT should be identified. As one interviewee summed it up, "if you bring the wrong people to the table, you get the wrong questions and answers." An example (believed to have been developed during the revisions to the Emergency Plan in 1993) received from one agency is presented on the opposite page. It is important to be sensitive to the fact that the purpose of the CTT and the involvement of provincial departments changes depending on the emergency and the phase of the emergency response.

Further, the people representing the agency at the CTT must have responsibility for the agency and able to commit resources. As the authority of the CTT shifted to other levels of the emergency response structure, senior people didn't attend the meetings.

Thirdly, many participants had concerns with the structure of the meetings. Suggested improvements to the meetings included:

- schedule daily meetings earlier in the morning,
- agendas for the meeting or at least minutes of the previous meeting, and
- the same chairperson for continuity

In order to coordinate the response, it was suggested that a large contingent of organizations, again represented by the senior officials, could attend. The meetings (or briefings) should be used to share information and task the work.

2.2.3 Emergency Operation Centre (EOC)

Several recommendations were provided to improve the EOC. Four areas were identified:

- 1 layout and aesthetics of the EOC,
- 2 communication facility,
- 3 separate public information centre,
- 4 media briefing area, and
- 5 installation of computer systems and an emergency management system

The physical setup of the EOC is not conducive to effective coordination of an emergency. People complained that the work space is inadequate, it's too noisy, telephone and computer resources are insufficient, cable television capabilities do not exist, etc. It may not be practical to provide an area suitable for an emergency the size of the 1997 flood, but MEMO needs *procedures* for seconding resources. MEMO has the authority to second space and resources from other departments, however it does not appear that procedures are in place to carry out this authority.

A communication facility needs to be established. The facility should be used to receive and direct calls from the participating organizations. Many agencies unfamiliar with the CTT structure found it difficult to get information from MEMO and the province. The call receptionists should have computer systems for logging the calls, accessing information and directing calls. At times people received conflicting information from call receptionists because they were not properly briefed and were

not provided with up-to-date information. The call centre could manage real-time information utilizing computers with "flash board" messages.

The call receptionists should be logging the calls and MEMO coordinators should be able to perform queries in order to determine who is calling, what their concerns are and whether their concerns are being addressed.

During the flood response, public inquiries overloaded MEMO's EOC with 600 to 800 calls per hour, making it difficult to maintain an acceptable level of service with the municipalities and other agencies involved in the emergency response. It has been suggested that a call centre for public inquiries be established separately from the operations communication centre. The call centre could run like a 911 office and have similar capabilities for dealing with emergency calls.

However, a concern with the previous two suggestions is that MEMO may have difficulty finding enough trained resources to operate a public inquiries centre and an emergency operations centre.

Emergency Management System at MEMO MEMO requires a major technological upgrade to its Operations Centre to effectively manage large-scale emergencies such as the 1997 flood. Some of the key components of an effective emergency management system that could be installed at MEMO's Operations Centre are

Operations Management - which would be used to record and report on major events, resource allocation and response status. It would also have map query and display capabilities which would enable the MEMO operations centre to quickly generate maps indicating locations and status of various important activities/events.

Communications Log - which would enable operators with headsets to record calls as well as enable managers or operators to query and search the call database. This module may provide input to the operations management module.

Field Access - a system to share data between field staff (On-Site Commanders) and the MEMO emergency coordination centre. On-Site Commanders need a computerized reporting system to provide regular and structured written records of local site conditions.

Data Warehouse In order to enable an effective operation management system, the applications listed above must access a fairly comprehensive database of spatially-

referenced information This would allow MEMO to not only maintain an accurate picture of events, but also enable it to provide useful information to municipalities and other agencies as required A very significant portion of the data that would be required has already been created by various provincial agencies MEMO should investigate drawing upon this existing provincial resource or at least have the infrastructure in place in order to access these repositories of information when required

2.2.4 On Site Commander/Provincial Site Coordinator

According to the provincial emergency plan, whenever provincial resources are used, an on-site provincial site commander is appointed

8.12 On-Site Commander (OSC) When an on-site provincial response team is established, the Coordinator will appoint an OSC to provide the control and co-ordination of the response of the participating agencies, delineating the responsibilities and reporting structure related to that specific emergency

In the flood of 1997, on-site commanders were used intermittently Wherever there was an on-site commander, all agreed that information between the provincial EOC and the local EOC flowed better The challenge MEMO faces is the ability to mobilize a large number of on-site commanders Again, MEMO needs a trained reserve force The difference between previous flood emergencies and the flood of 1997 was the use of on-site commanders In previous emergencies, MEMO had more personnel and access to field personnel of the Department of Natural Resources to deploy to the field

Some municipalities had on-site commanders who were dividing their time among several municipalities Part-time site commanders helped, but the site commanders were not always accessible Further, as the emergency progressed, some municipalities felt as if the provincial EOC did not value the opinions and information of the on-site commanders Eventually the on-site commanders lost their effectiveness partly because decision making processes were changing and partly because the on-site commanders were not equipped with computer technology to package site information in an efficient manner It was suggested that the on-site commanders need to be equipped with computers to provide regular status reports via modem as discussed earlier

The problems with communications with the municipalities that arose as a result are further discussed later, in section 2.4.1 Communications with Municipalities

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2.2.5 Municipal Emergency Coordinator

The Emergency Measures Act states that,

- 8 *Every local authority*
(c) shall appoint a person from the local emergency response control group and prescribe the duties of that person including the preparation and co-ordination of emergency preparedness plans and programs for the local authority,

All the municipalities have appointed an emergency coordinator. In general, their understanding of their role is to manage the emergency response activities and make all decisions within the municipality with respect to the emergency in accordance with the direction established by the local council.

Conflicts arose in the management and control of resources which were undertaking the emergency response activities. The municipalities believe that they should have more control over provincial and federal resources in an emergency. They believe that the province's role is to a) support the municipality with resources on demand, b) monitor and track the resources.

The majority of the *smaller* municipalities have designated the chief administrative officer as the emergency coordinator. During an emergency, the CAO is too busy to perform both positions, and often results in the municipalities' capabilities being exceeded prematurely. The emergency coordinator's back up support is usually the mayor or reeve of the municipality, which tends to introduce politics into the emergency response. The mayor and council need to set policy direction and the emergency coordinator needs to plan and execute the response to best meet the policies. Within the context of municipal control, the working relations between the emergency coordinator and the council becomes a critical factor in managing the emergency.

Problems also arose from the fact the many of the emergency coordinators were directly impacted by the emergency. That is, they had family and property in flood prone zones. Many emergency coordinators admitted that it was difficult to filter out personal concerns and make objective decisions. Many felt a strong obligation to save property and even developed a "siege mentality" (go down with the ship attitude).

It was suggested that

- a) the role of the emergency coordinator be defined in the provincial emergency plan,
- b) the emergency coordinator not be the chief administrative officer of the municipality,
- c) there be a procedure in place to recognize when the emergency coordinator needs support

2.2.6 Provincial Executive Coordinator

It was agreed that the provincial executive coordinator did an excellent job, however it was suggested that the executive coordinator worked too hard—managing both the operations and acting as the spokesperson for MEMO. At times, the provincial executive coordinator was difficult to contact and organizations were not sure who was in command of MEMO in the absence of the provincial executive coordinator. It was recommended that the hierarchy of MEMO be clearly presented and that the role and responsibility of the provincial executive coordinator be either focused on the management and operation of MEMO or on public relations, but not both.

2.3 Organizational Interaction and Coordination

2.3.1 Agency Interaction and Coordination

The support and assistance from non government agencies and volunteer organizations was greatly appreciated by the municipalities. However, at times there were problems with the delivery of the services. Specifically, different organizations' procedures were not always compatible with the desires of the municipalities. One example is evacuation registration. Several municipalities wanted registration during the evacuation to be administered by local, familiar townspeople, while the agencies wanted to administer the registration. Another example was the collection of information for disaster financial assistance. Agencies were eager to help but had uncoordinated goals, programs and processes which resulted in a slow compensation process.

To reduce these types of conflicts, better coordination was suggested and advanced planning of service delivery during an emergency should involve the municipalities.

2 3 2 Coordination of the Provincial Departments

Areas for improvement in coordinating the responses of the provincial responses are

- coordination of the provincial emergency response, and
- sharing and accessibility of information

Individually, the emergency response of the provincial departments was excellent. However, the municipalities felt that the departments were uncoordinated, often relying on their own field people to gather intelligence and making independent decisions. It was apparent that provincial departments were following policy guidelines set by their ministry and not those policies and decisions set by the CTT. This is likely a result of the problems alluded to earlier, where the effectiveness of the CTT declined as its authority shifted to other areas. The municipalities found this frustrating as different agencies were trying to be the expert—Canadian Military, Water Resources, DNR—and at times providing conflicting information.

Both provincial departments and municipalities believed that information was not coordinated and not always shared. Each department had their internal source of information which was not coordinated among the departments. Quality of map data, for example, varied from department to department and data was uncoordinated. For example, if one wanted to know which farmers were in an area, what road access to the farmers was available and where the water was in relation to these farmers, one had to contact three separate departments. As well, municipalities said that they would request electronic copies of maps and geographic information systems data which they knew existed, but were only given incomplete paper maps and printouts. Similar examples were provided for the coordination of compensation payments and for information collected by the various disaster financial assistance organizations.

Provincial departments treated information as proprietary and some felt that there were political barriers to open information sharing. The municipalities would like MEMO to break down barriers between different agencies, and coordinate and centralize the data.

2 3 3 Organizational Relations and Coordination of the Military

Organizational problems with the military stem from the different command structure the military employs. The centralized command did not mesh well with the decentralized emergency response structure. Municipalities found it frustrating that

ground personnel for the military had limited authority and most decisions had to be directed up the chain of command. Many of the municipalities never understood the military's structure and did not establish good communication channels with the military. As a result, the military appeared to be following their own agenda. The reality is, in order to manage and prioritize the numerous requests, the military took their directions from MEMO (except in the case of life threatening situations), and not from the municipalities or provincial departments. The participating organizations need to understand the procedures for tasking the military.

Finally, some municipalities had personality conflicts with the military's local site commander. Compounding this was the fact that local military command changed several times. The loss of continuity in command at the local level and the occasional personality conflict made it difficult for the municipalities to develop a rapport with the military.

The municipalities believe that MEMO should play a role in bridging the gaps between the military and the municipalities by a) clearly defining the role of the military and b) clearly defining the reporting structures. As a precursor, it was suggested by the military that MEMO and the Military meet regularly to familiarize one another of their emergency powers and develop working relationships. For certain tasks such as security of the emergency area, in accordance with the Emergency Powers Act, the request for military support should come from the Solicitor General of Canada.

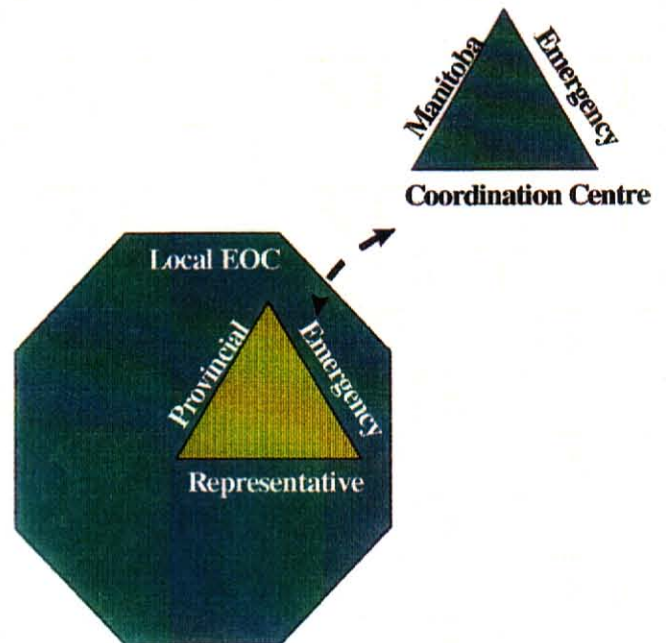
According to the municipalities, it appeared that the military's role was to evacuate the Red River Valley. However, the municipalities wanted the military to undertake laborious tasks such as flood protection and dike patrol. This created conflict between the municipalities and the military because the municipalities felt their control of the emergency was being challenged by the military. The municipalities also felt uneasy because, in their estimation, the military was either overly cautious or had information that the municipalities didn't have. Many believe that it was this struggle which ultimately upset the balance of the provincial emergency response organization structure.

