NEIGHBOURHOOD DISASTER PLANNING

by

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ABSTRACT

Research indicates the need for emergency personnel to concentrate their efforts on preparedness and mitigation, as opposed to short-term recovery needs. This pro-active approach would necessitate such tasks as building community participation into plans, concentrating on process planning to encourage creative and innovative thought, simplifying the disaster plan through the use of an all-hazard, all-phase framework, and raising the profile and status of the emergency profession.

One of the major problems in the disaster planning field has been the failure to involve community in the planning process. Disaster plans primarily deal with the physical/technical side of the disaster response, but it has been shown that hostility and aggression is likely to arise when community involvement in the response and recovery phases is neglected.

In the mid-1980's, the United States began the task of setting up neighbourhood disaster response teams to teach communities self-reliance in the event of a disaster. In Canada, the first case of a neighbourhood-level plan was initiated in June 1990 in the community of Burkeville, City of Richmond, British Columbia. This thesis documents Burkeville's disaster planning experience. Through a detailed examination of a 'bottom-up' planning process, we can learn about the positive and negative attributes of this model over traditional 'top-down' planning approaches. This thesis links theoretical propositions and research with the neighbourhood disaster planning process in Burkeville, to contribute suggestions for practice.

One highlight of the Burkeville experience has been the indication that
neighbourhood disaster plans depend on a top-down push from government to encourage and support community actions, and a bottom-up drive by the community to take on emergency planning and preparedness responsibilities. Secondly, emergency personnel must move away from producing highly detailed, voluminous plans and focus on process planning. Thirdly, neighbourhood disaster plans will need to concentrate on volunteer management issues; how to motivate individuals to get involved in emergency planning and preparedness, how to keep them involved, and what planning processes techniques are more effective to use at the community/neighbourhood level.

It is hoped that the information gleaned from this thesis (theory, research, case study) will assist public and private organizations in developing strategies and plans which take into account community actions and practical realities. As the need for trained community involvement becomes more apparent from each disaster experience, the need for techniques to develop an effective community response becomes a pressing priority matter. This thesis provides an insight into a community disaster planning process, to help motivate emergency personnel and local citizens to begin the task of disaster preparedness and mitigation in their community.
TABLE OF CONTENTS

Abstract ........................................................................................................ ii
Acknowledgements .................................................................................. vii

1. Introduction ............................................................................................. 1

2. Planning Theories and Principles to Guide the Development of a Neighbourhood-Level Disaster Response Plan ........................................ 3
   2.1. J. Friedmann's Theory of Social Transformation .............................. 4
   2.2. Principles of Public Participation and Citizen Empowerment .......... 5
       2.2.1. Public Participation ............................................................. 5
       2.2.2. Citizen Empowerment ....................................................... 7
       2.2.3. Networking ................................................................. 8
   2.3. Community Development Principles ............................................. 9
   2.4. Disaster Planning Theory and Principles ....................................... 11
       2.4.1. Theory ................................................................. 11
       2.4.2. Principles .............................................................. 12
   2.5. The Principles of Process Planning ............................................. 15
   2.6. Summary .................................................................................. 17

3. Disaster Planning Literature Review .................................................... 18
   3.1. Emergency Planning Perspectives .............................................. 19
       3.1.1. Professionalism ............................................................. 19
       3.1.2. Lack of 'Community' Participation ...................................... 19
       3.1.3. Process Planning Versus Plan-Production ......................... 21
       3.1.4. The All-Hazard, All-Phase Approach ................................. 24
       3.1.5. Public Versus Private Interests .......................................... 27
       3.1.6. Individuals in Perspective .............................................. 28
   3.2. Government Perspectives ............................................................. 29
       3.2.1. Government Funding .................................................... 29
       3.2.2. Resources .................................................................. 31
       3.2.3. Getting on the Political Agenda ....................................... 32
       3.2.4. Provincial and Municipal Legislation ................................. 34
       3.2.5. Planning versus the Plan .............................................. 37
       3.2.6. Public versus Private Rights .......................................... 39
       3.2.7. Other Important Issues ................................................ 39
   3.3. Community Perspectives .............................................................. 41
       3.3.1. The Role of the Community in a Disaster ......................... 41
       3.3.2. Why is Community Involvement So Important? .................. 42
           3.3.2.1. Communities Must be Prepared for the First
                    Seventy-Two Hours. ................................................. 43
           3.3.2.2. Local Governments Do Not Have The
                    Resources To Cope .............................................. 43
Designing and implementing the first neighbourhood-level disaster plan in Canada was a golden opportunity to learn about the realities of disaster management on a small-scale planning level. It was a wonderful experience, but the pilot project would not have been possible without the help of others. Many individuals contributed their skills and resources to the project (often on a volunteer basis), but in particular I would like to thank the following:

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1. INTRODUCTION

Disaster planning, with the exception of planning for war, took root in Canada in the 1950's. Over the past forty years disaster planning has struggled to move from an occupational status into a profession. With a growing awareness that local governments (the focal point of disaster planning) do not have the resources and skills to cope with a large-scale disaster, emergency departments are beginning to seek community input into disaster plans. Much of their efforts have concentrated on educating and informing the public on disaster preparedness strategies to reduce the loss of life and property.

In the mid-1980's the United States (in particular, California) took the concept of community involvement several steps further by introducing the idea of neighbourhood disaster response teams. Through training and education, neighbourhoods can be taught to be self-sufficient for a minimum of three days without having to depend on local government resources or other emergency response organizations which would be overwhelmed with requests for assistance. In Canada, the first case of a neighbourhood-level disaster response capacity was developed in the community of Burkeville, City of Richmond, in June 1990.

The thesis first provides an overview of theory and empirical research relevant to emergency planning and community participation in order to put the need for citizen involvement into perspective, and to suggest ways to avoid the pitfalls typically associated with ‘para-military top-down’ plans. As indicated in Chapter 2, there is little theory to guide a ‘bottom-up’ approach to neighbourhood-level disaster planning. The empirical research outlined in Chapter 3 is also limited and piecemeal which
adds to the difficulty of designing an effective disaster planning process which takes
into account citizens behaviour following a disaster. The detailed presentation of the
Burkeville disaster planning experience in Chapter 4 suggests one solution to aid local
governments in disaster planning and response, and provides a planning guide for
action. There are no known critiques of neighbourhood disaster plans in North
America. We need to know more about the potential community's have in assisting
governments prepare for disasters, and what strategies best suit the needs of
community members.

Chapter 5 analyzes the relationships between theory, research and the case
study. The thesis concludes by summarizing the implications of neighbourhood
disaster plans in the realm of disaster planning, with some suggestions for further
study.
2. PLANNING THEORIES AND PRINCIPLES TO GUIDE THE DEVELOPMENT OF A NEIGHBOURHOOD-LEVEL DISASTER RESPONSE PLAN

As indicated in the Introductory Chapter, there are no existing detailed descriptions or critiques of neighbourhood disaster planning processes. In order to develop community participation strategies, we need to look at the trends emerging in the field of disaster management. Unfortunately, the written material on the subject of disaster planning theory is negligible. To assist with the task of building our knowledge base to produce better plans, a search was undertaken under the guise of general planning theory and principles, outlining those theorems believed to be relevant to guide a bottom-up planning process.

The trend in planning is toward greater public participation in areas which have in the past been exclusively the government’s domain. There is a growing realization that public involvement has many advantages which can outweigh the apparent disadvantages perceived by government (the latter defines the bottom-line for citizen involvement in public decision-making). Disaster planning is one area where the need for public input and involvement is crucial to the ‘success’ of a disaster response. In order to build community input into disaster plans, we need to gather knowledge about ‘bottom-up’ processes to encourage, motivate, and gain commitment from citizens to take on a personal disaster responsibility.

This chapter outlines the theories and principles which shed some light on community empowerment and community development trends. As the last section on disaster planning theory/principles suggests, we need to move away from a traditional disaster planning framework (standard operating procedures) into designing creative
planning processes which include both the organization and the individual.

2.1. J. FRIEDMANN'S THEORY OF SOCIAL TRANSFORMATION

As the complexity of our world increases, planning has been relied on as a means to simplify and direct that change. Planning theory acts to condense the world around us to a manageable level to bring about positive change.

John Friedmann (1987) discusses historical changes in planning, and classifies these changes into four traditions of planning theory - social reform, policy analysis, social learning, and social mobilization. The 1980's reflected an inability of past theories to bring about real change, consequently Friedmann added a fifth dimension, Social Transformation. He believes that our present crisis, unmet challenges, exists because knowledge and action have come apart. He sees three major problem areas which have given rise to this crisis:

1. The crisis of knowing.
2. The crisis of the accelerated pace of historical events.
3. The crisis of the unprecedented nature of events we face.

Friedmann suggests that the accelerated flow of events has risen to the point where our understanding of the world is actually decreasing. His solution is salvation by re-centering political power in civil society, through a re-structured household economy.

Friedmann does not delve into the mechanics of Transformation Theory other than to suggest that access to power is through selective de-linking, collective self-empowerment, and self-reliance, starting with the single household. Small action groups can play a decisive role by taking over 'left-over' areas which pose no threat to the basic configuration of power. If public opinion is considered a threat to the
present power structure and status quo, it is unlikely that any real power to the
people will be given: as Friedmann suggests, individuals/families/groups will have to
be satisfied with the 'left-over' areas for the time-being.

2.2. PRINCIPLES OF PUBLIC PARTICIPATION AND CITIZEN
EMPOWERMENT

2.2.1. Public Participation

Public participation has been broadly defined to include "all persons, groups,
and/or organizations that have a 'perceived' stake in the results of a decision,
excluding government and corporations" (Gardner, 1991).

Over the past 20 years, a growing number of public participation groups have
emerged on the scene. Despite their proliferation, there has been very little written
about the impact of these groups on the social/political milieu (Nerfin, 1987:1).
Public pressure appears to be mounting to give citizens a greater voice in what has
historically been government 'business', and this pressure is unlikely to abate. People
are demanding greater participation in decisions directly affecting the quality of their
lives and their environment, along with a growing unwillingness to let outside actions
detract from that quality (Lang and Armour, 1980:301).

Why public involvement? A government (US) manual on risk communication
entitled "Improving Dialogue with Communities", suggests that public participation is
necessary for the following reasons (Hance, et al., 1988:32):
1. People are entitled to be involved in issues that directly affect them.
2. Involvement in the process leads to a greater understanding, and more
appropriate actions by the community (to a particular risk).
3. The input of those who live with the risk everyday and are familiar with their own needs can lead to better policy decisions and solutions.
4. Co-operation between agencies and citizens can increase that agency's credibility.
5. Community outrage is reduced.

Other advantages include (Gardner, 1991):

6. Re-distribution of public power and enhancement of the democratic process.
7. Greater accountability for decisions.
8. Better decisions (by working toward equitable solutions).
9. Eradication of bias and social injustice.
10. Increased individual and community satisfaction.
11. Seeking technical inputs and value preferences for decision-making.

Sally Lerner (1986:55-60) states that there are three corrective functions of volunteer groups in relation to the dominant societal institutions:

1. Prophetic Function - Their role is to correct conditions, policies, and practices in business and government that are hazardous, de-personalizing, or unjust.
2. Supplemental Function - Volunteer organizations aid or replace government agencies in providing services.
3. Modelling Function - volunteer groups are sources of organization experiment and innovation.

For volunteer groups to survive (short and long-term), P. Pross (1986:8) states that three things must be offered to its members; social rewards (ie. friendships), psychic rewards, and the belief that individuals can 'make a difference'.

In terms of assessing citizen group effectiveness, there is very little theory or practical application to draw from. In addition, the limited evaluation methodologies undertaken by institutions cannot be easily or effectively transferred to non-governmental organizations due to their differences in purpose, goals, process and desired outcome (Gardner, 1991). A second problem associated with evaluation methodologies are their inherent lack of 'testability'; there is no scale to measure what is acceptable - all decisions (on a criteria by criteria basis) rest with the
evaluating agency. The subjective nature of this evaluation can be easily mismanaged if in the hands of a manipulative agency. One example is the Ministry of Environment's new approach to 'public consultation'. Their approach is designed to enhance their public image, reduce conflict, reduce time, make implementation easier, and be pro-active (Gardner, 1991) - any process used to achieve these results could be construed as 'effective' whether or not it is a fair process. Joan Vance (1990:70) points out that "because there are no right answers in inherently subjective decisions, numerous outcomes are both possible and legitimate. While the source of conflict can appear to be over fact, it is usually a difference in beliefs and values". The outcome depends on who is doing the assessment, and for what purpose.

In North America, governments define the 'bottom-line' for citizen involvement in public decision-making: the result is often minimal participation from the public.

2.2.2. Citizen Empowerment

John Forester (1989) redefines the concept of planning in terms of communicative action. He argues that information is a complex source of power, and it is the lack of information exchanges on all sides which represents the critical problem for decision-making. Information is a source of power because it enables the participation of citizens and avoids legitimizing the capitalist structure. In reality, the public has limited access to information, and public participation is reactive rather than proactive. As Forester points out, the power and ability to act and invest in this society are unequally distributed and those inequalities provide and shape the context in which planners, public administrators, and decision-makers more generally work.
and act. He believes that planners must assess encompassing power structures and recognize how their own actions can either work to discourage or encourage citizen organization.

Many non-governmental organizations believe that true citizen/public involvement only comes with the sharing of power and direct input into the decision-making process. Sherry Arnstein's ladder of citizen empowerment ranges from manipulation to citizen control (1969:216-224). She believes that citizen power in determining a plan or program only begins at the partnership level. A second viewpoint held by Joan Vance recognizes citizen control as the pinnacle of citizen participation (1990:68-72).

2.2.3. Networking

Networking focuses primarily on communication. It is defined by Webster's dictionary as "the exchange of information or services among individuals, groups, and organizations". Nerfin (1987:380) believes that networking is invaluable in the life of a volunteer group: "being multidimensional, they stimulate imagination and innovation. They foster solidarity and a sense of belonging. They expand the sphere of freedom and autonomy". The importance of networking cannot be underestimated. Networking can occur on different geographic levels, between movements of a similar nature, and/or between groups of a different type. For all linkages, networking has the advantage that it can (Gardner, 1990):

1. Increase efficiency by sharing information and other resources.
2. Respond to a crisis more quickly by mobilizing information, resources, and support.
3. Increase the range of contacts and entry points into decision-making.
4. Experience a sense of community support.
5. Train and share leadership.
6. Increase political clout through greater numbers and effective integration of related interests.
7. Provide support for grass-roots conservation efforts on a small scale.

Despite the obvious advantages of networking, Stuart Langton (1984:133) points out that unfortunately, "in everyday practice, agencies do not seek each other out for the purposes of resource exchange; each agency sees itself as independent of all others, depending only on its own subsidized resources...and nurturing the fantasy that there must or should exist the quantity and quality of resources that could ensure a safe and goal-fulfilling life".

2.3. COMMUNITY DEVELOPMENT PRINCIPLES

Community development is a bottom-up development strategy where local citizens take charge of their future. This practice has been undertaken primarily for economic reasons where traditional top-down recovery methods fail to produce the desired results. In some cases, communities have incorporated a social reform element in their short and long-term goals. One example is New Dawn, a non-profit corporation in Cape Breton which combines business with social and cultural activities to contribute to community development (MacLeod, 1986:20). On a grander scale, Mondragon, Spain, is virtually a regional co-operative where the entire population is sustained socially, culturally, and economically from the 'cradle to the grave'. Co-operative enterprises are the most common form of community development projects.

In North America, the modern economy operates as if there were no law of
entropy (M'Gonigle and Michael, 1986:301). Economic inequalities are present, and
the disparity gap is widening despite the injection of government funds into specific
areas of the economy. During the mid-1970's, the 'Small is Beautiful' school of
thought was born - its basic message was that an imbalance existed which was one of
over-centralization. Their solution was decentralization, to explore ways to develop
local economies and technologies that use local resources on a sustainable basis
(M'Gonigle and Michael, 1986:301). A more recent proposal to bring society into
balance was put forward by Weaver in his political strategy for regional development
(in Hill, 1989:50):

"A political strategy...amounts to mobilizing local labour power to create
self-reliant economic well-being, typically in marginalized peripheral
locations. Starting with use-value production for the individual and
living group, it provides a mechanism for promoting wider forms of
petty commodity production and exchange".

North American governments have begun jumping on the community
development bandwagon, by providing initiatives to local areas to improve their
economic/employment base. Neighbourhoods, localities, and/or regions are given a
greater capacity to determine their own economic destiny (Economic Council of
Canada, 1990:18):

"We [The Economic Council of Canada] therefore support the
community economic development approach, with the caveat that it
cannot be a panacea for the problems of every community faced with
economic diversity. At the same time we stress the importance of
applying public sector assistance in ways that do not stifle the
enthusiasm and innovativeness of local development organizations.
Arrangements should be as flexible and as unbureaucratic as possible".

The emphasis is on the economic side of community recovery, but the
Economic Council supports the notion that community-based projects are more
sensitive to local needs. It is the direct application of planning with people, as
opposed to for. The community development approach may be the only plausible alternative when top-down plans fail.

2.4. DISASTER PLANNING THEORY AND PRINCIPLES

2.4.1. Theory

Little theory has emerged, despite four decades of research. Though there has been "some attempt to render the findings of separate disaster studies into formal propositions, the study of disasters has yet to turn the corner and move into a phase of systematic, consciously undertaken tests of theory" (Stallings, 1987:1). We need theory "simply to provide a way to organize one's data", ... [but] "it has been used ad hoc to organize and inform descriptive findings" (Stallings, 1987:17-19). Quarantelli (1978:7) stated that both empirical and theoretical research was desperately needed, and there was almost a total absence of simple descriptive accounts of disasters. He emphasized the need for model building and comprehension of inter-organizational relationships.

Robert Stallings (1987:1-2), in his attempt to advance sociological theory construction of disaster behaviour, focused on the single hypothesis that "as normal daily interaction between organizations increases, the problem of co-ordination in a disaster decreases". This hypothesis had been accepted as a fact although it had never been tested. Stallings believed that this hypothesis (and others) may defy testing in the conventional sense. One reason given is pre-impact data cannot be collected in advance. A second reason is the tenuous fit between theory and disaster
...Those components of the theory so used stand out, while other components that either do not fit or are irrelevant to the case under examination are ignored. This selectivity in the use of theory is often overlooked because interest lies not in explicating theory, but in understanding the case itself. Over time the repeated use of the same theory in the same way creates the illusion that it has somehow been 'tested' in the several instances of its application. If one’s goal is to understand human behaviour in disasters, this is acceptable. If one’s goal is to construct theory, this is unacceptable " (Stallings, 1987:20).

During the 1970's, research shifted away from individual behaviour in crisis, with organization and community responses to social disruption coming to dominate disaster research (Quarantelli, 1978:4).

