THE RESPONSE TO AND RECOVERY FROM THE 2004 EASTERN BAY OF PLENTY FLOOD EVENT

A thesis presented in partial fulfilment

of the requirements for the degree of

Master of Philosophy in Emergency Management

at Massey University, Palmerston North

New Zealand.

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2010

Abstract

Incident Management Systems used in New Zealand have their origins in the fire-fighting organisations of the United States of America in the 1970's. They began in an atmosphere of disciplined quasi-military emergency response organizations. Emergency management research, theory and practice have since evolved to incorporate comprehensive facets acknowledging disasters are about people, individually and collectively and their environment. Emergency Management now includes addressing psycho-social aspects.

New Zealand emergency services adopted the Coordinated Incident Management System (CIMS) as a result of a requirement following the Cave Creek disaster of 1995, where a multi- agency response to the event was found to be unsatisfactorily managed. Emergency management in the modern era now requires the orchestration of many and varied agencies and organisations including government and non-government organisations. These organisations are not necessarily suited to command type management styles and during a recovery phase of an incident, an approach involving a coordination style is more appropriate than a command style.

An examination of the 2004 eastern Bay of Plenty flood event highlights that improved coordination by using a suitable incident management system benefits the response and recovery process. The Eastern Bay of Plenty community has social and cultural characteristics that impact on the effectiveness of emergency management outcomes. An incident management system that improves communication within the multi-agency organisation and between an emergency management organisation and the disaster-affected communities contributes to overall trauma reduction by stress reduction and facilitating early support and interventions. This allows where necessary, for modern emergency management to use systems that can utilise the unique community cultures, structures and networks that form the dynamic communities that they serve.

If disasters magnify pre-existing social and community problems then the incident management system model used in a disaster can determine the degree of magnification.

Acknowledgements

I would like to thank Dr David Johnston of the Joint Centre for Disaster Research for his positive guidance and support in the role of thesis supervisor.

I take the opportunity to acknowledge the survey participants for the support and assistance and willingness to take part in my research. The staff of the Whakatane District Council that provided me with information and records of meetings, debriefs and reports are also worthy of praise, for without their assistance, the thesis would not have been possible. Likewise, I appreciated the assistance given by members of the Canterbury Civil Defence Emergency Management Group.

Special thanks go to the support and patience shown by my wife and family throughout my academic endeavours.

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Chapter 1

1.0. Background and Overview of the thesis

1.1. Objectives of this research

The objectives of this research are to:

1. Examine the response and recovery process of the Whakatane flood event of 2004. This will be done in order to establish what worked well, what did not and what lessons may be learnt to improve the response and recovery phases in future events.

2. To examine what improvements that the application of a local version of the British Columbia Emergency Response Management System (BCERMS) to the Coordinated Management System (CIMS) model may be made to increase its effectiveness in the recovery context in a Bay of Plenty setting. The local version of BCERMS is referred to as the Emergency Coordination System (ECS).

An examination of the Eastern Bay of Plenty Flood event of July 2004 has been carried out to assess how effective the methods used were in respect to the response and recovery phase. Some comparisons and references are made to the Matata flood and debris flow event of 2005 as this event occurred in the same district and some Eastern Bay of Plenty communities suffered the impacts of both events. A number of organisations were involved in managing and providing support services in the response and recovery from both events and it is useful to examine what evolution in emergency management practice may have occurred in the district following the first event.

The examination is approached from a perspective of the use of incident management systems and their impact on the quality of service and support provided to the flood victims

that includes trauma reduction. It is useful to use incident management systems as a vehicle to measure and comment on the effectiveness of the response and recovery phases and as a means to be able to suggest practical methods of creating any recommended improvements. A background is provided of current and evolving incident management systems within the New Zealand context.

A survey was used gather qualitative information from some of the people holding key roles in the response and recovery from the 2004 flood event. Further research included examining records; reports and the notes of debrief meetings and management meetings relating to the events of 2004 and 2005. The author also had personal knowledge and experience of these events, being involved as a Police supervisor in the Eastern Bay of Plenty at the time of both events.

Observations relating to general recovery management practice are also made where it is believed that this may assist recovery efforts for future disaster events.

1.2. Composition of the thesis

The thesis is composed of seven parts. The first chapter introduces the thesis and establishes a literature review of current knowledge of emergency management and incident management systems. Recovery best practice is defined and the need for a coordinated holistic approach is established.

Chapter 2 examines CIMS from its origins in the United States of America, to being adopted into the New Zealand emergency services and Civil Defence Emergency Management sector and legislation. CIMS is examined in detail as it forms the cornerstone of the modernised ECS model.

Chapter 3 examines BCERMS and the management system (ECS) that has been subsequently adapted from BCERMS for the New Zealand context, along with its

similarities and differences to CIMS and its adoption by some regions in New Zealand emergency management.

Chapter 4 examines a case study of the Eastern Bay of Plenty Flood event of 2004. The magnitude and consequences of this event are discussed, as are aspects of the recovery phase relating to communities and the people. The social processes of response and recovery more than the physical reconstruction aspects are considered.

Chapter 5 of the thesis discusses the methodology of research and research interviews.

Chapter 6 presents the results of a research survey conducted with some of the key role players in the flood recovery. Particular emphasis is placed on the incident management system components used in relation to various government and non-government organisations. The effectiveness of the incident mangement systems employed at the time is discussed.

Chapter 7 concludes the research, makes recommendations to improve the incident management system and makes recommendations for further research.

1.3. Introduction

The purpose of this study is to examine the response and recovery from a particular flood event in order to further advance knowledge of these two phases of comprehensive emergency management in a New Zealand community context. An examination and comparison has also been undertaken of CIMS and ECS as management systems using the 2004 flood event recovery as a case study. This will add to the body of research concerning disaster management systems and in particular, recovery regarding New Zealand flood events.

Comprehensive Emergency Management (CEM) was adopted in the New Zealand emergency management setting with the advent of the Civil Defence Emergency Management (CDEM) Act (2002). The CDEM Act is applied to natural and man-made hazards that result in emergency situations. These may be of rapid onset such as an earthquake or a slow onset such as a pandemic influenza (swine flu H1N1) or drought as experienced in Hawkes Bay in 2007(Harper, 2007).

Civil Defence Emergency Management includes the planning, organisation, coordination and implementation of measures designed to guard against, prevent, reduce or overcome any harm or loss associated with any emergency (CDEM Act, 2002). CEM comprises of the "4Rs" that make up the phases of emergency management activities. These being:

- Reduction
- Readiness
- Response
- Recovery

The four phases are interrelated and the effectiveness of each phase affects and is impacted by each other phase (Petterson, 2009). Some of the aspects of 2004 flood event examined may be classified as belonging to the response phase however, as cited by Petterson (2009), with the phases inter-related, recovery cannot be examined in isolation.

Emergency services, along with some government organisations such as Department of Conservation and District Health Boards have employed the CIMS model as a management tool for CEM. Generally, CIMS has been used in the response phase effectively, where command and control define the success of an emergency response.

1.4.0. Literature Review

1.4.1. Disasters

Disasters occur when there has been large-scale injury, death or disruption according to Smith and Petley (2008). Mileti (1999) asserts that natural disasters are recurrent events in natural ecological cycles. It is important to differentiate between an incident, an event and a disaster. Reid and van Niekerk (2008) define an incident as a relatively minor occurrence or episode of brief duration and that may have potential to escalate. They add that it is of limited magnitude and does not exceed the response capabilities of single response agencies or those agencies acting in support of the primary response agency. An event is a larger scale occurrence that may have multiple sites in a number of separate locations requiring a greater coordination in management and all available resources are exceeded.

United Nations International Strategy for Disaster Reduction (UNISDR) (2004) defines a disaster as "a serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community, or society to cope using its own resources". It may be appropriate to include provision for occurrences threatening to occur in this definition. Disasters exceed the capacity of the surviving elements to deal with the consequence using all available resources. They have significant impact on the social fabric of society. Disasters disrupt existing social structures and create difficulties in managing consequences for the normal social mechanisms that are in place (Schmuckler, 2004). Tuohy (2009) found disasters to be social phenomenon due to the human experience of disaster occurring within a current social context.

The Eastern Bay of Plenty Flood event of 2004 may be considered a small-scale disaster or a large scale event as there was no loss of life however, there was sustained and substantial disruption to a number of families, organisations and businesses as well as significant economic loss. Distinguishing between an event and a disaster is a subjective assessment as the boundaries of both overlap and are somewhat blurred. The terms event and disaster are used interchangeably in this thesis relating to the same event.

1.4.2. Incident Management

Incident management can be defined as a system composed of inter-related components functioning together in order to enable the best possible management of an emergency of any scale (New Zealand Fire Service Commission(NZFS), 1998). Incident management systems must provide for the integrated and coordinated management of multiple agencies and provide for tactical and strategic decision making (Reid & van Niekerk, 2008).

Societal expectations of the effectiveness in the way emergency incidents are managed have changed and there is an increased readiness to examine and criticise performance that may be imperfect. (NZFS, 1998). The role of this thesis is not to seek fault and facilitate performance criticism. The author seeks to identify what worked well and why it worked, what did not work well and why it did not and what can be learnt in order to provide communities with more effective emergency management in times of future disaster.

Incident Command Systems (ICS) assist in defining lines of authority however, a more flexible coordination model is more appropriate for emergency managers who are now described by Haddow and Bullock (2003) as typically more recovery coordinator than field general. Emergency management has evolved from quasi-military leadership styles that occurred in the cold war era to a non-autocratic style. Command and control methods although still present, have given way to a consultative coordination approach. It is perhaps more appropriate in the modern era to consider the Emergency Manager more of a conductor, orchestrating the resources and responses for the challenges they face. Quarentelli (1988b) suggests that sound disaster planning should involve developing an emergent resource coordination model rather than seeking to centralise authority. Communities and their organisations have pre-existing systems of authority and emergencies and disasters require autonomous decision –making with concurrent action (Murphy, 2007).These same communities and organisations provide the participants in emergent groups and active participants that authoritarian tendencies will not work well with.

The many and varied organisations involved in modern emergency management have their own sometimes unique organisational cultures. Drabek (2006) points out that cultural difference within agencies do not disappear just because of policy adoption. Knowledge and understanding of different agencies roles, responsibilities and workplace cultures provide the ability for different agencies to work together taking into account how each other work. This applies to government and Non-Government Organisations (NGO). This highlights the importance of having incident management systems that are appropriate for the context of the incident, and are known and understood, and exercised by key role players.

The participation and input of people within the affected community will directly affect the effectiveness of recovery. There is a need for people within the community to be heard by those concerned with managing the recovery. A locally based bottom –up recovery approach is the most effective method according to Petterson (2009).Top down approaches tend not to deliver the requirements of local needs and do not contribute to the development of local capacity to endure future events (Petterson). Top down vertical structures are not appropriate for crisis management in complex multi-jurisdictional settings according to Paton, Johnston and Houghton (1998). In a study of the organizational response to the 1995 Ruapehu eruptions, Paton et al. found that centralized bureaucratic systems restricted response effectiveness by utilizing established decision-making processes rather than adapting processes to suit unusual and often urgent demands. They suggest that planning and exercises can improve this capability in an organization. Paton et al. recommended that attention be given to group dynamics and decision-making processes when developing the inter-organisational networks and organizational structures that form emergency management systems. Ideally, a combination of bottom-up and top-down communication should occur as part of the recovery process to ensure balance between the needs of the community to restore order and strategic goals such as long-term mitigation measures that may be sought at a higher level of governance.

ICS models were studied to assess the impact on Emergency Operation Centre efficiency during the application on 22 EOC's in Texas during hurricane Rita (Lutz & Lindell, 2008). The study found that results were inconclusive as there was significant variation in EOC's in the duties of particular ICS sections. A recommendation for further study of non-fire emergency application of ICS resulted. According to Helsloot (2008), social scientists studying disaster response have also researched and scrutinised ICS (Drabeck, 1985, 2005;

Neal & Phillips, 1995; Schneider, 1992; Wenger, Quarantelli, & Dynes, 1990; Quarantelli, 1988a; Dynes, 1994). Organisations with seemingly military style discipline command and control structures such as Police and Fire Service are more suited to the ICS model whereas civilian style organisations such as local government and social agencies do not operate as effectively under a command and control structure.

1.4.3. Response

Response occurs at the onset of a disaster and concerns the immediate actions taken to preserve life and property and establish stability in these areas. The CDEM Act (2002) does not define response in its interpretation. Response involves the actions that are taken immediately at the onset of a disaster in order to protect life, property and infrastructure assets. They are also aimed at reducing secondary impacts that may occur (Raine, 2006). Response duration may vary with the speed of onset of a disaster and the nature of its impact. Disasters such as earthquakes that result in building collapses that bury many people may have lengthy response phases that involve slow methodical search and recovery activities. The response phase generally involves emergency services and specialist groups for example, urban search and rescue, swift-water rescue, and sometimes military assets such as aircraft and transport. The immediate response is suited to the quasi-military command and control style of the basic CIMS model and this is generally the model used.

Response often occurs amidst a degree of confusion that occurs as information networks struggle to keep abreast of the dynamic situations that occur in a disaster, particularly those of sudden onset. Decisions in the field and at managerial level are often made under duress caused by a lack of timely and accurate information. The passage of information forms a critical part of the response phase. Information management is critical to the efficiency of response to an emergency incident. Information is a prime resource in the planning and management of a disaster. Its flow can fundamentally affect the success in dealing with emergencies (Alexander, 2002). Information, moving both up and down within control and command chains, must be clear, timely and uninterrupted.

Pre-event response planning forms part of the mitigation measures that resilient communities undertake. Plans for response operations are not always adhered to as response agencies adapt to particular events and their consequences (Uhr, Johansson & Fredholm, 2008).

1.4.4. Recovery

The many facets of disaster recovery are defined by Smith and Wenger (2006, p. 237) as

"the differential process of restoring, rebuilding, and shaping the physical, social, economic, and natural environment through pre-event planning and post-event actions"

Recovery begins during the response phase and has short and long term goals to achieve community rehabilitation and restoration as well as reducing future hazards and risks (CDEM Act 2002). However, recovery planning may be carried out as part of the reduction and readiness phases in order to mitigate impacts of hazards and to minimise delays that may be caused by administrative "red tape" such as requirements for measures such as debris disposal compliance with the Resource Management Act (1991).

Recovery plans that are well-conceived and involve and consult communities should be in place long before disasters occur in order to utilise the opportunities that may occur (Berke & Campanella, 2006). This method increases community hazard awareness and knowledge and is likely to be better supported. Rotimi, Le Masurier & Wilkinson (2006) write that the effectiveness of the recovery process is dependent on the pre-event planning and the preparation for disaster. Recovery plans can result in reducing uncertainty, stress and conflict where an understanding of disaster impacts on a community's bonds, the reactions of individuals and families and subsequent psychological and support needs are addressed to rebuild social capital (Sullivan, 2003). Community participatory decision-making is most effective when it occurs without the emotional and social disruption of disaster as suggested by Ward, Becker and Johnston (2008).