2.4 Communications

2.4.1 Communications with Municipalities

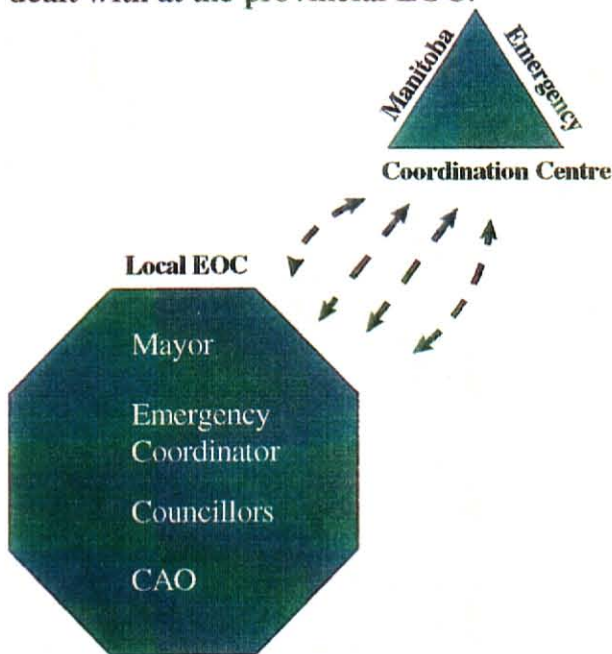
According to many authorities in emergency management, communication is typically the first resource to be exceeded. According to the provincial emergency plan, the province places a representative in the community to gather local intelligence and facilitate the flow of information.

The on-site commander for the province filters out unnecessary information and helps prioritize resource requests. In any emergency, information exchanges must be dealt with at the lowest possible level to the emergency. Queries such as, "is the road closed?" should not be dealt with at the provincial EOC.



Planned Emergency Management

In the 1997 Flood emergency, MEMO did not have full time, experienced site liaisons. The result was that personnel from the local authority called MEMO directly. The resources at the EOC were overloaded and information was not properly packaged. That is, with so many calls to the EOC, the information was uncoordinated and at times conflicting. As well, the large volume of oral versus written communications, resulted in miscommunicated and misunderstood messages. The problems rippled up to the provincial departments as the municipalities called directly to the province when MEMO staff were unable to manage the large volumes of calls.



Actual Emergency Management

Further, people in the EOC were unfamiliar with local conditions, a gap the on-site commander usually bridges. Personnel from MEMO should be at sites such as the Brunkild dike. Much of the information regarding the construction and purpose of the Brunkild dike came from the media rather than provincial communication channels.

For regular communiqués updating the status of the emergency, the municipalities believe that fax is the best method to communicate. However, there were complaints that the faxes were not timely, often arriving 24 hours late. Often the information received by fax came in the afternoon almost always after the local emergency meeting. The result was that many of the municipalities were dealing with outdated information and felt at a disadvantage to the provincial staff who had more current information. Extra fax lines would rectify this.

The two conference calls involving the municipalities and the Premier received mixed reviews. The municipalities said that the conference calls developed a sense of togetherness (It was nice to hear how other municipalities were coping). However, conference calls are not a substitute for face-to-face decisions. As well, many municipalities did think that many of the issues discussed such as evacuations and re-entry are site specific and resented the broad generalization that all municipalities were at the evacuation stage. On an operational side, it is difficult to assemble the participants to the conference call.

2.4.2 Communications Among Provincial Departments and Agencies

Many of the provincial departments have had long-term working relationships with MEMO and have electronic communication links. Many would prefer to have electronic copies of the communiqués rather than the faxed copies received from MEMO. They cited that e-mailed copies are

- easy to forward (faxes don't always re-fax clearly);
- a written record,
- easy to search, and
- easy to file

The provincial departments found the Internet to be a useful medium to communicate with other departments and the public. Many web pages reported several thousands of hits per day. Many organizations relied on the flood forecasts posted on the web page of Water Resources. It was suggested that MEMO needs to develop procedures for Internet use (i.e. what information can be posted).

2 4 3 Communications Through the News Media

Communications with the media went well, nonetheless, many interviewees felt that MEMO could have been more proactive with the media. Specific recommendations include

- select who delivers the message, and
- be more proactive with the media

Many believe that the delivery of media interviews need to be better planned by MEMO. Messages delivered by the provincial executive coordinator can have a high impact if used selectively. Once the media has access to the executive coordinator they have the expectation that he/she will always respond to the media requests placing inordinate demands on executive coordinator's time.

MEMO should have been more proactive with the media to prevent rumors and to quash the "informal" information networks. The media has a tendency to "journalize" information in an effort to scoop a story. Many commended the work of the City of Winnipeg and their media scrums in providing information to and instilling confidence in its citizens. Also, the information sessions coordinated by MEMO in Morris, Letellier and Domain received high praise.

However, unless clear authority is established, different levels of the emergency response team could be delivering conflicting messages—for example, the mayors and reeves saying the municipalities are not evacuating while MEMO issues evacuation orders. Authority During an Emergency Response is discussed in section 5.3 of this report.

It was generally agreed that MEMO should have facilities in the EOC for media briefings.

2 4 4 Information Requests by the Public

There is a need for coordination of information requests by the public during an emergency. For example, in one municipality, residents were told (by a provincial department) to build dikes around their homes in areas where it was not necessary. This created panic and overloaded resources. It is important to decide who is authorized to issue information. These types of issues should be dealt with at the local level, but often need coordination.

Conflicts, such as those noted above, could be reduced if MEMO had an on-site commander coordinating the provincial response teams

2.5 Procurement of Resources

2.5.1 Municipal Access to Resources

Except for sandbags, access to resources was not a significant problem in the 1997 Flood. Municipalities commended MEMO on their resourcefulness in obtaining two-way radios, pumps, etc. However, there were conflicts with the control of provincial and federal resources and, in the case of the Brunkild dike construction, the control of private resources. Also, the smaller municipalities would like MEMO to take a more active role in procuring resources (such as centralized purchasing of sand bags) and tracking costs.

There were conflicting viewpoints between the municipalities and the provincial departments when it came to allocating provincial resources such as boats and motors. The municipalities would prefer that MEMO not play the "middle man." They would like MEMO to limit their role to assembling the expertise to deliver the service and establishing the lines of communication between provincial departments and the municipalities. The provincial departments, however, would like MEMO to play a larger role in documenting and distributing resources equitably.

During the construction of the Brunkild dike, some municipalities said that it was difficult to hire contractors. Much equipment was tied up with the construction of the Brunkild dike.

In the above cases, MEMO must set out procedures for allocating resources and clarify the control and authority which municipalities have over resources other than their own.

The municipalities would like to centralize purchasing for resources such as sandbags. Currently, the resourcing of sandbags is a municipal responsibility. In order to fulfill this role, MEMO would need to maintain lists of recommended suppliers.

Moreover, some municipalities (and provincial departments) suggested that MEMO develop an inventory management system for coordinating the large scale resources (such as helicopters, boats and heavy equipment) in order to provide real-time cost data for quick cost/benefit analysis and for tracking resources and costs.

Part 3 Chronological Summary of the 1997 Flood

Serial	Action	Responsibility	Date
Pre-Emergency			
1	Preliminary flood forecasting liaison with U S authorities on flood prediction	Natural Resources	Starting January 13
2	New releases on flood forecast issued	Minister of Natural Resources/EMO Communications Officer (Media Specialist)	February 9, 24 March 7, 20, 27 April 9, 16, 20
3	Central Task Team meets to consider threat	MEMO /Departments	Starting January 13
4	Key provincial departments are alerted	MEMO	Starting January 13
5	Municipal advisors increase liaison visits to municipalities of flood prone areas	MEMO	February, March, April
6	Contact and advise local authorities on movement of grain stocks from flood prone areas	Agriculture	February 3, 18, 19 March 6
Preparatory Stage			
1	Flood forecasting continues	Natural Resources/ MEMO Communications Officer (Media Specialist)	February 9, 24 March 7, 20, 27 April 9, 16, 20
2	Spring run-off outlook issued	Natural Resources/ MEMO Communications Officer (Media Specialist)	February 9, 24 March 7, 20, 27 April 9, 16, 20

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Serial	Action	Responsibility	Date
3	Update flood plans/procedures	Departments/ Municipalities	February, March, April
4	Check resources of stores, equipment and manpower Take replenishment and/or purchasing action	Departments/ Municipalities	March, April
5	Meet with local authorities to consider flood control measures, emergency diking	Engineering and Construction, Natural Resources	February, March, April
6	Meet with local authorities to review emergency response/evacuation plans and procedures	MEMO/EHS/ESS	February, March, April
7	Meet with local authorities to advise and assist movement of fodder and livestock	Agriculture	February 3, 18, 19 March 6
8	Central Task Team continues to meet, informs Deputy Ministers' Committee about the developing flood threat, action taken and recommendations for further action	MEMO/Departments	February 9, 24 March 7, 20, 27 April 9, 16, 20
9	Elements of the provincial emergency response structure are alerted and response personnel briefed	MEMO	January
10	Provincial Emergency Co-ordination Centre is made ready and Co-ordinating Staff are briefed	MEMO/Departments	April 19 - date opened
11	ECC telephone communications installed and checked	Communications/ Government Services	April 10
12	Information/news release procedures are set up and media advised	MEMO Communications Officer (Media Specialist)	February, March, April (ongoing news releases)
13	Preliminary contractual arrangements	Engineering and	

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Serial	Action	Responsibility	Date
	made with commercial firms for diking operations	Construction, Natural Resources	
14	Arrange special financial appropriation and coding	Finance	March, April
15	Arrangements made with transportation authorities for the movement of grain, fodder and livestock	Agriculture/ Department of Highways/ EPC	Starting February 3
16	Arrangements made for the assistance of Canadian Forces	MEMO/Canadian Forces	April 19
General Flood Emergency			
1	Daily operational flood forecasts and information on water levels and flow are issued	Water Resources Natural Resources	April (not sure if daily)
2	Central Task Team meets daily, briefs and makes recommendations to Deputy Ministers' Committee	MEMO/ CTT	February, March, April (not daily)
3	Deputy Ministers' Committee and the Minister meet as necessary	Deputy Ministers'/Ministers	February, March, April
4	Elements of the provincial emergency response structure are activated	MEMO/ Departments	April
5	Emergency Co-ordination Centre is activated and provides the co-ordination for the provincial/municipal response	MEMO/ Departments	April 19
6	Issue operations telephone lists to municipalities, departments and agencies	ECC	March/April

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Serial	Action	Responsibility	Date
7	Co-ordinate and control public information	MEMO Communications Officer (Media Specialist)	February, March, April
8	Departments and agencies activate and staff their twenty-four hour a day emergency telephones	Departments/Agencies	April 19
9	Provincial on-site response teams are dispatched by the Central Task Team to advise and assist local authorities in the flood threatened areas	MEMO/CTT/ Departments	April - May
10	Canadian Forces are dispatched to designated localities	MEMO/Canadian Forces	Starting April 22
11	Municipalities conduct flood operations, evacuate citizens, hospitals, care homes as necessary, assisted by on-site response teams	Municipalities/On-Site Response Teams/ESS/EHS/ RCMP	April 20 - April 29
12	Assistance is provided to evacuees at reception centres by the designated reception communities	Municipalities/ESS/ EHS	April
13	Departments and agencies support municipal flood operations in accordance with departmental and agency response procedures	Departments/Agencies	February, March, April
14	Implement and co-ordinate arrangements for the shutting down of utilities/services in the evacuated areas	Municipalities/CTT/ ECC	April