2.4.2. Principles

Louise Comfort (1988:5) characterizes emergency environments as having three conditions - uncertainty, interaction, and complexity. Through design, she postulates we can simplify complexity to bring about action. She states that there is no known equation for 'uncertainty' in public management, though it is a fundamental concept. We need to design plans which help mitigate the effects of uncertainty - Comfort recommends incorporating the following into emergency plans:

1. Creativity.
2. Involvement of the organization and the individual.
3. Cumulative effects.
5. A time factor.

Comfort maintains that common sense must be incorporated into the process. One example is the 'call for assistance' policy as a standard operating agreement between departments - emergency personnel now realize that they need to check on those
places they had not heard from.

Our ability to act depends on three things - the decision-making process, the priority setting given to the situation, and our ability to manage information (Comfort, 1988:24)).

The Decision-Making Process

Research tells us that standard operating procedures are inadequate tools to cope with out-of-ordinary events. There is also the charge that rational planning may actually inhibit a problem-solving process in dynamic, uncertain conditions (Comfort, 1988:345). No theory per se has emerged from these findings, but two trends have surfaced:

1. Herbert Simon's "The Structure of Ill-Structured Problems" (the transformation of one large problem into sets of smaller well-structured problems):
   a. Define the goal or desired outcome(s).
   b. Decompose the larger problem into smaller segments.
   c. Evaluate actions taken in separate segments against the overall goal.

2. a. Identify the commonality of function between two or more subjects.
   b. Those actions that function effectively stay.

   In the absence of time (and information), the ‘quick and dirty’ approach can enable one to get started; that is, what to put emphasis on, what to do, what to let slide by (Hightower, 1989). If the outcome is a process for problem solving (as opposed to a plan), there is opportunity for modification as new information becomes available.
Priority Setting

Priority setting is very important in a fuzzy, ill-structured environment, for all emergency phases (Comfort, 1988:17). The setting of priorities cannot take place without a clear understanding of hazards (and their secondary effects), and a consensus among those who are in a position to make decisions. One must first be able to 'see' a risk before any action becomes possible. Sociologists who have studied risk perception in depth cannot agree which of two theories best fits reality (Stallings, 1987:49): the first, Social Factist Theory, states that social forces are "things themselves" with properties which can be measured (though only partially or imperfectly glimpsed by participants); the second tradition, Social Definitions, states that the only 'real' thing about social forces is the mental picture people have of them (i.e. subjective phenomena).

Even when the risks are known it is difficult to achieve consensus:

"People are rarely aware of all the alternatives open to them...They differ greatly in the way they judge the consequences of particular actions even on the rare occasions when the physical outcomes are known accurately. The comparison of many different consequences is a highly complex operation [even] for a decision-maker" (Perry, 1983:67).

Management of Information

Management of information and the ability to communicate effectively in a disaster situation is critical. The communication component is known to be the weakest link in the system, and it is usually the first thing to break down in a disaster. The focus of any planning task group should be on communication/information needs.
The Natural Hazards Observer (1986) took a look at the effectiveness of the U.S. national earthquake hazard reduction programmes over the previous ten years - what they found was the programmes probably prevented things from getting worse, but the greatest need was not for new knowledge or engineering methods, but for more effective implementation of the capabilities they already had.

2.5. THE PRINCIPLES OF PROCESS PLANNING

P. Boothroyd (1989) defines planning as a process by which an individual, group, organization, or community decides where it wants to go (goals), and how it is going to get there (objectives). P. Hall (1980:1) believes planning can be separated into two distinct processes:

1. A set of processes whereby decision-makers engage in logical foresight before committing themselves. These include problem definition, problem analysis, goal and objective setting, forecasting, problem projection, design of alternative solutions, decision-processes, implementation processes, monitoring, control, and updating.

2. Processes which result in a physical plan.

Planning comes before action, and evaluation comes after (Boothroyd, 1989:1). P. Boothroyd states that planning produces three outputs - action which leads to change, written plans, and feelings and ideas. Action is the most important output.

B. Hance, et al. (1988:12), contends that process is (almost) everything:

Everyone - academic experts, practitioners, and citizen leaders - agrees that the process by which agencies make decisions is crucial...In most stories that involved citizen action to a government proposal, the opposition was not only to the action, but also to the manner in which the agency proceeded towards that action".

Uncertainties pervade the decision-making process. James March describes
the decision-making process as ‘The Garbage Can Model of Organizational Choice’


1. Information is always imperfect.
2. Time is always inadequate, so we deal with the most burning issues.
3. Not everyone values the issues, problems, and solutions equally.

Herbert Simon’s ‘Theory of Bounded Rationality’ conveys a similar meaning:

"Cognitive limitations of the decision maker force him to construct a simplified model of the world to deal with it. The key principle of bounded rationality is the notion of 'satisficing' where an organism strives to obtain some satisfaction, though not necessarily maximal, level of achievement" (Slovic, et al., 1974 in Perry, 1983:67).

What is needed is "a model which demystifies planning and brings it under community control while increasing the communities effectiveness in defining and reaching goals" (Boothroyd, 1989:2). Planning skills are also needed to cope with increasing change, complexity, and conflict. These skills cannot be taught by using detailed sector-specific substantive planning recipes especially at the non-professional level. We also need to know how to use people's ideas and feelings. Unfortunately, there is little in the academic literature to assist with this task.

Peter Boothroyd (1989) believes that community leaders, staff, and advisors are hungry for planning process concepts and techniques to help them plan. Based on his experience working with communities, Boothroyd designed a planning process which can guide even the most inexperienced through difficult problem-solving situations (see Section 4.3 for detail). The first step in any planning project is to find a comfortable, effective process which can be assimilated by all participants.
2.6. SUMMARY

This chapter indicates our limited knowledge surrounding citizen participation processes, despite the fact that these groups have proliferated in number over the past two decades. Acceptance of citizen involvement in ‘government business’, particularly in the decision-making process, has been slow to materialize, but it is gaining momentum.

When the delegation of power and responsibility from government to local citizens becomes possible, there may be a need to aid these groups/individuals in the initial start-up phase. We have yet to understand what motivates individuals to get involved, and how community project’s survive the long-term. Good process planning techniques are believed to be crucial to community participation, that is to set goals appropriate to community needs, and to act on people’s feelings, ideas and beliefs. It is difficult to teach communities to help plan for themselves when leaders, and other professionals, struggle with similar problems due to the lack of planning expertise. This problem is exacerbated in disaster planning where the issues of uncertainty, complexity, and interaction pervade all phases of disaster planning and management.

A second primary source of information to understand the disaster environment is research. Chapter Three outlines the effectiveness of disaster management as it presently stands and provides some suggestions for future strategies.
3. DISASTER PLANNING LITERATURE REVIEW

The purpose of the literature review is to discern what obstacles remain as barriers to effective emergency management, and what potential steps can lead to equitable solutions. We need to know what factors motivate governments and communities to move toward good emergency practices, and what those practices are. Though the process will likely differ between governmental and non-governmental organizations due to their differences in purpose, goals, and desired outcome, both stakeholders will be faced by obstacles generic to the disaster planning field. There are some obstacles which specifically relate to government, while others are primarily a concern of communities. For this reason, the literature review has been divided up into three sections - Emergency Management Perspectives, Government Perspectives, and Community Perspectives.

It is suggested that we have the physical/technical knowledge to markedly improve our disaster response capacity, but we need to improve our understanding of social and political behaviours. In 1987 the United States (U.S.) government endorsed the International Decade for Natural Hazard Reduction, and established the U.S. Decade for Natural Hazard Reduction the following year (Natural Hazards Research Applications Information Center, 1989). From experience, the U.S. government discovered that "...we have enough knowledge already, if properly applied, to reduce both human and property losses substantially...Progress in scientific and technical understanding of natural hazards as well as techniques to mitigate their effects, has led to the [Decade]". William Petak (1984:291), on natural hazard mitigation in the U.S., found that "the major obstacles to hazard mitigation in the
U.S. have been far less of a technical or legal character, and far more of a social, political, economic or administrative nature. The information presented in this Chapter focuses on the latter.

3.1. EMERGENCY PLANNING PERSPECTIVES

3.1.1. Professionalism

The emergency management field is in the process of evolving from the status of an occupation to a profession, but it has been slow to materialize (Waugh, 1990:230; Perry, 1983; Drabek, 1991:23). Without professional accreditation, emergency management is the 'Rodney Dangerfield' of government priorities..."it just don't get no respect" (Feigenbaum, and Ford, 1984:1). A few results are:

1. Hazard officials often devote only part-time to hazard mitigation (Cigler, 1988:42).
2. Hazard officials are a diverse group (different educational backgrounds/different occupations).
3. Lack of financial support.
4. Limited training.
5. Lack of legislation to enforce emergency planning.
6. No sense of responsibility or accountability by the people in the system (Varnes, 1984:6).

3.1.2. Lack of 'Community' Participation

Community, for the purpose of this thesis, is defined as the intermediate stage between individuals and families on the one hand, and society on the other (Melnyk, 1985:135).
One of the more controversial issues in planning surrounds the lack of community participation in governmental planning processes. Disaster planning is no exception. Despite having a great potential to assist in a disaster, the private sector is a neglected resource. Potential community resources include volunteer organizations, private business/industry, local emergency organizations (amateur radio operators, Church groups), and dedicated individuals. Even well-established volunteer emergency organizations tend to work within their own disaster mandate (Salvation Army, Red Cross).

The patterns of interaction between the public and private sector range from laissez-faire to promotion, encouragement, co-operation, inducement, and regulation (Ruchelman, 1988:54). At a basic participatory level, public input is needed for compliance with warnings, evacuations, and survival measures. One of the many lessons learned from the Edmonton Tornado (1987) was the need to educate the public about self-help actions to take in different kinds of emergencies (Wilson in Laughy, 1989:17).

Most citizens accept emergency management as an appropriate function of government which is detrimental to personal preparedness (Drabek, 1991:22). Research has found that community resistance to emergency planning can be overcome if someone in authority takes initiative, usually the mayor (Scanlon, 1991:79). Disaster planners must realize the potential of public demands to raise the priority [and consciousness] of disaster preparedness in their jurisdiction (Laughy, 1989:14).

Hazard mitigation is a two-way street - before an individual will take any type of adjustment to an environmental threat s/he must be aware of its existence and
believe that it poses some level of real danger; however, there is no consensus about the degree of importance or urgency to the situation (Perry, 1983). Emergency planners need to promote awareness and encourage individuals in self-help activities, which in turn can raise the profile of disaster planning.

A study of 42 emergency managers in six cities and counties in Washington State revealed the belief that "community information hotlines, neighbourhood networks, and citizen education and training had some benefit but [required] a great deal of effort" (Kartez, and Kelly, 1988:134-135). The study findings suggest that managers judge the prospects of adoption along the lines of least resistance, their routine experience, and that of colleagues.

3.1.3. Process Planning Versus Plan-Production

Process planning is a guide to decision-making. A well planned process leaves one with the means to do the right thing at the right time (FEMA, 1981:3). The output of a planning process is a ‘plan’, or a written document of decisions. A major criticism of emergency officials has been the emphasis on the plan, and almost total neglect of process. Disaster research tells us that standard administrative practices and planning alone are inadequate in a disaster (Comfort, 1988:4). Though written plans are valuable for training and familiarizing new participants with their duties, there is a need to move away from writing plans in isolation:

"Paper plans, prepared by civil preparedness directors/co-ordinators alone, with little participation by local operating departments, are of little value because they are not used. A written plan does not guarantee that actual operations will be effective but the process of planning which leads to the development of a written plan is extremely
valuable [from] spent time determining what forces will do what, and how operations will be co-ordinated" (FEMA, 1982:1).

"We need to move away from the technical aspects of a plan - it does not matter how well structured they are, if people do not acknowledge them, they are ineffectual" (source unknown).

"Realistic planning requires that plans be adjusted to people, and not that people be adjusted to plans" (Quarantelli in Laughy, 1989:28).

"Resist the temptation to make written plans highly detailed because: 1. It is impossible to plan for every contingency; 2. Situations change constantly and specific details become out of date; 3. The presence of too many details gives the impression that everything is of equal importance; 4. A complex detailed plan is intimidating to potential users and tends to be ignored" (Kreps, 1991:36).

"The command and control model is not appropriate for emergency management...timely co-ordination is more important than hierarchical authority" (Kreps, 1991:44).

Despite recommendations to shift from plan-production into process planning, few individuals are aware of the techniques of conducting effective planning processes. Organizations must contend with the lack of planning expertise within local and support agencies, the lack of formal training in planning among emergency managers, and the fact that planners basically deal with general planning issues, not emergency planning (Daines, 1991:174). Unfortunately, a good planning process still does not guarantee that there will be an improvement in preparedness.

J. Scanlon (1991) gives a rare glimpse into an emergency planning process but the article does not suggest what techniques are appropriate. Scanlon recommends the following process:
2. Community Assessment of attitudes and needs.
3. Planning within government.
4. Networking to evaluate resources.
5. Disaster education.
   - take advantage of the existing structures (e.g. Block Watch,
     and the fact that 80-90% of victims are rescued by citizens.
6. Develop the plan (may be the least important part of the process).
7. Test/Update the plan.

The traditional 'para-military' model of emergency plans (Standard Operating
Procedures) has an impact on slowing the adoption of innovative approaches.

Predictable problems in a disaster situation have a habit of remaining unresolved.

For example (Kartez, 1988:1):

1. Emergency officials continue to be surprised at the number and diversity of
   responders (ie. convergency problems).
2. There is an inability to find and use special resources (equipment/skills).
3. Unplanned media relations continue to lead to confusion and conflict.
4. There is ambiguity of authority and co-ordination.

Some cities in the U.S. adopt good emergency practices, even without disaster
experience (Kartez, 1988:1). Some examples are*:

2. Training personnel to organize citizen volunteers (e.g., volunteer reception
   centres - City of Oakland).
3. Better public information dissemination capabilities (e.g., phone banks, media
   information centres).
4. Specific strategies (e.g., training for evacuation warnings, aiding special-needs
   populations).

* See Appendix A for further information.

The City of Corpus Christi, Texas (1988), incorporates many good emergency
practices in their disaster plan. For example, the plan formally adopts Ham/CB radio
operators in its communication network. In British Columbia, the Provincial
Emergency Program provides no training or funding for amateur radio operators
though the Province depends on them (Anderson, et al., 1990:18). This is a common
problem in North America - even the most effective communication networks do not avail themselves of the resources offered by the voluntary and private sectors (Kartez, and Kelly, 1988:144). The Corpus Christi plan includes an unusual proviso which condones personal judgment as a legitimate tour de force:

"Nothing in this plan shall preclude the exercise of good judgment on the part of agencies and personnel responding to a disaster. Deviation from prescribed procedures is authorized when, in the opinion of those in charge, it becomes necessary" (June 1988).

City employees whose presence is required must make preparations ahead of time to safeguard their property and instruct their families. Drills, exercises and simulated disasters are 'a must'.

The content of training and exercising can play a significant role in improved preparedness, particularly when a large number and variety of government departments, and other organizations, participate (Kartez, and Lindell, 1990:27). Research has found that the lack of disaster experience is an impediment, but it is not as great as previously thought; the payoff is also greater when a face-to-face learning process is in place (Kartez, and Lindell, 1990:29). A comparative study of emergency responses undertaken at two aviation disasters, Gander (1985) and San Diego (1985), found that Gander responders 'did a much better job'. Gander conducted better pre-disaster preparedness planning, and completed an exercise simulation only twenty-seven days prior to the incident (Scanlon, and Sylves, 1990:110-124).

3.1.4. The All-Hazard, All-Phase Approach

The all-hazard planning approach to emergency management treats man-
caused disasters under the same planning guidelines as natural disasters. This
approach also considers no separation in the plan between different disaster types.
The all-hazard approach can effectively reduce voluminous plans to a manageable
level; more importantly, research has found that there is no significant conceptual
reason for treating man-made or natural hazards as fundamentally different (Perry,
1983:18). The advantages of an all-hazard approach over agent-specific plans are as

1. The management needs and problems are similar.
2. The approach avoids duplication of efforts and resources if done on a hazard-
   by-hazard basis.
3. Research into civil defense programmes in the 1960's and 1970's found that
   appeals made to local co-ordinators on the basis of an all-hazard approach
   were more likely to be acted upon than others.

However, generic planning may not meet the needs of every jurisdiction, especially at
the local level (Daines, 1991:168). Certainly for localities faced with reoccurring
disasters, it would be common sense to plan for specific outcomes.

A second trend in the 1980's is an all-phase approach to emergency
management - mitigation, preparedness, impact, response, and recovery. For all
phases, five resources need to be co-ordinated (Gillespie, 1991:63-66): 1.
Information; 2. People lending or exchanging personnel (essential aspect of co-
ordination); 3. Money (grants made from higher to lower levels); 4. Physical space;
5. Equipment.

In the early 1980's, the U.S. Federal Emergency Management Agency (FEMA)
developed a strategy called Comprehensive Emergency Management (CEM), a
prototype for an all-phase approach. The idea was to develop a capacity to handle
all phases of activity (mitigation through recovery) by identifying common functions in
all disasters for all phases (Perry, and Mushkatel, 1986:130). In 1984 FEMA introduced the Integrated Emergency Management System (IEMS), an implementation strategy for CEM. The most important component of CEM was to be a community focus, the latter being directly impacted by a disaster (Perry, 1983:18).

Despite the growing recognition that an all-phase approach is warranted, most funds continue to be directed toward the post-impact disaster phases (Perry, 1983:4; Perry, and Mushkatel, 1986:132). Mitigation and preparedness activities can potentially reduce the social and economic costs of a disaster, but there are no guarantees (Waugh, 1990:230). Governments are unlikely to invest taxpayer’s money without justification, and governments and populations tend to avoid investments into disaster prevention until it is clearly shown that a large investment will pay off substantially in the future. Unfortunately, poor recovery planning is characteristic of North America (Daines, 1991:182). Even communities who have experienced frequent disasters do not necessarily give more attention to mitigation and preparedness (Rubin, 1991:257).

The all-hazard, all-phase approach is composed of generic tasks and roles. The common denominators are - a warning system, evacuation procedures, sheltering and welfare, medical care/morgues, search and rescue, and security/protection of property [communication is also an important consideration which needs to be mentioned] (Perry, 1991:218).
3.1.5. Public Versus Private Interests

William Petak (1989:4) believes that we must consider all facets of an issue which will lead to better decisions. These facets he calls STAPLE - Social, Technical, Administrative, Political, Legislative, and Economic. The neglect of the social component has compromised the goal of an effective emergency response. The fact is emergency planners need the approval of the public (Rubin, 1991:234):

1. Politicians will not jeopardize votes unless the public demands it.
2. Emergency officials have few police powers to enforce public commitment, or municipal initiative.
3. The bundle of rights accruing to land is very powerful (and much of it is in the hands of the private sector).
4. There is no consensus between stakeholders - very few community leaders are able to combine their foresight about the future with the ability to assess community values and provide effective leadership.