The recovery process is characterised by intricate sets of issues and decisions that must be made by individuals and communities (Haddow and Bullock 2003; Mileti, 1999; Norman, 2004). The processes require finding the balance between the immediate needs to return communities to normalcy and longer term reductions in vulnerability and increased resilience. Opportunities can be available for individuals and communities to be safer with improved quality of life and economic security. There are many participants in these processes and this can include those with regulatory roles. The objective of an effective recovery process is to coordinate the participants to create and execute a strategy that will rebuild the affected area and community safer and more resilient as quickly as possible. Sustainable hazard mitigation requires a longer timeframe for recovery decision making according to Mileti. Decision-making must include considerations for long term goals and impacts on future vulnerabilities and resilience to hazards. The core of recovery lies within the community and the recovery process must involve the community being supported, not directed by external stakeholders (Sullivan, 2003).

Recovery action plans facilitate the progression from response to recovery and are developed after an emergency and include the input of recovery task groups (Tonkin & Taylor, 2006). These are set against the template of generic recovery plans and form the "how to" component of executing recovery plans. Recovery Action planning was utilised in the Recovery office for the Whakatane flood event of 2004.

Recovery should address environmental-societal dimensions of flood consequences. Traditionally, the response phase has been focused on the physical consequences to man-made structures and the environment, as opposed to being focused on psychosocial recovery and the psychological and social needs of the people (Spee, 2008). Recovery has involved restoration such as the repair of damaged buildings, infrastructure, and community assets with a view to returning to normality, or a pre-disaster state. Modern society is built on infrastructure and traditionally, focus has been placed on the restoration of this infrastructure immediately after disaster (Angus, 2004). Effective and efficient reconstruction following a disaster is dependent on coordinated efforts of all stakeholders as pointed out by Rotimi et al., (2006). Recovery is about more than achieving physical outcomes, it includes social processes encompassing decision-making about restoration and reconstruction (Mileti, 1999; Norman, 2004). Smith and Wenger (2006) advocate that restoration should include psychological conditions that exist following a disaster including individual and family

sense of wellbeing or reconnecting interrupted social networks. Restoration of critical infrastructure along with preservation and rebuilding the built environment are crucial to full recovery however, familial, social and religious networks must also be restored or rebuilt from the basic level (Berke & Campanella, 2006). Communication networks and social networks form a significant aspect of successful recovery. As disasters are about people, so too is effective recovery about people.

Emergency Management Australia (EMA) includes "the restoration of emotional, social, economic and physical wellbeing" in its definition of recovery (EMA, 2009). Many organisations and agencies may be involved in providing various forms of assistance and Quarentelli (1998) notes that there is much potential for overlap and inefficiencies. These may be overcome as Mileti (1999) points out that some of the main problems and issues during recovery may be foreseen and planned for accordingly.

The CDEM Act 2002 is not a full best practice guide to recovery according to Norman (2004). The Act does however, require and empower councils at territorial and regional level to carry out recovery with a degree of flexibility to suit the local needs (Norman, 2006). Local based recovery approaches are the most effective according to Mileti (1999, p.230), indeed he states "Local participation and initiative must be achieved". Ward et al. (2008) point out that public participation although requiring consideration in recovering planning does not guarantee successful outcomes.

There has been significant pressure in the past to achieve quick results in restoration activities, guided by financial drivers and community pressure to return to normalcy as opposed to using the window of opportunity to recover stronger, more resilient and in a sustainable manner. Mileti (1999) asserts that time is the major influence on local government recovery decisions and processes resulting in safety and community improvement goals being compromised or completely abandoned. This does not sit well with longer time frames that may be required in order to incorporate sustainable hazard mitigation strategies as supported by Mileti. Recent research indicates that individuals and organizations may be more open to changes to the pre-disaster state following disasters (Smith & Wenger, 2006) supporting the concept of participative decision-making.

Mileti (1999) points out that successful local recovery plans have a number of common characteristics. Included are:

- Community participation
- Information based plans
- Organisation tasked with specific roles
- Streamlined procedures that allow rapid decision making as recovery plans are action orientated.
- Damage assessment and evaluation that can be rapidly carried out with relocation as a consideration.
- Financial mangement that can that is capable of obtaining and utilising funding including central government grants where the event recovery is beyond that capability of local government funding.

The plans should consider future land-use policies and building construction guidelines or requirements that reduce vulnerability to identified hazards and limit future development in these zones. Becker et al. (2008) have developed a methodology for pre-event land-use planning within New Zealand based on Australian/New Zealand Risk Management Standard 4360:2004. The methodology provides a logical systematic risk management approach to this aspect of pre-event recovery planning. A number of scenarios including flooding are outlined along with recommended actions and mitigation measures. These can include aspects of structural strengths, weather and flood-proofing or hazard avoidance as mentioned in the risk mangement doctrine. Local government has the ability through the planning process to address these issues by including an emergency management component into short medium and long-term plan processes that they must carry out.

Recovery as a process of actions involving many groups and organisations can be pre-planned with provisions included to address foreseen issues and problems. These plans can

involve consultation with community members. This can result in raising awareness of the hazards that they may face and gaining support for future sustainable mitigation measures and agreed objectives. Plans can include sustainable mitigation measures such as restoration of natural environmental resources with a mitigation function including sand-dunes, wetlands and forestation. The end state of the recovery process is achieved when a community no longer requires external assistance to function in a sustainable manner and restoration of the community's capacity for self help has been restored (Rotimi et al., 2006).

A paradox exists with natural hazard disasters. The very disaster those communities, their resources and infrastructure may be vulnerable to can build future resilience. Evacuations to Welfare Centres expose community members to others that they may not normally interact with. This can result in increased social networks from interaction and shared experience and this can build social capital. Increased social capital contributes to resilience to any future event as does the collective experience of a community that effectively recovers from a disaster.

Assistance for victims forms part of the recovery process. The major source of assistance for victims of emergencies and disasters in New Zealand originates from donated funds and grants or benefits from central government to those that can display loss from the event (O'Kane, 2001). The level of media profiling of flood events will impact on the amount of money that is donated by way of attracting sympathetic support. Mileti (1999) notes that external donor programs that do not have a local input may impede a speedy recovery, as will aid that does not meet the need of the needy. Qualification for this assistance also generally requires the person to have been registered at a Welfare Centre or its equivalent.

It is suggested by Smith and Wenger (2006) that disaster recovery is the least understood phase of emergency management in relation to the research community and practitioners. Mileti (1999) holds a similar view. Spee (2008) found that a limited amount of literature and research exists concerning individual and community long-term psychological and social recovery following disasters especially in the New Zealand context. Recent research and academic writing has begun to assert the importance in creating sustainable resilient communities and infrastructure. The importance of pre-event recovery planning has also been highlighted (Norman, 2006; Saunders, Forsyth, Johnston, & Becker, 2007). Well

thought out stand alone plans and parts of comprehensive plans prepared prior to disasters make for more robust mitigation measures and reduce property damage in natural disasters (Berke & Campanella, 2006). Studies have shown however, that many of these plans are of low quality and many communities have not considered aspects of disaster recovery and hazard mitigation in planning (Berke & Campanella, 2006).

1.4.5. Coordination

Coordination plays a key role in the effectiveness and efficiency of emergency management. The crises management that takes place in the disaster environment involves multiple agencies that may or may not have worked together previously, striving to achieve common outcomes in times of uncertainty with limited accurate and timely information. Research findings suggest that they require lateral coordination rather than top-down command and control according to Helsloot (2008). Quarentelli, (1988a, p. 377) is cited by Helsloot highlighting the importance and difficulties of coordination:

"Co-ordination is what is needed to be emphasised in disaster emergency planning and managing, at least in develop [sic] societies. However, while desirable, organisations typically experience a large number of co-ordination problems during a community disaster."

Many government and NGO are likely to be involved in the recovery phase. Recovery has many components including community networks, relationships, psychological wellbeing, and infrastructure assets. This creates a requirement for sound coordination in order to achieve effective and efficient utilisation of resources and services.

Co-ordination may be defined as making a group or groups of people or things work together to achieve a desired goal or effect. The purpose of the CDEM Act (2002) includes: "..To encourage the co-ordination of emergency management planning and activities related to civil defence emergency management across a wide range of agencies and organisations preventing or managing emergencies".

The significance of coordination in recovery within New Zealand is illustrated by Norman (2004, p. 35) defining recovery as " the coordinated efforts and processes to effect the immediate, medium and long term holistic rehabilitation of a community following a disaster."

Likewise, UNISDR (2009) state: "Emergency management involves plans, structures and arrangements established to engage the normal endeavours of government, voluntary and private agencies in a comprehensive and coordinated way to respond to the whole spectrum of emergency needs".

Recovery assistance is less likely to fulfil the local needs when substantial coordination and interaction among key players and stakeholders is deficient (Pettersen, 2009)

Recovery is a process of working towards an identified desired outcome however, this is not a finite process with an end point (Winkworth et al., 2009). Recovery action from the Matata flood and debris flow event of 2005 continues to be visible almost five years later as restoration work on the Matata lagoons is being carried out and residential redevelopment following damage continues.

Chapter 2

2.0. CIMS

One of the most important parts of the disaster plan is the command structure that is used in the emergency operation (Alexander, 2002). CIMS is an incident management system that sets the rules for providing standardised structures and procedures for managing an emergency incident generally in the response phase. It provides a means of coordinating the efforts of agencies as they work toward the common goal of stabilising an incident and protecting life, property and the environment (National Rural Fire Authority, 2007). It also provides a modular framework that can expand or contract as appropriate to the size, nature and complexity of an incident. Control is manageable due to the modular nature of CIMS. As an incident and the response resources that are required grow, the modular organisation can expand. CIMS utilises integrated communication planning, standardised common terminology and the identification of clear common objectives and priority of effort through the use of Incident Action Plans (IAP). It defines clear pre-designated functions, facilities and resources (New Zealand Fire Service Commission, 1998). The structure is adaptable with the ability to have specialist resources and expertise added. While CIMS was designed primarily for emergency service providers, the system is relevant to anyone handling emergency situations (Ministry of Civil Defence and Emergency Management (MCDEM), 2007).

The origins of CIMS can be traced to California in 1970, when a large number of fires occurred and a number of agencies were involved in response. A need for an incident management system was identified that would allow agencies to work together in an efficient and effective manner (Auf der Heide, 1989; New Zealand Fire Service Commission, 1998). This resulted in the creation of the Incident Command System. This system was developed, adapted and adopted by various organisations and countries, resulting in its use throughout the United States, Australia and, eventually New Zealand.

In 1996, New Zealand Fire Service led the way in New Zealand by promoting a system of standardised incident management within the emergency services of New Zealand as well as

associated organisations such as the New Zealand Defence Force, Civil Defence agencies and the Department of Conservation. In New Zealand, the agencies, which were involved in responding to emergencies developed and instigated CIMS. This was in contrast to what occurred in countries such as the United States, where the Incident Management System was legislated and instigated by government. This is significant, as participating stakeholders have a sense of ownership of the management system that they now utilise. CIMS does not impact on the identity or statutory obligations of participating agencies. It offers control horizontally from the Incident Controller to agency commanders, and command vertically within the multiple agencies making up the structure. It provides opportunity for liaison staff to be present in EOC structures.

Historically, there are many examples of multi-agency response to emergencies where coordination has not adequately occurred and this has been to the detriment of the overall response. The Cave Creek platform collapse in New Zealand on 28 April 1995, resulted in 14 deaths and 4 persons with serious injury. The subsequent emergency service response included a number of organisations including Police, Royal New Zealand Air Force, St John Ambulance Service, New Zealand Fire Service, Alpine Cliff Rescue, and civilian helicopters working at the scene. This incident highlighted the need for a coordinated incident management system (Department of Internal Affairs, 1995). The Royal Commission of Inquiry found that there needed to be coordination between the rescue organisations to ensure that everyone is heading in the same direction. This did not occur at Cave Creek (Department of Internal Affairs, 1995).

Another example of poor coordination in an emergency response occurred with Hurricane Andrew in Florida in 1992. The state and federal response agencies did not work together with common objectives and the support to the victims of the hurricane was delayed or not given. In some cases, the support that was provided was duplicated (Haddow and Bullock, 2003). Subsequent changes after the review of the Hurricane Andrew response saw a much-improved coordinated response to Hurricane Floyd in North Carolina in 1999. This resulted in the saving of lives and property damage being reduced (Haddow and Bullock). The Hurricane Floyd evacuation represented a triumph of US hurricane emergency planning (Alexander, 2002).

CIMS addresses communication planning. This is part of the IAP process. A further benefit of the CIMS system is that comprehensive resource management allows reduction of communication loads. Utilising CIMS enables the ability for effective interagency communications, which, in turn, increases and contributes to the efficiency of the emergency response.

CIMS includes the preparation of IAP. As a result of situation analysis, the planning and intelligence section prepares the IAP. These plans identify the incident response objective of the organisation, the resources that will be required and likely developments of the incident. By identifying the objectives, a common focus of effort can be established for the agencies involved. This will avoid duplication of effort. The plans include measurable goals and objectives to be achieved and are prepared around a timeframe called an operational period (Ministry of Health, 2002). The IAP also looks to the future, by anticipating developments and creating a strategy for the longer term. IAP includes the communication plan with frequencies, cell phone numbers and details of call signs.

The modular design of CIMS allows for escalation and expansion as incidents develop. The Ash Wednesday bushfires in Australia in 1993 illustrated the problem of a lack of escalation in response to a number of fires occurring concurrently. An earlier escalation to a multi-jurisdictional response would have reduced the consequences of this incident (Heath, 1995). The person tasked with overall responsibility for the management of an emergency incident must have the ability to escalate the response. The organisation for CIMS is made up of a modular framework than can be expanded or contracted as required. This enables developments in the incident to be managed with an appropriate sized organisation.

An example of the benefits of a quick ability to escalate a response to a developing situation occurred in Whakatane during the floods of 2004. A Police Sergeant, who was the duty shift supervisor of the afternoon shift, initially dealt with small scale evacuations. The floodwaters rose rapidly within the Whakatane Township and the CIMS structure expanded accordingly with the establishment of a full Emergency Operation Centre and the appointment of an Incident Controller. The Sergeant’s role subsequently reverted to overseeing some of the many evacuations, as the Incident Controller dealt with coordinating a multiple agency response from an established Emergency Operations Centre (EOC).

2.1. Manageability

CIMS also allows control to be manageable due to its modular nature. The structure is such that the organisation is layered in a manner that restricts the number of direct subordinates for the Incident Controller. A manageable span of control is defined as the number of individuals or functions that one person is able to manage effectively. The CIMS organisation works on one person being able to direct, between three and seven operations, or workers as a manageable level. The optimum is five (Alexander, 2002; Ministry of Health, 2002).

The model differentiates between command and control. This is particularly important as it prevents conflict within the multiple agency response structure that would otherwise occur, should an Incident Controller direct how actions were to occur within any given agency. The structure can consist of multiple layers (New Zealand Fire Service Commission, 1998; Ministry of Health, 2002). An Incident Controller can therefore maintain a strategic planning function without getting overly involved in managing purely response functions. This also allows a holistic approach to incident management. For instance, in situations of rescue, the rescue agencies involved may include New Zealand Fire Service, Police and the local Civil Defence Rescue Team. These organisations concentrate on the physical aspects of rescue and often do not necessarily consider the need for psychological treatment of affected persons, a matter for which the Incident Controller can plan for. Such treatment must commence during the response phase because if left unattended to, psychological trauma will develop significantly. Another benefit of this comprehensive management approach is that staff safety within the overall organisation can be managed from the highest level. A safety officer is appointed who works directly with the Incident Controller.