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Serial	Action	Responsibility	Date
15	Advise and assist school authorities in flooded areas in arrangements for school closing and continuing education requirements	Education	
16	Arrange and co-ordinate the provision of transport to supplement municipal resources	Dept of Highways/ Government Services	February, March, April
17	Arrange through EPC the adjustment of postal service to flooded areas	CTT	March 27
18	Maintain regular patrols of all property in the flooded areas	RCMP	April - May
Post-Emergency			
1	Initiate preparatory arrangements for re-entry preparations	Municipalities/On-Site Response Teams/CTT/RCMP	Starting May 1
2	Support and where necessary co-ordinate municipal re-entry preparations	CTT/ECC	Starting May 3
3	Initiate re-entry information program	MEMO Communications Officer (Media Specialist)/ Departments	Starting May 3
4	Ensure that municipal preparations for re-entry are complete and that provincial responsibilities have been discharged	CTT	May 6
5	Implement re-entry operations when communities are prepared to receive returning citizens	Municipalities/On-Site Response Teams/ECC/ Departments	Starting May 3

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Serial	Action	Responsibility	Date
6	Support municipal re-entry operations and co-ordinate as necessary	Departments/ECC	May
7	Arrange for flood damage estimation	MDAB/Departments	Starting May 5
8	Process claims for compensation	Local authorities/MDAB	Starting May 17
9	Process operations costs	Finance	

Part 4 Emergency Preparedness Phase

4.1 The Province's Emergency Plan

The current edition of the provincial emergency plan is dated January 1988. Revisions to the plan were undertaken in 1994, but have not been approved by the Lieutenant Governor in Council. According to The Emergency Measures Act,

6 a) The Lieutenant Governor in Council may make orders and regulations concerning the establishment, modification and approval of emergency preparedness plans and programs,

The agencies which referred to the provincial emergency plan found that information in the plan was outdated. Since the last official revision in 1988, several provincial departments have undergone restructuring and downsizing programs and the new structures and names and phone numbers of personnel have not been updated in the provincial emergency plan. As well, local authorities such as regional health authorities have been created in the past several years and the future will likely include additional changes. MEMO needs to update and continuously maintain their emergency plans to keep them current.

The provincial departments that participated in the revisions to the 1988 provincial emergency plan agree that the resulting plan is much better and some departments refer to it.

4.2 The Municipalities' Emergency Plan

According to some provincial officials, the quality of the emergency plans of the municipalities varies dramatically from municipality to municipality. In general, the plans are sound (on a macro scale), however many found that the operational details and procedures for the execution of emergency response are lacking.

Many municipalities are planning to document their experiences, however, few have completed an operational debrief since the 1997 flood emergency. Many plan to document procedures such as how to evacuate a hospital or care home (lead times, resources required to execute the work, evacuation routes, etc.) or how to pressurize and secure the natural gas system. The municipalities expect that documentation of these general procedures will assist in making future decisions.

Many municipalities also admitted that they have become complacent with their emergency plans and have not undertaken routine maintenance of the documents. Some municipalities are planning to regularly review their emergency plans.

A final observation, in which MEMO could play a lead role, was the need for consistent and coordinated emergency plans among the municipalities. Both provincial departments and municipal officials were disturbed by the lack of coordination of emergency plans between neighbouring municipalities. For example, some municipalities were relying on neighbouring municipalities (who were also responding to the emergency) to act as their host community in the event there were evacuations. When the size of an emergency is beyond the boundaries of a municipality, there is a need for an integrated emergency response plan.

4.3 Preparedness

Both the municipalities and provincial departments commended MEMO in their preparedness in the months leading up to the flood. The advance public meetings in Domain, Morris and Letellier were beneficial by focusing people on the emergency and by establishing early participation and involvement of the various agencies. For emergencies which occur with advance warning, pre-emergency meetings should be coordinated.

The municipalities also appreciated the bulletins and checklists issued by MEMO and the provincial departments (information such as what to do during an evacuation, procedures for re-entry, how to treat the water supply upon re-entry, etc.). The municipalities would like MEMO to lead and coordinate the provincial departments in the development and maintenance of general information which could be issued prior to an emergency which provides guidance and could be tailored by the municipalities to meet the specific needs of their situation. The municipalities would like MEMO to package the information and provide it in advance of the emergency rather than piecemeal during the emergency.

In addition, the municipalities would like MEMO to lead and coordinate the provincial resources in the development of a general emergency response plan. For example, the municipalities would like more information such as when will a ring dike be closed or raised? When will provincial road closures be issued? What alternative truck routes are available in the case of a regional emergency?

The following section dealing with emergency scenarios could be dovetailed with the general emergency response plans.

4.4 Large Scale Planning/Emergency Scenario Building

The provincial departments involved in the 1997 flood emergency believe that emergency scenarios need to be developed and that MEMO should take a lead role in developing the scenarios. For example, scenarios for large scale evacuations, "in-place" evacuations, emergency evacuations for sudden emergencies such as dike breaches, and identification of essential services and personnel in the event of an evacuation could be developed.

These scenarios should be used to develop plans and procedures by identifying critical decision points and lead times for decision. It was suggested that all the organizations need to consider and plan for worst-case scenarios such as what to do if the capacity of the Winnipeg floodway is exceeded? How might the floodway fail? How much advance warning will there be? And more importantly, what should the emergency response be?

The Department of Highways built "flood extent" maps by adding 1, 2 and 3 feet to the 1996 flood levels. With this information, the Department of Highways was able to plan alternative traffic routes in advance of the flood emergency.

At the municipal level, there is a need to build scenarios for different flood levels. The municipalities could develop scenarios of different flood levels to identify emergency responses (timing of the emergency declaration, evacuations, re-entry, etc.), resource requirements (people, sandbags, provincial support, etc.) and costs. In the case of floods, municipalities need to identify "trigger elevations" for evacuations and re-entry. As a starting point, the province and the municipalities should document the lessons learned in the 1996 and 1997 floods.

4.5 Municipal Emergency Preparedness

MEMO could assist municipalities in their emergency preparedness by clarifying the point at which compensation commences and how the province shares the costs to fight the emergency. Municipalities were reluctant at first to spend money preparing for and fighting the flood. Being prepared costs money—and it is easy to over react. The municipalities were worried about having to justify expenditures in light of difficult trade-offs. Every expenditure is questioned. Is it needed? How much should it

cost? Will it be reimbursed? When will payment be received? Often municipal mobilization began when provincial compensation commenced, and this reduced preparedness

4.6 Emergency Declarations and Defining the Area of a Disaster

The major concern regarding the municipal and provincial state of emergency declarations was the division of authority when the province makes a declaration. When the province made their emergency declaration, many of the municipalities believe they lost all decision-making authority. Many provincial departments agree, and are of the opinion that the province should have made the declaration earlier when it was clear that this emergency was of epic proportions. The significance of a provincial emergency declaration and the role the province and municipalities have in a provincial emergency must be defined (division of powers). This is further discussed in section 5.3 Authority During an Emergency Response.

A secondary concern revolved around the definition of the area of the disaster. Specifically, the municipalities felt that the boundary for the provincial emergency was too arbitrary. MEMO should develop more definitive procedures for defining the emergency.

4.7 The Decision to Evacuate

The mandatory evacuation was undoubtedly the most controversial decision during the 1997 flood. Questions raised include

- ◆ Who should decide if, who and when to evacuate?
- ◆ How should evacuation orders be issued?
- ◆ How should evacuations be executed?
- ◆ How will compensation for evacuees be handled for mandatory and voluntary evacuations?

Rumors abound regarding which organization(s) influenced the decision for evacuations. The opposing views are summarized in the table below.

<i>Opposing Views: Evacuations</i>		
	<i>Pro Evacuation</i>	<i>Against Evacuation</i>
Safety	Err on the side of caution	Take calculated risks
Emergency rescues	No more than 50 people possible	Much more than 50 people possible
Risks	High	Low to medium

Hindsight is 20/20, but it uncovers strong philosophical differences. What do you do when organizations view a situation differently? While many rural municipalities were preparing for self-sufficiency and not considering mandatory evacuation, other organizations were preparing for mass evacuations.

Much of the problems were exacerbated by the fact that MEMO did not have on-site commanders in the municipalities and communication and information exchange was poor.

On April 27, 1997, MEMO issued an order for a mandatory evacuation of the Red River Valley. Additional problems surfaced because a) the fax was unsigned, and b) Natural Resources was empowered to identify essential services to remain in the ring diked communities.

Many rural municipalities were establishing communication links with rural residents who were manning their dikes and were shuttling resources to support them in their flood fight. However, the municipalities lost communication with their residents when the evacuation order was issued. Residents were afraid to leave for supplies for fear that they would not be let back in to the flood zone. The support structure the municipalities were building was lost.

The lessons learned can be summarized as follows: (All are addressed in later sections)

- a) a clear definition of authority and roles and responsibilities of the interested organizations is required (and must be supported by strong communication links),
- b) evacuation scenarios are required,
- c) criteria for evacuations is required

Many believe that the municipalities should decide (with support from MEMO) whether or not to evacuate because they represent the residents; others believe that the person or organization that makes the decision to, or not to evacuate must have the capability to execute the evacuations or perform emergency rescues.

More up-front analysis of lead times to critical decisions such as evacuations is required. In river floods, evacuations are anticipatory decisions and do not need to be rushed decisions. With better understanding of lead times, evacuations can be planned to avoid evacuations at night or hastily executed evacuations. And finally, evacuation

plans need to be developed for each community. The plans should include evacuation routes and special evacuation requirements for schools and hospitals, etc

It was agreed that residents within the ring diked communities have different criteria for evacuation than residents in the rural areas due to different levels of flood protection, different levels of preparedness, different access to resources, and different livelihoods. Below, the criteria for evacuation for ring diked communities and rural areas is discussed.

4.7.1 Criteria for Evacuating During a Flood Emergency

Residents within ring diked communities tend to evacuate voluntarily. For these residents, evacuation is only an inconvenience. Some of the issues to be addressed when developing criteria for mandatory evacuation of ring diked communities are

- the predicted crest level of the flood water, the rate of rise of the water and the weather forecast,
- the level of confidence in the flood protection works,
- the time required to decommission or prepare the utilities such as hydro, water and gas,
- when special evacuations are required (hospitals, schools and manors, and
- the availability of evacuation routes

By building scenarios, the ring diked communities should be able to determine the "trigger elevations" for mandatory evacuations. In addition, emergency response teams need to consider developing criteria for staying in the ring dike to monitor and reinforce flood protection works and infrastructure.

The criteria for evacuating rural areas and farms during a flood emergency is more complex than for ring diked communities. Farmers in the rural area have very expensive farms to protect from both the flood and theft, they have animals to sustain, and they are better prepared and have resources such as tractors, boats, cell phones, etc.

Some argued that people in the rural areas needed to evacuate when water was on the main floor of their home. Regardless, MEMO should lead the municipalities and provincial response teams in developing evacuation criteria which strikes a balance between safety of the residents and protection of property.

4.7.2 Criteria for Staying Within an Emergency Area During a Flood Emergency

Many interviewees believe that there should be criteria for staying within an emergency area during a flood emergency. Some of the issues to be addressed in developing criteria include the number and roles of the people who stay, their safety, and their preparedness.

Firstly, for ring dike communities, most agree that the number of people within the dike needs to be reduced to a manageable number. Certainly all agree that safety is the first concern. However, there was much conflict regarding what is a safe, manageable number of people and who should decide. As well, there was disagreement with respect to identifying the essential personnel and the role of these people. For example, is the local council considered essential personnel?