Petak (1984:289/290) suggests that we must address problem perceptions - what we are trying to solve, who has the authority to determine its importance, is agreement possible, and what social, economic, and environmental impacts will result?: "If we do not know what problems we are trying to solve it is unlikely that the policies we adopt will be much importance in reducing natural hazard losses".

One example is the emphasis on physical/technical measures to prevent chronic flooding problems rather than the possibility of relocation. Solutions often treat the symptom not the cause, and rarely reduce the vulnerability factor.

North Americans have an institutionalized safety net to draw from which is a major deterrent to preparedness and mitigation: a social welfare net to catch the casualties, insurance policies to cover damages, and disaster relief funds to draw from (though they are never sufficient to cover everyone’s needs). Self-interest is a
powerful force in determining a course of action. In disaster situations, everyone pays for losses in one form or another - apparently indirect costs are easier to accept and administer than direct expenditures to disaster preparedness and mitigation. Los Angeles has the most successful hazard reduction program in North America due to three factors (Varnes, 1984:3):

1. A solid base of technical information.
2. An able and concerned government.
3. Citizen recognition of need.

3.1.6. Individuals in Perspective

Social scientists have been accumulating research material on human behaviour in disasters since the 1950's, but their results and recommendations have been largely ignored. How emergency personnel view the public is often reflected in their plans, with an overemphasis on crowd control measures and property protection; these practices continue despite evidence which has found that people do not panic in a crisis, and looting is rare. Recent sociological research suggests that the general public plays a major role in assisting their community, and it is detrimental to the community's recovery to inhibit this response. Unfortunately most government studies of community recovery have dealt with economic issues (LaPlante, 1988:223), and there is little information to draw upon concerning the ability communities possess to respond effectively to a disaster.
3.2. GOVERNMENT PERSPECTIVES

An effective emergency programme hinges on the co-operative and co-ordinated efforts between all levels of government, with the primary co-ordination point at the municipal level. Some important reasons for choosing a municipal-level co-ordination point are:

1. People who make plans should be responsible for their implementation.
2. The municipality has the material resources which need to be co-ordinated and mobilized during a disaster.
3. The municipality has the potential manpower for action.
4. Decisions made closer to the level of actual operations are more effective than those made at distant levels (Comfort).
5. Planning is done on a small-scale where information is more readily available.

In order to develop an emergency capacity, local governments must have the following in place: Federal/ Provincial resources, a reliance on local rather than external resources, a technical/administrative sophistication, and horizontal/vertical government relationships (Rubin, 1991:235; Waugh, 1990:223). The following sections outline major obstacles governments must overcome to effectively manage the disaster environment.

3.2.1. Government Funding

The rate of disaster occurrence is not increasing but the potential is. Increased vulnerability is due to three factors: population concentrations (increased densities), populations moving to hazard-prone areas, and rapid growth among some of the most vulnerable groups in society - elderly, disabled, minorities, poor (Anderson, and Mattingly, 1991:311). The social and economic costs can be debilitating. In the Loma
Prieta earthquake (1989), the City of Oakland alone incurred $1.2 billion dollars in damages (Henry Renteria, Emergency Services Manager, City of Oakland).

Funding for mitigation and preparedness is an obvious necessity, but the majority of funds are directed toward the recovery phase. Governments need taxpayer’s approval, and taxpayers already believe that they are paying for protection through private insurance policies. Local actions are shaped by what resources are available, which tend to be limited given the low priority of disaster planning on the political agenda. Local governments are the focal point of emergency planning, but they are less resource rich than their counterparts (Perry, 1983:8). Government funding is most often after the fact, usually covering short-term needs only. In the United States reliance on Federal government for assistance has increased greatly since 1953 but little has been done to change local vulnerabilities (Mileti, et al., 1975:142).

Disaster aid has created an unreal expectation on the part of the local government. There is at least some expectation of post-disaster funding, but this has not necessarily been the case. In the history of the United States, 41% of States and localities were denied a Presidential Disaster Declaration (Settle, 1990:33-55):

"It remains unclear to many states and local officials, as well as citizens in general, what the decisive factors are in obtaining federal disaster aid (or obtain enough aid)... Maintaining this ill-defined dependency on the Federal government in time of disaster is a high-stakes gamble state and local governments may lose".

Even after a Presidential Declaration, communities may still have difficulty obtaining funding, particularly to cover long-term needs (Drabek, 1991:24). In one situation in Salt Lake City (mid-1980's), emergency managers reduced flood damage to buildings by sandbagging city streets to channel the water overflow away from the
downtown area. Unfortunately, they were severely criticized for reducing damage to levels where it would not justify low interest Federal business loans for recovery (Waugh, 1990:231).

3.2.2. Resources

At the local planning level, skills and material resources are abundant, but local governments lack the ability to collect, co-ordinate, and train resources both in the pre- and post-disaster phases. The inability of most local governments to tap into the private sector for goods, services, and manpower prior to a disaster reduces the effectiveness of recovery.

In 1983 FEMA defined the use of volunteers as one of nine policy issues of interest (Drabek, 1991:24). Yet, five years later, private sector resources were still being underutilized. For example, during Hurricane Hugo (1989) and Loma Prieta earthquake (1989), FEMA, the State, and American Red Cross had inadequate numbers of trained volunteers to cover the disaster response activities, and these organizations were not trained to deal with ethnic minorities (U.S. General Accounting Office, 1991:40-41).

In some cases in the U.S. (primarily California) neighbourhood disaster response teams have been set up. The City of Oakland developed a neighbourhood disaster response program called Citizens of Oakland Respond to Emergencies (C.O.R.E.). Since its conception five years ago, 20% of the population has been trained to respond to a disaster. Despite possessing a volunteer disaster response capability, this resource was not utilized during the urban fires in 1991. In this
situation, the Mayor of Oakland was quoted as saying, "We don't need volunteers, we need professionals" (Ester O'Donald, Volunteer Services Co-ordinator, Santa Cruz County Office of Emergency Services).

A survey of 400 U.S. municipalities with disaster experience (1986) revealed that the most frequent demands of emergency operations were to work not only with neighbouring units of government, but also the resource providers from the voluntary sector (Kartez, 1988:3/4). However, the least widely adopted practices were those which dealt with autonomous citizen activities and behaviour during a disaster (See Appendix A).

3.2.3. Getting on the Political Agenda

Emergency planning needs to be higher on the political agenda (Anderson, et al, 1990:21). Local governments are the crucial element in the formulation and implementation of emergency management policy, but the latter has been assigned a very low priority (Perry, and Mushkatel, 1986:136). Unfortunately, there have been few examinations of how risks actually appear on the political agenda:

"A critical question of risk control* is what risks will the government deal with first. Scientists are the key actors setting priorities, but following that, regulatory agencies are more influenced by lawsuits and daily press. The Conservation Foundation found that agenda setting was not thoroughly rational...as science provides no means of comparing and ranking essentially incommensurate types of risk" (The Conservation Foundation, 1985).

* Risk control is defined as the amalgamation of priority setting, risk assessment, and risk management.

For local governments to act they must be aware the threat exists and consider
it important, believe that the threat is susceptible to management, and develop or be presented with a politically and economically feasible policy that can be implemented (Perry, and Mushkatel, 1986:137). One U.S. study conducted in 956 flood-prone areas found that only 17% of community officials thought that flooding was a problem (Cigler, and Burby, 1990). Given the reality of ambiguous goals and limited power to co-ordinators, the result is often minimum participation from key departments (Kartez, 1988:9). Disaster planning can also run counter to established community values, for example, with the community opposed to funding costly mitigation works (Perry, 1983:116).

Research tells us that the key to effective planning is the active support of the Mayor or Chief Executive Officer:

"Policy implementation will always falter unless a highly committed and motivated core of public officials diligently pursue implementation. Absent these personnel, the perceived intractability of the problem and lack of visible political rewards for supporting seismic safety, make seismic safety a policy area prone to unsuccessful or incomplete implementation" (Wyner, 1984:267).

In the City of Oakland, department heads must complete an acceptable emergency plan before s/he will get a raise or promotion (Henry Renteria, Emergency Services Manager, City of Oakland).

J. Scanlon (1990:165-179) studied 19 of Canada's emergencies/disasters to test the assumption that the active involvement of a top official is crucial to the development of an effective local emergency plan. His findings indicated that while the Mayor's involvement is crucial to planning, that involvement is likely to stem from disaster experience, training, education, and sometimes outside forces, i.e. Provincial inducements. The research team observed that local planning requires outside
pressures because local authorities are too involved in day-to-day responsibilities to worry about planning for emergencies - pressure must come from a higher authority.

Support and commitment from top-elected officials can bring legitimacy and prestige to emergency departments and volunteer organizations. The result is a ‘multiplier’ effect where an organization has a greater ability to attract personnel, influence legislation, wield informal power in the community, and ensure adequate numbers of clients, customers, donors, and/or investors (Wright, 1978:200).

3.2.4. Provincial and Municipal Legislation

Murray Stewart, Ex-Director, Provincial Emergency Program (PEP), called the lack of modern legislation the largest single deterrent to emergency preparedness (Emergency Preparedness Digest, 1989). At the Provincial level, the Acts which apply are the Emergency Program Act (EPA), B.C. Regulation 456/59 and 666/76, as well as Sec. 20 of the Municipal Act in British Columbia. Regional Districts are under the responsibility of the Provincial Government; in the case of the Lower Mainland, municipal mayors make up the Greater Vancouver Regional District Board providing a connection between emergency planning at the local and regional level. The Emergency Program Act was established in 1951 and covers both civil defense and enemy action. Though serious attempts have been made to update the Emergency Program Act, no changes have been made to date. The Province has been designated two main roles in a disaster (Laughy, 1989:8):

1. To provide an emergency response in a disaster and declare an area a Disaster Zone.
2. To assist municipalities develop their emergency plans, and act as a
co-ordinating body.

In reality, the Provincial level of assistance is limited to training and funding. The operational responsibility for emergency preparedness and response lies with municipal government, but municipalities are not eligible for a Provincial grant without an emergency plan.

Under the EPA, the responsibilities of the various actors have not been clearly laid out (Staples, 1989):

1. **Police** - Regulations do not specifically state what the police will do in a disaster. Their responsibilities are outlined in the Police Act, i.e. to protect people and property.

2. **Fire** - The only authority to order an evacuation is the Fire Commissioner, and this responsibility cannot be delegated. The Fire Commissioner is 'supposed' to prepare a comprehensive plan for fire fighting and fire prevention in the event of an emergency. Mutual aid agreements have been developed to assist other jurisdictions in need.

3. **Minister of Municipal Affairs** - Responsibilities include emergency legislation, action to re-establish civil government in municipalities and emergency housing construction programmes (Reg. 92/66).

4. **Civil Defense Control Committee** - Representatives from each municipality and rural areas are in charge. This responsibility may be delegated under Sec. 6 to a Civil Defense Officer (i.e. usually the emergency co-ordinator) or municipal council provided it does not unduly interfere in the exercising by a municipal council of its powers (the term 'unduly' has yet to be defined).

5. **Lieutenant Governor in Council** - Sec. 4 gives the Lieutenant Governor the power to authorize acts and make regulations s/he considers necessary. Emergency is not defined in the Act itself, only in B.C. Regulation 666/76.

6. **Municipal Council** - Council can declare an emergency and exercise the powers necessary by adopting a bylaw (vote of two-thirds council members) under Sec. 290 of the Municipal Act. This procedure would take a minimum of 24 hours to adopt. Control would last until it was superseded by a proclamation under the E.P.A.

The lack of clearly defined emergency roles and responsibilities under current
legislation adds to the disorganization on top of the technical difficulties of organizing an effective response. Local governments are authorized to undertake emergency planning but there is no legislation to enforce this course of action. For those municipalities engaged in emergency planning in Canada and the United States, they have no specific authority to enter into agreements with other government agencies, and there are no practical means of ensuring a certain standard of preparedness (U.S. General Accounting Office, 1991:5). Municipalities are assisted by Federal and Provincial departments (primarily in grants and training), but the level of assistance is inadequate, and there is no assurance that after a disaster, outside help will be immediate or relevant.

Liability can be a motivating factor - once it was safe to advise municipalities that no action meant no liability, but this is no longer a certainty (Staples, 1989). However, local governments would not be negligent if they were able to prove "sound economic reasons" for the level of resources allocated to this activity (Staples, 1989). Municipalities are better off legally and financially if they proceed under the E.P.A. - the EPA will waive liability if a Civil Defense Committee has been established under Sec. 5, or the Lieutenant Governor in Council declares an emergency under Sec.11 (2). In the United States (as well as Canada), full discretion is given to State authorities to begin and end an emergency (Feigenbaum, and Ford, 1984:2).

Emergency legislation in the U.S. has clearer guidelines than its Canadian counterpart - for example, local plans are dictated by FEMA/State guidelines in terms of established rules and procedures (Daines, 1991:169). State emergency planning departments often create, co-ordinate, and implement city/county disaster plans, which exempt the latter from personal liability (Feigenbaum, and Ford, 1984:3). U.S.
legislation states that there is a duty to provide information essential to a reasoned choice among alternatives (Covello, et al., 1987:23). The accident at Three Mile Island lead to a recommendation to require the establishment of safety versus cost trade-offs and explain them to the public (Covello, et al., 1987).

### 3.2.5. Planning versus the Plan

As noted earlier, the planning process is far more important in developing good planning practices than Standard Operating Procedures (SOP's). The International City Management Association (ICMA) found that 80% of American cities adopted formal disaster plans, but plans were often found to be inadequate in a disaster (Kartez, and Lindell, 1987:486/490):

"What is puzzling is that after years of research on organizational behaviour in emergencies, local government continues to be surprised when standard procedures in their lengthy detailed plans are irrelevant" (Hoetmer, Study Director, 1983).

The study concluded that process-oriented planning activities (multidisciplinary simulations and task forces) are more effective than technical activities (SOP's).

Louise Comfort (1985:156) suggests that the way governments run their day-to-day affairs has a negative impact on how emergency management is delivered:

"The [government] system tends to inhibit co-operative interaction between multiple components and bureaucracy, designed to operate under routine conditions, becomes mired in human error. There is also a question of power rather than effective performance, authority rather than creative solutions, administrative status rather than competent service, which characterizes government hierarchy."

In the U.S., blame for standardized rather than adaptive thinking is often laid on plans written to comply with Federal/State funding requirements (Kartez, 1988:7). In
Canada, the Collegeville Plan (the city-prototype disaster planning model) does not include the planning department as a resource for emergency co-ordinators (Laughy, 1989:22).

The U.S. General Accounting Office (1991:23) examined Federal, State, and local emergency management activities in four states. One discovery was those states who placed an emphasis on disaster preparedness programmes had few co-ordinating problems during the initial response phase. The study also found that there are no means of ensuring that remedial action be taken after an exercise. Specifically, problems which arose during exercise simulations re-occurred in the Hurricane Hugo and Loma Prieta disasters.

A second study of 400 U.S. municipalities recommended that local governments concentrate on the following processes (Kartez, and Lindell, 1990:5):

1. Pay more attention to community and organizational behaviour, especially convergence.
2. Develop a mutual aid plan in the pre-disaster phase which focuses on response-generated demands, not agency-generated.
3. Develop a shared schema (through frequent participation).

Few training or exercise requirements are built into plans. Kartez (1985) suggests that their omission is due to a time factor, cost, a public participation requirement, and "they sometimes embarrass department heads" (in Anderson, et al., 1990:23). Training is usually for in-house/first responders and rarely others. Training and exercises are very effective means of gaining disaster experience without having to go through the real event.
3.2.6. Public versus Private Rights

In North America, the private rights of individuals and property owners are powerful. Governments face difficulties in their ability to enforce actions related to mitigation and preparedness measures particularly with regard to private property. There is also a question whether an agency has the legal authority to take action, particularly in regulating the personal habits of people (The Conservation Foundation, 1985:18).

"Legislation everywhere has difficulty in deciding how far an individual should be responsible for his own action and how far an individual should be protected from his and other's risk taking" (Singleton, 1987:173).

3.2.7. Other Important Issues

Louise Comfort (1985) states that all levels of government play a crucial role in public safety but all levels are faced with inadequate understanding of risk, and the complexity of co-ordinating hazard mitigation on top of all their other tasks. Comfort adds the following to her list of obstacles government must overcome:

1. Organization fragmentation. The policy of decentralizing power to accomplish goals creates communication problems as bureaucrats tend to avoid communicating with their counterparts.

2. People assume that decision-makers will act rationally when faced with hazard information but decision-makers are often affected by non-rational factors.

3. Planning and technical staff are rarely trained to deal with risk.

4. Attitudes of staff and elected officials have important bearings on safety policies.
5. The technical and scientific complexity of hazards.

6. The operational rules of administration agencies which neglect risk mitigation. The planning staff in Alaska was quoted as saying, "We have never denied anybody anything because they were in a high-risk area."

7. Prediction problems - techniques are not well developed.

Other Obstacles:

8. Preparedness is in part dependent on the ability to do routine tasks and standardize decision-making procedures. Few organizations are prepared to deal with non-routine questions (Mileti, et al., 1975:22).


10. Questions on who should be involved in the decision-making process as there is unequal political and economic power among interested and affected parties (Beatley, 1988).

11. The critical question of 'how safe is safe enough' or 'how fair is safe enough' (Rayner, 1987:208).

12. Large institutions are prudent and cautious (Singleton, 1987:180).


14. Trade-offs are essential to assess and control risks. Often trade-offs can reverse the nature of a threat which may result in a more serious threat (The Conservation Foundation, 1985:2).
3.3. COMMUNITY PERSPECTIVES

3.3.1. The Role Of The Community In A Disaster

An important and productive strategy for emergency officials to take is view the private sector as a potential resource. The public can help out in five ways:

1. Pre-set agreements with the private sector for material resources, including donations.
2. Household preparation for an emergency/disaster to mitigate social and financial costs.
3. Provide manpower for the recovery phase of a disaster.
5. Identify and prioritize community concerns (Perry, 1983:12).

Emergency officials need to take steps to incorporate 'community' into their planning process. The private sector can be integrated into the process in two ways; as untrained post-disaster volunteers where local governments must deal with the issue of convergence, or as trained pre-disaster volunteers to augment agency resources (Kartez, and Kelly, 1988:132-133). Involvement with the community can range from informational/educational exchanges (e.g. compliance with warnings/evacuations), to participation in selected operational duties (Emergency Social Services teams, amateur radio operators), to independent citizen cadres (neighbourhood disaster response teams).

The 'community' component has, for the most part, been ignored. In those instances where members of the private sector have been invited to participate on emergency planning task forces, the choice of individual often depends on what well-established community business or organization s/he represents. To compound the problem, the present system can only accommodate an extremely small number of
community representatives. These factors make it extremely difficult for the average but motivated citizen to get involved.

In some cases where tradition indicates that disaster will strike in the future, community disaster 'subcultures' have emerged (Hannigan, and Kueneman, 1978:130-133). These are 'bottom-up' community disaster teams which are frequently formed without encouragement, acceptability, or full recognition on the part of society. Community-based disaster teams become salient when hazards transcend the ability of government to contain or limit their destructive capabilities. Development of disaster subcultures are facilitated by:

1. Repetitive disaster impacts.
2. A disaster agent which regularly allows a period of forewarning.
3. Existence of consequential damage which is salient to various members of the community.