The Incident Controller in a CIMS structure can also turn their mind to the recovery requirements of an incident, whilst the response phase is occurring. This can occur as the Incident Controller does not have direct field command responsibilities in an incident of a magnitude that will require recovery action in the longer term. The Incident Controller has the capability to view the overall situation, planning for response of the overall organisation, which can adapt to developments in the incident in a timely manner.

The organisational structure is adaptable and specialist expertise liaison staff may be added at any time and at any level. This allows CIMS to be used on a wide variety of incident responses and, as such, makes this a generic structure adapted to suit a specific type of incident. In adverse weather events, meteorological staff can be placed into the organisation in areas such as planning and intelligence. This would be appropriate on a larger scale incident. A multiple fatality incident may well result in a disaster victim identification specialist being involved in a planning role.

The use of IAP that incorporate communication plans combined with comprehensive resource management that provides accountability, work together to ensure the passage of information. Information must be received and evaluated as part of the planning and decision making process. The defined roles within CIMS include the Operations Manager's responsibility for assembling and analysing all current information (New Zealand Fire Service Commission, 1998). Information management includes the passage of information to the public via the media. The structure of CIMS includes media liaison.

CIMS can be applied to both short and long-term applications of incident management. This allows its use at both small and large or severe incidents. It is therefore considered suitable for managing all emergency incidents. CIMS application may be suited better to the response phase of incidents as opposed to event recovery as larger scale application requires a greater coordination function than command and control function. The New Zealand Fire Service Commission (1998) asserts that "CIMS provides a means for coordinating the efforts of agencies as they work towards the common goal of stabilising an incident". Recovery goes much further than "stabilising" an incident.

CIMS is arguably deficient in providing coordination and control at levels higher than at incident control point. The multiple agencies involved in a CIMS approach to an incident (emergency or disaster) have a liaison function as opposed to an operation function within the CIMS structure. The term liaison suggests an advisory type responsibility as compared to active participation in planning and decision making processes. By applying a different emphasis and different guidelines to CIMS, these agencies can take active roles within the Operations cell, thus improving coordination within the structure. Wenger et al. (1990) maintains that it is only the quasi-military organisations like Police and Fire Service that are

able to use command and control management systems such as CIMS well as they have the pre-established discipline that is required.

A model that provides increased coordination ability would be beneficial to emergency management efficiency and effectiveness, particularly during the recovery phase.

Chapter 3

3.0. British Columbia Emergency Response Management System (BCERMS)

Like CIMS, BCERMS is based in the incident management system that originated from the United States in the 1970's. The Operation and Control component of BCERMS has four designated levels in its response structure. These include:

- Site
- Site support
- Provincial regional coordination
- Provincial central coordination

Incident command principles are used to manage response at site level and in the organisation and management of Emergency Operation Centres at site support level right through to Provincial Central Coordination level. Applying key management principles that improve efficiency and effectiveness in a standardised way contribute to much of the success of ICS (Justice Institute of British Columbia, 2009). Provincial regional coordination involves coordination, facilitation and information management. Policy direction and coordination of provincial resources also occurs at this level. Operational areas may be defined to coordinate the provincial response within that area (Justice Institute of British Columbia, 2007).

The BCERMS model unlike CIMS has three activation levels. These are:

- Status One, monitoring with minimum staffing of key appointments.
- Status Two, partial activation for moderate events involving multiple agencies. The minimum staffing requirement is increased as required.

- Status Three, is a full activation for a major event likely to have multiple sites and multiple agency involvement. There is likely to be significant evacuations on a regional scale.

These levels of activation are not currently included in the CIMS manual however, they will be included in new local and regional CIMS manuals (J. Thompson, personal communication January 13, 2010).

The Canterbury Civil Defence Emergency Management Group (CDEMG) created the Emergency Management Training Centre (EMTC) as its training facility. In 2006, EMTC formed a working relationship with the Justice Institute of British Columbia, Canada (EMTC, 2009). The British Columbian model was adapted to the New Zealand environment and EMTC began conducting courses under licence for Tier Two (EOC) and Emergency Coordination Centre (ECC),Tier Three (Controller and Senior Manager) levels. At Tier One, Incident Control Point (ICP), CIMS is used.

EOC facilitate responses beyond regular capabilities in multi-incident and, or multi-agency responses. These incidents may require direction, multi-agency coordination and resource support. ECC are responsible for regional coordination at CDEMG level and these are defined by geographic boundaries. The role of ECC is to coordinate and facilitate the regional information, direction and resources. Support is provided to local responses and coordination is provided for regional agencies.

ECS is the system Environment Canterbury has adopted from BCERMS and the principles of BCERMS apply to ECS (J. Thompson, personal communication January 13, 2010). The ECS term was used in order to avoid any confusion with CIMS. ECS is more definitive in the application of the principles and responsibilities than CIMS. According to EMTC, "the structural principles outlined in the New Zealand CIMS manual apply equally to the ECS systems" (EMTC, 2008). CIMS is more incidents focused for example, relying on lead agencies and being subject to command and control. The training for ECS at Tier three splits into specific separate courses for Operations, Planning/Intelligence and Logistics. Function specific assessment has been developed. CIMS level 4 courses teach practitioners all functions on the one course without specialisation. No training resources that incorporated

function specific assessment were created for CIMS. ECS provides greater definition and detail of specific functions and responsibilities within EOC's and this is illustrated with the detail included in EMTC's manuals compared to CIMS training manuals. ECS training is therefore more effective in preparing EOC staff for their duties.

ECS advocates management by establishing clearly defined objectives to be achieved in a specified time frame. These time frames are named operational periods and are determined predominantly by the event's dynamics. EOC action planning is achieved by "management of objectives" where collective agreement of objectives occurs in order that all EOC personnel have ownership and understanding of the overall direction of plans. Risk management is formalised. ECS establishes a Risk Management function within the organisation where CIMS has a Safety function. Within ECS, the safety function is overseen by Risk Management.

CIMS remains the cornerstone of the ECS model. Summarising, BCERMS and indeed ECS may be viewed as second generation models of CIMS, modernised to encompass the multi-agency and comprehensive emergency management approach to incidents, emergencies and disasters. Incident mangement models should be living tools that evolve as emergency management evolves through research, experience and development.

Chapter 4

4.0 Floods: A Case Study

Floods are New Zealand's most frequent natural hazard (Institute of Geological and Nuclear Science (GNS), 2007). There are many risks associated with floodwaters including property damage, drowning, hypothermia and disease. Floodwaters can be contaminated by the collapse of sewerage systems, creating pollution hazards (Smith & Petley, 2008). The major cause of tangible loss is physical damage to property, especially in urban areas (Smith & Petley). Observations in many western countries show that survivors of catastrophic flood events suffer some form of mental illness directly related to the flood event and these psychological problems may last up to five years following the flood event (Nott, 2006).

The weather of the Bay of Plenty area is related to the Interdecadal Pacific Oscillation (IPO), a climate cycle that can result in heavy rainfall and flooding. The IPO has been in a negative phase since about 1998 (Chiswell, Bowen & Mullan, 2001; Ministry for the Environment (MFE), 2009). This weather cycle contributed to the events of 2004 in the Eastern Bay of Plenty. Severe weather along with a swarm of earthquakes struck the Eastern Bay of Plenty area in July 2004. The 1987 Edgecumbe earthquake had increased flood risk in the areas of the district where ground levels had dropped by up to 2 metres preventing gravity driven drainage of floodwaters. The swarm of earthquakes coinciding with the rainfall is likely to have aggravated land slippage through ground saturation. Heavy rain caused broad flooding and a number of landslips occurred with saturated hillsides (Environment Bay of Plenty (EBOP), 2007). The extent of flooding as at 2.00pm 19th July 2004 is shown at Appendix1. The Met service did not have the capability to provide forecasting specific to the Eastern Bay of Plenty at the time and reference was only made to heavy rain in Tauranga. This remained the case in 2005 at the time of the Matata flood and debris flow (Debrief, July 14, 2005). Weather radar coverage did not exist for the area.

The 2004 flood event resulted in over 3200 people being evacuated and 400 farms being damaged (GNS, 2007). As at 19 August 2004, about 644 people were in temporary housing and overall damage from the flood was estimated to cost in excess of $100M to repair

(Debrief, August 19, 2004). One landslide at Bryans Beach near Opotiki resulted in a fatality and two other event related fatalities occurred in the district (Debrief, August 19, 2004). People were isolated due to all roads to neighbouring districts being cut off by flooding and slips and many roads within the district being likewise affected. Isolation added to the distress residents were experiencing from flood impacts (EBOP, 2007). As at July 2004, Whakatane District Council did not have a Civil Defence Emergency Management Officer. One would be appointed in August 2005 (Debrief, August 3, 2005), following another declared Civil Defence state of Emergency that year relating to the Matata Debris flow event.

111 of the 141 homes deemed uninhabitable did not have contents insurance (Whakatane state of emergency lifted, 2004). Domestic violence increased following the flood event, jobs were lost and schooling was disrupted for many children (EBOP, 2007). All schools and childcare facilities in the area were closed, contributing to the stress that parents experienced (Houghton, 2009a). Some businesses were not able to operate and where the employees were employed casually, this impacted financially and psychologically with the addition of stressors including an extended period of a lack of normalcy in their lives. This normalcy included day to day social interaction and bonds. Social networks include those formed in the work environment and theses were disrupted A significant number of Awatapu residents are seasonal workers and these were likewise affected.

At the time of this flood event commencing, the author was the Police shift supervisor at the Whakatane station. The authors' role was overseeing and taking part in the emergency response. The task of warning residents of Muriwai Drive was quickly overtaken by the speed of the rising floodwaters. A five metre boat was commandeered from a backyard in Muriwai Drive and used to evacuate families and their pets as floodwaters entered houses and covered car roofs in the street. Later, evacuations took place in the Awatapu area as waters began rising and these floodwaters had the additional hazards of sewerage contamination, along with rats and eels swimming over submerged footpaths.

The first that some evacuees knew of the flood event was when they were awoken by emergency service staff knocking on their doors and seeing people being carried out to Army trucks in flood waters on the street. Evacuations in the Whakatane District involved

many diverse elements of differing community groups ranging from wealthier river-front residents of the Whakatane Heads area to residents of different socio-economic profiles from the suburb of Awatapu and rural areas. This included the full time employed, seasonal workers, pensioners and beneficiaries. The effects of the flood event differed in consequence for the various economic and social characteristic subgroups of its victims. The attitudes of those evacuated varied considerably from young adults that appeared to view the event and evacuation process as an adventure to the elderly that appeared in shock and felt a loss of control and independence.

CIMS was used throughout the flood response by the emergency services such as Police and Fire Service that were involved, as this is used as a matter of standard practice. CIMS is suited at this level and for this role in 'front-line" first response where the main function is the immediate protection of life and property and any other requirements at this stage are passed to other agencies.

Edgecumbe and Whakatane West (Awatapu) were areas that suffered major flooding. These two areas contain some of the most disadvantaged communities as shown by a deprivation index score of either nine or ten as at 2001(EBOP, 2007). Factors considered in this score include high unemployment, low income, overcrowding no car, no phone, single parent families, and living in rental accommodation (EBOP). These factors lead to pre-existing vulnerabilities to events such as the flood. Recovery as a complex process is dependent on material conditions and social forces present in the community before a disaster (Petterson, 2009).

The physical environment and psychological environment created by the flood caused health problems for many. The environment provided physical, visual, olfactory, and mental stressors. The presence of cherished items floating in contaminated floodwaters in houses is an example. Existing medical conditions such as asthma were aggravated, with compounding issues such as damp living conditions from flooding. (Saunders & Coomer, 2006). The stressors remained for a number of evacuees, who upon returning to their addresses were faced with contaminated wall linings and floor coverings that were eventually removed but not immediately replaced due no insurance or settlement delays. People in the community continued living in the conditions for lengthy periods that included

the coldest and wettest months. A period of "social turbulence" was created when the flood occurred as the social environment of the evacuees changed rapidly (Gordon, 2008). The sense of security within the community was shattered, and as Spee (2008) found at Matata the following year, people no longer felt safe in their own community.

The flood event occurred before the Civil Defence and Emergency Act 2002 had been applied in the district. The Whakatane District Council was using CIMS as the incident management system for the response organisation. Emergency management planning in the Eastern Bay of Plenty was not well developed at this time. There was no current Emergency Plan or Recovery Plan prior to the event at district level. The organizational structure and operation of the subsequent Recovery Office was developed based on the Manawatu-Wanganui 2004 flood Recovery Plan. The declaration of a state of civil defence emergency was made and the event managed under the 1983 Civil Defence Act provisions. This included the appointment of a Recovery Facilitator (Norton, 2004).

A Recovery Manager or Facilitator had not been identified for the Eastern Bay of Plenty District prior to this event and the district was fortunate that the Manawatu-Wanganui flood event earlier that year had provided experience to the person that would full this role. The Manawatu-Wanganui flood event in itself was significant as the Horizons Regional Council, the territorial government body for that area was the only council at that stage to have their emergency plan as required by the CDEM Act (2002) in place and approved by Central Government (Hudson &Hughes, 2007). The Bay of Plenty Region did have a Civil Defence Emergency Management Group with agreed response and recovery plans (Davies, 2004). However, the Manawatu-Wanganui Regions' recovery plan was used for guidance for the initial recovery planning in the Eastern bay of Plenty (Davies). The local Regional Council, EBOP did not declare a state of civil defence emergency and they did not activate their headquarters in support of the districts (Opotiki had also declared as a result of flooding) as this did not appear necessary (Davies; J.Thurston, personal communication October 27, 2009). This was a contentious issue to some commentators as Tauranga also experienced significant flooding resulting in three districts of the Regional Council experiencing major events at the same time.

A Recovery Office was created on 21 July 2004 and operated until 3 September 2004 when it was disestablished. Recovery responsibility reverted to the local authority and relevant government and NGO. This office was responsible for recovery in the Whakatane and Opotiki districts. The organisation of the recovery office consisted of four units (Welfare, Rural, Infrastructure and Economic). These were supported by a Planning and Reporting unit and a Communications unit. An Environmental unit was not created as it was considered that EBOP would manage environmental issues (Davies, 2004).

The flood was contextual in that the effects and consequences had a relationship with the season at the time. The season affected industry and employment such as seasonal work, stages in agricultural and horticultural farming cycles and the size of the population which is markedly greater with tourists and holiday-makers in the summer months. Tourism industry impacts related to reduced rates of motel occupancy and restaurant customers. Farming, in particular dairy farming impacts were much greater due to this being a busy period in faming productivity. The context was also relevant in the urban sector. In July, a number of Awatapu residents rely on benefits between seasonal work opportunities. The recovery phase lasted many months for some families with the loss of uninsured or underinsured possessions. Many families had the situation of both parents working long hours at the expense of time that they spent with their children.

“Children are suffering emotionally, neglected, -parents out working long hours[sic]. Other issues with stress and emotions causing problems” (Eastern BOP Flood Recovery Office Welfare Sector, August 5, 2004).

The story of this flood can shed light on the social needs of evacuees and can help to identify deficiencies that may have been present in order to provide guidance for improved practice in future events. The evacuees were made up of a number of vulnerability subgroups that included the elderly, the young, and the physically impaired and solo parent families within lower socio-economic groups. A number did not have the ability to self-evacuate when the floodwaters came. Some of the sub-group characteristics overlapped, for example, elderly persons with physical impairments and in a lower socio-economic group, the combination making such people especially vulnerable. Stressors experienced by some

of the flood victims created lasting physical, psychological and social consequences on a personal and community level.