Secondly, safety needs to be assessed and the responsibility for safety needs to be determined. In the case of rural areas, does government (municipal, provincial and federal) have responsibility for the safety of the residents? Or is it sufficient to inform the people of their risks and tell them that the municipality does not have the resources to rescue them. Should residents be required to sign a waiver?

Further, scenarios need to be developed for emergency rescue operations. If the dike fails, can the remaining people be evacuated safely? By boat? By helicopter? Is there an evacuation route? Is self-evacuation an option? Again, lead times and the risks involved in rescue operations need to be assessed. Many agreed that life should not be risked to save property, however, equally as many felt that the evacuations erred on the side of caution. Scenarios need to be used to determine the risks, and to communicate the risks so that these varying viewpoints are reduced. In addition, a system to monitor those who are staying is required. In the flood of 1997, the municipalities regularly called the rural residents, and DNR and the military paid periodic visits.

Thirdly, the preparedness of those residents who stay to fight the flood should be evaluated. It was suggested that checklists be developed which include essential items such as access to a boat, cell phone, generator, pumps, food supplies and a signaling device.

4.7.3 Enforcement of a Mandatory Evacuation Issued by the Province

Evacuation of an area, whether partial or entire, will be necessary. When an evacuation is called by the province, they should stand by the decision. Many organizations need to mobilize when an evacuation is ordered. Water and gas systems need to be pressurized, house services need to be turned off, etc. And finally, the agencies in charge of enforcing the evacuation are placed in a difficult position if the evacuation is only loosely enforced. As well, rescuers are put at risk if people disregard the evacuation order and require emergency rescue at a later time.

4.8 Training

Generally, the people who have attended MEMO's training programs find the programs beneficial. Some suggestions provided by the municipalities are presented below.

MEMO's training courses do a good job of role definition for the municipalities, but do not adequately prepare the local response personnel to carry out those roles. Many would like the courses to be more specific to the municipalities' local conditions and resources. The municipalities would like to develop emergency scenarios which are tailored to their situations. Many of the smaller municipalities would like to be introduced to the latest technologies and their use in emergency management. Many of the provincial departments and agencies also expressed an interest in being a part of the delivery of the training courses related to their area and expertise.

Finally, the municipalities believe that there should be a debriefing coordinated by MEMO.

All municipalities were discouraged by the cancellation of MEMO training programs until March 31, 1998.

Part 5 Response Phase

5.1 Deployment of Resources

The primary concern with the deployment of resources was with the reception and confirmation of the reception of resources. There is also the need for a "closed loop system" for the delivery of resources. There were several instances when resources were sent to a municipality and were either diverted along the way or arrived in the wrong place or at the wrong time. A procedure needs to be established to document when resources leave the source, how they are being delivered, to whom they are being delivered and when they have been received and by whom.

5.2 Availability of Human Resources in MEMO

Many provincial departments and municipalities thought that MEMO did not have sufficient human resources and lacked duplication of key expertise. MEMO does not necessarily need more people, but they need more people to call upon in an emergency. As the EOC becomes more technically sophisticated, more skills will be required. It was suggested that MEMO develop a "skills database" to identify people who can step in during an emergency.

5.3 Authority During an Emergency Response

In smaller emergencies, municipalities have the authority and the capabilities to manage emergency responses. MEMO's role in these cases should be to monitor local decisions and support the municipalities with resources, information and expertise. This role requires MEMO to respond to the municipalities' requests by prioritizing the requests for support and deploying provincial resources.

But as the emergency escalates and crosses municipal boundaries, as the response involves resources from several provincial departments and agencies, and as the emergency exceeds the capacity of the municipalities, authority needs to transfer to a higher level. In fact, many people *expect* MEMO to take control and perceive that MEMO is at the top of the decision making hierarchy.

The point at which decision-making power transfers from the local authority to a higher level of government is complicated by the fact that not all municipalities are equal. During the flood of 1997, the capacity of some municipalities was not exceeded, while other municipalities may have been exceeded. But without local personnel, MEMO does not have the ability to assess the capacity and quality of the response of the municipalities.

- ⇒ *MEMO must have people in the municipalities to assess the capacity and quality of the response; and*
- ⇒ *MEMO must have a procedure for transferring the authority. A process for communicating the transfer of authority and clear definition of roles and responsibilities are also needed.*

Local conditions are unique to a municipality. MEMO must recognize that they do not know the local conditions as well as the local authorities and MEMO should value their insights. The on-site commanders only reduces the gap in information regarding local conditions.

5.4 Emergency Operations

5.4.1 Pass System

The pass system deserves special attention because it was a system that needed coordination. Pass systems were being operated by the DNR and the municipalities. Operating the pass system across municipal borders was difficult and was further complicated by the loosely enforced evacuation orders.

The pass system tells authorities who is in the emergency zone and where these people are located (for rescue operations), and restricts access into the emergency zone (for security reasons). As well, MEMO is responsible for arranging and accompanying media visits to the flood zone (using the pass system).

Both MEMO and the municipalities have an interest in coordinating the pass system. Many provincial departments and agencies had difficulty obtaining passes and gaining access to the flood zone in order to carry out their duties.

It was suggested that the pass system be jointly managed by the province and the municipalities. The province could develop a pass system in advance of the emergency and issue specially marked blocks of passes to the municipalities for their emergency management operations. It is believed that a coordinated pass system with criteria for issuing the passes will be easier to enforce and will make it easier to locate people in the case of emergency rescues.

Part 6 Recovery Phase

At the time of the interviews, the disaster financial assistance programs including trauma counseling, processing of municipal claims and flood proofing programs were still on going. Information contained in the following sections include preliminary observations noted by the interviewees

6.1 Re-entry

From May 1st to May 4th, personnel from MEMO, the provincial departments and interested agencies, led by the military, met to develop re-entry procedures. Many people wondered whether the province or the municipalities were responsible for the re-entry plans. This authority should have been determined and policies and procedures put in place even before evacuation occurred.

The resulting re-entry procedures and checklists were comprehensive and the municipalities found them quite helpful. Participants to the development of these documents hope that these plans will be maintained. Absent during the development of the re-entry plans were officials from the municipalities, except the City of Winnipeg. Meanwhile, the City of Winnipeg developed their own re-entry plans which, according to the agencies involved in the development of both re-entry plans, was a strain on resources. If plans need to be developed during the emergency, they should be coordinated to eliminate duplication of effort.

As the water receded, the municipalities were eager to commence re-entry. However, the province assumed authority to issue dates for re-entry. The municipalities did not agree with the re-entry dates issued by the province, nor did they agree that issuing re-entry dates fell under the province's authority. There is a need for criteria for re-entry and MEMO needs people in the municipalities who can provide them with visual confirmation that the area is ready for re-entry.

6.2 Disaster Financial Assistance

Until now, despite problems with authority and communications, the municipalities, the province and the volunteer agencies were proud of their success in ensuring no loss of life directly attributed to the flood and the protection of several communities in the flood path. However, the initial weeks of the DFA programs greatly demoralized the flood fighting efforts. People realize that the DFA department is still restructuring.

after their recent amalgamation with MEMO and have provided recommendations along the following

- ◆ better coordinated programs,
- ◆ more proactive and better defined compensation programs,
- ◆ stronger communications,
- ◆ earlier implementation of the programs,
- ◆ a reserve of trained resources to administer the programs, and
- ◆ a “closed loop” system to ensure equitable distribution of compensation

Many of the organizations delivering the DFA are territorial MEMO needs to break down the barriers and coordinate the programs There were several forms to fill out for the various agencies and the public was confused and frustrated by the piecemeal support

The programs need to be streamlined and developed in advance of the delivery of the program There were too many changes in the programs (albeit for the better) The programs need to be more proactive. Victims of the emergency would like to know before incurring expenses and since compensation programs influence their decisions (decisions to evacuate, decisions to re-build, etc) Victims do not want to finance the restoration and then hope for reimbursement Damage and compensation needs to be assessed up front It was suggested that a “basket” of eligible expenses needs to be developed

Communication with victims must be stronger. At the outset, residents of the Red River Valley needed more public information and training sessions MEMO needs to develop the communication vehicles for compensation Letters accompanying compensation cheques issued early in the process did not explain the payment and led some people to believe that this was the only compensation they would receive It was suggested that MEMO needs to develop a database of standard letters and keep the provincial communications department mobilized throughout the recovery phase

The programs need to commence as soon as there is a threat of an emergency People endured unnecessary anxiety waiting for compensation programs to be defined and to begin

To have early and effective implementation of the programs, MEMO needs a reserve of trained resources. Firstly, it was suggested that people at MEMO should not be involved in both the response and recovery phases—it is too much work. Secondly, the claims adjusters need to be trained. There were many complaints of inexperienced adjusters or inspectors and damage recorders who tried to be helpful but who misled the victims. The adjusters, inspectors and recorders are the “customer interface” for MEMO. Inexperienced people do not instill confidence in the system. As well, there is a need for people in the impacted communities who are knowledgeable about the programs who can direct the victims through the programs. In fact, it was suggested that an adjuster should be assigned to claimants, not an adjuster for each program. In essence, you would have “claims specialists”, not program administrators.

As time passed, the delivery of the programs improved. The creation of “one-stop shops” in St. Adolphe, Letellier and Rosenort solved many problems and would have prevented many problems. MEMO should mobilize the DFA teams and offices earlier. As well, the use of computers to manage the volumes of data improved the delivery of the programs, but computers could be used more to coordinate the programs and ensure fast and equitable compensation. It was suggested that a central database be developed and interfaced with the municipal tax systems to provide house and property valuations. The computer system could be used to equitably deliver the financial assistance, to identify when people will be assisted, and to identify who has not been compensated.

6.3 Municipal Claims

The primary complaint regarding municipal claims was the funding formula used which reimburses 90% of the cost for using contracted resources versus 16% for internal resources.

Secondary issues revolved around the procedures for making a municipal claim and the timing of the payment for the claim. Not all municipalities have experience making a municipal claim. These municipalities would like written procedures in advance of the emergency outlining what costs are reimbursable, at what rates the costs are covered, and the documentation required to support the claims.

Many of the municipalities are having cash flow problems as they wait for the municipal claims to be processed. Suggestions to alleviate this ranged from allowing interest to be charged against the province on outstanding claims to accelerate the processing, to increasing the advance payments to 100% (from 75%) of the claim.

6.4 Trauma Team

The trauma teams in the Red River Valley received high praise from the municipalities. Many wish that trauma counseling start earlier—many of the post-emergency programs were not planned in advance of their implementation.

Some also felt that the “human element” of the emergency was not given enough consideration. Many problems encountered with the DFA programs were compounded by the trauma of the impacted residents.

6.5 Flood Proofing

At the time of writing, the flood proofing programs are still relatively new. One recommendation received from the interviewees is for the province to coordinate expenditures to optimize the flood proofing works. There is a need for an integrated plan for the Red River Valley which considers the impacts upstream and downstream of any proposed works.