A case study of flood emergencies in Canada found that growth in disaster mitigation efforts at the government level weakens individual interest in flood-related matters (Hannigan, and Kueneman, 1978:144). This trend was less evident in rural areas (e.g., in Manitoba where flood mitigation efforts have not prevented annual flooding problems). A survey of 1450 adults in the Los Angeles County found that in the absence of an obvious severe threat, sustained collective action will not take place, especially without leadership and resources (Turner, et al., 1986:248).

3.3.2. Why Is Community Involvement So Important?

Public involvement is a necessity. There are some things only citizens can manage in a disaster. The six points listed below are indicative of the importance of
3.3.2.1. Communities must be prepared for the first seventy-two hours

Building codes and zoning laws help decrease the potential risks from hazards, but these mitigation techniques have their limitations. Research has shown that an individual's chance of avoiding injury and property damage are highly correlated with his/her level of preparedness (Davis, 1989:8). In a major earthquake, seismically-engineered buildings are built to remain structurally intact, but will sustain heavy non-structural damage. In this situation, personal preparedness becomes very important, that is, knowing what to do to survive (Ang, 1989:37-39). If trapped, the first 72 hours are critical for victim survival; after this time the death rate rises exponentially.

A study of human behaviour in Japan (Niigata earthquake) revealed that it was "absolutely imperative" that all family members arrange among themselves a place to evacuate (Takuma, 1978:163): 1. People who wait at home for a family member may lose the chance to escape; 2. The person whose family has evacuated experiences high levels of anxiety and confusion.

3.3.2.2. Local governments do not have the resources to cope with a city-wide disaster

Post-disaster studies reveal that individuals, neighbourhoods, and communities can be expected to be on their own for a minimum of three days. Joanne Nigg (1986) calls the gap between the impact of a disaster and the mobilization of
traditional resources, the 'organizational lag'. Nigg's research was based on a 1450 interviews of adult residents living in the Los Angeles County (1977) - her key observation was organizations take longer to react to new information and events than do individuals and families (Turner, Nigg, and Paz, 1986:11). The lag time is different for different organizations and problems.

Organizations are at a disadvantage in a disaster - victims can look around, see what has to be done, and do it. Communication and transportation problems do not allow organizations to do the same. In Peru, Community-Based Organizations (CBO's) were found to respond more quickly and effectively than government agencies because they were able to avoid bureaucratic delays and corruption (Maskrey, 1989:84).

Mobilizing resources quickly is a difficult hurdle to overcome, even when well-prepared. In Salt Lake City in 1983, a serious flooding problem created a situation where a large, organized labour force was needed within the hour. There was no public or semi-public organization capable of meeting this requirement. Fortunately, the Church of Jesus Christ of Latter-Day Saints (LDS) was able to mobilize one thousand volunteers within the hour. Unlike local government, LDS was a highly organized structure which remained in place in emergency and non-emergency situations (Fisher, 1985:56-59).

3.3.2.3. Basic rescue and response teams emerge naturally in the field

In the immediate aftermath of a disaster, citizens will begin searching for family members and friends, then take protective steps (e.g. evacuation, search for
assistance). This will occur naturally if outside help is unavailable (Raphael, 1986:72).

Once help is given to family members, friends, and neighbours, other victims can be tended to (Mileti, et al., 1975:64; Form, and Nosow, 1958:65). The family unit is considered the basic rescue group within the community:

"Its internal organization is such that the obligations of the members to one another are clearly defined. Its integration into the neighbourhood makes it an ideal unit because its members are usually identified with the neighbourhood, and because they know the physical layout of the homes and the area" (Form, and Nosow, 1958:35).

The family unit retains its importance throughout a disaster - it is the major resource victims turn to for help (Mileti, et al., 1975:69). However, a study of civilian prisoners incarcerated in Japanese camps during WWII concluded that "it is not living in family units which gave a better chance for survival, but the ability to engage in a caring relationship with others" (Clason, 1983:43).

Individuals draw from their own familiar procedural patterns to carry out their new roles (Forrest, 1978:116), and tend to model their behaviour in harmony of who they are - e.g. man, husband, father, policeman (Form, and Nosow, 1958:24). Behavioral roles are primarily dependent on sex, age, family role, neighbourhood role, and occupational role (Form, and Nosow, 1958:28). Research indicates that effective functioning in a disaster requires reciprocal fulfilment of expected behaviour between citizens and organizations and men and women (Form, and Nosow, 1958:16). Men tend to take on physical tasks; women, supportive. In the immediate aftermath a euphoria affects the entire population, known as the "therapeutic community response". The psychological and social stresses of a disaster lead to a therapeutic social system which helps to compensate for the sorrow and stress felt by community members (Perry, 1983:94-95). Quarantelli and Dynes call it a short-lived
phenomenon (in Perry, 1983).

Shock, inactivity and panic are uncommon responses (many researchers consider them rare) (Perry, 1983; Perry, 1991). Psychological stresses appear but they do not affect an individual's ability to get on with helping themselves and others. Trained emergency personnel will not abandon their roles as previously thought, but those individuals who do not have an official disaster role will aid their family, friends and neighbours first, then return to their job.

Study after study on human behaviour indicates that people will do the right thing in a crisis, but it can be done more effectively if pre-thought, pre-planned and pre-associated.

3.3.2.4. The emergency response is related to the social/demographic characteristics of the community

A considerable amount of research has been compiled on evacuation behaviour. In the immediate aftermath, the primary motivating force of individuals is to ascertain the whereabouts of other family members and ensure their safety:

"Families try to be together during a disaster; this can be even more of a priority than confirmation of the warning or taking protective action (Raphael, 1986:47). This was evident in the Mt. St. Helens volcanic disaster - unless all family members are accounted for, families were slow to undertake any protective action (Quarantelli, 1960 in Perry, and Greene, 1983:66). Two factors influence citizen compliance with warnings and evacuation (Raphael, 1986:125): 1. Warnings must be authoritative, specific and frequent; 2. Families must be able to support each other's decisions."
Citizen participation in the pre-disaster phase helps to ensure that a warning is effectively communicated to the public. A study of minority citizens in disasters by R. Perry and A. Mushkatel (1986:93) found that the reasons for evacuating differed among ethnic groups:

1. Black populations - warnings from friends and/or relatives was the second most frequently mentioned compliance reason.
2. White populations - watching friends and neighbours leave was the most important reason.
3. Mexican-Americans - warnings from friends and/or relatives was the most important reason to evacuate.

Citizen involvement is also necessary for the operation of emergency shelters. Without volunteers, shelter operations (e.g. feeding, clothing, lodging) would be unmanageable.

An effective emergency response depends on the ability to reach all segments of society impacted by a disaster. Some segments of the population are difficult to reach - ethnic minorities, poor, handicapped (Perry, and Mushkatel, 1986:150). Local citizens are more aware of special needs individuals in their neighbourhood and are in a better position to provide assistance. One of the major problems in the Whittier Narrows earthquake, California (1987), was the inability of emergency personnel to communicate to victims in a language other than English.

3.3.2.5. Community participation can shorten the recovery period

The raison d'etre of an effective emergency response is to get the community back on its feet as quickly as possible. Despite objectives to alleviate human suffering and social dislocation, disaster planning tends to focus exclusively on the
physical/technical side of rescue and rehabilitation (Form, and Nosow, 1958:242).

When organizations are unable to integrate 'community' into their organization (and vice versa), hostility and aggression can arise which may persist throughout all the disaster phases, and prolong the disaster itself:

"Whether a community has a plan or not, there are certain social mechanisms constantly operating that enable people to meet many types of daily crises. Spontaneous or carefully contrived plans, which do not take into account knowledge of communities and how they function, may needlessly prolong human suffering (Form, and Nosow, 1958).

Individuals respond immediately to disasters by initiating rescue and care to victims. External organizations may come in conflict by disrupting the already established self-help pattern in the field. The more similar the background of community members and external agencies, the less likely hostility and aggression will materialize (Form, and Nosow, 1958:19). Community rescue operations are essential in assisting individuals gain mastery over the disaster and their lives, and restore a sense of control over what is uncontrollable (Raphael, 1986:25/93). One of the side-effects of a disaster is social change. Disasters can pull communities together, but more often the opposite results: high divorce rates, disruption of families, increased violence, economic change, and so on (Raphael, 1986:170). This problem arises when community involvement in the response and recovery phases is neglected, and individuals have no control over their present or future situation. The problem worsens with a major relocation of the population, with a "resulting loss of community spirit" as in the case of Buffalo Creek, West Virginia, 1972, and Darwin, Australia, 1974 (Raphael, 1986:118).

An excellent study on volunteer behaviour and organizational response to disaster was undertaken by Form and Nosow (1957) following the 1953 tornado at
Beecher, Michigan State. In this unique situation, State police and firemen joined in the rescue activity performed by the residents of the area. Both groups were viewed positively by citizens as they symbolized the community's own rescue efforts. The Salvation Army also gained a "soaring reputation" in the rehabilitation phase for "helping without asking questions"; the absence of red tape combined with the organization's familiarity with the community (unlike the National Red Cross) made it a key resource people turned to.

To assist in the recovery phase, people need to be given a specific role in a disaster, and repeated training in various aspects of emergency response to develop reflex reactions (Takuma, 1978:170). The dividends could be substantial. In the poor regions of Peru, the community-based disaster teams had accomplished the following within a two year period (Maskrey, 1989:56):

1. A substantial strengthening and centralization of community organization.
2. An improved capacity for negotiating with government.
3. Implementation of a large number of local mitigation measures.
4. Local control over mitigation projects.
5. An investment of significant government resources (short and long-term).

3.3.2.6. Personal responsibility

Costs often accrue to society, not just individuals (Cigler, 1988:44). Though individuals tend to look to government for solutions, inevitably some of the responsibility must be shifted onto the shoulders of the community. Home preparedness measures and family plans are known to substantially reduce human and property losses. Research has shown that if citizens know about specific protective measures, they will use them (Perry, and Mushkatel, 1986:175). Other
studies indicate that risks under individual control are accepted more readily than those under government control, and voluntary risks are accepted more readily than those imposed (Hance, et al., 1988:6).

Public education can produce both positive and negative results. Claire Rubin (1985) in her study of the community recovery process found that community-based demands, when leadership, resources, and knowledge are present, can lead to better emergency plans. She cites the example of Marin County, California, where residents pay high taxes and expect high performance from their public officials: after the 1983 disaster the community pressured the County not only for recovery actions but improved emergency preparedness. In other situations in California, potential victims have joined in collective action to block mitigation/preparedness measures which would have reduced their exposure to risk of injury and death in the case of a severe earthquake (Turner et al., 1986:241).

3.3.3. Community Involvement Issues

3.3.3.1 Motivation

A study of risk assessment in Texas found that newcomers tended to evacuate rather than those who had been there a few years. The study findings concluded that though past experience with disasters seems persuasive, people seem more inclined to clean up than prepare (Doornkamp, 1985:5): "there appears to be a psychological gap between being aware of a hazard and doing something about it".

Some researchers suggest that procrastination, not denial, is the most common
reason why precautions have not been taken (Davis, 1989:14). Other researchers suggest that most people have a sense of "personal invulnerability" which is reflected in a general community consensus (Raphael, 1986:30), and even a tendency to deny the existence of danger altogether (Mikami, 1985:118). Still others cite the factors of age, income, and deep-rooted habits as barriers to involvement (Boschi, 1986:60; Perry, 1983:82).

A study of preparedness levels in Southern California found a low level of preparedness despite the fact that 90% of all seismic activity in the U.S. occurs in California (500 tremors a year strong enough to be felt) (Davis, 1989:8). Perry and Mushkatel (1986) in their study of minority citizens in disasters found that only one quarter of whites, blacks, and Mexican-Americans chose to volunteer for a disaster-related activity in the pre-disaster phase. They conclude that "as expected, most citizens would not choose to do volunteer work in an emergency capacity". Given the general apathy the public has for any volunteer activity, a twenty-five percent participation rate could be construed as high. One highlight of the study found that the white population primarily volunteered on task forces and advisory committees as the latter had definite parameters and completion times.

3.3.3.2 Perceptions of mastery

A significant reason for public apathy and/or denial of hazards is the perceived inability to 'control the uncontrollable':

"When people believe that a hazard is beyond the control of man's technology, they seem to ignore the threat and are reticent to adopt planning measures to protect themselves" (Perry, 1983:85).
A study of earthquake prediction and behaviour in California determined that "the emotional variable of earthquake fear has a stronger effect than the cognitive variable of earthquake awareness in determining who takes warnings seriously and who expects a damaging earthquake in the immediate future" (Turner, et al., 1986:174-189). However, heightening awareness and stimulating fear only motivates people to take a few precautions. More significant results are produced when people are shown that something can be done which will credibly enhance their chances for survival, and by involving them in the community and in social exchanges about the threat.

3.3.3.3. Priorities

In a survey of public issues in Southern California, residents gave earthquakes a seventh place rating (Davis, 1989:14) - in order of priority, the issues covered crime, smog, traffic, housing costs, drug and alcohol abuse, overcrowding, earthquakes, and Aids. Disaster preparedness must also compete with the lifestyles of individuals and families.

3.3.3.4. Lack of legitimacy

Emergency officials need to legitimize volunteer emergency organizations. These groups are unlikely to acquire support and assistance without recognition from traditional emergency organizations:

"By recognizing and legitimating emergent groups, disaster personnel
can encourage other emergency organizations to accept these groups, thus integrating the emergent groups into the ongoing emergency system. This in turn can facilitate making available the needed 'environmental inputs' for the emergent groups and enhance their effectiveness...In the past emergent groups have been relatively untapped as a resource: by employing and understanding the emergent process, these groups can become more effective agents in disaster relief and recovery" (Forrest, 1978:124).

Support can work both ways - credible volunteer organizations can be effective advocates for raising a disaster consciousness, and the profile and status of emergency planning.

3.3.3.5. Scarcity of leadership skills

Leadership skills are at a premium during a disaster. As one source suggests, "handling people in emergency management need not be so difficult. All you need is inexhaustible patience, unfailing insight, unshakable nervous stability, an unbreakable will, decisive judgment, infrangible physique, irrepressible spirits, and an awful lot of experience" (D. MacIver, Emergency Co-ordinator, City of Richmond).

There is no time to train individuals to fit leadership positions in a crisis situation; these skills must be developed beforehand (Forrest, 1978:117). It is important that the leader be accepted and trusted by the local community. Lamentably, there are few training resources available in Canada to aid emergency professionals, and even fewer for nonprofessionals.
3.3.3.6. Emergency planning lacks a 'community' process

There are cases in the U.S. (particularly California) where local governments have designed and implemented community-based plans to supplement their emergency programmes. In California, the community-based disaster programmes emerged from a similar mold. Unfortunately, very little is known about bottom-up planning processes - in particular, what works and what does not. A single prototype model may not necessarily fulfil a community's needs.

It has been suggested that rational and effective policy at the macro-level may be reversed at the community/individual level (LaPlante, 1988:232). Kartez and Lindell (1990:10) found that individuals were far more influenced by concrete information than abstract, especially when interacting with other groups and officials. T.R. Forrest (1978:113) noted that emergent groups illustrate 'structural elasticity': when group size increases explicit rules and regulations are developed to standardize behaviour; when size decreases, there is little need for rigorous reliance on standardized behaviour, though certain operational procedures may still be carried out.

3.3.3.7. Vulnerability issue remains unchanged

Even the best-laid plans rarely begin to address the vulnerability issue. In some disaster-prone areas, mitigation efforts have proven more harmful than if no effort had been made, for they can lull people into a false sense of security (this is particularly notable in flood-prone areas). Relocation has taken place on occasion,
but the motivating factor appears to be one of economics, rather than social obligation. Even after the most severe disasters, people will return to their homes to rebuild their lives. Relocation is a socially unpopular move, and a decision to relocate will depend on whether acceptable alternatives exist.

3.3.3.8. Inadequate disaster relief

From the community's perspective, much of the responsibility for short and long-term recovery rests on the shoulders of its citizens. The lack of knowledge, experience, and long-term support can be a serious handicap. Community members are most vulnerable in the long-term recovery phase once the short-lived euphoria of the 'therapeutic community' has died away. Long-term mental health consequences have resulted from disasters particularly when a large number of deaths have occurred, affecting non-victims as well as victims (LaPlante, 1988:225).

Volunteer groups who emerge in the preparedness phase, are unlikely to hold more than one earthquake session (only 7% of such groups in S. California sustained interest for several months - exceptions were the Mormon Church and the Boy Scouts) (Turner, et al., 1986:234). Local organizations have a great potential to help communities during the long-term recovery phase when traditional emergency resource organizations have disappeared. With no arrangements to assist individuals through the bureaucratic tangle of red tape, the recovery period may be unnecessarily lengthened. This is especially poignant for the community, for the equitable allocation of disaster relief is not a policy consideration - "neither all communities nor all disaster victims within one community share equally in available recovery
3.3.3.9. Lack of awareness

The Emergency Preparedness Digest (1989) polled 2,006 Canadians in December of 1988 on the role of Emergency Preparedness Canada. The questionnaire revealed that 78% of the respondents indicated that they did not get enough information on emergency preparedness. Out of 14 organizations to call in an emergency, the Police Department was at the head of the list, followed by the Fire Department (few individuals were aware of the earthquake information on page 27 of the telephone book). Though the vast majority knows how to prepare themselves prior to a disaster (primarily in the home), "it is doubtful whether the majority have taken the necessary steps".

3.4. SUMMARY

Disaster research is limited in its depth and scope. The piecemeal undertakings of research make it difficult to build a comprehensive picture of disaster planning and management, as a guide to future developments and strategies. More often than not, research will indicate what does not work, rather than offer alternative and creative solutions.

Governments face a number of obstacles which can potentially retard the development of local disaster capabilities. Although many of the obstacles discussed in this Chapter are important factors to disaster planning and preparedness, the
literature suggests that above all else, emergency personnel need to place an emphasis on process planning over written plans, and adopt practices which take into account community participation. The private sector is capable of launching an informal disaster response but it can be done more effectively if pre-thought and pre-planned. Community rescue operations are crucial in regaining a sense of mastery over the disaster. Community rescue operations may be the only means of avoiding negative social change through the loss of ‘community spirit’. Once motivated to accept a disaster preparedness responsibility, citizens can act as advocates to bring legitimacy and prestige to disaster planning, potentially increasing the resources available to that organization.