Current evidence suggests recovery is most effective and likely to be less protracted when it commences from the moment of impact (Sullivan, 2003). Recovery effectiveness is driven by the effectiveness of the other phases of comprehensive emergency management and the phases do not work in a linear timeline, with often concurrent activity of the different phases occurring. During the response phase in Awatapu, Army Unimog trucks were driven through the flooded residential streets effectively creating bow-waves. These knocked over the front fences of properties creating further damage that would require action to repair from owners as part of a recovery phase. This created ill feeling from the residents of Awatapu towards those operating the trucks and added further to the sense of a loss of control. A loss of trust with those involved in response and recovery operations is detrimental to the overall recovery process that includes community participation. The use of Army Unimog trucks for transport for evacuation and assessment purposes was not part of any pre-existing plan; indeed it was an ad-hoc decision to request Army transport support recommended by Police at a meeting on the evening the flood event occurred. Pre-existing emergency management plans must include identification of suitable transport resources and parameters for their operation that take into account the Fire Service perspective of minimising further damage caused by response activities. Disaster recovery is perhaps the least planned for and neglected aspect of emergency management, indeed Angus (2005) has suggested that a poor understanding of recovery exists with little consideration having been given to the implications of recovery in New Zealand.

Chapter 5

5.0. Research

5.1. Questionnaire Method

This research includes a case study examining a specific event. Methods used incorporated interviewing, personal observations and experience and the observations of others along with document analysis against a template of a literature review. A case study relies on multiple sources of evidence and data collection is guided by previously developed theoretical propositions according to Yin (2009).The research was conducted in a qualitative and evaluative manner by way of open questions to determine participants' experience of emergency management model and system practice and the impacts of this on disaster victims. This included anecdotal evidence. Qualitative research relies on non-numerical data collection or explanations based on the data source, in this case the participants in this survey. These explanations are generally reliant on participant's observations, experiences, opinions, notes and subsequent personal analysis of events. Qualitative research is a study of the representation of the experience; in this research it is the experience of flood recovery process.

Qualitative research is a suitable method for determining how and why particular outcomes were produced and assessing unplanned outcomes and impacts. The content of recorded interviews is analysed in order to derive valid inferences from the texts. With qualitative research, the data sources can be selected based on contextual criteria to ensure relevance. Interviewing allows the researcher to clarify ambiguity and to focus on relevant content. Depth may be pursued in particular areas of interest during the interview as part of the investigative process. The use of multiple observers in a single study is a useful strategy to add accuracy and depth to the method of research (Denzin & Lincoln, 2003).

Qualitative research is interpretative (Denzin & Lincoln, 2003). Qualitative interpretations are constructed as the texts of interviews are examined by the researcher in their attempt to make sense of the information that they gathered. A potential weakness with this method

may occur with the researcher taking a non-neutral position in the selection of participants or the selection and formulation of questions. Denzin and Lincoln talk of the interview not necessarily being impartial or neutral as two people create the outcome of the interview and both have personal characteristics and histories that influence the interview. This raises the importance of validation which is able to occur through the research interviews being auditable and confirmable.

In the later part of 2009, contact was made with a number of people that held key positions within government and non-government organisations involved in the Eastern Bay of Plenty flood response and recovery. Participants were provided the information sheet (Appendix 2), the question sheet (Appendix 3) and the consent form (Appendix 4) in order that they fully understood the nature of the research and their rights as participants if they agreed to participate. Interviews were conducted in the workplace and private homes following confirmation of informed consent. A number of participants interestingly had maintained their own desk files and records as they stated “in case it happens again”.

Interviews were held with ten participants and comments from these interviews have been included in this thesis to support observations and examination of the 2004 flood event.

A list of the organisation that participants belonged to at the time of the disasters is shown at Appendix 5.

All interviewees consented to participation. Interviewees were selected based on their participation and roles during the 2004 flood event. The research questions were designed to gather information about an ICS model’s effectiveness and impact in the response and recovery phases of a real disaster that had occurred. The focus of the interviews was to collect and understand the participant’s experience and observations of their involvement in two phases of the flood event. The information was gathered with a view to seeking improvements in effective emergency management systems and practice.

5.2. Ethics

This project has been evaluated by peer review and judged to be low risk research. It has not been reviewed by a University Ethics Committee. The thesis was also assessed as low risk by the Ethics Committee of the Health and Disability Services Policy Group of the Ministry of Health. This assessment was required as research participants included a community health worker.

The research involved participants responding to questions of organisational systems and practice and observations of their impacts. The study was retrospective and did not involve personal human health conditions. The participants are not identified by name, where names formed part of the participant's response; the names have been removed and replaced with a letter to ensure anonymity as this was a condition of participation.

Chapter 6

6.0. Results

Interviews were carried out between November 2009 and January 2010. Although this was over five years after the flood event occurred, the recovery phase had had taken place over an extended period and a number of participants had kept personal records or desk files relating to the event. Information was also collated from Whakatane District Council records; various debrief notes and reports prepared by those with key roles in the flood recovery such as Peter Davies, the Recovery Facilitator and Sarah Norman, the MCDEM Facilitator for the Recovery Debrief (Debrief, September 14, 2004).

6.1. Synopsis of Interview Results

It became apparent that a number of key people involved in the recovery did not have relevant emergency management type training, position descriptions or standard operating procedures in place during the flood recovery phase. A common pattern emerged of participants not knowing the roles and responsibilities of other organisations that were involved in the recovery phase. Very few had experience of similar events at the time the flood occurred in 2004 however, the event was to provide a valuable skill set to be used in 2005 for the Matata event. Those that did have experience of a disaster were generally involved in the 1987 Edgecumbe earthquake and that experience was vastly different by nature of the event and its historic nature. “Flying by the seat of your pants’ was a common term that was used by the survey participants. This included emergency services as well as NGO and occurred at more than one level within these organisations.

Incident management systems were not in place generally within the organisations that were involved and this became apparent through coordination and communication issues that arose. Where this occurred, information was sought to find out what actually happened with the view to seek ways that improvements could be made for future events particularly in the

context of an Eastern Bay of Plenty event. Research highlighted the possible benefits of a coordinated approach to flood recovery where this had not occurred.

The results of this research indicated that there are distinct issues that relate to the distinguishing demographic characteristics of the community that has been impacted by the disaster. In this case, an above national average proportion of Maori within the community highlighted the need for a strong consultative and participative approach that recognised and took account of cultural aspects including cultural leadership in the recovery process. Within the Bay of Plenty, 27 per cent of the population identify themselves as Maori (Statistics New Zealand, 2007a) However, the Eastern Bay Of Plenty has a significantly higher proportion with Kawerau having over 61 per cent and Opotiki having over 59 per cent, featuring in the top four Maori populated districts for New Zealand (Statistics New Zealand, 2007b). Whakatane ranks 14th out of the 73 districts within New Zealand (Statistics New Zealand, 2007a). The national average percentage of Maori population is 14.6 per cent (Statistics New Zealand, 2007b).

6.1.1. Communication of Recovery Requirements

Communication networks form an important part of managing disaster recovery and are significant to the effectiveness of the incident management system that is used. In this event, recovery requirements were communicated to the Civil Defence Headquarters, the Recovery Office and to the many organisations involved in the recovery by various networks and methods. Regular meetings within the Civil Defence organisations occurred with the government and NGO that had responsibilities and obligations to the flood victims.

Person F:

> *"Managers were communicating directly with Council (Whakatane District Council)"*.

Communication was also from the bottom up from people in the community however, there were communication problems.

Person F:

> "*There were people that felt that they were not heard. People that were traumatised were not sure how their emergency needs were going to be met".*

Person D:

> *"There was a system in place but the communication was not good. Who turned up did whatever they could."*

> *"When we shifted to the Army Hall, communication wasn't good. Because of the deterioration in communication, a number of people who had suffered hardships in one form or another were given the run around before they could find the assistance they needed."*

Person G:

> *"These were communicated from the people and they felt like they weren't being heard by the Council. They had major problems communicating with the Council. They felt like they were being dictated to. People would say that there was a big meeting today and they are not hearing us".*

This created tensions between the civil defence organisation and the affected community that may have been able to be avoided. Participation does not occur when a person is allowed to speak but is not heard or their view considered. The victims of the flood were

experiencing a sense of powerlessness and as Spee (2008) points out, it is important that they are directly involved in their own recovery in order to provide a sense of hope and control in their lives.

Communication of requirements and expectations sometimes was more reliant on the personal attributes and abilities of individuals that held key appointments as opposed to organisational planning, preparedness and procedures. Where the individual had pre-event established relationships and existing knowledge of other organisations and individuals that they were working with, communication and subsequent recovery activities were carried out much more efficiently.

Person E:

> *"Ad-hoc tasks were given by 'N'* [name removed]. *'M'* [name removed] *from Red Cross may have also given me tasks. 'N' was familiar with my skills and organisational abilities."*

In some cases, organisations such as Police and Fire Service had a liaison officer present in the Civil Defence Headquarters (EOC) on full-time basis relaying information and requirements to the management of their own organisations. This suited their CIMS style of operating.

Person J:

> *"Executive decisions were made through Police management and the CEO of Whakatane District Council (the Controller)."*

In other cases, the communications were not so clear. Another respondent involved in the Welfare Centre stated that recovery requirements and expectations were not really communicated to their organisation.

Person D:

"..We just got in there and did what we thought we were supposed to doing".

"We were left without knowing how long we were expected to continue our role".

Person D:

"*They were not communicated by the District Council. Our recovery requirements came from within our own organisation. There were dynamics of conflict, unclear responsibilities and lack of structure. It changed when a Recovery manager was appointed"*

6.1.2. Welfare Needs Survey

The welfare needs survey also formed part of the method that recovery requirements and expectations were conveyed to the recovery office and this had its challenges. The survey was provided by MCDEM and was used by the Recovery Office to collect information. Comments suggest that the survey process was difficult, that it was poorly worded and that it did not relate specifically to a flood event. The survey created stress on people that were already stressed.

Person I:

> *"Questions were not appropriate to the nature of the event. We stressed out people by asking all these dumb questions."*

There were many questions that did not relate specifically to damage of a flood nature as the form was of a generic nature.

The survey did not come with a database and this had to be created. By conducting the survey, an expectation was created that there would be a quick response to the needs that were identified in the survey and this did not occur.

Person I:

> *"The main problem was the survey. The survey was still in draft form. It was a nightmare. It did not have a database and the survey needed a number of changes. The processing of the information was slow. We created an expectation that there would be a quick response to the survey."*

Person C:

> *"The Welfare needs survey had no electronic means of inputting data and that took some time."*

This survey had been commenced in order to provide reliable data to establish an impact assessment and needs that would allow the development of support packages from central Government and other appropriate agencies (Davies, 2004). There were a number of different agencies that took the survey to the flood victims. The survey took longer to

complete than anticipated and was not ready in time for inclusion as part of the Government support package submission by the Whakatane District Council. The delays in obtaining survey results effectively delayed the ability to respond to the flood victims' most requiring assistance (Debrief, 14 September 2004**).** It took until 25 August 2004 before reports from the database were forwarded to welfare groups that had ongoing responsibilities in the recovery. This included requests for counselling support that were sent to Child Youth and Family Service and Victim Support (Summary of Survey Result, 2004). Delays in the provision of counselling support hinder the effectiveness of the support where early intervention and assistance are required.

The welfare needs survey was a tool used to collect data for the purpose of establishing the needs of disaster victims and to provide accurate data that could be used in decision-making. Information flow and networks form an important part of any incident management system as do the tools that facilitate information flow. The survey as a tool was in its infancy and although it had been used earlier in the year during the Manawatu-Wanganui event, insufficient time had passed to allow a thorough evaluation of the survey and modifications to improve it.

As one of the many facets of the science of emergency management, the welfare needs survey must be dynamic and evolving.

6.1.3. Debriefing of Flood Victims

Paton (1996) draws a distinction between educational debriefing and psychological debriefing. Educational debriefing facilitates self-referral by providing information and opportunities, whereas psychological debriefing involves the mangement of the post-trauma consequences and these debriefings are conducted by trained mental health professionals. There were a large number of people in the evacuation centre and debriefing generally was of the educational form. Paton (1996) suggests that educational debriefings are not as effective as psychological debriefings but are influenced by the size of the group and resources available to carry out debriefings. Early intervention to trauma influences the reduction or prevention of longer-term problems stemming from experiencing traumatic

events (Creamer 1996). The management system that is used impacts on how issues affecting disaster victims are managed and communicated within the multiple agencies that form the emergency management structure. Where roles and responsibilities are not clearly defined, some victims that require psychological debriefing may not receive this or it may be delayed to the detriment of early intervention and subsequent recovery.

Some informal debriefing did occur in the form of what Spee (2008, p. 8) describes as "constructive narrative perspective" where people were encouraged and given the opportunity to talk of their experience and feelings of the event with members of organisations such as Victim Support.

6.1.4. The Main Welfare Centre (Whakatane War Memorial Hall)

Most evacuees from the Whakatane area that went to a Welfare Centre went to the Whakatane War Memorial Hall and later to marae or to stay with family or friends. Some evacuees from out-lying areas went to Kawerau. This thesis examines the situation and issues arising at the Whakatane Welfare Centre.

A feeling of a lack of preparedness was experienced from the outset.

Person J:

> *"There was a lack of communication until the headquarters was set up properly. Whakatane District Council had not planned for such an event for example, no one knew about the emergency evacuation centre and what was required and where one was. There was no established registration practice"*

> *"Every single emergency service organisation was flying by the seat of their pants as there was nothing in place at the time."*

Initially, the basic needs of evacuees and other displaced persons were provided for and the importance of how these necessities were provided was identified early.

Person A:

> *"We attended to immediate needs. There was a guy bought in from a vehicle out by Pekatahi Bridge. There were wet workers bought in that were working on drains. They were given hot drinks, refreshments and towels to warm up a bit. We dealt with the evacuation of the Tuscany Villa Motel. People were bought to the Hall from there. We billeted out the owners. People who were staying there moved on or out of the district."*

Person B:

> *"If you think of Maslow's triangle, how you provide the necessities is so important. People are dislocated in a strange location with no sense of direction or what is happening next. There is almost a need to provide control for these people."*

Problems existed within the Welfare organisation that stemmed from a lack of pre-event planning. This had a significant impact at the time of the evacuees arriving at the Whakatane Memorial Hall. The evacuation facilities had not been identified prior to the flood event and there had been no planning or preparation for an evacuation. At the commencement of evacuees arriving, there was a major lack of resources to provide for the basic needs such as feeding and suitable bedding.

Person A:

> *"We went to the hall and started with a teaspoon. We had to set everything up. We were telling the Council what resources we required. We dealt with immediate crisis response such as being dry, refreshments and shelter."*

There was also a lack of comprehension on the size of the overall evacuation or what the duration of the evacuation might be.

Person E:

> *"There were rumours about how many evacuees to expect with one estimate given to us of 1000 to sleep there on Sunday night."*

It was some time before an accurate assessment of the overall extent of flooding in the Eastern Bay of Plenty was known and this can partly be attributed to the difficulties in providing the Civil Defence Controller accurate and timely details of what had occurred in the field. In the initial stages of the disaster, such information was being passed through the emergency services such as Police and Fire Service but liaison personnel of these organisations were not in place at the District Council to pass the information directly to Civil Defence Headquarters. The lack of information resulted in one agency doing its own reconnaissance.