Manitoba Emergency Management Organization 1997 Red River Flood Synopsis of Events February 9 – April 21, 1997

Events

Severe flooding predicted
 Meetings with producers to discuss grain movement
 Crests forecast to exceed record levels
 North Dakota expecting to reach record flood levels
 Record high levels expected if bad weather scenario

Drilling holes in river ice to hasten breakup assessed
 Blizzard in Red River Valley
 Crests forecast 3-4 feet higher than 1996
 Red River 14 km. wide just north of Grand Forks
 Grand Forks floods
 Joubert Creek overflows into St. Pierre-Jolys
 Crests forecast 4-5 feet higher than 1996
 Crest is in Grand Forks

February		March		April		May	
1-7	8-14	1-7	8-14	1-7	8-14	15-21	22-28
	15-21	22-28	29-31	29-30	1-7	8-14	15-21
	22-28						22-28
							29-31

Responses

Sandbag estimates are provided for the City of Winnipeg

Chemical or hazardous products must be moved
 Military assistance requested
 Ring dikes in Red River communities are raised
 States of Emergency being declared
 Floodway opens



Manitoba Emergency Management Organization 1997 Red River Flood Synopsis of Events April 22 - April 30, 1997

Events

- Red River rises 4-5 feet
- Flooding surpasses 1979 levels
- Grande Pointe floods
- Crest is at Emerson
- Lake Morris is forming
- Crest is at Morris
- Ste. Agathe floods
- Crest is at Ste. Agathe

February			March			April			May				
1-7	8-14	15-21	22-28	1-7	8-14	15-21	22-28	29-31	1-7	8-14	15-21	22-28	29-31

Responses

- Province of Manitoba and additional R.M.'s declare States of Emergency
- Flood zone communities are under mandatory evacuation
- Z dike construction begins
- Floodway embankments reinforced
- An additional 5,000-6,000 military personnel requested
- Residents in the flood area must evacuate
- Work begins on the St. Norbert dike
- Z dike is completed
- 10,000 Winnipeggers are on evacuation alert



Manitoba Emergency Management Organization 1997 Red River Flood Synopsis of Events May 1 - May 22, 1997

Events

- Crest is in Winnipeg
- Red River is 40 km. wide
- Red River levels begin to fall
- Crest is in Selkirk area
- River is near 1979 peak levels
- River is near 1996 peak levels

February		March			April			May					
1-7	8-14	15-21	22-28	1-7	8-14	15-21	22-28	29-30	1-7	8-14	15-21	22-28	29-31

Responses

- Military sent to Grande Pointe
- Limited re-entry begins
- Oil boom reduces wave impact on Z dike
- Intergovernmental flood compensation negotiations begin
- DFA inspecting accessible properties
- Manitoba EMO discusses re-entry procedures
- DFA starts processing claims
- Province extends State of Emergency
- Re-entry continues
- Manitoba EMO begins providing \$2,500 advance assistance payments
- Crop Restoration Program to provide assistance to farmers

Appendix A Detailed Chronological Summary of the 1997 Flood

The following is a chronology of significant events and the responses to those events concerning the 1997 Red River Flood. The period covered is from Saturday, February 1, 1997, when early predictions were being made, to Friday, May 30, 1997, when the water levels were receding and the re-entry phase was underway. This list was compiled from information made available by the Manitoba Emergency Management Organization which included news releases, briefing notes, weather reports, and faxes from communities and regional municipalities. The list also includes information from news items printed in the Winnipeg Free Press (WFP).

Monday, January 13, 1997

- The Inter Agency Committee is advised to monitor the flood situation and advise municipal authorities when more accurate forecasts are available so that they can mitigate the situation.

Monday, February 3, 1997

- Flood meeting in the Red River Valley to discuss and plan for the potential of grain and livestock flooding.

Response

- The same approach is to be used as in 1996. It is important that producers have enough time to take action.

Sunday, February 9, 1997

- Manitoba Natural Resources, Water Resources Branch predicts severe flooding, based on snowfall in the Red River Valley (WFP).

Monday, February 17, 1997

- The City of Winnipeg requests that Harold Clayton notify the Department of National Defense to advise them that the City will likely ask for military assistance.

Tuesday & Wednesday, February 18 & 19, 1997

- MEMO organized meetings in Morris, Letteler and Domain to discuss flooding potential and grain movement.

Response

- Producers are advised that grain movement will focus on the large elevators on main lines with no increase on branch lines and are requested to only move grain that is only in low lying areas.
- Natural Resources will open information offices in Niverville, Melita, Russell and Selkirk.

1997 Red River Flood Post Emergency Report - Part I

Monday, February 24, 1997

- Manitoba Natural Resources reports that the flood outlook for the Red River Valley is very high but ring dikes around towns in the Red River Valley should protect these communities. Extensive flooding is expected on the Souris River from the U S boundary to Hartney

Friday, February 28, 1997

- United States National Weather Service forecasts crests exceeding record levels potential for the Red River from Whapeton, ND to the Canadian border

Tuesday, March 4, 1997

- Meeting is held with the City of Winnipeg to discuss volunteer registrations, the payment of housing for non-Winnipeg evacuees and the information package to be sent to residents

Friday, March 7, 1997

- The Works and Operations Division releases a report indicating the number of sandbags required for the City of Winnipeg, forecasted river elevations, and the sandbagging schedule
- Training is scheduled for municipal administrators on the cost recovery process

Monday, March 10, 1997

- The Canadian Wheat Board encourages farmers to move their grain to higher ground

Tuesday, March 11, 1997

- A City of Winnipeg map is created illustrating the number of sandbags required by area as well as the number of houses and buildings at risk

Saturday, March 15, 1997

- North Dakota expecting to reach record flood levels set in 1979 (WFP)

Friday, March 21, 1997

- Flooding is expected to be 0.5-1.5 feet higher than 1996 level under normal spring weather. A rapid melt or heavy spring rain could result in levels 3-5 feet higher than 1996 levels between Emerson and the Floodway Inlet. Significant flooding is expected in southeastern Manitoba
- Peak levels on the Red River from Selkirk to Lake Winnipeg should be 3-4 feet below 1996 levels unless serious ice jams develop

Response

- While ring dikes around towns in the Red River Valley will likely withstand flood waters, valley towns such as St Adolphe, St Jean, Letellier and Emerson may need their dikes raised by as much as 2 feet to protect against wave action. The decision to do this will be made the first week of April
- The parking lots of Birds Hill and St Malo Provincial Parks are made available to residents of the Red River Valley for storage of vehicles and trailers

1997 Red River Flood Post Emergency Report - Part I

Monday, March 24, 1997

- Evacuation arrangements are prepared for the Red River Valley

Thursday, March 27, 1997

- A Quebec hovercraft specialist will advise the government whether it is feasible to drill half-meter holes in the ice to aid spring breakup north of Selkirk (WFP)
- The federal government offers the province \$15 million with the promise of more financial aid to help prepare for the flood

Saturday & Sunday, April 5-6, 1997

- Blizzard in Red River Valley and Southern Manitoba Approximately 19" of snow fell in Winnipeg

Wednesday, April 9, 1997

Response

- City of Winnipeg filling 80,000 sandbags a day (WFP)
- Portage la Prairie requests disaster assistance for pending flood
- US President Bill Clinton declares the Red River Valley in Minnesota and North Dakota as disaster areas

Thursday, April 10, 1997

- Following an early April blizzard, the Manitoba Natural Resources, Water Resources Branch revised the flood forecast upwards calling for crest levels one to two feet higher than 1979 under normal conditions They also indicated that there is a one in ten chance that levels would be two to four feet higher than 1979 levels under unfavourable weather conditions
- Work will proceed in St Adolphe, Dominion City, St Jean, Letellier, and Emerson to raise their ring dikes by as much as 2 feet
- Crests on the Red River from Grand Forks to Winnipeg are predicted to occur during the 3rd week of April or early May
- Record river crest expected in Fargo by end of the week (WFP)

Monday, April 14

- Public information meeting was held in Morris with elected officials and municipal senior staff of 25 communities and municipalities

Tuesday, April 15, 1997

Response

- Over 40,000 holes were made in the ice north of Selkirk (WFP)

Thursday, April 17, 1997

- Military offers emergency relief (WFP)
- The Red River is 14 kilometers wide just north of Grand Forks (WFP)

1997 Red River Flood Post Emergency Report - Part I

Response

- Manitoba Environment issues an advisory to Red River Valley residents to move chemical or hazardous products out of flood prone areas

Friday, April 18, 1997

- Emergency Operations Centre opens Two meetings a day were conducted until May 22, 1997

Response

- Ring-diked communities are raising their dikes

Saturday, April 19, 1997

- Manitoba Natural Resources, Water Resources Branch forecast the Red will be at least one foot higher than had been projected (WFP)
- Red rushes over Grand Forks dikes and fire breaks out in the historic security building (WFP)

Response

- The province formally requests the assistance of the Canadian Armed Forces
- Call for volunteer sandbaggers in the R M s of Ritchot, Morris, Montcalm and Franklin

Sunday, April 20, 1997

- Manitoba Natural Resources, Water Resources Branch forecasts are raised again based on observed conditions at Grand Forks, North Dakota Crest elevations are expected to be four to five feet higher than 1996 levels At St Adolphe and the Floodway Inlet, crests are predicted to be 4-5 feet higher than 1979 levels
- Ice flows develop along the Assiniboine River The Pembina River levels rise rapidly
- Joubert Creek overflows in St Pierre-Jolys
- The City of Winnipeg forecasts that the river peak within the city will be at an elevation of 23 5-24 5 at James Avenue which is a 2-3 foot increase in the anticipated peak from the April 19 forecast River levels above and below the Floodway structure are expected to be 769 0-770 0 and 759 3-760 3 respectively The city estimates that 500 Winnipeg homes need to be protected with a combination of earth dikes and 2 million sandbags The City has made and delivered 1 6 million sandbags and will continue to make bags at a rate of 100,000 per day until it makes a minimum of 2 2 million bags

Response

- 50 people were evacuated in St Pierre-Jolys
- The Town of Emerson declares a State of Emergency and begins a voluntary evacuation
- The Town of Morris declares a State of Emergency
- States of Emergency are also declared by the R M s of Morris and Tache
- The City of Winnipeg estimates that 500 Winnipeg homes need to be protected with a combination of earth dikes and 2 million sandbags The City has made and delivered 1 6 million sandbags and will continue to make bags at a rate of 100,000 per day until it makes a minimum of 2 2 million bags

Monday, April 21, 1997

- The Red River begins cresting in Grand Forks
- Significant flooding occurs along Red River tributaries such as the Seine and Rat Rivers and Joubert and Tourond Creeks as water levels rise and approach their crest
- Number of Red River Valley evacuees 1,150

Response

- St Pierre-Jolys has evacuated 83 people
- Highway 75 is closed to all vehicles except local traffic from south of St Norbert to the U S border
- Dominion City and R M of Morris begin a voluntary evacuation
- Additional States of Emergency are declared in the R M s of Montcalm, Franklin, Ste Anne, Tache and West St Paul and the communities of Dominion City
- IPPCLI Battalion set ups in Altona Company A - R M of De Salaberry, Company C - R M of Franklin, Company D - R M of Montcalm, and Company E - R M of Morris
- Water Resources starts operating the Floodway

Tuesday, April 22, 1997

- The Red River rises between four and five feet from Morris to the Floodway structure
- Property owners along the river between Winnipeg and Selkirk are advised that levels will be higher than earlier predicted
- Number of Red River Valley evacuees 3,200
- North Dakota Governor orders Drayton to evacuate

Response

- Natural Resources to bring 1.5 million additional sandbags into the province
- The Province of Manitoba declares a State of Emergency for the area of the province south of the 51st parallel
- States of Emergency are declared in the R M s of Macdonald, East St Paul, Brokenhead, the Town of Beausejour and the Village of Ste Pierre-Jolys
- The Town and R M of Morris begin a voluntary evacuation
- Dominion City begins evacuation
- The military moves into the R M of Montcalm
- The City of Winnipeg purchases a 3rd sandbagging machine and is able to produce 200,000 bags/day The City anticipates that 3 million sandbags will be needed in total

Wednesday, April 23, 1997

- The Red River rises one and one-half feet to two feet from Emerson to Morris and three to four and one-half feet from Ste Agathe to the Floodway Inlet
- River ice moves out north of Selkirk eliminating the danger of ice jamming
- Ice jams along the Assiniboine River cause significant flooding from Baie St Paul to Headingley
- A big rain may back up City of Winnipeg sewers (WFP)
- The R M of Morris reports severe damage to bridges and roads

1997 Red River Flood Post Emergency Report - Part I

Response

- The Manitoba Emergency Management Organization recommends a mandatory evacuation affecting communities in the flood zone from Emerson to the R M of Ritchot. Rapid increases in water levels mean these communities will be isolated sooner than expected. Forecasted levels remain the same.
- A State of Emergency is declared in the R M s of De Salaberry, Reynolds, Richot, Stuartburn, Rhineland, and the City of Winnipeg.
- Construction of the Z dike near Brunkild begins. The dike is anticipated to prevent flood waters from the Morris River and the flooded Red River Valley from spilling northward into the La Salle River and flowing into Winnipeg.
- The City of Winnipeg has ordered the mandatory evacuation of 51 Winnipeg homes upstream (south) of the Red River Floodway and puts 500 homes on 24 hour notice.