Leadership is very important to implement and sustain disaster planning and preparedness. Active involvement by the Mayor and other top officials is crucial, but communities also need leaders to spearhead a ‘bottom-up’ disaster planning process. Leaders who are respected and trusted by the community can be very effective motivators - this may be the only solution without the backing of legislation to enforce actions related to mitigation and preparedness. Governments need to assist communities to accept a greater personal responsibility for home and community preparedness, as was the case in Burkeville, Richmond.
4. A NEIGHBOURHOOD DISASTER PLAN: THE BURKEVILLE EMERGENCY RESPONSE TEAM (B.E.R.T.), RICHMOND, BRITISH COLUMBIA

An innovative strategy in the mid-1980’s was the development of neighbourhood-level disaster response teams in the United States. Neighbourhood disaster plans in California and Washington State base their approach along the guidelines of Neighbourhood Crime Watch. Neighbourhoods are organized into block areas of 25 to 50 homes - volunteers organize with Block Captains and report their neighbourhood needs to Area Captains. In a disaster situation, residents are responsible for communications, damage assessment and recovery, first aid and medical treatment, safety and security, light search and rescue, sheltering, and special needs individuals. Emergency teams are expected to run their own planning process, "as people are generally more motivated to carry out their own ideas, not [others]" (Sunnyvale Neighbourhoods Actively Prepare [SNAP]- Emergency Manual). Local governments assist neighbourhoods with training and education.

In Canada, the first case of a neighbourhood-level disaster planning process plan was initiated in Burkeville, City of Richmond. At the time of writing this thesis, other neighbourhood disaster plans have been recently initiated (City of Richmond, North Vancouver). Burkeville is the focus of this Chapter, to describe in detail a unique bottom-up disaster planning approach. It is hoped that the information gained from their experience is insightful, pointing to new ways of introducing community involvement into the disaster planning process.

The writer was directly involved in the process as Plan Co-ordinator. In the initial planning phases, the writer was unfamiliar with other neighbourhood disaster
plans in the United States; as a consequence, the pilot project differs from its American counterpart. As far as the writer is aware, there are no academic examinations or critiques of neighbourhood-level disaster plans in North America.

4.1 BURKEVILLE, RICHMOND - BACKGROUND INFORMATION

The City of Richmond has a population of approximately 130,000 and employs a full-time Emergency Co-ordinator. Burkeville is a small residential community (approximately 850 individuals) located on Sea Island, adjoining the Vancouver International Airport. Sea Island is connected to Vancouver and Richmond via three access bridges.

The West Coast is the most seismically active area in Canada, but the soil conditions in Richmond suggest that the latter is one of the most-at-risk municipalities. Burkeville is particularly vulnerable due to its potential isolation from municipal services if the three access bridges become impassable. Burkeville was chosen due to its potential isolation, its strong Community Association to spearhead the project, its well-defined borders, and its relatively homogeneous population. A second pilot project was considered for the Hamilton Road area located on the east border of Richmond straddling the Fraser River (Map, p.60). This area was selected as a challenge to project implementation. It also has the potential to be isolated in a disaster, but differs in its mix of new and old homes, its poorly-defined border, a large ethnic population, and no community association to guide the pilot project. If both projects proved successful, neighbourhood preparedness would be considered for implementation city-wide.
In November 1989, the Sea Island Association invited Richmond's Emergency Co-ordinator to give a talk on home preparedness. Individuals from Burkeville approached the Emergency Co-ordinator inquiring whether there was more they could do as a community. The project was initiated in June 1990, with one hundred percent backing from the Sea Island Association. The Loma Prieta earthquake in October 1989 was believed to be instrumental in raising the consciousness and priority of community preparedness issues in Richmond. Burkeville was deeply concerned for their children in the event of a disaster for they were bused to schools in Richmond. With the exception of Menoah Steves School, there were no school disaster plans in place to co-ordinate with home preparedness plans.

4.2. STRATEGIES/PLANNING ASSUMPTIONS

The aim of the pilot project was to prepare individuals to be self-sufficient for a minimum of three days without having to depend on the assistance of city personnel and other emergency volunteer organizations who would be overwhelmed with requests for assistance.

Although the planning focus was on earthquake preparedness, the end-product was a generic disaster response plan. The potential primary and secondary effects of earthquakes were believed to cover many potential hazards faced by the community, and represented the 'worst-case' scenario to prepare communities for any eventuality. The planning process concentrated on two areas of disaster management - personal/home preparedness, and community preparedness. It was important to cover home preparedness measures as research has shown that the latter can
significantly reduce the loss of life and property. Community preparedness focused on Reception Centre Management and Light Search and Rescue.

Burkeville was expected to co-ordinate their activities with other organizations on Sea Island, particularly the Vancouver International Airport (Main and South Terminals). It was estimated that a disaster at rush hour could leave 30,000 people stranded on Sea Island. It was imperative that resources be shared due to the lack of retail outlets on Sea Island.

4.2.1. Goals

City Emergency Program goals were to assist Burkeville achieve self-sufficiency for a minimum of three days, and use the worst-case scenario as a planning guide. Burkeville' goals (in order of priority) were three-fold: 1. To save lives and tend to the injured; 2. To reunite families; 3. To shelter, feed and clothe individuals who are unable to help themselves. The establishment and prioritization of goals was an important step in the process. Without a clear purpose individuals could be easily overwhelmed by the number of tasks to be undertaken. During the initial planning phase, activities were chosen based on their relative importance to the overall goals.

4.2.2. Objectives

The Burkeville disaster team did not set out the objectives, but consented to their implementation. The process had to be streamlined to complete the project within the three-month deadline. The objectives were as follows:
1. **To educate** all community members on hazards, home preparedness, and disaster management. Educational tools included brochures, videos, and guest speakers.

2. **To train** the community in emergency response. The essence of the disaster plan was a ‘first come - first serve’ approach. Volunteers would have to improvise in the implementation stage until a sufficient number of volunteers could be recruited (for more detail see Section 4.8).

3. **To recruit** volunteers.

4. **To delegate** co-ordinators (and alternates) and assign duties.

5. **To inventory** community skills and material resources. Two strategies were employed; a household questionnaire, and an inventory of community supplies and equipment. At last count 65% of the questionnaires had been returned.

6. **To develop** a simple, flexible plan, and test it. For more detail on Burkeville’s emergency plan, see Section 4.5.4.)

### 4.3. PROCESS (THE SEVEN MAGIC STEPS)

The goal was to find a process comfortable for the Plan Co-ordinator and the community. The process chosen was designed by Professor Peter Boothroyd, School of Community and Regional Planning, University of British Columbia. His students affectionately refer to the process as ‘The Seven Magic Steps’ due to its remarkable tenacity to fit any planning situation with ease.

The Seven Magic Steps may not be a panacea for all planning projects, but it can be used regardless of substance or process planned, or intended audience. Unfortunately, process planning is a relatively new phase in disaster management, with the result that most co-ordinators must field their own processes. The seven steps are outlined below (Boothroyd, 1989:21):
1. Planning TASK Definition
   - what matter does the group agree to plan (or problem to solve) - how, by whom, when and where?

2. Personal GOALS Identification
   - what would all process participants like to achieve in terms of the matter the group has agreed to plan?

3. SITUATION Appraisal
   - what are the significant characteristics of the systems which have to be managed or taken into account in order for participants to move towards their goals? What opportunities and constraints do these systems present?

4. Generation of Action POSSIBILITIES
   - what possibilities for action will bring the participants toward at least some personal goals?

5. Packaging of Possibilities as OPTIONS
   - what categories do the possibilities fall into, which possibilities are contingent on which, and therefore, what are the mutually exclusive packages of possibilities, or "options"?

6. ASSESSMENT of Options
   - what are the pros and cons of each option given all participants goals and values - not just the goals they started planning from - and given present and future resources and constraints presented by the systems to be managed?

7. DECISION Making
   - which is the best option given substantive criteria and political process established for decision?

Side Step: Continuous PROCESS EVALUATION at each planning step and reiteration of steps as judged necessary (in view of the discoveries or frustrations at this step, is it desirable to revert to a previous planning step?)

This process was utilized by the Plan Co-ordinator to set the framework for the Burkeville disaster plan. Burkeville's process was designed to answer the question, 'what knowledge, skills, equipment, and experience does the community need to be self-sufficient during a disaster'? The 'outcome' was fixed, but the steps leading to the outcome were open to community discussion. The intended purpose of the Seven Magic Steps is a sequential planning guide where the outcome is largely
unknown and/or undecided. The project deadline was instrumental in the decision to modify this process, including the exclusion of step five.

The Seven Magic steps proved useful during the emergency task formulation phase where team members participated in defining each emergency task, its role and responsibilities. The process was generally applied in circumstances where the issues were complex and detailed, with too many avenues to explore. Despite its apparent simplicity, the Seven Magic Steps was not fully embraced by the community. Many individuals intuitively knew what they wanted to do, and felt that too much time was spent on planning process without getting further ahead in their plan. On their own, the community would unlikely initiate a similar process planning activity, at least on a formal basis.

4.4. PROJECT DEVELOPMENT - A DIARY OF EVENTS

The pilot project was initiated in June 1990, but by August it was obvious that three month deadline was insufficient for project completion. The project was absorbed under a Directed Study Course (School of Community and Regional Planning, University of British Columbia) which carried the pilot project on a part-time basis until May 1991. The Plan Co-ordinator was hired in the summer of 1991 to continue to develop the neighbourhood disaster planning pilot project.

During the first summer, meetings were frequent, (approximately one every 1.5 weeks) to compensate for the lack of time. The first month focused on educational matters; emergency plans, hazards faced by the community (See Appendix B), earthquakes (geofacts and predictions), home preparedness measures, and goals and
strategies of a neighbourhood disaster plan. Discussions proceeded from the general to the specific. Approximately 35 to 40 individuals attended the meetings in June.

The household questionnaire was undertaken at the earliest opportunity. The three month completion deadline necessitated a quick submission and response to assess the community resource base. The first page of the questionnaire gathered household information (this page was designed to be removed and stored as a hard copy). The second and third pages collected information on personal skills, supplies, and equipment. Questionnaires were delivered door-to-door in June by local residents. Steps were taken by the Plan Co-ordinator to inform Sea Island about Burkeville's intention to develop a neighbourhood disaster response capability.

By the second month, attendance had dropped by half. Discussions centred around generic tasks associated with a disaster response, and the management of an emergency Reception Centre. Much of the previous month's material had to be repeated due to sporadic attendance from participants.

Hand-delivered pamphlets informed the community of upcoming events. The local Sea Island Times was an ideal newsletter for disseminating information (it is well-read by Burkeville residents), but it was not available in the months of July and August. Information was posted on three bulletin boards in the community.

By mid-July the questionnaires were filtering back. It was obvious from the initial responses that specific questions had to be revised: for example, when asked about occupation (to assess individual skills), answers were often vague - "I work at the airport". In the category for pets, individuals would frequently write their name but not the type. Submitting one questionnaire per household created problems; it was impossible to tell which individual in the household possessed what skill. The
questionnaire would be redrafted numerous times before eventual use in the Hamilton Road community (See Appendix C). During July, Burkeville undertook a resource inventory of the buildings in their community.

By August an agreement had been reached with St. John Ambulance (Vancouver) to hold disaster-related first aid training courses in Burkeville. Three training sessions were set for October and November, at less than half the regular cost. Two Registration and Inquiry training sessions were also slated for October (these months best fit within the schedule of community events). The community was offered a choice of sessions to attend - this was to encourage greater participation due to the relative importance of these courses to the overall goals.

The last community meeting of the summer established a framework for emergency tasks. Participants were asked to think about their personal goals for the project, and take on a specific emergency task/responsibility. For those interested in volunteering on a regular basis, a meeting was held August 15 to decide on future strategies and activities (See Appendix D for details). Many individuals were on holiday in August, and only four team members were able to attend.

September to May 1992 were difficult months to keep the process going. The pilot project ran on a part-time basis during the school year, competing with other community/school functions. Telephone calls were made to anyone who indicated an interest in volunteering on their questionnaire (approximately 25% of the respondents did not wish to participate). The results of the telephone blitz were not as successful as anticipated:
1. **Personal Services Meeting** - Five individuals were expected, two attended.
   - Discussions were based on the role of this team in a disaster.
   - One individual agreed to head up this team.

2. **Food Services Meeting** - Five individuals attended, one with food service experience.
   - The individual with catering experience agreed to head up this team.
   - A second catering company in Burkeville would not join B.E.R.T. due to a personal conflict with a team member.
   - Roles, responsibilities, and strategies were discussed.

3. **First Aid Team** - Out of 14 medical professionals living in Burkeville, no commitment was given to meet and plan strategies. Shift-work added to the difficulty of co-ordinating meeting times.

4. **Communications Team** - No meetings were held.
   - The two ham radio operators living in Burkeville were not interested in pre-planning activities.
   - Communication with CB radio operators was a one-way transmission.

5. **Light Search and Rescue Team** - No meetings were held.
   - Leadership for this task was passed on to one individual.
   - The meeting was postponed until approval was received from the Richmond Fire Department to train volunteers.

6. **Reception Centre Management** - No volunteers.

7. **Lodging Team** - No volunteers, with the exception of a Pet Management Coordinator.

8. **Registration and Inquiry Team** -
   - Eleven volunteers attended the introductory meeting September 18 sponsored by the Red Cross.
   - Thirteen volunteers were trained in October.

Poor attendance plagued every planning session. Four individuals turned out to hear the Emergency Co-ordinator's home preparedness talk in October. Two out of three first aid training sessions were cancelled due to low enrolment. Familiarity with the community suggests that the following may have had an impact:

1. Too much too fast overwhelms and causes withdrawal.
2. People believe that action not talk produces results (B.E.R.T. was very task-oriented throughout the process).
3. There were not enough personal rewards or community recognition to
sustain motivation.

4. Individuals were reluctant to take on emergency-related responsibilities without the necessary training.

5. Individuals were more comfortable with small tasks they could do at their leisure. Being part of a team was more responsibility than they could manage.

6. Local community activities were in full force, siphoning off potential volunteers.

7. Meetings with the Plan Co-ordinator were tedious events to be avoided unless absolutely necessary.

Steps were taken to modify the process to encourage higher participation rates and better fit the communities needs. The following group recommendations were put into effect:

1. Only one meeting per month (no meeting in December).
   - a special emergency event (e.g. training) would replace the monthly meeting.
2. We would emphasize tasks which produced tangible results, and move away from process discussions.
3. We would continue to advise the community of our efforts but would stop reaching out for more volunteers.
4. The Emergency Co-ordinator would look into ways to bring in Municipal support.
5. The Plan Co-ordinator would alternate or supplement meetings with guest speakers, and videos.
6. Meetings would be held in private homes rather than the Sea Island Hall.

Twelve individuals from Burkeville were trained in emergency first aid, thirteen in Registration and Inquiry. Two Richmond school principals and several individuals from the Vancouver International Airport attended the Registration and Inquiry session. Red Cross stated that it was the largest attendance from one community ever. Red Cross has the unenviable task of forming volunteers throughout the City into teams; Burkeville was fortunate to have an established team.

November 7 at the Sea Island Association Annual General Meeting, the Mayor, City Administrator, City Emergency Co-ordinator and Burkeville Plan Co-ordinator commended Burkeville on their emergency planning efforts. City
Emergency Program donated a fire-proof box to secure database information and other important supplies. On December 16, the Mayor donated a Medical and a Reception Centre kit to the community (valued at $2,000). Burkeville was offered the use of the bomb shelter at the designated Reception Centre (R.C.A. Forum) to store their equipment and supplies.

There were no meetings in December but activities continued. The Burkeville Co-ordinator met with the Brighouse School Principal and Parent Association to discuss a disaster plan for the school. Concern for the children played an important role in the community's decision to undertake a neighbourhood disaster plan. Up until September 1991, school-age children had to be bused to Richmond (the Sea Island Elementary School now administers grades one to three). Parents were anxious that they would not be able to contact their children after a disaster. The three daycares in Burkeville were invited to participate in the planning process - only one staff member attended. The responsibility for assisting the daycares was delegated to the Personal Services Co-ordinator.

January was a busy month. Members of the community went door-to-door collecting questionnaires. A community disaster action plan was established and printed in the February issue of the Sea Island Times. A volunteer communication network was set up to relay information from B.E.R.T. to the community. The network proved invaluable - there were many situations which could not wait for the monthly publication of the local newsletter. The first draft of the emergency plan was distributed to six team members who attended the January meeting. Copies were made available to other team members.

By January, an agreement had been reached between City Emergency Program
and Burkeville to hold a one-day open house in March on community and personal/home preparedness (a quiet time for community events). The aim was hands-on exposure to preparedness measures; members of the Burkeville disaster planning team were aware that pamphlets and preparedness talks had little effect on changing the behaviour pattern of individuals to begin home preparedness. B.E.R.T. would be responsible for the physical/social preparations for the open house, the City Emergency Co-ordinator, for invitations to emergency organizations.

The heavy snows over Christmas and New Year produced positive results for the team's disaster planning efforts. Meals-on-Wheels was unable to deliver food to Sea Island and B.E.R.T. was concerned for those unable to acquire food and other basic supplies. B.E.R.T. contacted Meals-on-Wheels to volunteer their help to deliver food, but were refused the recipient's names; Meals-on-Wheels indicated that it was a policy matter not to divulge the names of their clients. Team members compiled a list of potential names using the database information and their own knowledge of the community, and went door-to-door taking requests for supplies.

An informal meeting took place in January between the Plan Co-ordinator and a doctor residing in Burkeville. Fortuitously, the latter was an emergency specialist who was extremely enthusiastic about the project, but would be unable to participate until summer graduation. After graduation, he agreed to head up the Medical/First Aid team for B.E.R.T..

A third drive to collect questionnaires was set for February. The questionnaires had to be cross-referenced beforehand to ensure that future efforts would not be duplicated. A few individuals complained on the previous drive that their questionnaires had been already been submitted.
By February, conflict between four team members was beginning to erode the process. Three members felt one individual was taking on too much responsibility, leaving the less interesting jobs for others. However, it was apparent to the Plan Coordinator that these members were reluctant to volunteer for tasks, regardless of what was involved.

Seven members attended a one-day training course on Reception Centre management sponsored by the Provincial Emergency Social Services. The workshop was free to any member of Burkeville who wished to attend due to the community's recognition as an ESS Team. Only one workshop a year is available to communities in B.C., despite the obvious importance of emergency Reception Centres to the overall disaster response. The topics covered were:

1. The different levels and functions of government in the emergency hierarchy.
2. Agreements in place between the Ministry of Social Services and other organizations.
3. Table Top Exercises (the focus).
   - Typical problems with reception centre management.
   - Learning to deal with more than one reception centre.

The February meeting dealt with two major issues - good group process and the upcoming open house in March. Group process discussions centred around the theme of teamwork, particularly problem-solving as an essential part of the process. Problems not openly discussed early in the process would be difficult to resolve at a later date. Any group process must be intrinsically rewarding to all team members if it is to be successful.