Person A:

> *"At this stage we had very little information from the Council. We rang them every hour or so. We were definitely not prepared for the numbers that were bought in. No one had given us an indication of the number of people that were involved coming to the evacuation centre and we had something like 750 come in the first*

12 hours. We did our own little recce, we went down to see what Awatapu was like."

This occurred at a time when Awatapu was being evacuated with floodwaters rising that eventually made the area inaccessible to all but specialist Army trucks. The situation for the 2005 Matata event was much improved with the hall being set up for 600 evacuees by 6.30pm on the evening of the event which gave ample time for the reception of evacuees (Debrief, 14 July 2005).

The physical environment of the hall was of concern with a lack of adequate heating, which especially affected the elderly and problems were experienced in handling people confined to wheelchairs (Debrief, 19 August 2004).

Person E:

"If L [name deleted] *had not arrived with two giant gas heaters the people would have frozen. The church paid for the running at $100 a day."*

There was a lack of toilet and shower facilities for the elderly and disabled at the hall and this was also an issue in 2005 (Debrief, 14 July 2005). At the time of the 2005 evacuation, there was only one wheelchair at the hall with flat tyres (Debrief, 14 July 2005). The hall did not have an emergency power system which potentially could cause further distress to evacuees including the young and elderly in the event of power failure, this being a possibility in adverse weather events. No medical kit was available and St John's First Aid Staff were not present at the hall. A debrief for the 2005 use of the hall as an evacuation centre identified that it would have been beneficial to have someone at the hall to refer medical issues to and to deal with minor issues of this nature, along with having a first aid kit in place (Debrief, 3 August 2005). In 2004, people evacuated at short notice had left important medication behind (Debrief, 19 August 2004).

Person A:

> *"There were people standing in line to talk to me about their needs, for example, a person that had left their heart pills behind".*

This medication had to be retrieved from the flooded areas which were now contaminated tying up Police and Army resources or arrangements had to be made through the Whakatane Hospital dispensary. It is not unusual for those suffering trauma to have difficulty remembering important matters such as taking their medication with them when they are evacuated at short notice. Difficulty can also be experienced processing important information in times of trauma and emotional distress. Spee (2008) talks of people were having been traumatised and being unable to process much information following the Matata event of 2005. Cognitive competence was disrupted where immediate action was required with no time to plan (Gordon, 2008). Gordon makes comment that the evacuees lacked time to think or make decisions and were told what to do by emergency service staff.

Other issues arose about the suitability of the hall in its current state.

Person E:

> *"The hall was an inappropriate place for so many people to be left for so many days. There were issues with sanitation, security and people leaving their children at the hall as a babysitting service. Some people took advantage of the free food and knowing how many to cater for was an issue initially."*

Communication problems at the hall were compounded by a lack of resources. There were only two telephones available and the Welfare Manager for the Whakatane response was working out of another location at the District Council building in the EOC. When the hall was used as a Welfare Centre in 2005, a radio-telephone was installed in the hall providing a direct link with the EOC (Debrief, 14 July 2005).

There were difficulties in fulfilling the needs of evacuees to go home and view the damage to the properties without creating further problems that included being exposed to the contaminated floodwater damage.

Person E:

> "*After people returned to Awatapu to have a look around, they returned to the hall wearing soiled footwear. They had no other footwear. Babies and children were crawling around on the floor which was contaminated with unsanitary matter from shoes. I was extremely concerned about the outbreak of disease as a result. Some foot washing facility could have been set up at the door".*

6.1.5. Rapid evacuation consequence

Emergency service personnel often operate with a degree of urgency, particularly in situations where there is the threat to life or property and this carries through to the manner that the evacuations are carried out. The degree of urgency and behaviour of emergency service staff evacuating people heightened shock and commenced cognitive disruption for the evacuees and this exaggerated the trauma and impeded individual recovery (Gordon, 2008). The consequence of this approach to evacuations can be disempowering for evacuees as they lose a sense of any degree of control in their lives. Gordon points out that this evacuation trauma may be mitigated. A better approach for future events would be for emergency service personnel to provide evacuees a few moments to gather their thoughts and any necessities such as medication that they may need. Gordon recommends that personnel involved in evacuations should attempt to allow evacuees to make their own decisions and act on their own will, albeit that by necessity this may have to be a relatively quick process. Organisations such as Police and Fire Service could train their field supervisors on the psychological aspects of dealing with disaster victims, especially evacuees.

6.1.6. Defined roles and responsibilities

The CIMS approach suited emergency services responsible for the immediate response phase and this included the initial evacuations. Placing emergency service liaison officers in the EOC increased coordination and efficiency.

Person J:

> *"It worked well as it bought agencies together. The liaison officer was important in that. It was hard to give up a staff member for an admin job but it illustrated the importance of coordination. It took a lot of work off the front line as it streamlined what was being done by using external resources through a coordinated approach e.g., road closure enquiries through Civil Defence Headquarters 0800 line set up and people directed to that. This stopped conflicting advice including the media with changing situations of road closures.*
>
> *Each agency knew exactly what was happening and the evacuation was more efficient."*

The EOC utilised the CIMS model, however, the Recovery Office did not.

Person C:

> *"The EOC was set up on a CIMS model but not the recovery. There was a decision early on, on what were the key issues and a structure was created."*

> *"Although there was not CIMS, there was coordination and interaction within the organisation."*

Person H:

> *"The way the Recovery Office was set up did lend itself to the CIMS structure. Although we didn't have a CIMS structure, it operated along those lines, perhaps more accidently or perhaps Peter Davies had set it up that way in the beginning."*

> *"It made sense to be broken up like that, perhaps if it had been done in a formal way, some of those groups might have been more encompassing."*

A lack of knowledge of roles and responsibilities within the welfare organisation existed in some areas creating confusion within this organisation and by evacuees. This affected the delivery of resources and services to those that may have needed them.

Person E:

> *"On the Friday I discovered there was a correct procedure to be followed in the civil defence plan. I had no idea that civil defence headquarters and Welfare were separate and that there was a welfare section until Monday afternoon. This should have been made plain to volunteers on the Sunday. I would have been more than happy to have been given the job of sweeping the floor or otherwise taking any orders people wanted to give. What I did find was that people were more than willing to accept orders from me- even though I was somewhat terse at time. The majority of volunteers did not care what job they were given as long as they were doing something useful."*

The point of contact people within the evacuation hall were not aware of mental health counselling services that were available to those that may have needed them from the time of being evacuated.

Person E was at the evacuation centre as a person that people went to for information.

> *"There appeared to be no help in the form of counselling. I was not aware of any mental health type agencies available when I was at the hall."*

The recovery organisation experienced difficulties initially as organisations that had not worked together previously clarified understanding of each other's roles and responsibilities. This occurred where there was a lack of pre-event relationships and networks between the organisations.

Person H:

> *"In the beginning, we didn't have a good understanding of different organisations roles and responsibilities. There was doubling up in some cases of support provided. In the rural sector there may have been some that didn't get the support."*

Person C:

> *"At the start it was difficult as we weren't used to working together. There were difficulties more at the trust style organisations compared with the big* [government] *ministries. There was difficulty trying to work out their roles and what they could offer. They had to get used to the idea that we were working as a collective. As time went on, coordination got better."*

> *"Planning and pre-event interaction would have improved this."*

"We didn't have a recovery framework and that would have helped as it was slow at the start."

The lack of communication improved over time however, problems continued with coordination that affected the efficient use of resources that may have been better utilised.

Person G:

"I didn't think I was part of a coordinated response. I went to one meeting and said that this is what we will offer."

Person A:

"After people were taken back to view their properties in Awatapu, there was one person who was distressed. Thirty people were called in from different organisations to provide counselling to this person and this included the likes of pastors, Victim Support, CYFS, and Family Works and so on. We set up a roster to ensure that people were available to talk to if they were needed."

Surprisingly, Victim Support was informed that they were no longer required at the evacuation centre after day one. This effectively would have removed them from the crisis response role. However, Victim Support did establish a rostered presence in the hall whilst it continued to operate.

For the longer term recovery, the management procedures and structure used during recovery coordination played an important part in the outcome of the process.

Person C:

> *"It provided structure and framework and we were delivering previously identified outcomes. I think it played a huge part in where we managed to get to in that eight week period. There will always be things that go wrong but it's a matter of how wrong."*

Some of the volunteers working at the hall were not sure of their role in relation to talking to the evacuees about their distress and experiences. One of the survey participants involved in providing counselling services was aware of the importance of the evacuees talking about their experiences. Stephens (1996) highlights the importance of talking about traumatic experiences and expressing emotions as an important way of relieving post-traumatic anxiety.

Person B:

> *"Because there so many people and some volunteers were not sure of their roles and responsibilities regarding counselling, we told them (the volunteers) to let them talk. We had little skills training sessions with the volunteers."*

The ability and facilitation of evacuees being able to talk about their traumatic experiences of the event form an important part of their personal psychological recovery from the event. Psychological recovery should begin at the start point of the disaster according to Spee (2008) as opposed to waiting until physical or psychological symptoms present later. It is important for people to be able to tell their stories as by doing so they are able to organise feelings and thoughts as well as expressing and labelling their feelings (Spee). This forms part of the debrief process for trauma victims and it was important to be able to facilitate this for the Eastern Bay of Plenty evacuees. Contact with people that are able to provide information and orientation at an evacuation centre is important for evacuees (Gordon, 2008).

Having clearly defined roles and responsibilities for volunteers in the Welfare Centre may be achieved with the implementation of a management structure such as ECS within the welfare organisation.

6.1.7. Frustration

The stress experienced by flood victims included that which was created by a lack of information and stemmed from a number of concerns that evacuees experienced.

Person E:

> *"The biggest anxiety was "when can we get home to see what we have got and what sort of mess and what we have to deal with".*

> *"There were problems with stealing and also fights outside as people became angry at not knowing what was going on...".*

Concerns not being addressed added to a sense of loss of control of the individuals situation and a feeling of not being able to move forward until this stage of assessing their personal situation had been addressed. Gordon (2008) found that evacuees experienced a reduced sense of self-control and autonomy. Confident thinking and decision-making abilities were disrupted as a result of lives being disorganised (Gordon).

Person G:

> *"People felt like they weren't being heard. People were told a helicopter was going to fly over and assess the damage and come back and tell them. They were*

watching the floods on TV and they were upset about not being able to go out and have a look themselves. Buses did eventually get organised for this."

"It was frustration of not having enough food, clothing and not being able to get back into their homes. A lot of men were frustrated about being dictated to with this is what you are going to do and this is how you are going to do it."

"The assistance provided would have been better if it was better coordinated. Decisions were being made without the victims taking part in those discussions."

Recovery frustrations were expressed as conflict or antagonism and promoted emotional overload and further cognitive disruption (Gordon, 2008). This resulted in decision-making with adverse consequences creating further harm to some evacuees. Feelings of disempowerment were experienced and stress manifested itself in violence and drug abuse. Conflict and divisions occur in the aftermath of a disaster and tension is created contributing to emotional overload and further cognitive disruption (Gordon). It is important to listen to and address the concerns of those evacuated in order to reduce the psychological stress and the subsequent impacts in this group.

A video of the flooding was shown to evacuees at the hall so that they could see for themselves the extent of the flooding. The decision to screen the video proved to be controversial.

Person B:

"When the footage of the flooding was to be shown in the hall there was contention. Some had the view "we need to save people from the consequence of seeing their homes, they will be upset". I wanted it shown and this was to avoid a media directed showing. The flooding didn't equally affect everyone and the media show certain parts and it doesn't show the extent of the damage or where all the

people's homes are. It is empowering and important that individuals saw the extent of the damage and their homes before the nation did."

Part of the situation was improved at the hall in 2005 with videos of the damage of that whole event being shown to evacuees at the hall (Debrief, 14 July 2005).

A similar sentiment was expressed about the media in the 1998 Ohura flood event with Ward et al. (2008) alluding to the media reporting that houses were being condemned when local residents felt that they should have been told first.

The evacuees were also provided an opportunity to view the flooded areas from Army Unimogs. It was important for people to be able to see for themselves the impact on their properties and also important as part of their personal processing of the status of their possessions and a changed context of their lives. This journey was potentially traumatic by its nature, involving sensory stimuli from the smell, sight and sounds of the floodwaters combining with the damaged state of their possessions. The potential impacts on the flood victims were anticipated and steps taken to provide support.

Person B:

"I went out with the Unimogs when people returned to view the flooding. People got to see the reality of what they were facing."

"I arranged a support person on each of the Unimogs."

The media wanted to travel with the evacuees which proved upsetting to the evacuees. It was important that evacuees' exposure to the media was managed to minimise the impact this had on the evacuees.

Person B:

> "*The media was there as well and wanted to get on the Unimogs and there was such an uproar from the people. I had a conversation with an army guy that Unimogs were not there for the media. Survivors were to go first and we made them a priority. The media got to go later."*

6.1.8. Communication

The Recovery debrief also eludes to the communication problems with comments about the difficulties experienced with getting accurate and timely information from council inspectors on a regular basis. Local authorities in the Manawatu-Wanganui flood event of 2004 also experienced the difficulties of a lack of information and overloading of communications networks (Hudson & Hughes, 2007). Communication is fundamental in addressing one of the principle needs of the community in recovery, which is reducing uncertainty (Sullivan, 2003). The evacuees were not getting information in a timely manner and this added to their stress. The provision of accurate relevant information enables people to initiate their coping capacities at the earliest opportunity (Gordon, n.d.)**.** Accurate information is important in allowing survivors to understand their experience and to help reduce negative appraisals of the event together with increasing feelings of having control (Creamer, 1996). A lack of a feeling of control of one's situation creates stress adding to their trauma.

Some evacuees at the hall in the 2005 event experienced a feeling of insecurity of what may happen to them when the hall was shut down as an evacuation centre (Debrief, 3 August 2005) suggesting there remained room for improvement in keeping evacuees informed.

It is noteworthy that Gordon (n.d. p. 3) states "Communication is the medium for social action and social structure can be viewed as a system of communications." When communication breaks down or is less than satisfactory, this directly impacts on social action and social structure. Networks fail and social capital is eroded.

A lack of information invariably impacts on the decision-making abilities of individuals and groups that are disaster victims. This may delay important recovery decisions being made, delaying the overall recovery. Pre-existing social and communication networks are less likely to be available at evacuation centres given that not all persons evacuated go to the same place with some making own arrangements or needing specialised care when away from their home. Information gathering abilities are therefore likely to be reduced. The breakdown of communication is illustrated.

Person F:

> *"There were the elderly that were reluctant to leave their homes and there were the young ones that just packed up and left and we didn't know where they had gone to".*

The effectiveness of inter-organisational communication within the Civil Defence Recovery organisation was impacted by coordination weaknesses.

Person C:

> *"Communication was an issue. We addressed that in 2005…We put a lot more effort into communication"*

Person H:

> *"It could have been better. There were meetings that died off as time went on. There could have been better communication of information and better coordination of information and that was in our organisation as well. It was difficult to ensure the accuracy of information because there were so many*

agencies involved. There were problems compiling a consolidated version of information."

Poor communication is not unique to the Eastern Bay of Plenty response and recovery processes. It was found to be a major obstacle in the response and recovery effort by Hudson and Hughes (2007) study of the role of marae and Maori in the Manawatu-Wanganui 2004 flood event.