Thursday, April 24, 1997

Response

- The Canadian Armed Forces deploys over 800 personnel.
- City of Winnipeg is producing 200,000 sandbags per day.
- First conference call of Reeves, Mayors and the Premier at 8:00 p.m. Second conference call at 11:00 p.m.
- Light rain in the Red River Valley.

Friday, April 25, 1997

- Floodwaters surpass 1979 levels. The Manitoba Emergency Management Organization advises that anyone remaining in the mandatory evacuation zones must leave.
- The Red River outside the City of Winnipeg rises close to a foot at most locations.
- The Assiniboine River rose three to four feet from Headingley to Winnipeg.
- Tributaries of the Red River begin cresting.

Response

- Residents in the La Salle River watershed in the R M of Macdonald are put on 48-hour evacuation standby.
- Work begins to shore up the Floodway embankments to prevent erosion.
- Winnipeg hospitals cancel most elective in-patient surgeries.
- A State of Emergency is declared in the R M of St. Clements.
- Ste. Agathe is evacuated.
- 300 pieces of equipment working on the Brunkild dike.

Saturday, April 26, 1997

- Red River levels rise about one foot from Morris to the Floodway. Smaller rises are reported ranging from two inches at Emerson to about a half a foot in St. Jean.
- Serious flooding occurs on the Seine River at Grande Pointe.
- If the dike does not hold, it is estimated that water levels could be two to four feet higher at the junction of the La Salle and Red Rivers in the south end of St. Norbert.
- Prime Minister Cretien visits the Red River Valley.
- The Floodway is handling 40,000 cfs.

1997 Red River Flood Post Emergency Report - Part I

Response

- The province requests an additional 5,000–6,000 military troops and equipment
- The Floodway will keep the Winnipeg James Avenue water level at 24.5 feet
- The City of Winnipeg is distributing mandatory evacuation notices to homes protected by dikes where water level is within one foot of the main floor and rising (300–400 homes)
- Mandatory evacuation of residents of Kingston Row and Kingston Crescent west of Dunkirk will occur when the James Ave elevation reaches 22.5 feet
- Within the City of Winnipeg it will be necessary to evacuate three areas at risk from overland flooding if the newly constructed Brunkild Dike fails

Sunday, April 27, 1997

- Crest at Emerson, but strong southerly winds are expected to cause strong wave action and possibly push levels up a half a foot
- Forecasted crests from Ste Agathe to the City of Winnipeg are revised upward by half a foot. Water levels on Red River tributaries and other smaller streams remain very high
- Prime Minister Cretien calls a federal election
- Manitoba Surface Weather Management section has estimated the wind speed could have the following effect in what has now become Lake Morris

<i>Wind Speed</i>	<i>Wind Setup</i>	<i>Wave Height</i>
30 km/hr	0.5 ft	1.5 ft
50 km/hr	1.1 ft	2.5 ft
70 km/hr	2.1 ft	4.0 ft

Response

- Highway #75 from St Norbert to Emerson is closed by the Department of Highways to all but essential traffic
- EMO orders residents of all municipalities and towns in the Red River Valley flood area who did not comply with the mandatory evacuation, to leave their homes today
- The evacuation is being taken because anticipated wave action and strong wind conditions forecasted for Monday and Tuesday will prohibit rescue attempts if they should be required. Officials also have serious concerns about the integrity of sand bag dikes outside ring-dike communities if the wind reaches predicted strengths

Monday, April 28, 1997

- Forecasted crest level for St Jean is lowered by one foot as flood waters begin to flatten out and form a lake
- River levels are unusually high near Grande Pointe where the river rose overnight due to strong winds
- Flood waters are nearing the Z dike where construction work continues

Response

- Residents of the La Salle River watershed within the R.M. of Macdonald are issued a mandatory evacuation order
- The City of Winnipeg has begun issuing mandatory evacuation notices to approximately 2,352 homes and 30 businesses in St Norbert and the Kingston Row peninsula

1997 Red River Flood Post Emergency Report - Part I

Tuesday, April 29, 1997

- Crest at Morris
- The Ste Agathe dike breached at approximately 2 30 a m resulting in up to five feet of water in parts of the community
- The relatively rapid rises from St Adolphe through Winnipeg are due to a surge of water coming through Ste Agathe from Lake Morris
- Flood waters reach the Brunkild dike
- Erosion from the fast current remains a concern in some areas

Response

- Virtually all Assiniboine River flows at Portage la Prairie will be diverted to keep levels in downtown Winnipeg from exceeding 24 5 feet
- Thirty-three two-person teams comprised of City of Winnipeg staff will be patrolling and monitoring dikes on a 24 hour per day basis
- The military will be deployed to respond to either leaks or breaches in the dike system
- Work is nearly complete in blocking culverts and closing openings in the stretch of the Perimeter Highway from Waverley to the Red River
- Work has started on both the east and west ends of the St Norbert dike The earthen dike will stretch for 4 km and will increase the height of existing roads from one foot to two meters Work on this dike will be completed by the end of Friday, May 2
- City crews are sealing sewer connections where necessary, sealing wastewater manholes to protect against infiltration, and preparing contingency plans to isolate water and sewer services in at-risk areas
- The R M of St Andrews declares a State of Emergency
- The R M of St Andrews is constructing a 1 2 km dike along River Road from south of Larters Golf Course to Overwater Road
- Planning for a mass evacuation of the City of Winnipeg starts at 17 Wing
- Flood disrupts rail traffic south and west (WFP)
- Radio and TV give extended flood coverage (WFP)

Wednesday, April 30, 1997

- Crest at Ste Agathe
- Construction of the Z dike is complete Work continues to add extra height and compaction
- If the Brunkild dike were to fail, it could cause higher levels than previously predicted on the Red River in Winnipeg
- Serious flooding is taking place in the downstream areas of Red River tributaries due to backup from the swollen Red River Levels in the Grande Pointe area rose another inch and were expected to rise a further half foot Severe flooding is anticipated on the lower Netley Creek in the Petersfield area within a week

Response

- Ten thousand Winnipeggers put on evacuation alert (WFP)

Thursday, May 1, 1997

- As of May 1, approximately 5,600 military personnel have been deployed

1997 Red River Flood Post Emergency Report - Part I

Response

- The federal and provincial governments agree to increase the limit for compensation under the Disaster Financial Assistance Program from \$30,000 to \$100,000 while maintaining a 20% deductible
- Canada-Manitoba agreement signed on Red River Flood Disaster Assistance - an interim advance payment of \$25 million to help municipalities and individuals deal with the costs of the flood
- The Re-entry Committee will meet today to review the criteria for the re-entry of evacuated communities and properties
- An oil boom is being placed along the Z dike and straw will be added between the boom and the dike to reduce wave impact due to forecasted high winds

Friday, May 2, 1997

- Crest in Winnipeg The floodway is diverting 65,100 cfs
- Water levels at Grande Pointe rise higher than expected due to increasing road washouts between Ste Agathe and St Adolphe Water is flowing overland from the Red River near St Adolphe and is being channeled into Grande Pointe by road and railway embankments
- Strong southerly winds predicted for May 4-6

Response

- Additional military personnel are sent to the Grande Pointe area
- \$465,000 pledged to Red Cross (WFP)

Saturday, May 3, 1997

- Red River levels are expected to remain high until well into June
- The severe flooding in the Grande Pointe area is localized
- Homeowners at Grande Pointe feel betrayed as all but 25 of 150 homes are flooded (WFP)
- Red River is 40 km wide just south of the Perimeter (WFP)
- CBC Red River Rally raises \$250,000 (WFP)

Response

- The R M of Macdonald announces a limited re-entry to parts of the municipality The R M of Franklin announces that Dominion City residents can begin returning home
- Coast Guard barges ferry in sandbags, and protection efforts continue with military personnel in the Grande Pointe area
- Polyethylene, straw and oil booms are being used to reduce wave impact on the Z-dike

Sunday, May 4, 1997

- The Red River has now crested throughout the entire Red River Valley, including the City of Winnipeg High water levels will keep permanent and temporary dikes under extreme pressure for a couple of weeks
- Total forces deployed 8516

Response

- The Coast Guard has sent a second barge to help with the movement of sandbags into the Grande Pointe area
- The residents of Dominion City begin returning home

Monday, May 5, 1997

- Red River levels begin to fall slightly from Emerson to Selkirk
- The winds will create strong wave action today on the north side of dikes

Response

- The residents of Letellier begin returning home (CDE - Tuesday, May 6)
- Inspectors from the Disaster Financial Assistance Program begin the process of inspecting accessible properties affected by the flood
- The province meets with rural municipal officials to discuss the distribution of the \$25 million advanced to the province by the federal government
- The province is finalizing a re-entry package for rural residents returning to their homes

Tuesday, May 6, 1997

- Crest at Selkirk area
- The Z-dike is being reinforced
- Flood waters have dislodged an unknown number of hazardous material containers

Response

- The Manitoba Emergency Management Organization has prepared information for evacuated residents returning to their homes
- A provincial re-entry committee met with municipal authorities to discuss re-entry procedures
- A meeting is held at the International Inn in Winnipeg
- Provencher Bridge is closed due to damage by high water (WFP)
- Department of Natural Resources recommends that re-occupation of the following ring-diked communities by the general public be approved only after water levels have reached the following elevations and are continuing to drop

Town	Stage	Approximate Date
Emerson	788	Monday, May 12
St Jean	781	Wednesday, May 14
Morris	778	Thursday, May 15
Rosenort	780	Monday, May 12
St Adolphe	767.5	Friday, May 16

- Re-entry for evacuated communities will only be considered once road access has been restored and essential services can be provided

Wednesday, May 7, 1997

- Serious wave action is expected due to strong northerly winds
- Water has now reached all portions of the Z dike
- Total military personnel deployed 8547
- The City of Winnipeg renews its declaration of state of local emergency

1997 Red River Flood Post Emergency Report - Part I

Thursday, May 8, 1997

- Approximately 20,000 Manitobans remain evacuated due to the flood

Response

- A Manitoba Flood Relief Committee is established to oversee financial, material and volunteer flood relief assistance to flood victims
- The R M of Ritchot lifts its evacuation order for the northwest area of the municipality

Friday, May 9, 1997

Response

- Disaster Financial Assistance claims adjusters start processing claims
- Salvation Army puts together 2,500 cleanup kits (WFP)

Sunday, May 11, 1997

- Assiniboine River's diversion threatens farmers' pastures near Lake Manitoba (WFP)
- Assiniboine River levels will increase five to six feet at Baie St Paul by late today and four to five feet at Headingley by noon Monday, May 13. These levels are well below peaks recorded earlier this spring

Response

- Flows in the Portage Diversion at Portage la Prairie have been reduced to help prevent levels on Lake Manitoba from exceeding the desirable range

Monday, May 12, 1997

- At Morris, the Red River is still half a foot higher than the 1979 peak and more than two feet higher than last year's peak. Due to the large amount of water still stored in "Lake Morris", levels of the Red River will continue to fall relatively slowly. Levels at Emerson will also fall slowly due to storage in another "lake" in the Drayton area south of the International Boundary