The open house on March 3 was not as well-attended as expected (approximately 350 people turned out), but its success was three-fold: 1. For some emergency organizations (Hi-Hope Kennels, Diefenbaker School, Beaver Lumber) it
was their first invitation to a community event in Richmond, giving participants an opportunity to meet and exchange information; 2. It boosted the profile of a neighbourhood-level disaster planning approach; 3. It boosted the morale of B.E.R.T., through social exchanges and local media coverage. Attendance from the community of Burkeville might have been higher if it had not snowed and the advertising had gone into the Sea Island Times as planned. Display booths were manned by the following organizations:

1. Richmond Fire Department
   - displays included how to turn off a gas valve, smoke detectors, and fire extinguishers
   - a tour of the fire truck
2. Permits and Licences Branch, City of Richmond
   - basic safety in home construction
3. Red Cross, Richmond and Vancouver
   - sign-up for Registration and Inquiry, first aid, and other emergency-related training, first aid kit display
   - a tour of the Red Cross Emergency Communications Van
4. St. John Ambulance, Vancouver
   - sign-up for first aid courses, sale of first aid kits
5. School preparedness booth (Diefenbaker School, Menoah Steves)
   - signage, school questionnaires, school emergency supplies, 'designer' raingear recycled from plastic bags
6. Ham radio operators
   - equipment was set up to transmit around the world
7. Hi-Hope Kennels
   - information on pet preparedness
8. Beaver Lumber
   - how to secure a hot water tank
   - sale of supplies to begin home preparedness
9. City Emergency Programs, Richmond
   - brochures, videos
10. B.E.R.T.
    - neighbourhood preparedness, water sales, emergency pack display
    - babysitting provided by volunteers

The meeting in March created a greater rift between four team members. The meeting time coincided with an important School Board meeting. Burkeville's meeting was cancelled by Burkeville's Co-ordinator, but team members were not
informed of that decision.

No meeting took place in April due to the activities planned for Emergency Preparedness Week. Red Cross and City Emergency Programs held a Reception Centre exercise on April 24 at a local high school. The exercise focused on Registration and Inquiry skills using students as ‘victims’. Seven B.E.R.T. team members who attended the session assisted with lodging, personal services, special needs individuals, feeding, and communication tasks.

By May the conflict between four team members was irreparable. The end result was three members quitting the team. The use of the database was also creating problems - the Database Co-ordinator was unable to search and list information when requested, frustrating team member’s efforts. One such request originated from a team member who resigned.

The Light Search and Rescue course was approved by the Fire Department in May. It was advertised for July 6, but rescheduled for August. On May 24, the Provincial Emergency Social Services held a one-day workshop on the Personal Services role in a disaster. Unfortunately, participants were given three days notice prior to the event, and only the Plan Co-ordinator was able to attend. This was the first time in British Columbia Personal Services training has been made available to volunteers. It suited Burkeville’s needs perfectly. Volunteers were not expected to counsel individuals, but to encourage them to talk about their experience and assist them with their basic needs. In-depth counselling does not begin until the community’s basic needs have been met (it is assumed that external assistance would be in place by that time). Copies of the Personal Services manual were made available to team members.
The community was advised of summer events through a hand-delivered flyer.

The June meeting began with a retrospective of past events, with an emphasis on applauding Burkeville’s efforts. Seven team members and three guests attended:

1. City Emergency Co-ordinator, Richmond
   - To praise efforts and instill enthusiasm.

2. Emergency Social Services Director, Richmond
   - To assure the community of a continued commitment to ESS activities, including neighbourhood-level disaster plans.
   - To applaud Burkeville’s efforts.

3. Emergency Financial Co-ordinator, Ministry of Social Services, Richmond
   - To explain private contracts to acquire goods and services.
   - To guarantee payment of disaster bills provided a paper trail is kept.
   - To approve the amendment of forms to suit Burkeville’s needs.

Attendance in July and August was low, but this was anticipated:

1. Most individuals take holidays in the summer.
2. Schools are out.
3. People want to spend more leisure time with their families in the fair weather.
4. Many individuals in Burkeville are active volunteers in community activities throughout the school year, and desire a break in the summer (the Sea Island Association does not meet in the summer)
5. It followed the pattern of attendance from the previous summer.

The Light Search and Rescue course was held August 24 at the No.1 Fire Hall in Richmond. Thirteen originally signed up for July, nine attended in August.

4.5. PROJECT DETAILS

4.5.1. Professionalism

The personal goal of the Plan Co-ordinator was to make the process simple, informal, and interesting. Burkeville is an extremely active community and the neighbourhood preparedness project had to compete with many other high priority
projects. Regretfully, the community was unable to set their own pace for project
evolution due to the three month deadline. Volunteer commitment is difficult to
maintain at the best of times, but it is increasingly difficult in open-ended projects
such as disaster planning. Team members would attend events when no other
activities coincided with meeting times. Emergency preparedness was important, but
not urgent relative to other needs and commitments.

Team members were familiar with each other and had worked together on
other projects. In some cases, conflict was unavoidable in a close, informal setting.
Teamwork is (almost) everything to the disaster planning process, but it can be
difficult to maintain. The concept itself may be alien to many individuals whose roles
and responsibilities either as professionals or members of organizations are clearly
laid out, and tend to be acted upon individually.

Team members were reluctant to take on leadership roles, particularly without
experience or training. In the Burkeville Disaster Plan the title of Manager was
struck-out and replaced with Co-ordinator. The team was advised on many occasions
that everyone has an equal share of responsibility to assist team members with their
emergency task, but leadership problems persisted throughout the first year.

The community expressed deep concern about the use of information collected
through the questionnaires. Some individuals were reluctant to mention the details of
special needs individuals in the household; a few individuals believed that the
questionnaire could be construed as carte blanche consent to use their supplies and
equipment in a disaster. Many expressed concern about confidentiality of
information, particularly in terms of who would be given access to that information.
The delivery of questionnaires was undertaken by local residents (accompanied by an
official letter from Emergency Programs) to reassure Burkeville that this was a community-run project, and that the information would be kept in the community and used for disaster planning purposes only.

4.5.2. External Support

During the first six month period, team members believed that they were getting little support from the City, with the exception of City Emergency Program. A new Mayor and Council, and a new Emergency Social Services Director have gone a long way to smooth ruffled feathers. Active involvement by the Mayor, a member of the Richmond Council delegated the task of emergency preparedness, and the ESS Director, has given the project credibility, recognition, and the badly needed boost of support; the fact that these individuals take their emergency responsibilities seriously has helped raise the profile of neighbourhood disaster planning with other emergency organizations. The Richmond ESS Team is a potential resource for Burkeville for education and training purposes. Burkeville can also tap into training provided by the Provincial ESS organization.

Red Cross fully endorsed Burkeville's pilot project from the very beginning. Training in Registration and Inquiry permitted participants to take other emergency-related training through Red Cross (free admission). As the project grew, more resources became available to Burkeville. B.E.R.T. was invited by the Richmond Fire Department to participate in the public safety displays at the Salmon Festival held July 1. Recognition from the emergency planning profession came with an invitation to speak at the Fourth Annual Emergency Planning Conference in Vancouver on
Burkeville’s behalf (October 1991).

4.5.3. Community Skills/Training

Training is a key ingredient in building team confidence, motivation and commitment, but training requires recognition and support from all levels of government and private organizations involved in emergency management. Few emergency-related training courses are available to the average citizen, with the exception of Registration and Inquiry and first aid/CPR training. For an individual or community to access training, a prerequisite is to become a member of an established organization such as Red Cross or ESS. In Burkeville’s case, membership was gained through both organizations.

Recognition from the City was instrumental in gaining endorsement from the Richmond Fire Department to undertake a Light Search and Rescue course for Burkeville volunteers. This course is believed to be the first of its kind in Canada. The four hour course covered personal safety, protective clothing, danger spots, building collapse, area assessment, public utilities damage, and equipment/supplies. Mother’s for Help Everyone Learn Preparedness (H.E.L.P.) in Washington State has been trying since 1985 to gain consent from their Fire Department and Emergency Services to train volunteers in Light Search and Rescue.

Burkeville’s disaster response pivots around Light Search and Rescue and Reception Centre management activities. Training was not available to cover all aspects of Reception Centre management. The Provincial government sponsors an annual one-day workshop on Reception Centre activities (the content varies from
year to year) but it is too little, too late. A resource alternative is the Richmond
Emergency Social Services organization which has the expertise and experience to
become Burkeville’s mentors, but this resource was not available to B.E.R.T. during
its first year of operation. The emergency specialist heading the Medical/First Aid
team was sent to Arnprior, Ontario, for one week of specialized training. He was the
only member of B.E.R.T. to access the Federal training programme.

The ESS programme is currently being rejuvenated under a new ESS
Director’s guidance. In a meeting September 1990 entitled ‘Renewing the Spirit’,
Richmond’s ESS Team (including team members from Burkeville and Hamilton)
gathered to set goals and re-establish the team approach. The focus was to develop
individual skills, and increase the understanding of procedures and processes. It was
agreed that the Richmond ESS team would develop strategies to incorporate
neighbourhood disaster teams into their programme, and school emergency
preparedness plans.

If Burkeville is a ‘typical’ community, then community members possess
tremendous skills and potential to develop a self-help disaster programme. In
Burkeville’s case, the success of the programme was not dependent on the number or
quality of skills in the community, but on the level of motivation and commitment.
Recruiting volunteers and keeping them involved were the two most difficult tasks in
the process. Effective volunteer management deserves more recognition than it has
received; it needs to be part of the development goals of any community project.
4.5.4. The Plan

Burkeville’s disaster plan was designed to be simple and flexible. It is a guideline only, designed as a reference guide to assist team members prepare strategies for a disaster response. In order to accomplish the tasks set out in the plan, team members must have a clear understanding of the emergency response. The plan is a working document as opposed to a finished product; blank pages were purposely left to take notes and jot down ideas.

The plan was set out in the following manner:

1. Flow chart outlining the emergency hierarchy in British Columbia.
2. Flow chart outlining the Emergency Control Group, Richmond.
4. Richmond’s Emergency Contact List.
5. General Emergency Procedures for all Emergency Task Groups (Burkeville) - one page (see Appendix E)
6. Emergency Tasks and Responsibilities*
   -tasks include Leader, Rescue Operations, Manager - Reception Centre, Medical/First Aid, Registration and Inquiry, lodging, Feeding, Communications, Personal Services, Emergency Supplies.
   a. Task description and responsibilities - one page
   b. Pre-planning tasks - one page
   c. Forms, logs, status cards relevant to each task activity.
   * See Appendix F (Medical/First Aid) for details.
7. Reference materials to assist task groups plan strategies.
8. Overview of Burkeville’s disaster planning process.
9. Evacuation Considerations - one page
10. Maps.

It is Burkeville’s responsibility to develop and implement their emergency response plan. The plan can be activated at any emergency level. In some emergency situations, B.E.R.T. may be called upon to assist the City of Richmond, the Vancouver International Airport, or other emergency response organizations. It is up to the discretion of the community when to activate their plan. B.E.R.T. is
expected to work with other emergency personnel once the latter has been established on Sea Island. Plan implementation covers the period of impact until a decision is reached between B.E.R.T., the community, and the City of Richmond to terminate the emergency.

4.6. FUTURE DIRECTIONS

4.6.1. Richmond

The City of Richmond has experienced a significant population growth over the past decade. This growth has lead to a change in family makeup, increased ethnic diversity, and a growing recognition from local government that neighbourhood and/or community activity centres can be powerful instruments in combating the social ills of a growing city (Staff Position Paper, April 1990). Most community services in Richmond are focused at the municipal and community level, with only minimum service given to local neighbourhoods.

The Staff Position Paper (April, 1990) recommended to Council that the community centre act as a major focal point for the delivery of community services to that area, through a series of associated neighbourhood facilities. The philosophy behind this approach is the expansion of a facility beyond its purely recreational role into the provision of social, educational, and other community services. The idea is to move is away from the regional delivery of services into providing greater access to local facilities, with the responsibility of management delegated down to the neighbourhood-level. The concept of a neighbourhood disaster plan in the role of a
community service fits neatly into this new philosophy.

During the fall of 1991, the Richmond Department of Community and Government Relations was established. This department is an umbrella organization for four departments - Community Development (community programmes and volunteer management), Economic Development, the Richmond Foundation (private funding for community projects), and City Emergency Program. It is too early to perceive the direct connections between departments, but the potential exists to better co-ordinate community services by reducing the overlap in the areas of planning and development. The Department’s direct ties to senior officials has the advantage of raising the political consciousness and voice of emergency planning. Council’s mandate for City Emergency Program includes full endorsement of neighbourhood-level disaster plans.

A second direction contemplated by Richmond’s ESS Director is the development of an Emergency Reception Centre Programme. The objective is to build volunteer Reception Centre Teams by recruiting school principals, civic maintenance personnel, and surrounding neighbourhoods in each of the 22 designated Reception Centres in the City.

Menoah Steves and Diefenbaker School (Richmond) are prototype models for school disaster planning and preparedness in the Lower Mainland. Including the establishment of emergency procedures and supplies and equipment for the two schools, Diefenbaker School can pride itself on the formation of a Disaster Planning Committee consisting of twenty-seven parents. Both schools have been instrumental in disseminating a major earthquake awareness programme in Richmond, by bringing their disaster preparedness programmes to the attention of the School Board, parents
and students. Through the initial efforts of one highly motivated individual (the principal of Menoah Steves), every school in Richmond has been integrated into an earthquake preparedness programme.

4.6.2. Burkeville/Hamilton

Burkeville has not advanced its disaster planning mandate since September 1991. The two meetings with the ESS Director in the Fall were poorly attended. B.E.R.T. lost their Co-ordinator in October when she moved to another city.

The ESS Director is not concerned with Burkeville's lack of activity. They have accomplished a great deal within a one year period and the community may be satisfied to withdraw from the project into other activities for the time-being. The ESS Director would like to hold four mini-exercises (table top) to round-off the community's training in disaster preparedness. At the time of writing this thesis, the Sea Island Association was taking steps to integrate Burkeville's disaster planning process under the umbrella of the Association. B.E.R.T. would be responsible for the planning and implementation of the plan, but would report its activities to the Sea Island Association on a regular basis to keep the project active.

Contact with the Hamilton Road community was established in the Spring of 1991. Richmond's Emergency Co-ordinator was advised that Hamilton would not be able to begin a neighbourhood disaster programme at that time due to community concern with the Persian Gulf war. Contact was re-established in May 1991. The City Emergency Co-ordinator, Plan Co-ordinator, and Burkeville Co-ordinator were invited to talk to the newly-formed community association about emergency
preparation and neighbourhood disaster plans. Members of the Association were interested in the project, but wanted to postpone the project until September. The Association had recently committed themselves to oversee the development of a community centre and a new school building. A compromise was reached with a few members to continue contact with the Plan Co-ordinator during the summer months. The responsibility for their neighbourhood disaster plan was turned over to the Emergency Social Services Director in September 1991.

The Hamilton community began working with the Parent ESS team in the fall, and are proceeding slowly with their disaster planning process. Contact was made with the R.C.M.P. to assimilate disaster planning into the Neighbourhood Watch Programme. A household questionnaire has been distributed through the Hamilton School. The community has requested that a local disaster exercise be held to encourage individuals in Hamilton to participate in the neighbourhood disaster planning process.

4.7. SUMMARY

It was inevitable that the Burkeville pilot project would experience some difficulties during the course of its development. Both the community and City Emergency Program Co-ordinators were on a learning curve while establishing a framework for neighbourhood disaster plans and community participation.

During this process we have gained some insights into a community-based disaster planning process. Whether these insights are unique to Burkeville is impossible to judge without a comparative study of other neighbourhood disaster
planning projects. In summary, below is a list of points believed to be salient to the success of a 'bottom-up' disaster planning process based on the observations in Burkeville:

- Disasters must be salient to community members before any action can take place. In Burkeville's case the Loma Prieta earthquake (1989) coupled with earthquake preparedness talks by the Emergency Co-ordinator raised the consciousness and priority of preparedness measures.

- Concern for the children plays an important motivational role for community members. A school disaster preparedness programme can assist in motivating parents to carry out home preparedness measures.

- The process must be simple and flexible, and fit the community's needs. The process needs a schedule which does not compete with other community activities (In Burkeville, the summer months were difficult times to generate interest).

- Different community disaster planning processes will likely result from various community efforts. In the case of Hamilton Road, a Neighbourhood Watch programme took precedence over disaster preparedness. In this situation disaster planning will be amalgamated under the umbrella of Neighbourhood Watch, to provide a single framework for personal safety and preparedness.

- Community disaster plans must be built on an element of personal preparedness (especially home and family preparedness plans) to ensure that a minimal standard of safety is achieved.

- Networking with emergency organizations can multiply the level of resources available to the community in the pre- and post-disaster phases.

- The greatest level of community involvement in training occurred in those instances where emergency personnel came into the community.

- Leadership in the community is very important but a programme will not succeed in the long-run if dominated by a few highly motivated individuals. Communities may have to be taught the basics of teamwork to grasp its importance to disaster management.

- For best results, a neighbourhood-level disaster programme may have to be sheltered under an established community programme such as a community association.
In B.E.R.T.'s case, greater recognition from the Mayor and Council at the onset of the pilot project could have raised the level of motivation and commitment from the community: more resources could have been made available when enthusiasm for the project was running high.

Community members possess the skills necessary to mount an effective emergency response, but success depends on motivation, commitment, and training. Burkeville responded quickly to the needs of those community members who were isolated during heavy winter snows.

Pamphlets and other written material had little effect on changing the behavioural patterns of community members. In Burkeville's case, team members wanted hands-on demonstrations to show what can be done to safeguard their home and family, and involve the community in social exchanges about the threat.

Female volunteers far outnumbered the male. The male population needs to be aware of the roles they can play in a disaster and be encouraged to participate. Teenagers should also be encouraged to participate.

Neighbourhood disaster plans need long-term support and commitment from local government to sustain activity. Including training and education, local governments can provide the 'psychic reward' needed to maintain the life of a volunteer organization.
5. AN ANALYSIS

5.1. INTRODUCTION

The purpose of this section is not to provide empirically proven answers from a one-case examination, but to contribute suggestions for practice, by analyzing the relationships between the case study, theory, and empirical research. Through a detailed examination of a ‘bottom-up’ planning process, we can learn about the positive and negative attributes of this model over the traditional ‘top-down’ plans, and its potential for management through local governance (community and local government).

5.2. THE RELATIONSHIP BETWEEN THEORY, RESEARCH, AND THE CASE STUDY

The profile of the emergency planning profession in the government hierarchy is low, and emergency planning departments often work in isolation from the day-to-day business of government. These factors may allow emergency personnel greater freedom and flexibility in programme initiatives, provided that the demands of the department do not exceed the government’s ability or willingness to pay; in this field it is possible for public involvement to expand, and there is a great potential for innovation and creativity to take root.