6.1.9. Information for Evacuees

There was a lack of communication between the Civil Defence Headquarters and the evacuation centre as well as a lack of structure that impacted on the recovery process. As Davies (2004) points out, "there were huge demands on public information and communications" and he goes on to suggest that a variety of communication methods need to be used in the future.

Person E:

"No situation reports were given to the people at the hall on Sunday, Monday or Tuesday morning except those I collected personally from HQ."

"There was nobody in charge down at the hall. If there had been a regular report for example, every half hour and then less frequently, it would have helped. Sometimes the information was good but it was not always what people wanted to know for example, pet welfare."

"There needs to be the ability to squash rumour about looting. This was causing distress."

Ward et al. (2008) talk of the problems of rumour and emotional communications that can occur in the period immediately following a disaster impact, making reference to the 1998 Ohura flood, the 2004 Manawatu-Wanganui floods, and the 2005 Matata debris flow. Rumours add to the distress of disaster victims and affect their decision-making abilities. When information or advice is given, it is often unable to be processed or used by those who are still in shock or suffering cognitive disruption from being displaced (Gordon, 2008). This escalates the stress experienced by the evacuees. Gordon also talks of the importance of information and communication processes in respect of creating supportive social processes and managing the social environment in order to assist recovery and mitigate its effects.

Information was provided to residents in flood relief information packs. These packs contained a number of fact sheet leaflets that provided information to the flood victims on what action to take in relation to a number of the floods possible consequences. Contact information for a wide variety of relevant organisations and agencies was also included. The fact sheets included one on health measures to minimise risks from contaminated floodwaters and tips on how to cope with feelings that may experienced after the flood. This fact sheet provided information on common reactions and helpful hints to try to help cope with those feelings and emotions. Advice was included that aimed at helping children deal with emotions and grief.

A further information sheet provided information on what to do if the person's home was damaged. It recommended action to be taken on returning to damaged homes and suggested remedial action such as removing wall linings and insulation where flood water damage had occurred to houses. This sheet also suggested action to take regarding telephone services for displaced persons. Early re-establishment of communication networks that allow contact between the flood victims and support such as family, friends, and counselling agencies was an important aspect of individual and community recovery.

The third fact sheet supplied information about salvaging objects that were special to people such as photographs, books, memorabilia, and prized possessions. Advice was provided on the different methods to be considered for dealing with differing materials. Prized or valued items may be of particular significance to recovery from disaster trauma for reasons that include cultural (as in the case of taonga), or for grieving as in the case of a relatives

cremation ashes that may have been left behind with sudden evacuations. Often these items may be irreplaceable and may be the cause of significant stress and anxiety for disaster victims. Tuohy (2009) found that the loss of treasured possessions was a common issue in all the older people that were interviewed in her research and that this related to the sense of vulnerability they experienced. These possessions can impact on the sense of self identity that an older person feels (Tuohy) which in turn will affect recovery from trauma following the older person's experience of a disaster. This also goes beyond an individual's loss where items may be of family historical significance and the loss is experienced by family members albeit that they may not reside in the district or even within the same country. This may include items of great significance to a family of historical importance such as a grandmother's wedding dress or war medals for a deceased family member. Some cultures place great value on family history and treasures creating a cultural influence on the degree of impact this may have. The psychological impacts of disasters may reach persons geographically distant from the occurrence.

The signs and symptoms of stress were listed in the information pack and advice was given that it was normal to experience reactions for weeks or even months after the event. A Government flood helpline was created with a 0800 telephone number and this service provided information on civil defence registration, community assistance, housing and income support, emergency benefits, evacuee host support, and insurance claims. Detailed descriptions of the nature of the support available through the helpline were provided in written form in the information pack. The details of this telephone number and the support offered appeared a number of times on fact sheets and another document included in the flood relief information pack.

The flood information packs provided information that the flood victims could keep going back to in order to help them process the information that the packs contained. The information packs were an important method to provide depth to the way information was delivered to those that may have experienced difficulty processing the information due to stress or trauma as described by Spee (2008).

6.1.10. Incident Management System at Hall

An Incident Management System was not used at the Welfare Centre to coordinate the multiple agencies that were present and providing support or services to the flood victims.

Person D:

> *"Management wasn't terribly visible initially. There was a lack of management at the Welfare Centre and that impacted on its efficient running."*

Some agencies present had their own internal management systems in place on an intra-agency basis however, inter-agency management appeared to be ad-hoc, created on the day and the success of this was dependant on individual's attitudes toward their respective roles and their personal attributes.

Person A:

> *"We had our own organisation's system. We were dealing with organisations that did not have training in dealing with critical incidents"*

Person B:

> *"Initially it did not appear to be coordinated but it got there. You could see the difference in two hours and then in two days it was much different. It was noticeably better at Matata from the lessons learnt."*

The majority of agencies present were well versed in delivering their respective services but providing a coordinated response along with the other agencies present proved difficult. This observation conforms to Mileti's (1999) comments that in the absence of pre-event inter-organisational and community planning, agencies will tend to perform their tasks in an uncoordinated and autonomous manner. Some relied on past experience that was out of date for the modern disaster.

Person A:

> *"Some people were using their experience of the 1987 earthquake and it didn't fit, it was outdated."*

The affected community, resources and expectations were significantly different in 2004 as was the nature of the disaster and its damage psychologically and to the physical environment. Although emergency management may be generic in its methods and practices, it also must be flexible to adapt to the nature of the situation and to the nature of the affected community.

The coordination and inter-agency efforts did improve with the appointment of an experienced Recovery Manager.

Person A:

> *"Once we came under the umbrella of a Recovery Manager and organisation, it was more effective. Everyone became clear as to what their roles and responsibilities were."*

> [Within the Recovery Office] "*Requirements were communicated sideways and from above, through the Recovery Manager, through the Ministry* [MCDEM] *and*

other agencies. The details for allowing the community to get to normal came from other agencies".

6.1.11. The Role of Elected Governance in Emergency Management

Lines of authority from a Civil Defence or Welfare management role may have become blurred with the presence of district governance in the form of elected Councillors, where their presence had not been part of any previously existing welfare organisation or civil defence planning. Their presence was spontaneous, not planned. This created tension in some cases with some of those in key roles.

Person A:

"There are horror stories, the moment governance got involved; they did not know what they were doing. It wasn't coordinated."

The role of elected local and territorial officials can be something of an enigma as to where and how they fit into emergency management structures. They clearly have a governance function and a representation function as democratically elected representatives. Their authority is derived from the Local Government Act (2002) but this does not necessarily diverge to declared emergencies unless authority is specifically delegated by a Civil Defence Controller. The important function of providing representation to their communities continues throughout the response and recovery phases of a disaster however, the most suitable "chain of command" for them may well remain with direct communication with a Controller or the leader of their respective levels of government such as Mayor. A similar situation may be considered at national level with members of Parliament and their role in local disaster management. There is a need to establish where elected officials fit into any ICS or emergency management organisation that is created for a recovery role and what degree of executive influence they have in a disaster scenario away from an EOC and Civil Defence Controller.

Person A:

"People involved in governance saw their role in Welfare Management when they had no experience and no idea what to do."

"Once a Recovery Manager was appointed and once governance people stepped away and agencies were able to perform their roles, it worked well. Although by the time that this had happened, the victims have suffered revictimisation because of the lack of structure and coordination. People need to understand trauma and we have to avoid revictimisation which impedes their recovery."

6.1.12. Management Style

Management procedures and structure used during the recovery phase played an important role in the outcome of the process. The influence was not always positive.

Person A:

"It played a significant role. People in organisations were polarised. There was ill feeling. There was confusion for the evacuees."

Person J:

"We were learning as we went. There was no loss of life although there was significant damage to property. It highlighted weaknesses that were addressed in the short, medium and long-term following the disaster. The more clearer it was, the more clearer the objective and outcome was. Personality played a significant role in the outcome."

The impact of management procedures and structures influences the emotional state of evacuees and contributed to the stress they may have experienced.

The importance of the role of the Welfare Group and the importance of positive relationships with volunteers was not always clearly recognised.

Person A:

> *"When we attended meetings at the Council to provide information on the evacuees, Welfare was always at the back. It wasn't a round table. It may have been a particular management style but it was difficult for participants. It was a male dominated meeting. The atmosphere needs to be cleared and be embracing, particularly where volunteer organisations are involved. Volunteers were treated differently."*

Person G:

> *"You had to have structure and somebody to organise and oversee everything. There were personality clashes in some cases with people being told what they would do and how they would do it."*

This may have been a by-product of a particular leadership style or the strong male presence in most leadership roles at the time. Previous executive leadership within the Whakatane District Council had taken an often confrontational approach that had resulted in industrial action and a loss of corporate knowledge .Currently the Chief Executive Officer position in the Whakatane District Council along with its Emergency Management Officer and Welfare Manager positions are held by women which is likely to bring balance and have resolved this gender-related issue.

6.1.13. Volunteers

Volunteers from within a community form an important local participation function in recovery management as suggested by Mileti (1999). Some of those working in support roles at the hall were volunteers that arrived at the hall through a sense of duty as opposed to be called upon or activated by any civil defence or welfare management. This included church representatives and pastors.

Person A:

> *"There was no structure for anybody supervising volunteers..."*

Person E:

> *"There did not seem to be any organisation of the many volunteers who turned up to help initially on the Sunday and later on subsequent days. No one was obviously in charge."*

> *"It did not appear that there was any structure in place*."
>
> (Referring to coordination at the hall.)

> *"For me it was a complete blurring of who were volunteers and who were staff."*

Interaction and organisation of volunteers is part of recovery (Mileti, 1999). The problem then arises as to how best utilize and coordinate all the agencies and volunteers involved in order to improve effectiveness in the recovery process. Command and control based ICS may fall into Mileti's (p. 230) description of "top-down, inflexible standardised approaches"

that deter speedy recovery. A management model with a greater capacity for coordination appears to be a more suitable alternative.

The rostering of staff throughout the response and recovery phases proved an issue in a number of areas. This included the hours being worked by volunteers at the evacuation centre. It was sometimes difficult to get workers to leave the hall to rest and this proved a difficult issue.

Person A:

> *"There was no structure for anybody supervising volunteers, the length of time that they were involved and ensuring their wellbeing and their health and safety. We had one person that would not leave the hall and they became untrustful of how gifted resources were being distributed and they tried to have sole control of these resources. This required assistance to resolve."*

6.1.14. Registration

During the flood recovery debrief facilitated by Sarah Norman (from MCDEM), a number of areas were identified as needing improvement. This included coordination, communication, and processes such as registration.

Person D:

> *"There was a lack of coordination. The registration activities and procedures were functioning to some degree but not in a structured manner. It would have been extremely helpful if we had had a lot more information about what was going on."*

Those that were involved in the registration process were not familiar with the process. The process had a dual role as it was also used to obtain WINZ financial assistance where this was urgently required on welfare grounds. A prerequisite to WINZ assistance was registration. The forms used were not standardised at the time, with different organisations using different forms (Davies, 2004).

Registration did not occur for all evacuees initially as some had self-evacuated and then found difficulty when they did seek support. People left the area without registering at the Welfare Centre or anywhere else. This eroded the ability of welfare agencies to provide assistance where the actual details and circumstance was not known. Some of these left due to housing problems and had the circumstances been known by Housing New Zealand, alternate accommodation within the area may well have been able to be provided. Some others did not register because they were unable to.

Person E:

> *"Some people did not register; some were unable to for example, a parishioner with no legs".*

> *"If you are dealing with a catastrophe with loss of life or missing people, it would be difficult or impossible to account for them, for example, a person who lives alone with no relatives and no legs. It was only because this person was a member of the church, that the Reverend checked members of the church."*

Registrations form an important part of recovery management, providing information that is required for decision making by managers. It also provides the basis for the identifying the needs and for the provision of support and services. Often the registration process is the first step following physical evacuation from flood affected areas. It may be the first opportunity that someone other than an emergency service staff member interacts with the disaster victim and is able to see and assess the level of trauma of that victim. It is important that the

person that registers the evacuee is suitably experienced and this was not necessarily the situation at the evacuation centre.

Person D:

> *"The registration desk was the first port of call for everyone coming into the centre…".*

Person A:

> *"We had people dealing with registration that were not trained in dealing with people with trauma."*

Methods of communication should be active in seeking the needs of the evacuees and passive in respect of being receptive and responsive to their changing needs (Sullivan, 2003).There is also a warning from Sullivan about a need for judgement in considering the likelihood of wants being expressed as needs where some may wish to benefit personally from the situation that they are in. Identifying suitably experienced or qualified people to facilitate registrations is important in the planning process to ensure that evacuees are dealt with appropriately.

Where registrations did occur, it was actioned as a manual process and no electronic data was created initially. Several of the books containing the registration details were missing as at 19 July 2004 (Debrief, 19 August 2004), raising issues of accuracy of registration information and privacy issues and concerns for those that had provided information at the time of registration. Information security and meeting privacy obligations are an important consideration in emergency management planning.

Some of the agencies responsible for providing support at the hall had difficulty accessing evacuation information from the first day (Debrief, 19 August 2004). Initially there was no facility at Edgecumbe, a badly affected area, for people to register and people had to travel to Whakatane (Debrief, 19 August 2004). Over 3000 evacuees registered and by 19 August, all had received their first voucher from WINZ (Debrief, 19 August 2004). The situation in 2005 at the hall was improved with a computer being available for the registration processing of evacuees (Debrief, 3 August 2005).

There were those that did not evacuate but still needed support and assistance. The Salvation Army provided food to those in need, such as the elderly and a mobile catering unit was provided to assist at Edgecumbe. The provision of food to those in need created concerns regarding safe practice in relation to transporting this into certain areas (Debrief, 19 August 2004).

6.1.15. Empowering the Evacuees

Positive actions did occur during the recovery phase that assisted in the psychological recovery of evacuees. Community Mental Health workers encouraged victims of the flood to become positive role models by taking actions such as cooking in evacuation centres and helping with pumps to get rid of water in Awatapu. These actions resulted in a significant change to the demeanour of some men that had felt helpless towards their families (Mahoney, 2004).

Person B:

> *"We started to establish needs and utilize the evacuees to do some of these things. We made a list of people and their skills and matched these to what we identified that needed doing. It was important to move them away from victim status to influencing how they control their immediate environment."*

"Some of the people given tasks went on to create an Awatapu group that that told people what they wanted. They were influencing their fate."

Person E:

"*G* [name removed] *from Voyagers suggested we ask the evacuees to do the jobs like cooking and other household chores to raise their self esteem and give them something to do. The kitchen team that emerged from this were absolutely awesome (this team was from Awatapu). The hall ran like any extended family as a result."*

Gordon (n.d.) talks of providing roles and tasks related to the emergency helps preserve social organisation. An examination of the Matata community recovery by Spee (2008) recommends that opportunities be created for "people to have feelings of achievement, personal control, coping and fun." Tasking the evacuees with constructive achievable tasks increased resources and more importantly provided a positive step in personal recovery by empowerment.

6.1.16. Empowering the Community not flooded

Whole communities experience the effects of disasters whether individuals, family or friends suffer loss, damage or evacuation (Spee, 2008). Not all parts of the communities in Whakatane directly suffered the effects of the flooding however; distress, empathy, and helplessness were experienced by people outside of the flooded streets and areas. There were people that felt that they wanted to help the flood victims but did not know how to or what they could to do to assist. A person involved with providing support at the Welfare Centre at the time saw an opportunity to combine helping the evacuees and other community members who wanted to help in some way.