Response

- The Province of Manitoba extends its declaration of state of emergency for that portion of the province lying south of the 53rd parallel
- The Town of Emerson residents begin returning home
- PTH 75 re-opens from PR 14 to Emerson

Tuesday, May 13, 1997

Response

- The mandatory evacuation order has been lifted for the R M of Macdonald north of the Brunkild dike including the communities of Brunkild, Sandford, La Salle and Domain
- Approximately 6,000 residents of the City of Winnipeg have now returned home, including the residents of Kingston Row/Crescent and Scotia Street
- Stress lines are ready for flood of calls (WFP)

1997 Red River Flood Post Emergency Report - Part I

Wednesday, May 14, 1997

- Red River levels continue to slowly decline with levels at or near 1979 peak levels
- Serious flooding will continue in the valley for at least the next few weeks

Response

- Military forces in the province have been reduced to 5,782 persons Military parade is held as vehicles left the city

Thursday, May 15, 1997

- Approximately 12,000 Manitobans remain evacuated from their homes
- Communities still evacuated include Morris, St Jean Baptiste, Rosenort, St Adolphe, Ste Agathe, and the Roseau River Reserve
- Emergency Services Unit Manitoba Health recognizes that support services may be required until December 1997

Response

- The number of military personnel is reduced to 5,301 persons

Friday, May 16, 1997

Response

- St Jean-Baptiste residents begin returning home

Saturday, May 17, 1997

Response

- The Town of Morris and St Adolphe residents begin returning home
- Red River Relief concert at the Forks Market in Winnipeg
- Ottawa and province agree on flood relief (WFP)
 - Flood proofing \$170 million 50/50
 - Business restoration \$50 million 50/50
 - Agriculture compensation \$20 million
 - Cooperation for river basin management \$30 million 20/10

Tuesday, May 20, 1997

- Red River levels, from Morris to the Floodway Inlet, are similar to 1996 peak levels Levels fell nearly five inches in the past 24 hours

Wednesday, May 21, 1997

Response

- The Manitoba Emergency Management Organization is providing \$2,500 advance assistance payments to residents of the R M of Ritchot
- Province caps municipalities' flooding bills no municipality will have to pay more than 5% of its annual budget toward flood fighting and cleanup efforts (WFP)

1997 Red River Flood Post Emergency Report - Part I

Thursday, May 22, 1997

- Over the past two days, Red River levels from Emerson the Floodway Inlet have been falling close to half a foot per day Levels in the Winnipeg area have been falling only one to two inches, due to the lowering of the Floodway gates
- Many highways were damaged by floodwaters and are in poor condition
- The military is providing engineering and technical information to the re-entry teams
- The 1997 flood has had a devastating impact on agricultural production in the Red River Valley A Flood Disaster Assistance program which ensures that production is restored as quickly as possible is essential

Response

- The purpose of the Crop Restoration Program is to provide farmers with immediate assistance to ensure that the maximum crop acreage is seeded in 1997
- EOC closes

Monday, May 26, 1997

Response

- The Manitoba Emergency Management Organization is providing \$2,500 advance assistance payments to residents of the R M of Ritchot in St Adolphe

Tuesday, May 27, 1997

Response

- The Manitoba Emergency Management Organization is providing \$2,500 advance assistance payments to residents of the R M s of Morris, De Salaberry, Hanover and Montcalm in Morris

Wednesday, May 28, 1997

Response

- The Manitoba Emergency Management Organization is providing \$2,500 advance assistance payments to residents of the R M s of Rhineland, Franklin and Montcalm in Emerson

Appendix B Interviews

Provincial Government

Government Services	Hugh Eliasson
MEMO	Harold Clayton
	Larry Gwiazda
	Harvey Bostrum
	Cindy Stevens
Agriculture	Gus Wruck
Emergency Health Services	Keith Hogarth
Emergency Social Services	Ray Hopke
	Chris Buchal
	Ron Fenwick
Dept of Environment	Dave Ediger
Fire Commissioner	Doug Popowich
	Chuck Sanderson
Highways & Transportation	Don Kuryk
Natural Resources	Steve Topping
	Larry Witney
	Bob Buck
Rural Development	Roger Bouvier

Federal Government

Emergency Preparedness Canada	Larry French
RCMP	R J Embury
	Phil McMacken

Department of National Defence

NDHQ	Randy Meiklejohn
Joint Force Headquarters	Matt MacDonald
	W Henderson

Municipal Government

City of Winnipeg	Mark Bennet
	Robert Gannon
Town of Emerson	Mayor Wayne Arseny
	E C Larry Propp
R M of Franklin	Reeve Bev Berrington
	E C Helen Robbins
R M of Montcalm	Reeve Florent Beaudette
	E C Mitch Duval

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Town of Morris	Mayor Dale Hoffman E C Sieg Neuman
R M of De Salaberry	Reeve Luc Catellier E C Ron Musick
Village of St Pierre Jolys	Mayor Claudette Clossen E C Claude Gagne
R M of St Andrews	Reeve Martin Zelych E C Curly Gagnon Marilyn Regiec
R M of St Clements	Reeve Kenneth L Thomas E C Sheldon Goers
Town of Selkirk	Mayor Bud Oliver E C Jim Fenske
R M of Morris	Reeve Herm Martin Ralph Green Grant McCaughley
R M of Macdonald	Reeve Rodney Burns E C Tom Raine
R M of Richot	Reeve Robert Stefaniuk E C Yves Sabourin

Other Agencies and Organizations

Amateur Radio Emergency Services	Don McKinnon
Centra Gas	Ken Mutchinson Ken Wilson
Manitoba Native Firefighters	Cam King
MTS	Eric Nazar
Manitoba Hydro	Earle Floyde
Mennonite Disaster Services	Syd Reimer
PFRA	Erminio Caligiuri Alaine Vermette
Canadian Red Cross	Jackie Wright

Appendix C Interview Guide

Bryan Corkal of Ernst & Young has been hired by the Province of Manitoba to review and evaluate the province's response to the flood emergency so that necessary changes to the provincial emergency preparedness and response programs can be made to improve response to future emergencies

Ernst & Young will be conducting a series of interviews with municipalities and other agencies to gather information for the review. Below is a summary of issues and possible questions. Your responses to these questions will be held in strict confidence and will not be disclosed unless you specifically request it.

Readiness

1. What is your level of familiarity with the Province's Emergency Plan?

Did you refer to these plans and procedures during the emergency?

Did the Province's plans and procedures properly prepare you and your staff for the emergency?

Did you have access to provincial training programs and educational resources for emergency preparedness?

How would you define your role in an emergency?

How would you define your community's role in an emergency?

How would you define the Province's role in an emergency?

What improvements would you suggest to the Province's Emergency Plan?

2. What information does the municipality provide to the residents to help the residents prepare for the flood? (information such as house elevations, estimated water elevations, evacuation routes, etc.)
3. What was your role in helping your residents prepare for the flood? (nothing, provided sand and bags, provided sand bags, other?)

What was your expectation of the province's role to support residents of your community?

- 4 What information does the municipality have which could be provided to the Province (such as information from Building Permits, or property assessments, maps, GIS, names and addresses of citizens who need assistance, etc)?

How do you maintain information that may be needed in an emergency?

Could a process be established for collecting additional information?

Do you have a computer, e-mail, fax, or other technology that could be used to transfer information?

How could technology be used to aid in managing the emergency response?

What problems did you encounter with conducting a prolonged operation?
What solutions did you find to these problems?

- 5 Did you refer to your community's emergency plan during the emergency?

When was the last time your emergency plan was revised?

Did you conduct any exercises in order to test and evaluate your emergency plan?

Have you conducted an operational debrief to identify the *lessons learned*?

Are you planning to review/revise your community's emergency plan based on the lessons learned in the 1997 flood?

What arrangements were made for respite for management and response staff?
What assistance is needed?

Preparedness

- 6 What mitigation actions did you take? (evacuation of people, livestock, equipment, prepare emergency supplies and equipment).

How did the Province assist you in mitigating the disaster?

- 7 Did you have adequate resources for the emergency response including equipment, communications, facilities and human resources?

Did you have sufficient human resources to support each community in the R M ?

Did this event exceed your capacity?

When did you contact MEMO? Were you able to contact MEMO?

Were your questions/concerns addressed?

Were decisions made in a timely fashion?

Did MEMO interact with your municipality? Was input from your municipality sought and valued?

Emergency Declaration

- 8 Did your community make an emergency declaration?

- 9 Were you informed of the provincial declaration of a state of provincial emergency made April 22, 1997? Were you advised that the declaration was made?

- 10 Were you advised of extension to the declaration (2 weeks later)?

Access to Resources

- 11 Were you in contact with the Manitoba Emergency Coordination Centre?

- 12 Did you receive the assistance you had hoped for from the Province?

If no, why not? Can you provide documentation which would help us identify improvements to the plans and processes?

Did the Province arrange for assistance from the Military and other agencies?

Were the resources received adequate and timely?

Timeliness of Information

13 Were you notified of road closures, flood level predictions, declarations, etc in a timely manner?

Could the methods of communication be improved? (e-mail, websites, etc)

Evacuations

14 Were you satisfied with the criteria for evacuation?

What should the criteria/process be for deciding who can stay and who should evacuate?

Who should decide when to evacuate and what areas to evacuate?

Was enforcement of the evacuation handled appropriately?

What method is used to determine names and addresses of citizens who may reside in an area subject to evacuation?

Do you have maps with names, addresses, contact information of residents?

15 Do you have concerns about future evacuations?

16 Were you happy with your community's role in finding temporary accommodations for evacuated citizens?

Do you have a list of possible accommodations for evacuees?

Re-entry

- 17 Did you have a re-entry plan?
- 18 Did you have the resources to re-establish services and utilities? Did the province support you in re-establishing services and utilities?
- 19 Would you consider developing a re-entry and recovery plan?

Recovery

- 20 How did you organize assistance to your residents in recovering from the flood?
- How did you coordinate this with provincial/ federal support?
- 21 What changes in organization and delivery would you make next time?

Disaster Financial Assistance

- 22 What role did your municipality play in helping your residents obtain disaster financial assistance?
- 23 What changes would you make to streamline your part of the program?
- 24 What changes would you recommend to the provincial system for delivering the program?
- 25 Do you have a system to support this system?

General Processes Review

- 26 How did you perceive the organizational relationship between the province and the municipality? How did the province interact with other agencies?
- 27 How were decisions made? Who had authority? What were the lines of communication? Were decisions timely?

- 28 What improvements to the process would you recommend?
- 29 What sorts of problems/conflicts/obstacles did you have with the process, organizational structure or information?
- 30 Was your emergency response sustainable?
- 31 What information (cost data, checklists, phone lists, maps, etc) did you require from the province in order to make effective decisions? Did you receive this information?
- 32 What training is necessary in the future to ensure that you have sufficient and adequately trained staff who can deal with an emergency?