Disaster planning, including neighbourhood disaster plans, may be one of the ‘left-over’ areas described by Friedmann (1987), which does not compromise or
threaten the status quo. Disaster planning can be a symbiotic partnership of mutual benefit: neighbourhoods can control those areas of disaster management beyond the grasp of government, and governments can focus on the overall disaster response (physical and technical matters). The introduction of the neighbourhood disaster plan can be construed as milestone in the level of community involvement sought by government. It is a dramatic shift away from public compliance measures into co-operative efforts. The programme marks the growing recognition that the emergency responsibility must be shared. In Burkeville's case it took an Emergency Co-ordinator with a vision, an enthusiastic ESS Director, and an involved Mayor and Council. As research indicates, community resistance to emergency planning can be overcome if someone in authority takes charge.

Judging from Burkeville's experience, the programme can be one of fiscal responsibility. With minimum staff and funding and the help of trained citizens, local governments have the potential to substantially reduce the loss of life and property, and dependence on external assistance.

5.2.1. Principles of Public Participation/Citizen Empowerment

The Burkeville pilot project is not a true 'bottom-up' approach to disaster management as was the case for Mothers for H.E.L.P. in Washington State. In Burkeville's case, the initiative was spawned by the City Emergency Co-ordinator, and the project grew under the guidance of the City's Emergency Program Plan Co-ordinator. Both emergency personnel were directly involved throughout B.E.R.T.'s programme encouraging citizen organization. It is questionable whether Burkeville's
neighbourhood disaster plan would have evolved without government assistance. Research tells us that community disaster subcultures emerge when there are repetitive disaster impacts, a period of forewarning, and the existence of consequential damage which is salient to the community. These factors were not present in Richmond to trigger disaster planning subcultures. For some team members in Burkeville, disaster salience was achieved through the efforts of the media and Richmond's Emergency Co-ordinator following the Loma Prieta earthquake in California in 1989.

Direct government involvement may not be critical to the initiation of a volunteer disaster planning project - as in the case of Mother's For H.E.L.P. - but it is likely crucial to the long-term survival. This group eventually won the recognition of government, a fact which undoubtedly helped this organization survive and grow over the past six years. Though Burkeville has been assisted from the very beginning, it is hoped that Burkeville has or will soon reach the point where the disaster planning project is run by community members, with minimal assistance from outside sources.

Emergency planning may be one of those situations where citizen control is not a plausible alternative. The Burkeville pilot project is a volunteer-run organization attempting to gain self-reliance in a disaster situation. Without the co-operative and co-ordinated efforts of all stakeholders, it is unlikely that the neighbourhood-level approach could attain any real depth of mastery without the necessary training and education. Without legitimation from government and private emergency-response organizations, it is doubtful that any neighbourhood project could entice the level or skill of membership it needs to run a disaster planning programme effectively. Conversely, top-down emergency plans need community involvement. Local
governments are becoming more sophisticated in their disaster plans, but have yet to turn toward trained community responses (with the exception of ESS organizations). Community/personal preparedness can reduce an area’s ‘vulnerability’ by preparing its citizens to be an asset rather than a liability.

Outside organizations can help neighbourhood disaster teams by offering social rewards (friendships between the community and those organizations involved in emergency planning and response), psychic rewards (appreciation for their efforts), and by instilling a belief in team members that their efforts can ‘make a difference’ (through networking, training, and shared exercises). Emergency planning, unlike many volunteer projects, does not culminate in a substantive reward (e.g. a decision, funding, equipment, etc.). Emergency planning is an open-ended process, intangible and subjective, leaving doubts about the potential effectiveness of one’s capabilities, strategies, and efforts. Numerous outcomes are both possible and legitimate. There is no way to test the ‘success’ of a neighbourhood disaster planning process, but involvement in desk-top and simulated exercises can assist communities prepare effective strategies, and provide feedback for their efforts.

Leadership has been shown to be crucial to the survival of a neighbourhood disaster planning project, particularly leadership which includes an active and concerned Mayor and Council. In Burkeville’s case, active involvement from the Mayor, a council member delegated the responsibility of emergency preparedness, high-profile emergency organizations (e.g. Red Cross, City Emergency Program, Richmond Fire Department), and media attention has played a big role in keeping the process alive. In one situation, the Mayor of Richmond sent out personalized letters to thank all volunteers who participated in a Reception Centre exercise.
Leadership in the community is also important - in Burkeville's case, commitment from fourteen medical professionals residing in Burkeville was not gained until an emergency specialist agree to head up the Medical/First Aid team.

Communities do not have to fulfil the same planning/preparedness requirements set out in Burkeville. As indicated in the Literature Review, the public sector can help out in a variety of ways. The community itself must decide on its own goals and objectives. It is conceivable that some communities may wish to pursue a less rigorous approach. Efforts could concentrate on home/personal preparedness measures, which could significantly reduce human and property losses. In the case of the Hamilton Road area, other community projects have taken precedence over disaster planning. In order to fit disaster planning on their agenda, the programme is to be assimilated under Neighbourhood Watch. The Richmond Royal Canadian Mounted Police are enthused with the idea of a joint venture to promote public safety. In this case, there is a greater potential to draw more volunteers and achieve long-term survival (only 7% of American volunteer groups sustained interest in emergency preparedness for several months). Neighbourhood Watch is a highly organized structure which can hold an emergency control group in place in both an emergency and non-emergency situation. In Burkeville's case, the shift of responsibility for neighbourhood disaster planning onto the shoulders of the Sea Island Association may be what the project needs to regain momentum.

B.E.R.T. can be described as a source of organizational experiment and innovation, but its purpose is 'supplemental', to aid or replace government agencies in providing services. In a real disaster situation, Burkeville will ultimately have to depend on external support in the disaster recovery phase (one example is long-term
counselling). When this assistance is offered, it is hoped that B.E.R.T. will have sufficient confidence from mastery over their crisis that they can direct this assistance in positive ways. The success of a neighbourhood disaster plan depends on both a ‘bottom-up’ drive from the community to take on an emergency preparedness responsibility, and a ‘top-down’ push from government to encourage and support their actions. There is no agency with the legal authority to enforce citizen action toward a minimum level of disaster preparedness in the home.

5.2.2. Community Development Principles

The move from (over)centralization into decentralization has evolved from the failure of top-down plans to resolve social and economic ills. The Burkeville pilot project is one example of the trend toward decentralization. The assumption is that community-based projects are more sensitive to local needs - i.e., communities are in a better position to decide what those needs are. Bureaucracies, including emergency planning departments, are encumbered by organizational fragmentation where bureaucrats tend to avoid communicating with their counterparts, and organizational mobility, where bureaucrats most often need official instruction before proceeding. The Meals-on-Wheels incident described in Section 4 is one example of the inability of a bureaucracy to adapt to new conditions on short-notice. Enthusiasm and innovativeness should have a better opportunity to flourish in community-run projects. As discussed in Section 1, the Economic Council of Canada recognizes the importance of these characteristics to the survival of local enterprise - they recommend that assistance to local enterprise be as flexible and as unbureaucratic as
Burkeville was reminded on numerous occasions that imagination and creativity were the qualities most sought after in emergency management. It is inconceivable that any emergency team is going to be fully prepared for what lies ahead. Out-of-ordinary events are going to require unusual, perhaps extraordinary strategies. Enthusiasm, a belief in one's ability, and a caring community environment can overcome tremendous obstacles. This is particularly poignant when the responsibility for one's own life, and the lives of friends and family, rest on the shoulders of the individual.

Mastery over neighbourhood disaster planning may encourage greater participation in other self-help projects. Once a community has developed skills in self-management, there is no reason why the skills and experience gained in the disaster planning process cannot lead to greater levels of community participation in other government-run projects. Provided local governments are cognizant of the potential communities have in assisting or running local programmes, delegation of power becomes possible, even encouraged. The City of Richmond is moving in this direction by suggesting that the management of community services be delegated down to the neighbourhood-level. The services themselves will be established through local community need. It is plausible that neighbourhood disaster plans may become part of this overall programme.

5.2.3. Disaster Planning Theory and Principles

As indicated in Section 1, general theory provides few guidelines for planners
to meet challenges and bring about positive change. Emergency planning theory and principles offers even less for emergency personnel. Emergency officials are rarely from a planning background. With little disaster experience, emergency officials in the Lower Mainland look south for information. The recent disasters in California have provided research material on disaster management but the information does not paint a true picture of the disaster response. It is reasonable to assume that the information which would 'embarrass the department heads' would be suppressed. There is also a problem of research fragmentation as different academic departments and professions work on isolated studies, often on one small aspect of the whole experience. As Robert Stallings indicated, there has been some attempt to render the findings of separate studies into formal propositions but these studies are rare. A sub-objective of this thesis was to consolidate the piecemeal undertakings of research into a digestible form to enable emergency personnel, officials, and the private sector to increase their understanding of state-of-the-art emergency management practices to move toward more realistic plans.

Networking is invaluable to the survival of public participation groups, but it is particularly meaningful in the emergency planning field (regardless of the planning scale). For Burkeville, it was important to establish links with City Emergency Program, Richmond ESS, Red Cross, and other emergency organizations, for information, training, education, and legitimization. It was hoped that a strong link could be forged between B.E.R.T. and Mother's For H.E.L.P. in Washington for the exchange of information. Unfortunately, no response was received after three attempts. In B.E.R.T.'s case, developing contacts with emergency personnel and volunteer organizations was a slow process, but other neighbourhood projects can
now benefit from their efforts.

The focus in research away from individuals in a crisis/disaster to organization (primarily government) and community responses is a positive shift. An increased understanding of community behaviour in disaster can assist emergency personnel to amend plans which account for community action. As research shows, appropriate community responses are not only beneficial to the whole emergency response, but are crucial to community recovery. A successful disaster response is the fulfilment of expected behaviours on both the part of organizations and individuals. The more we understand the community behaviours following a disaster, the closer our plans/strategies can emulate reality.

In theory, planning seeks to simplify the world around us to bring about change. It is therefore natural to regard planning as the rightful passage to manage the emergency environment. Unfortunately, this is rarely the case. Few individuals possess the skills to mount an effective emergency planning process. Without planning skills it is almost impossible to develop neighbourhood-level disaster response teams which survive the long-term. The latter need a firm grasp on process planning (especially group maintenance issues), as well as task responsibilities. The neighbourhood disaster plans in California rely on government-produced manuals to set up disaster teams. This is not necessarily a 'bad' approach, but it should be accompanied by training in developing individual and team planning skills. We do not want to promote 'standardized' behaviour, but to encourage people to think about possible alternatives in order to make the best decisions possible, both in the short and long-term: "a person trained in the creative process has a greater chance of developing worthwhile innovations than a person without such specialized training"
Research is desperately needed on effective planning processes to use at the community-level, in order to teach communities how to plan for themselves.

Comfort suggests that our ability to act depends on three things - the decision-making process, the priority setting, and the ability to manage information - but we are constrained by conditions of uncertainty and complexity. If the proposition that rational planning inhibits problem-solving in dynamic, uncertain conditions is correct, 'rational planning' could be totally inappropriate at the community level. In a disaster, citizens, friends, and neighbours see what has to be done and respond. Their process is informal, subjective, often based on individual plays. The idea that volunteers work as a team in the pre-planning phase to complete one prioritized task after another may be detrimental to 'bottom-up' processes. People choose activities which best suit their skills and preferences regardless of the priority ranking of tasks/goals. As research indicates, individuals draw on their own procedural patterns to carry out their new roles. One cannot force volunteers to act in a certain manner - good leaders will work on individual strengths to build team spirit. Emergency planning has the capacity to offer a wide range of possible actions/strategies. Leaders can encourage individuals to pursue the 'more important' tasks, but a great deal of flexibility in the system is warranted to allow for individual creativity. Once an individual has completed a task to his/her satisfaction, s/he may be more motivated to pursue other, perhaps more challenging, tasks. A neighbourhood disaster team needs to open up a multitude of options to encourage full participation. In Burkeville's case a rigid framework was placed on the pilot project to comply with the three-month deadline. When the deadline was removed, members were offered a full range of
options to pursue.

Governments are constrained by a multitude of obstacles in disaster management. These obstacles are: the lack of professionalism, public versus private interests, funding, resources, getting on the political agenda, inadequate legislation, lack of community participation, and an emphasis on plan-production rather than process planning. However, it is possible to identify those relationships with the most far-reaching effects: for example, efforts spent on community involvement could assist local governments with resource/funding problems, communities could become advocates for raising the political consciousness of disaster preparedness, private interests could shift into public concerns, and emergency planning could gain the recognition and credibility it needs (a multiplier effect).

The ability to manage and communicate information is particularly relevant to neighbourhood disaster teams. Until an organization is able to communicate in an effective and professional manner (internally and externally), it is unlikely that a team spirit will develop. Without a team approach, members become locked in power struggles. Communications between team members and emergency organizations in Richmond was almost non-existent during the first year of operation despite encouragement from the Plan Co-ordinator to develop contacts. B.E.R.T. experienced communication difficulties internally when insufficient attention was paid to individual concerns; as Pross suggests, in order for volunteer groups to survive, individual members must feel that they can make a difference.

As long as individuals are moving toward goal accomplishment, any path leading toward that goal should be acceptable. Emergency planning is an open-ended process, offering much flexibility in time and effort spent in the pre-planning phase.
We need to take advantage of this fact. Burkeville took approximately one year to define their emergency plan. The Provincial ESS organization suggests that one and a half years is the minimum time to develop an effective emergency response team. It should be up to team members to decide what that pace should be, and how the disaster planning process should proceed.

5.2.4. Process Planning

Disaster plans are ineffectual unless those who have a role in the disaster response are included in the disaster planning process. A team-work approach is needed between all emergency-response organizations to decide who will do what, and how operations will be co-ordinated. Unless individuals are able to walk through the process together, they are unlikely to accept ownership. Without ownership by critical segments of society, efforts are needlessly wasted; in the case of the Mexico City earthquake (1985), "the lack of pre-established plans lead to fruitless waste of a great amount of man-hours and economic resources" (Hartman, 1986:172).

Municipalities do have the resources to significantly increase the effectiveness of a disaster response, the major exception being local government's inability to tap into the private sector for goods, services, and manpower prior to a disaster. Process planning may be the only means to rectify this failing. The ICMA article (1991) on emergency management stresses the importance of including measures to satisfy community need. A second study revealed that emergency co-ordinators see the value of including the private sector in their emergency plans, but are reticent to do so because of the perceived workload. It would be an obvious benefit if
neighbourhoods could run their own emergency planning programmes with minimum supervision.

It is not enough to suggest models for process planning, we have to use them effectively. There is little in the academic literature to assist with our task. Professor Boothroyd (1989) believes that community leaders, etc. are hungry for process planning concepts. This was indicated at the Emergency Preparedness Conference (October 1991) from participant feedback. The Burkeville presentation was the only talk which offered a glimpse into planning ideas and concepts for project initiation. Individuals are aware of what has to be done (the end product) but few are aware of the techniques for getting there.

Peter Boothroyd's 'Seven Magic Steps' was the planning process used to define the task, the steps leading up to task accomplishment, and the long-term goals. It was not rigidly applied throughout the process due to the community's need to run their meetings in a style which is both comfortable and familiar. The Seven Magic Steps did provide a smooth transition from a blank slate to a programme outline. For the most part activities were chosen due to their relative importance to the goals and objectives outlined in the original task framework. Burkeville was assisted by the Plan Co-ordinator in the planning phase, but the responsibility for developing strategies rested solely on the shoulders of team members.

Burkeville's disaster plan follows the framework used in process planning. It was designed to be simple and flexible, a complete reversal from highly detailed manuals citing Standard Operating Procedures. It enforces the reality of having to prepare in the pre-disaster phase as team members are given a bare minimum of pre- and post-disaster information in the plan itself. The Burkeville plan was a deliberate
attempt to avoid the pitfalls typically associated with traditional, top-down emergency plans. The plan does not make any distinction between disaster types, and it can be activated at any emergency level (an all-hazard approach). There was no attempt to separate planning strategies into distinct emergency phases (with the exception of planning versus implementation responsibilities). Though there are noticeable references to Burkeville and Sea Island, the plan can be easily modified to fit any community's needs. The City of Richmond is now in the process of making the necessary changes for use in other neighbourhoods. It is believed that the Burkeville Plan is of value to any emergency planning group as a prototype model to new and innovative ways of adopting process strategies. It is also useful for training and familiarizing participants with emergency duties.

Plan exercises are an important part of any disaster planning process. They are the 'Side-Step' of the Seven Magic Steps; that is, they represent process evaluation. In most emergency planning situations, including Burkeville, plan exercises tend to be the last step in the planning process. Burkeville has yet to undertake a table-top/simulated exercise, though four mini-exercises have been slated by the Richmond ESS Director. In hindsight, plan exercises should be an integral part of any process to stimulate team members to higher levels of motivation and commitment; plan exercises could also provide feedback for past efforts. It is interesting to note that the Hamilton Road community has requested that a simulated exercise be initially undertaken in their community to encourage participation in the neighbourhood disaster planning project.

The most difficult problems associated with any volunteer project are getting individuals involved, and keeping them involved. A disaster planning project has the
potential to strengthen community roots by bringing together individuals of all ages, gender and ability. Disaster planning is also capable of competing with other community activities as it can offer many interesting avenues to explore. One problem apparently lies with shifting the emergency responsibility onto the shoulders of the team and/or the individual. The literature is full of material expounding the need for greater public involvement to improve local government response and recovery, but there is little information on what strategies work to promote full community participation. We need to provide incentives to help overcome the ‘procrastination’ factor. Even the Red Cross, with its extensive campaigns and canvassing, is only able to attract 3% of the population to donate blood.

5.3. POSITIVE AND NEGATIVE ATTRIBUTES OF THE BURKEVILLE NEIGHBOURHOOD DISASTER PLANNING PROCESS

Burkeville’s experience with disaster planning may be unique. The Hamilton Road area pilot project is taking a different approach by assimilating disaster planning into a Neighbourhood Watch framework. Most of the tasks and responsibilities associated with an emergency response will be similar, but their processes will differ. It is too early to state how successful the approaches will be in their respective communities, but it is possible to list the pros and cons of the neighbourhood-level approach from the information gleaned from Burkeville’s efforts (not given in any order of priority).
5.3.1. Positive Attributes

1. Burkeville’s disaster plan emphasizes ‘community’ in community disaster planning. The programme allows the average but motivated citizen to easily assimilate into the process.

2. It allows for public input to produce better emergency plans.

3. It raises the profile and priority of disaster preparedness in their jurisdiction.

4. It can be managed with relative ease and minimal cost to local government.

5. It encourages team members to plan strategies which are relevant to community needs.

6. It has the potential to reduce the burden on government emergency response services.

7. It is an indication that people are willing to take on more personal responsibility for emergency preparedness, and opens people’s minds to the fact that government will not always be there.

8. Government funds and resources are shifting away from the post-impact phase into preparedness and mitigation.

9. The programme encourages co-operative and co-ordinative efforts between all levels of government and the private sector. The Mayor’s involvement was a valuable contribution to the programme.

10. It encourages a reliance on local rather than external resources.

11. Planning is done on a small scale where decisions are easier to implement. People are familiar with the physical layout and special needs individuals in the community, and are better able to respond to the priorities of the disaster.