Person B:

"Actions can be empowering to make a greater impact."

"A community left feeling very helpless and here was an opportunity to for the community to do something to help. There was a feeling like they wanted to do something to help but didn't know what to do. It was people's way of giving something. The community gets forgotten and disaster is a great opportunity to create great community links. There was an opportunity to make it different by asking for specific donations and this gave the community the opportunity to help, for example we needed blankets. I had a request put over the radio that we needed blankets bought to the hall and to come to the back door and ask for me. This happened but people also bought other things to help as well. There was one man who bought me blankets and he also had a bag of toys that his daughter had given. The girl said that she still played with the toys but she wanted the children in the hall to have them. The woman standing next to me almost cried when she heard this."

6.1.17. Media

A positive aspect of communication involved the local radio station that is privately owned providing information to the public. There is no statutory requirement for the radio station to engage in this role however, as the manager at the time stated " It was considered part of our role and we were privileged to be part of this and work with the people involved" (Debrief, 19 August, 2004). Concern was expressed however, that News people were excluded from civil defence briefings and more involvement would have been useful (Debrief, 19 August 2004). The direct input from the EOC would have provided up to date unambiguous accurate information as a tool to keeping the public informed and offering advice to flood affected persons that may have helped reduce the impacts of the event. This would have been relevant especially for local media who would have been better known to the community. They would have been more likely to have been responded to, as recognisable providers of information to the local community.

Media other than the local radio station arrived quickly at the evacuation centre and there was a lack of control of the media.

Person A:

> *"There was no one controlling the media."*

Person E:

> *" Some directive from HQ regarding handling of media would have been helpful. I was placed in the position of having to talk to media (when I was the wrong person to be making comment). I endeavoured to stop crews filming where it would have been unhelpful and also directed media personnel to evacuees who would be able to give a reasonable story".*

Person J:

> *"The media started referring to the term looting which was a catalyst to encourage others and their behaviour which would have stretched our resources even further."*

Media were also an issue in 2005, going to places that were inappropriate for them to be in and boundaries had not been established regarding their activities involving victims of this event (Debrief, 14 July 2005). The timing of media interaction with evacuees was not always appropriate. Some media entered the evacuation centre late at night seeking to interview some of the evacuees (Debrief, 3 August 2005).

The media can create further trauma for victims where they encourage the person to recount or relive the event and therefore the trauma of the event in an environment that does not necessarily provide appropriate support or protection to individuals that may be especially vulnerable. This may well occur before any support networks are able to be established or suitable professional counselling provided. How the flooding was portrayed by the media affected flood victims when they viewed what the media presented. Gordon (2008) found that the media portrayal of the flood disaster raised anxiety. Inaccurate reporting of hazard activity and its impacts on communities placed additional demands on response agencies and organisations involved in the 1995 Ruapehu eruptions (Paton et al., 1998).

Whakatane District Council has limited media communication resources when considered in a context of operating on a 24 hour basis over a period of time. Consideration to utilising CDEMG resources or MCDEM media liaison resources may be beneficial in any future disaster events along with the creation of a detailed media plan. Paton et al. (1998) suggest building a media component into exercises and training simulations. The merits of a media plan emphasising use of local resources and forming part of the overall emergency or recovery plan should not be underestimated as a means of helping protect and empower disaster victims.

Control of access to the evacuees was an issue not only with the media. Other groups appeared to take advantage of the vulnerability of the flood victims, with some fringe groups attempting to provide their own interpretation of support.

Person A:

"We had stranger's coming into the hall like the church of scientology."

The possibility arises of such interactions impairing psychological recovery and some organisations considering the disaster as an opportunity to recruit vulnerable people to their ranks.

6.1.18. Identification of volunteers and evacuees

In the debrief at the Fire Station on 19 August 2004 and following the Matata event in 2005 (Debrief, 3 August 2005), the suggestion was raised that in future events involving evacuations, the evacuees are issued a wristband to identify them as there was a lot of people coming and going from the Whakatane Memorial Hall. Such a system would assist in control and coordination, particularly in the provision of assistance to the evacuees. The negative impact of the practice may well involve community alienation of the evacuees. This would be especially so where the evacuees are from lower socio-economic neighbourhoods. The possibility of further victimisation and moving away from creating a sense of normalcy may also occur.

The lack of structure at the evacuation hall impacted on coordination, affecting the efficiency of the recovery and the wellbeing of evacuees.

Person E:

> *"Security was an extremely severe problem at the evacuation centre hall and was not rectified until L* [company name deleted] *arrived. There were problems with stealing and also fights outside as people became angry at not knowing what was going on or had drug withdrawal problems."*

> *"Other people ordered goods without a purchase order and these had to be returned wherever possible, creating extra work and stress."*

> "*It did not appear that there was any structure in place."*

> *"It did not seem to be well coordinated until O* [name deleted] *turned up. There did not seem to be someone responsible for the hall."*

"There were some pastoral and welfare issues among evacuees not taken care of because some of the evacuees did not know who to go to for help and went to the wrong person who was unable to help them but did not say so."

Person A:

"There was dynamics of conflict, unclear responsibilities and lack of structure."

Identification of volunteers and staff from various agencies working in the Welfare facility continued to be a problem in 2005 with identification being an issue. Those managing the Welfare Centre and agency personnel from the various organisations were not clearly identifiable to evacuees requiring their services however, Salvation Army personnel did wear green fluorescent vests (Debrief 3 August 2005). During the 2004 flood event, the Salvation Army experienced difficulty knowing who they were coordinating and who to speak to within the Civil Defence organisation. They had difficulty accessing information both ways (Debrief August 19, 2004).

6.1.19. Compatibility of Evacuees

Compatibility issues arose with various sub-groups of evacuees. Elderly evacuees were taken care of by the Salvation Army at another location. Communal living and the general social atmosphere at the hall was an unsuitable environment to address the trauma of the elderly evacuees. Socio-cultural factors at the hall created an event specific society with its own norms, attitudes and perceptions, albeit this society was of relatively short duration. The event specific society inherited and reflected existing issues of the various community sub-groups that were evacuated to the hall.

Person D:

> *"There was a need for security from the start. I am sure there was a tinny house* [cannabis selling] *operating in the men's toilet at one stage."*

Person J:

> *"There were thefts at the Emergency Evacuation Centre as it was established ad-hoc with no clear audit of stock."*

Disaster exposes existing prejudices, attitudes and behaviours as traumatic stressors are applied, for example the feelings of loss of control that were experienced by evacuees. Social connectedness is reduced in the elderly as is their adaptive capacity generally. The ability or desire to connect, interact or relate to other evacuees, especially those that were not part of the elderly people's normal social network such as gang members would have been much diminished. Social networks are critical to well being and recovery after major adversity (Winkworth et al., 2009). The lack of, or diminished social networks would have influenced the ability of the elderly to process trauma.

Person A:

> *"Without structure, there were factions within the hall, we had gangs and domestic violence. It was difficult to get the Police there. The security of the people at times was compromised, you need the Police there."*

6.1.20. The Elderly

The elderly are generally more resilient to the psychological effects of a disaster and may avoid seeking help as they don't want to appear as a burden to others however, due to often

having limited incomes they tend to recover slower than the general population economically and subsequently emotionally (Sullivan, 2003). Some of the elderly that evacuated early in the flood event would have experienced different degrees of trauma from the evacuation than those evacuated later. The very first evacuation was not a pre-planned or necessarily ordered event. The decision was made in the field to commence evacuations as floodwaters rose quickly in a residential area. At this time the Police were not prepared or equipped for the scale of evacuation that was to occur. The first people that were evacuated were a retired couple who witnessed flood waters enter their house as Police carried them from their doorstep to the boat that had been commandeered from their neighbour's property. They did not have warning of the evacuation. Tuohy (2009) examined the orderliness of evacuation of elderly Kaitaia residents during a 2007 flood event and describes how these contributed to the sense of protection and how trust in emergency personnel involved in decision-making and evacuation was important to evacuated rest home residents. In the Eastern Bay of Plenty later evacuations involved a convoy of Army trucks with teams of emergency service and Army personnel working together in a more planned orderly and composed fashion. Evacuations occurring at different stages during a disaster have potentially quite different consequences related to when evacuees are evacuated in relation to other evacuees.

6.1.21. Multiple phase evacuation consequences

The length of onset of a disaster has a bearing on the trauma experienced by its victims. Differences between those that were evacuated at the flood onset to those evacuated a few days later were identified at the evacuation centre by one of the hall management team experienced with providing trauma support. Those that arrived a few days later were at a different stage in dealing with their trauma from the flood. This posed difficulties for individuals integrating into their new temporary environment.

Person A:

> "*It was difficult for evacuees that arrived in a second phase two or three days later as they felt alienated. If we had this occur again, it might be beneficial to*

evacuate them to a different location. They were new in their trauma; they were raw whereas the other people had processed their trauma that was a couple of days old. Most that came in later did not want to stay there, they couldn't cope with it."

This suggests that where a disaster may have more than one evacuation phase that consideration should be made for a degree of segregation or different evacuation centres to deal with each phase.

6.1.22. Multi-agency service delivery (cluster grouping)

The multi-agency one stop shop method of delivering support and services from government agencies to the flood victims worked very well. Although the individual agencies involved were capable and experienced in delivering support, the cluster management techniques avoided duplicity of support and simplified the process of finding the appropriate support for flood victims. As cited by Paton and Auld (2006), disasters bring together agencies that are not normally working with each other and don't generally have understanding of each other's roles. However, the clusters in this case were small scale units that worked with a team attitude and common goal to help the flood victims.

Person F:

"We made up teams from the agencies that went out together, so it became much better. This worked well as people within the teams knew their communities and they would break the ice. It was a bit daunting for the people being visited to have four people at their door."

This helped overcome the lack of knowledge of each other's roles that they had previously experienced to the detriment of flood victims.

Person F:

> *"If we had known Housing New Zealand had the ability to provide emergency housing, we would have been able to broker support for the people. This could have been done for the people who took off to keep them in the area."*

> *"People knowing their roles and knowing each other's roles were critical to us working better together."*

Person I:

> *"Having multiple agencies working together in one location was also an advantage."*

The method was used at a district level but it may have beneficial if it had been utilised earlier. The way the cluster management technique was used was considered by a MCDEM representative to be a good example to the rest of the country (debrief, 19 August 2004) and this method was used again in the Eastern Bay of Plenty at Matata in 2005. Following these two events, the Emergency Services Co-ordinating Committee has been established, meeting on a regular basis for the purpose of better communication and familiarity between the agencies that are likely to be involved in local disasters within the Eastern bay of Plenty.

6.1.23. Information sharing between agencies and organisations

A number of government and NGO already had in place communication networks and memorandums of understanding that allowed information sharing regarding personal details and situations of their clients. This includes for example, Police and WINZ, and Victim Support Trauma Counselling providers. Not all organisations have the mandate to share information, sometimes due to privacy issues and some due to constitutional issues.

Women's Refuge's Constitution covers aspects of confidentiality that prevented information sharing of client's details without their approval (Eastern BOP Flood Recovery Office Welfare Sector, August 5, 2004) which clearly can be an issue when they have been relocated to "safe houses" for their own protection.

The sharing of information within the Flood Recovery Office was important to ensure coordination of the services being provided so that victims needs were met and that agencies did not double-up, with some victims getting handouts of the same type and nature from a number of agencies at the same time. Hudson and Hughes (2007) point out that in the absence of strong links between organisations, ineffective uses of resources and unfocused planning may occur.

"3 areas to be covered - Kawerau, Opotiki and Whakatane to be sorted out with regard to what is needed and where and how to get it there. Ongoing issues of coordinating who gets what and to avoid double dipping. Also some families are already receiving current benefits. Having this coordinated by one organisation keeping a record of where food etc is being provided would avoid abuse."(Eastern BOP Flood Recovery Office Welfare Sector, 2004).

6.1.24. Government Agency decision-making

Some of the government organisations involved in the recovery had obligations driven by their senior managers located outside of the district and this affected their ability to deliver services and created some stress on "front-line" workers. The provision of information to higher levels within Government agencies was important to allow staff resourcing decision-making. The provision of statistical data increased workloads on staff that were already working long hours in arduous conditions.

Person F:

> *"There were problems with having to report back to the Ministry on what we were doing on a daily basis. It was frustrating; they wanted statistical information when we were spending the day in gumboots in the field. We requested an analyst from Wellington that could do this and report back to the Ministry."*

Person C:

> *"Those organisations that make decisions on a regional basis are more effective than those making decisions at central government level."*

Manpower resourcing of organisational structures to allow for this is an important consideration in pre-event planning. Multiple agency involvement in emergency and recovery pre-event planning provides the forum to raise awareness of considerations such as this.

6.1.25. Domestic Violence

There was a marked increase in domestic violence reported to the Police (Debrief, August 19, 2004,) and to the workload of Whanau Awhina Women's Refuge. This continued for a lengthy period and is likely to have been contributed to by the stress that some flood victims experienced. This supports MCDEM's Information for Human Service Workers fact sheet suggestion that constant stress may occur for many months in the recovery period and that relationships may become tense with ongoing problems in the medium to long term (MCDEM, 2009).

Domestic violence is defined as physical and or psychological abuse of relatives or partners regardless of the sexual orientation of the relationship. It includes controlling behaviours. As

Houghton (2009a) points out, women figure predominantly as victims and domestic violence is about the exercising of controlling behaviours. Domestic violence is not cultural, class, or socio-economic group specific. It can be present within families with highly paid professionals and also those reliant on benefits as income. Cultural background may influence domestic violence and some cultural groups feature significantly in domestic violence offending statistics.

Stress does not cause domestic violence. It exacerbates pre-existing relationship behaviours where a number of factors are present that include the poor anger and stress management skills of the perpetrators of domestic violence. Many factors may contribute to stress and feelings of loss of security and control, including displacement, financial pressures, loss of possessions, and loss of cultural icons (for example marae, urupa and other sacred sites) and loss of employment. Losing control in an abusers life is an influence on the intensity of domestic violence (Houghton 2009a). Heavy reliance on external support that occurs during disasters impacts on feelings of hopelessness and a sense of lack of control in a person's life which may in turn impact on the intensity of domestic violence incidents (Houghton, 2009a). Incidents that previously involved verbal and psychological abuse may progress to physical violence and those that involved lower-scale assault offending may elevate to more serious behaviour such as strangulation and serious injuring.

Whanau Awhina Women's Refuge caters for the Eastern Bay of Plenty district including the areas of Opotiki, Kawerau, Whakatane and Edgecumbe which were impacted by the flood event. The Refuge is part of a national body and had the ability to access other refuge centres for assistance during the recovery (Eastern BOP Flood Recovery Office Welfare Sector, August 5, 2004). The Women's Refuge was stretched well beyond capacity with the safe house garage being used for accommodating families along with staff members taking in three families each into their own homes (Houghton, 2009b). Some women and their families returned to their abusive households as a result of feeling that they had no other option due to financial and support issues (Houghton, 2009a), which was intensified during the disaster.