Summary

Identify the 3 most important areas (plans, procedures, information, organization structure, communications, etc) that need improvements in a) *your municipality* b) *the province*

Identify the 3 areas that don't need improvements in a) *your municipality* b) *the province*

Other Information:

Chronological Summary - If you have prepared a summary of the flood event please have a copy available

1997 Red River Flood
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Thank you for your time and assistance. If you have any additional comments or ideas please contact me at

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02/10/98

 **ERNST & YOUNG**

**1997 RED RIVER FLOOD
ERNST & YOUNG POST EMERGENCY REPORT - PART I**

Issue Raised	Suggested Solutions	Actions / Comments
1 Emergency response structure requires clarification particularly with respect to civilian and military operations	<ul style="list-style-type: none"> Outline roles and responsibilities, and better lines of coordination 	<ul style="list-style-type: none"> Manitoba Emergency Plan is currently being amended MEMO will provide training on provincial / municipal plans and response structure to provincial departments / municipalities
2 MEMO structure and hierarchy unclear to stakeholders	<ul style="list-style-type: none"> Communicate MEMO staffing structure during emergencies to stakeholders Need better distinction between the different phases of an emergency (preparedness, response and recovery) 	<ul style="list-style-type: none"> MEMO has undertaken a review of its defined role Training program easily adapted to place more emphasis on MEMO and other organization's roles and responsibilities
3 Central Task Team lacked authority and effectiveness as emergency proceeded	<ul style="list-style-type: none"> Clarify and hold to its role vis a vis Deputy Minister Committee Ensure participation from appropriate level of department representatives 	<ul style="list-style-type: none"> Manitoba Emergency Plan is currently being amended and will clarify roles of all components of the emergency response structure
4 Provincial Emergency Executive overworked	<ul style="list-style-type: none"> Public relations and emergency management role should be split into two separate positions 	<ul style="list-style-type: none"> Roles of key players are reflected in the Manitoba Emergency Plan
5 Provincial Emergency Coordination Center requires additional space and personnel	<ul style="list-style-type: none"> Need procedures to second space and resources 	<ul style="list-style-type: none"> A discussion paper has been prepared regarding MEMO space allocation / relocation An inventory of MEMO human resources is to be developed Provincial Emergency Coordination Center operating procedures to be amended
6 There was a lack of on site commanders	<ul style="list-style-type: none"> Ensure sufficient trained people are available for each impacted municipality or major emergency site Develop a skills database to identify people within the province who can assist during an emergency 	<ul style="list-style-type: none"> MEMO is developing a plan to locate and train persons to undertake this role as well as developing a remote computer communications capability for community advisors to access the provincial emergency coordination center
7 Municipal emergency coordinators were often overworked	<ul style="list-style-type: none"> Role of the Municipal Emergency Coordinator should be defined in the Provincial Emergency Plan Procedures are required to provide support to the emergency coordinators and identify when their capacity is exceeded 	<ul style="list-style-type: none"> Municipalities / Province to jointly develop respite plans for key municipal staff
8 Agency interaction and coordination requires improvement	<ul style="list-style-type: none"> Lead advance planning of interagency delivery of services with municipalities 	<ul style="list-style-type: none"> MEMO is undertaking a review of departmental involvement timing / interrelationships

**1997 RED RIVER FLOOD
ERNST & YOUNG POST EMERGENCY REPORT - PART I**

Issue Raised	Suggested Solutions	Actions / Comments
9 Coordination of provincial departments required better information sharing	<ul style="list-style-type: none"> • Clarify roles of all agencies • Policy for open information sharing needs to be established • Better use of computers to centralize and manage information 	<ul style="list-style-type: none"> • Provincial Plan is currently being amended and will clarify roles of all players • Adoption of computer technology and emergency management information system will provide for improved information access and management
10 Military relations with municipalities seemed to erode local control	<ul style="list-style-type: none"> • Ensure military understands its support role • Ensure municipalities understand the military's role and understand the procedures for accessing the military's help 	<ul style="list-style-type: none"> • Military have improved domestic operations plans since flood • MEMO training to place additional emphasis on military involvement and interaction with local authority
11 Communications between municipalities and provincial emergency coordination center require improvement	<ul style="list-style-type: none"> • Ensure full time on site commanders, in every municipality impacted by the emergency who can facilitate communications between the municipalities and the provincial emergency coordination center 	<ul style="list-style-type: none"> • MEMO is developing a plan to locate and train persons to undertake this role as well as developing a remote computer communications capability for community advisors to access the provincial emergency coordination center
12 MEMO overloaded with media inquiries	<ul style="list-style-type: none"> • Be proactive with media • Have a separate media briefing facility 	<ul style="list-style-type: none"> • Departmental plan for communications services (CH&C) to address media requirements
13 Public unsure of who to call for information	<ul style="list-style-type: none"> • List of contacts and numbers should be regularly broadcast via print and broadcast media 	<ul style="list-style-type: none"> • Departmental plan for communications services (CH&C) to address public information strategy
14 Provincial Emergency Coordination Center characteristics limited its effectiveness	<ul style="list-style-type: none"> • Ensure MEMO facilities can be expanded to accommodate a communication center, media briefing center, a public information center and can provide space to agencies and provincial departments • Improve aesthetics 	<ul style="list-style-type: none"> • MEMO has undertaken a needs analysis and developed a proposal for enhancing provincial coordination center technology and facilities • A discussion paper has been prepared regarding MEMO space allocation / relocation
15 Central Task Team meetings need to be better structured	<ul style="list-style-type: none"> • Keep written records and minutes of meetings • Develop an agenda when possible • Schedule the meetings early in the day 	<ul style="list-style-type: none"> • CTT meetings are facilitated by MEMO and will be improved through changes to MEMO's internal emergency procedures
16 Emergency operation Center requires use of information technology	<ul style="list-style-type: none"> • Develop a computerized emergency management information system 	<ul style="list-style-type: none"> • MEMO has undertaken a needs analysis and developed a proposal for enhancing provincial coordination center technology and facilities

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Issue Raised	Suggested Solutions	Actions / Comments
17 On site commanders lost authority as flood progressed	<ul style="list-style-type: none"> • Empower on site commanders with reporting technology 	<ul style="list-style-type: none"> • MEMO proposal for the provincial emergency coordination center includes capability for community advisors to access emergency management information system via remote (modem)
18 Information transfers were delayed between municipalities and the provincial emergency coordination center	<ul style="list-style-type: none"> • Install more fax lines at the EOC 	<ul style="list-style-type: none"> • MEMO has undertaken a needs analysis and developed a proposal for enhancing provincial coordination center technology and facilities. This would ensure additional forms of data transfer (E-mail, computer fax) to supplement conventional fax technology
19 There was a lack of written records between provincial departments and agencies	<ul style="list-style-type: none"> • E-mail and Web-based communication will be an effective addition • Develop procedures for the use of communication technologies 	<ul style="list-style-type: none"> • The information technology to be employed in the provincial emergency coordination center will help to alleviate the problem of paper records
20 Coordination and distribution of resources to municipalities could be improved	<ul style="list-style-type: none"> • MEMO can provide some support by helping maintain lists of approved suppliers • Potential for a consolidate Inventory Management System for key supplies and for tracking costs during an emergency 	<ul style="list-style-type: none"> • MEMO is conducting a logistics review to determine procedures for enhancing resource allocation • The software being developed for the provincial emergency coordination center will help to address resource and cost tracking
21 Provincial emergency plan out of date (last official version 1988)	<ul style="list-style-type: none"> • Update the revised plan developed in 1994 • Continuously maintain the provincial emergency plan 	<ul style="list-style-type: none"> • Provincial emergency plan is currently undergoing revisions and is to be reviewed on annual basis and amended as required
22 Municipal emergency plans lacked coordination with adjacent municipalities	<ul style="list-style-type: none"> • MEMO can assist in developing integrated emergency response plans for emergencies which include more than one municipality 	<ul style="list-style-type: none"> • Training and support for joint municipal planning
23 Information packages and checklists provided to municipalities were effective	<ul style="list-style-type: none"> • Prepare and provide the information to the municipalities as early as possible so that they may tailor it to the municipality 	<ul style="list-style-type: none"> • Departmental plan for communications services (CH&C) to address public information strategy
24 Worst case emergency scenarios need to be develop for use in planning	<ul style="list-style-type: none"> • Prepare worst case scenarios for emergencies • Identify critical decision points and lead times for decisions 	<ul style="list-style-type: none"> • Province / municipalities developing joint plans for dike breaches / evacuations including community ring dikes, the Brunkild Dike and the Winnipeg Floodway

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Issue Raised	Suggested Solutions	Actions / Comments
25 Municipalities were unclear as to how Disaster financial assistance works and were reluctant to spend money on the flood for fear that their expenditures would not be reimbursed	<ul style="list-style-type: none"> Clarify municipal financial assistance programs and their commencement 	<ul style="list-style-type: none"> DFA Training for most municipalities in the Red River Valley was undertaken prior to the flood. This training program is currently being updated to reflect changes to the DFA program and will be delivered as part of MEMO's training and education program
26 The boundaries of the flood emergency area appeared to be arbitrary	<ul style="list-style-type: none"> Develop definitive procedures or defining the boundaries of an emergency 	<ul style="list-style-type: none"> Further study is required
27 The significance of the provincial emergency declaration with respect to control of the emergency was not clear	<ul style="list-style-type: none"> Clarify roles and responsibilities in the event of a provincial emergency declaration 	<ul style="list-style-type: none"> Further consultation is required
28 There were opposing views between the municipalities and the province over evacuating residents from the flood area	<ul style="list-style-type: none"> Clarify authority and roles and responsibilities for decisions to evacuate The province needs people on site to aid with the decision to evacuate Develop evacuation scenarios to better understand lead times of critical decisions 	<ul style="list-style-type: none"> Province / municipalities jointly preparing evacuation criteria and plans for rural areas and ring dike communities to clarify decision making MEMO is developing a plan to locate and train persons to undertake the role of MEMO community advisor in each affected municipality
29 The mandatory evacuation was loosely enforced	<ul style="list-style-type: none"> Recognize that many organizations need to prepare their infrastructure during an evacuation Enforce mandatory evacuations 	<ul style="list-style-type: none"> Province / municipalities jointly preparing evacuation criteria and plans for rural areas and ring dike communities to clarify decision making and enforcement A legal review of the evacuation order is underway
30 MEMO's training program is highly praised	<ul style="list-style-type: none"> Ensure agencies, provincial departments and municipalities understand their roles and how to carry them out Emergency training should be tailored to local conditions Include more emergency scenarios Introduction to the latest emergency management technology Include more agencies and provincial departments in the delivery of training courses 	<ul style="list-style-type: none"> A training study is underway to determine new techniques and technologies for enhancing the delivery (quality and quantity) of training to provincial departments and municipalities
31 Resources were occasionally diverted from their original deployment	<ul style="list-style-type: none"> There is a need for a procedure for receiving and confirmation of reception of resources 	<ul style="list-style-type: none"> MEMO is conducting a logistics review to determine procedures for enhancing resource allocation

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Issue Raised	Suggested Solutions	Actions / Comments
32 Authority may need to be transferred to higher levels as the magnitude of an emergency increases	<ul style="list-style-type: none"> • MEMO needs people in the municipalities to assess the capacity and quality the response • MEMO needs procedures for transferring authority, including procedures for communicating the transfer of authority and clear definitions of roles and responsibilities 	<ul style="list-style-type: none"> • MEMO is developing a plan to locate and train persons to undertake the role of MEMO community advisor in each affected municipality
33 The pass system	<ul style="list-style-type: none"> • MEMO should consider jointly managing and coordinating the pass system with the municipalities • Pass systems should be developed advance of the emergency • Criteria for issuing the passes needs to be developed 	<ul style="list-style-type: none"> • Review with the RCMP, Natural Resources and local authorities
34 Comprehensive re-entry plans were developed	<ul style="list-style-type: none"> • Procedures for continuous maintenance of the re-entry plans should be developed • Criteria for re-entry need to be established 	<ul style="list-style-type: none"> • Review and update annually with Manitoba Emergency Plan
35 Disaster Financial Assistance programs were not understood by claimants	<ul style="list-style-type: none"> • Better coordinated programs • Proactive and defined compensation programs • Stronger communications • Earlier implementation of the programs • A reserve of trained resources to administer the programs • An information system to ensure equitable distribution of compensation 	<ul style="list-style-type: none"> • MEMO reviewing Disaster Financial Assistance Policy and procedures to improve program responsiveness and client communications for future disasters • MEMO is reviewing the disaster recovery process and the possibility of establishing a case management approach in future events

Note Issues have been edited to reflect standard terminology and to provide clarity The nature of the issues remain unchanged