12. As volunteer disaster workers under the Provincial Emergency Social Services, individuals are exempt from personal liability.

13. Burkeville does not need to wait until a disaster is officially declared to initiate a disaster response.

14. The project encourages full participation from individuals of all ages, gender and ability.

15. It demonstrates that ordinary citizens can be an invaluable resource.
16. It brings individuals together through a common bond to provide security for family and friends.

17. It educates people to believe in themselves, and develops confidence to take greater control over their lives.

18. It has the potential to structure community empowerment over other aspects of their lives.

19. It has motivated other communities to do emergency plans.

20. It de-bureaucratizes the traditional emergency planning structure by personalizing it - the people are the primary resource, not the tools, and their ideas and beliefs are an integral part of the process.

21. It trains individuals to cope effectively with a disaster.

22. The training the community receives will be an asset anywhere.

23. When individuals take ownership of a plan through design and implementation, they are more committed to the process and the project has a better chance of success.

24. Burkeville is in a better position to get things done, without the problems of government red-tape and jurisdictional dysfunction.

25. Burkeville has been an advocate to get hazard mitigation higher on the political agenda.

26. Individuals living in the community can add greater credibility to a community project than someone working from the outside.

27. Planners themselves can learn more about public participation strategies and community goals.

28. Neighbourhood disaster planning can be interesting and fun, facets too often ignored in project planning.

5.3.2. Negative Attributes

1. Individuals are untrained in process planning techniques, and often emphasize task-oriented strategies which can be detrimental to process (desk-top/simulated exercises can encourage process planning activities).
2. The all-hazard, all-phase approach may not cover the needs of every jurisdiction (Burkeville's process did not include long-term recovery, though it is important).

3. People are generally unaware of effective techniques for volunteer management. The City of Richmond is taking steps to rectify this in their creation of a Community Development Department (community programmes and volunteer management).

4. Training was slow to materialize. Reception Centre training needs to be extensively developed.

5. Concern over confidentiality of information affected the quantity and quality of information submitted by Burkeville residents.

6. Team members were very reluctant to take on leadership roles.

7. Motivation and commitment are difficult to maintain (for all volunteer organizations).

8. Disaster planning must successfully compete with other community events. This may be difficult to maintain in the long-run.

9. The initial time constraints did not allow the community much flexibility in the programme design.

10. Inconsistent attendance at meeting tended to lose the continuity of the process. A fall programme would have best suited the community's timetable.

11. The work is undertaken through volunteer efforts, which may work against the project in the long-run.

12. Information and resources needed to train the community and assist with planning are extremely limited.

13. People cannot be taught leadership - it must emerge through experience. A few leaders in Burkeville have emerged, but not enough to cover all the emergency tasks.

14. Burkeville was fortunate to have well-defined community boundaries. In other situations it may be very difficult to delineate a 'neighbourhood' disaster planning boundary using either physical and/or social criteria.

15. A single neighbourhood-level disaster planning model may not work in areas with a large ethnic population (different beliefs, different cultures).

16. It is a difficult task to wean the community off the Plan Co-ordinator. It is
also difficult to tell when this is necessary, or if it should be done at all. The project may only work under a local government umbrella.

17. Outside help from well-established emergency organizations depends on the good-will of those organizations.

18. Female volunteers far outnumber the male, despite the fact that the male population was fully encouraged to participate. A few observations during the Burkeville process suggest that women plan, men react.

19. Local governments do not have the resources to assist communities/neighbourhoods on a continuous basis.

20. Community disaster planning is not an issue which most of society feels deeply about. This adds to the difficulty of getting it on the agenda.

5.4. SUMMARY

The neighbourhood-level disaster planning concept follows the recent trends in general planning theory and principles - i.e., public participation, citizen empowerment, community development principles, networking - and fits neatly into stat-of-the-art strategies and management techniques for disaster planning suggested in the Disaster Planning Literature Review Chapter.

It is believed that neighbourhood-level planning requires local government involvement to survive, and local governments need an educated and trained public to overcome problems which have plagued past disaster responses. At minimum, local governments can offer social/psychic rewards, and recruit other emergency organizations (ESS teams, Red Cross, etc.) to assist with training and education. Communities need planning skills for long-term project survival, with a particular emphasis on process planning and group maintenance issues. Once a community has developed skills in short and long-term planning (through a team-approach),
neighbourhood disaster teams can run their programmes with minimum assistance from local government. Once the disaster planning framework has been established for one neighbourhood disaster team, other neighbourhoods can readily assimilate into a similar process. Communities themselves can decide how far they want to take their disaster planning responsibilities.

Burkeville can be applauded for their efforts in changing the perception of what communities and individuals can do in the complex and uncertain world of disaster management. They have gained a growing reputation and recognition in the local field of emergency planning, and have incited other local groups to participate in neighbourhood disaster planning. Despite the lack of disaster experience, Burkeville was willing to take on a disaster planning responsibility. Burkeville has shown that neighbourhood disaster plans can compete successfully with community projects, and other major events in society. It is suggested that concern for family members, particularly the children, has played a decisive role in project initiation. Burkeville's recent break with emergency planning is likely the threshold for community attentiveness to this type of volunteer work. The basic plan has been set up to allow the community to work on their own. Annual or bi-annual meetings may be all that is necessary to keep their neighbourhood disaster plan on track, and this is currently being pursued by the Sea Island Association.

Neighbourhood-level disaster plans, the pinnacle of citizen involvement in disaster planning, may only be feasible in those 'most-at-risk' communities where the majority of the population is aware of a specific hazard(s), and recognizes the need to reduce their vulnerability. It will take strong leadership and motivation from both the government and community sectors to begin disaster planning in their community,
6. CONCLUSION

It is believed that the neighbourhood-level disaster planning approach is the wave of the future for disaster management. In North America, local governments are coming to the realization that a disaster response, without the assistance of trained volunteers and without a productive strategy for private sector resources, can significantly reduce the effectiveness of response and community recovery. Communities are coming to the realization that during the critical period of disaster response, government assistance will not always be available. The United States began a programme of setting up neighbourhood disaster response teams in the mid-1980's. In Canada the first neighbourhood-level disaster response capability was initiated in 1990 in Richmond, British Columbia.

If the trend to develop a neighbourhood-level capacity is to continue, we need to know more about this approach to assist local governments and communities in their goal toward self-reliance and mastery over 'the uncontrollable'. It is hoped that the detailed description of Burkeville's experience will assist others to move toward a greater level of community involvement in local government disaster plans, and plans which better emulate reality.

A one-case examination of a neighbourhood disaster plan, plus the data originating from this thesis, is obviously inadequate to resolve all the problems generic to the field of disaster planning, but the thesis provides a starting point for future study and experiment. Areas which might be considered for further research are as follows:
What motivates individuals in the private sector to take on an emergency responsibility (home and/or community preparedness).

What factors lead to long-term community commitment to disaster planning and preparedness (public and private sectors).

What process planning techniques and strategies can be readily assimilated at the community-level.

How can we manage volunteers more effectively, and ensure project survival.

How much control should citizen disaster cadres have in both the pre-planning and implementation phases.

What responsibilities should governments have in the formation of neighbourhood disaster teams.

What techniques can we use to enhance creativity, innovativeness, and a teamwork approach at the community level.

What factors and techniques can be utilized to involve the community in social exchanges about a hazard.

How do we develop leadership skills at the community-level.

How do we define ‘neighbourhoods’ for the purpose of setting up neighbourhood disaster response teams.

Lastly,

More research and theory is needed in the field of disaster planning and management. If greater community involvement in the planning and implementation phases is the goal, research into community behaviours in disaster and community recovery will be necessary.


Stallings, Robert A. December 1987. Post Impact Field Studies of Disasters and
Sociological Theory Construction. Working Paper No. 60. University of Southern California: School of Public Administration and Department of Sociology.


### APPENDIX A
Cities Adopting Good Emergency Practices (Based on 370 Respondents)

<table>
<thead>
<tr>
<th>Good Practices</th>
<th>Adoption (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish emergency equipment rate and use agreements with contractors/industry</td>
<td>49</td>
</tr>
<tr>
<td>Establish communication link to a major area radio/TV station, such as protected phone lines or dedicated radio channel</td>
<td>56</td>
</tr>
<tr>
<td>Install rotary phone connections and establish staff procedures to operate a citizen emergency information phone bank (other than 911)</td>
<td>40</td>
</tr>
<tr>
<td>Train citizen members of Block Watch or other neighbourhood-based groups for emergencies</td>
<td>49</td>
</tr>
<tr>
<td>Establish agreements with RACES, CB, or other radio amateurs for assisting city staff in an emergency or warning situation</td>
<td>78</td>
</tr>
<tr>
<td>Establish a media information centre</td>
<td>90</td>
</tr>
<tr>
<td>Designate and train city staff to take responsibility for organizing untrained citizen volunteers who may show up in a major emergency</td>
<td>39</td>
</tr>
<tr>
<td>Establish a procedure with hospital and ambulance managers for co-ordinating the reception of casualties</td>
<td>86</td>
</tr>
<tr>
<td>Establish open purchase orders or other means for city departments to make and document emergency expenditures</td>
<td>70</td>
</tr>
<tr>
<td>Develop specific methods and staff trained to make public evacuation warnings</td>
<td>71</td>
</tr>
<tr>
<td>Designate vehicles and drivers to carry transit dependent and mobility-impaired persons</td>
<td>65</td>
</tr>
<tr>
<td>Designate voluntary group responsible for housing citizens temporarily evacuated</td>
<td>83</td>
</tr>
<tr>
<td>Establish an incident command system</td>
<td>95</td>
</tr>
</tbody>
</table>
APPENDIX B
HAZARD ASSESSMENT
(BURKEVILLE)

Types
- plane crash - fire (conflagration)
- flood - hazardous goods accident
- earthquake - weather

Major Effects
- deaths - injuries
- trapped persons - damage to property
- fires (explosions) - floods
 and fire hazards - loss of communication
- evacuation of people - separation of families
- dangers to public - disruption to transportation
 health - routes
- isolation - loss of equipment

Needs
- fire fighting/rescue - body recovery and
  equipment identification
- medical supplies - shelter
- food (cooking utilities) - water (important)
- home supplies - communications
- registration and - clothing/bedding
  inquiry - transportation
- animal lock-up - outside contacts
- Personal Services - financing
- call-out procedure - building assessment
- trained day-care staff - know school plans for
- evacuation procedures release of children
- leadership - volunteers
- Reception Centre - billeting procedure
 (and supplies)
APPENDIX C
QUESTIONNAIRE - CITY OF RICHMOND

NEIGHBOURHOOD REGISTRATION FORM

HOUSEHOLD INFORMATION

ADDRESS: __________________________ PHONE: __________________________

SURNAME: ______________________ FIRST NAME(S): __________________________

WORK ADDRESS: __________________ BUS. PHONE: __________________________

SURNAME: ______________________ FIRST NAME(S): __________________________

WORK ADDRESS: __________________ BUS. PHONE: __________________________

ADDITIONAL ADULT RESIDENTS:
Name: __________________ Work Address: __________________ Bus. Phone: __________

NUMBER OF:
INFANTS (under 6) _____ CHILDREN (6 -12) _____ TEENAGERS (13 -19) _____

In case of an emergency, please notify: (Someone OUTSIDE the Lower Mainland)

NAME: __________________________

ADDRESS: __________________________ PHONE: (_____)

Do you or any members of your household have special needs?: (for example - sight or hearing problems, medical concerns, language difficulties)

________________________________________

________________________________________

________________________________________
### INVENTORY OF COMMUNITY RESOURCES

<table>
<thead>
<tr>
<th>SPECIAL SKILLS:</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerical</td>
<td></td>
</tr>
<tr>
<td>Accounting</td>
<td></td>
</tr>
<tr>
<td>Teaching/Training</td>
<td></td>
</tr>
<tr>
<td>Supervisory Experience</td>
<td></td>
</tr>
<tr>
<td>Shelter Management</td>
<td></td>
</tr>
<tr>
<td>Food Preparation</td>
<td></td>
</tr>
<tr>
<td>Cleaning Professional</td>
<td></td>
</tr>
<tr>
<td>Registration &amp; Inquiry</td>
<td></td>
</tr>
<tr>
<td>First Aid - Date:</td>
<td></td>
</tr>
<tr>
<td>CPR Certificate - Date:</td>
<td></td>
</tr>
<tr>
<td>Personal Assistant to Elderly/Disabled</td>
<td></td>
</tr>
<tr>
<td>Medical Professional (Specify)</td>
<td></td>
</tr>
<tr>
<td>Languages Spoken: (Specify)</td>
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<td>Search &amp; Rescue: Wilderness</td>
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<td>Search &amp; Rescue: Urban</td>
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<tr>
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<td>Carpentry</td>
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<td>Plumbing</td>
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<td>Warehousing</td>
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<td>Truck Driving</td>
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<td>Other Emergency Related Skills:</td>
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<td>Personal Computer</td>
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<td>First Aid Supplies</td>
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<td>Medical Equipment (Specify)</td>
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<td>Bulk Water - Quantity gals.</td>
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<tr>
<td>Fire Extinguisher</td>
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<td>Tent</td>
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<tr>
<td>Camp Stove/Charcoal Grill/Fuel</td>
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<td>Camper</td>
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<td>Motorbike</td>
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<tr>
<td>4-Wheel Drive Vehicle</td>
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<td>Boat</td>
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<td>Ham Radio</td>
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<td>CB Radio</td>
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<td>Walkie Talkie</td>
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<td>Carphone</td>
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<td>Portable Radio</td>
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<td>Work Tools</td>
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<td>Portable Generator</td>
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<tr>
<td>Heavy Equipment (Specify)</td>
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<td>Chain Saw</td>
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<td>Water Pump</td>
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<td>Ropes</td>
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<td>MISC.</td>
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APPENDIX D
FUTURE GOALS (AUGUST 1990) - BURKEVILLE

Inventory

1. Collect the questionnaires.
2. Have the questionnaires updated at regular intervals.
3. Ensure that the date on the questionnaires is complete and accurate (especially the emergency contact name - the location of the latter should be outside the Lower Mainland).
4. Delegate the task of compiling inventories to one individual.
5. Ensure that each emergency task group knows what their resources are via the database.
6. Ensure that all task groups are given a copy of their resources, but only when requested.
7. Inventory the special needs individuals. Each task group will have to decide if this information is necessary for their mini-plan.
8. Inventory new people moving into the community. Contact the Welcome Wagon and United Realty to discuss the possibility of introducing the project through these organizations.
9. Lobby 'good corporate citizens' and the community but know what your needs are first.
10. Consider the possibility of a 'resource and supply' co-ordinator to oversee the needs of the disaster response.

Training

1. Train as many community members as possible:
   a. First Aid/CPR
      - St. John Ambulance
      - Red Cross (free)
   b. Registration and Inquiry
      - Red Cross (free)
   c. Reception Centre Management
      - training unavailable at this time
   d. Light Search and Rescue
      - training unavailable at this time

2. Assign the task of organizing training sessions to one or more individuals who will work with the Plan Co-ordinator and Emergency Co-ordinator.

3. Train daycare staff on emergency procedures in a disaster. This task has been assigned to the Personal Services Co-ordinator.
Education of Burkeville

1. Once task leaders and task volunteers have set their goals and strategies for each task, the information must be made available to all group members.

2. Advise the community of B.E.R.T.'s activities. Send out an update in the monthly publication of the Sea Island Times.

3. Inform the community who are the contact people for the Burkeville disaster planning process.

4. Keep the project alive:
   a. Guest Lecturers.
   b. Video nights (especially on those topics which affect all task groups).
   c. Media coverage.
   d. Keep in touch with the Plan and Emergency Co-ordinator.
   e. Make questionnaires, booklets, pamphlets available.
   f. Organize a tour of the Reception Centre (R.C.A. Forum).

5. The strength of the plan lies with home preparedness. We need to:
   a. Send out a home preparedness checklist.
   b. Ask the Emergency Co-ordinator to give a talk on home preparedness.
   c. Have a 'hands-on' workshop to demonstrate home preparedness measures.
   d. Delegate specific educational tasks to individuals.
   e. Run the 'Surviving the Big One' video.

Education of Others:

1. Advise the Sea Island Elementary School of your plans. Encourage staff to attend Burkeville’s disaster planning meetings.

2. Encourage schools in Richmond to develop an earthquake preparedness plan.

3. Compile a list of contacts on Sea Island.
APPENDIX E
GENERAL EMERGENCY PROCEDURES FOR ALL TASK GROUPS
(BURKEVILLE EMERGENCY PLAN)

1. Check the safety of your family and home.

2. Proceed to the R.C.A. Forum - take your emergency supply kit with you.

3. Assess the safety of the building prior to entry; if necessary find an alternate location (post a sign in the buildings indicating where the new Reception Centre is located).

4. Set up an Emergency Operations Centre and Reception Centre stations. Post Reception Centre signs (located in your Reception Centre kit).

5. List your task volunteers present - assign duties.

6. Ensure that volunteers wear identifiable markings (should be fluorescent).

7. Put volunteers on shift work to prevent ‘burn-out’ - the recommended scheduling is 12 hour shifts (if you cannot replace volunteers, make them take rests). Watch for stress - refer individuals to Personal Services.

8. Hold operational updates every one to two hours initially.

9. Keep a log of everything that has transpired - maintain a record of all borrowed/purchased supplies and equipment (label them).

10. Debrief your volunteers at the end of each shift and update incoming volunteers.

IMPLEMENTATION STRATEGY

TASK DESCRIPTION:
To treat the sick and injured.

RESPONSIBILITIES:
1. Report to Manager - Reception Centre
2. Administer physical/psychological first aid to victims.
3. Record all injuries, deaths, and treatments administered.
4. Tag the injured with their name, address, and treatment administered - this could be done with a magic marker or stick on labels on the arm.
5. Evacuate the seriously injured - contact Co-ordinator of Communications for assistance - you must record when and where they have been transferred to.
6. Isolate the deceased - set up a temporary morgue.
7. Send medical/first aid volunteers out with Rescue teams when requested.

PRE-PLANNING STRATEGY
1. Recruit volunteers to assist with Medical/First Aid tasks - identify individuals who have first aid, CPR, and medical training.
2. Meet periodically with your task group to set goals and brainstorm ideas - it is your responsibility to set up and facilitate your task meetings.
3. Set up first aid training for the community - contacts: St. John Ambulance; Richmond Red Cross; ESS Director, Richmond.
4. Prepare a strategy for responding to a disaster - attach it to the plan.
5. Prepare a medical/first aid kit.
6. Keep a list of your supplies/volunteers in the plan.
7. Identify individuals who have special needs - encourage those on special medication to maintain a two-week supply.
8. Contact the Vancouver International Airport to set up a mutual aid agreement. Contact: Safety and Protective Services Department.
9. Contact the Director of Continuing Care to assist your team with the preparation of a medical/first aid strategy to cope with mass casualties.
10. Be familiar with the concepts of psychological first aid.