Person G:

> *"The ones that couldn't get back into their homes had to go and find rentals and the rents increased. What we dealt with in relation to domestic violence was more serious than what we normally deal with."*

Returning to abusive partners and situations is a common pattern in domestic violence scenarios that increases in times of disaster. Houghton's (2009a) research also found that the frustrations of difficulties in obtaining assistance with basic needs such as food and bedding caused by communication breakdowns between support agencies and between support agencies and flood victims caused stress, impacting on domestic violence. There was significant impact on the staff of the Women's Refuge personally with a much greater workload of a more intense nature and the off-duty break from work ability significantly diminished with clients staying in their own homes. The impact on the staff illustrates secondary and indirect impacts that sometimes can create stress and psychological trauma. The actions of Women's refuge staff displays the commitment, dedication, sense of community and personal sacrifice that members of NGO's such as Women's Refuge dedicate to the communities that they serve in times of crisis. This forms part of the social fabric and resilience of the Eastern bay of Plenty community. The role of organisations such as Women's Refuge is important to provide specifically appropriate accommodation for a sub-group of evacuees along with specific welfare needs

As a Police Sergeant supervising Police day to day emergency response during the twelve months following the disaster event, the author often attended domestic violence incidents dealing with the offenders and victims and interacting with support agencies such as Women's Refuge and Victim Support. The marked increase in domestic violence within the area continued for well over twelve months. Stress from the flood impacted on the domestic violence offenders and their victims, resulting in more intense violence and lowered tolerance in the victims compounding the psychological impact of the violence. The number of families seeking refuge in safe houses rose about 62% in July and August 2004 (Collins, 2006).

"Domestic violence has increased - 21 call outs this week. This has caused a major overflow on Women's refuge with both old and new clients" (Eastern BOP Flood Recovery Office Welfare Sector, August 5, 2004).

The re-housing for the victims of domestic violence was an issue with problems of availability in suitable locations for their safety and employment.

"Houses have been accessed throughout the country-maybe these women can be housed out of area for their safety. Need to consider the need for some people to stay close to where they are working i.e. caravans." (Eastern BOP Flood Recovery Office Welfare Sector, August 5, 2004).

Pre-existing community problems were magnified by the impacts of the flood. Violence including domestic violence occurred at the evacuation centre and some flood victims experienced drug addiction withdrawal (Mahoney, 2004). Houghton (2009a) also reports anecdotal evidence of domestic violence incidents at the hall. Drug addiction withdrawal can also contribute to a sense of loss of control over a person's life circumstance and aggravate mood and behaviour anomalies resulting in violence outbursts.

Not all criminal offending increased indeed some was reduced in the short term but for reasons different from those affecting domestic violence offending.

Person J:

> *"Dishonesty offending went down. We believed the community rallied together with some charitable behaviour from the criminal fraternity who had their own issues to deal with and were looking after themselves. The community provided its own security as well."*

As Houghton (2009a) suggests, research into disaster related domestic violence offending is in its infancy within the international and New Zealand context. Further study particularly seeking domestic violence reduction methods for post-disaster communities is recommended. How the response and recovery of disasters is managed impacts domestic violence offending. Domestic violence that is contributed to by stress deriving from organisational coordination and communication deficiencies is an aspect of emergency management that may be positively influenced by an appropriate incident management system such as ECS.

6.1.26. Childcare

The ability for parents, especially in single parent situations to be able to have their dependant children at school or in childcare facilities affected stress levels for victims of the flood. Schools and childcare facilities were closed (Houghton 2009a) for a variety of flood-related reasons including access and availability of staff. Parents were already dealing with a number of stressors as they attempted to organise and gain control over their lives and were now confronted with the additional responsibility of looking after children who would have normally been in school or childcare. The problem was compounded where families were no longer in their own homes with the availability of family entertainment resources. There was little respite childcare available apart from self-arrangements utilising friends or family.

Person F:

> *"We found that a lot of people that had been traumatised used the hall as a drop off centre and then would go off somewhere."*

Person A:

> *"There was impact on children."*

"Boundaries and rules could have been given with advice as to childcare facilities."

"Childcare for Awatapu residents is often whanau based."

This highlights the suitability in certain situations of using marae resources as discussed later. It is also important to maintain social interaction for children and to seek a return to the security of routine and normality in their lives which provides reorientation, particularly for evacuee families.

The lack of available childcare also prevented some parents from being able to return to work as they were required to care for children that would have otherwise been in childcare (Houghton, 2009a). Facilitating the continuation of the availability of childcare facilities will assist in the recovery process.

6.1.27. Cultural Influences

New Zealand has an evolving cultural diversity within its communities that influences response and recovery outcomes and this should also influence emergency management practices in order to be effective. The cultural compositions of the communities that make up New Zealand vary considerably from region to region and sometimes within districts and neighbourhoods. Cultural beliefs and social organisations and their networks influence exposure to natural hazards (Mileti, 1999) and therefore shape natural hazard impacts on indigenous peoples. The Eastern Bay of Plenty has a proportionately higher Maori population than the national average. Each District and Region has its own often unique demographic characteristics and this highlights the need to have localised emergency management and recovery plans that suit the local needs and social conditions.

Maori participation in pre-event planning and the recovery phase of a disaster is important in determining the effectiveness of both of these. Maori are significant stakeholders and

possess significant communication and social networks along with resources that include health and social services. Becker, Saunders, Hopkins, Wright and Kerr (2008) in discussing establishing the context for recovery as part of pre-event land-use planning includes examining Maori traditional knowledge and practices regarding local hazards. Maori have strong spiritual relationships with the land and waterways and this plays a significant role in disaster recovery in New Zealand. The acceptability or otherwise of any actions that affect the land are determined by strong spiritual and therefore emotional drivers. This is supported by Mileti (1999) asserting that cultural values and beliefs can interfere with change by seeking to maintain the status quo. This can impede any mitigation and reduction activities that seek to develop sustainable resilient communities where culturally targeted consultation and participation is lacking. Pre-event land-use planning without cultural input is likely to result in rejection. Recovery action without cultural consideration disempowers Maori and may result in a further feeling of victimisation. Incorporating Iwi into these processes will build social capital within communities.

Person J, a senior policeman was asked what if anything was missing in the recovery process that could have improved it.

Person J:

"A recovery plan, a media liaison person and a stronger Iwi liaison presence."

A number of organisations with a strong Maori focus and responsibility were involved in the flood recovery phase. This included Te Puni Kokiri with a role of brokering support for the Maori people.

Person F:

> *"Our role was being a conduit between the people and all the agencies involved. This was basically with the Maori people. We knew the people and had relationships already with the community and those people."*

Ngati Awa Social and Health Services, as a local Iwi organisation along with Whanau Awhina Women's Refuge and other Maori based organisations also were involved although these were not necessarily pre-planned involvements. Some organisations initiated their own response and recovery support action.

Person F:

> *"A number of Hauora and health organisations just kicked in and did their own thing. "*

Person G:

(From another Maori based organisation)

> *"We provided assistance to families that had no transport, helping them with WINZ applications, things like picking them up and taking them to doctors and hospitals, picking up their laundry and then dropping it off again. We gave food, clothes and bedding, and that was all at T's* [organisation deleted] *costs."*

Cultural and spiritual assistance was provided at the hall and people were sent out to locate people in isolated areas to ensure they were safe whilst identifying housing and other issues for Maori at the same time in these isolated locations (Debrief, 19 August 2004). As was experienced generally, communication problems occurred within Iwi also. Psycho-social

aspects of recovery from a cultural perspective may have benefitted with greater use of Marae as evacuation centres particularly for displaced Maori flood victims. Health and Social services form part of existing Iwi networks and this sits well with recommended best practice of utilising local resources in disaster recovery. Marae generally have the resources and people with the experience and skills to accommodate a number of people at short notice and to utilise the people that are accommodated in productive and constructive ways to help on the Marae.

Iwi and Marae have their own organisations, social and communication networks and have recognised community leaders that were not always acknowledged or heard during the early decision making processes of the response and recovery phases with an initial overall lack of Maori participation occurring (Debrief, 19 August 2004).

When asked what was missing from the recovery process that would have improved it, one response from a Maori based organisation alluded to the lack of recognition of local leadership:

Person F:

> *"Community leadership and acceptance of local community leadership by central and local government agencies because they clashed and we saw some leaders walking away frustrated at the process that they weren't being heard. These people could pull resources together from their own networks. There is a need to accommodate community leadership."*

Spee (2008) talks of the importance of supporting and encouraging local leaders including kaumatua and kuia to actively become involved in local recovery and that recovery work should be based on the dynamics of a community along with its cultural context. This is reinforced with Spee talking of community planning involving the community in order to provide something positive to focus on.

Person A:

> *"There were noticeable difficulties for Iwi, there wasn't relationships developed with Council and agencies."*

Person H:

> *"I don't think we really got a handle on the Iwi representation and how we could best use the contacts through Te Puni Kokiri. There might have been a double up and we weren't sure of their role and how they could be utilised."*

In a study of the role of marae and Maori communities in the recovery from the Manawatu-Wanganui flood of 2004, Hudson and Hughes (2007) found that there was a lack of meaningful interaction between the district council marae and Maori community in that district also.

In a debrief for the 2005 Matata event a comment was made: "There were a number of victims that needed to know what was going on and to recognise that Iwi had a different culture and were more spiritual towards the land than Pakeha were."(Debrief, 3 August 2005).

The cultural difference also has a bearing on appropriate methods of reducing and dealing with trauma and stress for Maori. Hudson and Hughes (2007) study revealed that their survey participants found that being on a marae reduced stress. This was considered to be largely due to the participants' familiarity with tikanga Maori**,** marae protocols and marae processes. The marae processes involved discussions and sharing of experience in a safe and supportive environment where people knew each other. A group consciousness that brainstorms about what to do also provided empowerment to those present on the marae to have say and control over their lives. The marae environment also provides orientation to displaced Maori following a disaster. Stability and certainty for evacuees who may

experience trauma and anxiety is fostered in a marae setting. Marae have their own social order and social fabric and Gordon (2008) asserts that ordered social fabric and return to social order are important factors for ending shock and psycho-social disruption.

Some marae were utilised in some cases through self initiated evacuation and later through organised relocating from the Evacuation Centre at the Whakatane War Memorial Hall.

Person D:

> *"When things quietened down, I went down to the Wairaka Marae and registered people there as they were sorting out their own homes and not worrying about anything else. Some people were staying at the marae. Some were just cooking there."*

Person E:

> *"Colin Hammond* [Mayor] *asked me to organise dispersal to maraes on the Wednesday afternoon and this was accomplished with one phone call. Maquini from Ngati Awa Social Services had this completely organised in one hour and 10 minutes. (Yes I timed her because she said it would take an hour).What a star!!! She could have accomplished that on Sunday if she had been asked sooner."*

The Eastern Bay of Plenty has many marae and the local Iwi have established hauora, health and social services. Communication and social networks exist that interlink with marae and provide a suitable culturally appropriate vehicle for welfare centres and recovery processes including attending to the psycho-social needs of disaster victims. The issue of being disassociated may arise with urban Maori, those that do not have ties with the marae where they now live or those that may have drifted from having fluency in marae life. In the last fifty years, there has been a major shift from nearly two thirds of Maori living in rural areas to in 2006 nearly 85 per cent of Maori living in urban areas (Statistics New Zealand, 2007b).

This highlights the need for strong Maori involvement in pre-event planning and relationships with local and territorial government bodies responsible for emergency management. This involvement includes active participation and advising how best to accommodate a culturally appropriate approach to response and recovery. This also highlights the benefits of a cultural renaissance for Maori in creating stronger social capital and in turn building resilience for future disasters. Encouragement of a cultural renaissance forms part a holistic approach to emergency management.

Following the 2004 event, the Whakatane District Council has incorporated Maori representation into emergency management planning and involvement in recovery planning. This includes active ongoing participation of Te Puni Kokiri and Iwi social service agencies in the Welfare Group which meets on a regular basis. There has also been a Kaitakawaenga Maori position created with the recipient being heavily involved in Maori issues during the 2005 event (Debrief, 3 August 2005). The Maori perspective in response and recovery for the Matata event extended beyond Whakatane District Council with Housing New Zealand staff seconded to Matata being fluent Te Reo speakers with a good knowledge of the area (Debrief, 3 August 2005).

As Hudson and Hughes (2007) point out, marae make ideal natural evacuation centres for Maori evacuees, and the wider community. They may not suit all evacuees' needs such as the elderly and disabled who may have special requirements. They need to be seriously considered as part of an approach to emergency management that recognises the cultural needs of the community and the most effective tools that may be utilised to address the psychosocial aspects of recovery of Maori. Hudson and Hughes suggest that assumptions should not be made concerning the suitable nature of all marae as relationships and functions between marae, whanau and Maori communities may vary. Some marae may require supplementation of resources such as funding for food, bedding, and ablution facilities in the event of use as an evacuation centre. This could appropriately take the form of a koha.

6.1.28. Insurance Sector

One industry sector that was considered to be important but absent during the recovery phase was the insurance sector. A number of residential properties were lacking in adequate insurance and a number of businesses and rural properties including farms suffered loss. The lack of insurance industry representation hindered recovery work where clean-up work on residential properties was delayed pending processing and advice on insurance claim settlements. Insurance remained one of the unresolved issues that contributed to communication networks open to rumour and impeding the rational processing of information (Gordon, 2008). The lack of insurance resolutions created financial uncertainty and this contributed to ongoing anxiety. Flood victims perceived members of the insurance sector to be uncooperative, delaying and obstructive to the restoration of lost assets, which caused demoralisation and feelings of despair (Gordon). When they did become involved in a positive manner, Gordon found that they provided hope and reassurance and were supportive to flood victims.

6.1.29. Medium to Long Term Counselling

The passage of time was a helpful influence on personal and community recovery (Gordon, 2008) however, it is not a panacea. Confidence and optimism must be present if time is to be considered as a positive factor in recovery (Gordon). Time does not necessarily heal all wounds with up to 30-40% of those suffering trauma experiences requiring professional support in order to process those experiences (Spee, 2008). The psychological impacts of the flood event went on for a significant period of time after the event. Flood victims were requiring counselling well over a year later. This is often forgotten by some of the unaffected community, relatives, friends, and work colleagues.

At the time of a disaster there is much media coverage of the worst damaged areas and those that suffered considerably, physically, emotionally and financially. It often does not take long for there to be little media coverage of that event as other events occurring nationally and internationally take precedence. This results in diminished awareness of the trauma that may still be experienced by disaster victims. This should be considered in the planning and provision of support services for disaster victims as the support of professionals, family, and

friends plays an important role in the recovery process. Social support plays a significant role in helping prevent Post Traumatic Stress Disorder (PTSD) or related psychological disorders developing following exposure to trauma (Stephens, 1996). The importance of emotional support in preventing the development of disorder or PTSD is also discussed by Stephens.

Person B:

> *"There was a huge gap in providing for the grieving process which sometimes happened six months or a year down the line. You need to consider resourcing for the medium and long-term (for counselling support). The disaster is covered tremendously in the media initially and then it dies off and there are no recovery stories. Sensationalism dies down and people still have to go back to stress. The sense of loss goes off the radar of most people. That's a major gap having a longer term perspective."*

> *"You have got to be in touch with the people that mattered. I had the advantage of being there from the beginning to one year later when people were coming in for counselling."*

Participants were asked how long they were involved in the recovery role. This included those involved in a counselling role.

Person B:

> *"We were involved over a year and into the next disaster that struck. It was ongoing, it changed form and shape. It went on for a long time."*

Spee (2008) found that two years after the Matata event of 2005, many people were still experiencing the components of trauma albeit that the recovery of that event differed from the 2004 flood event due to mitigation measures delaying some rebuilding.

There is opportunity to utilise media for follow-up stories that focus on positive aspects of the recovery, and maintaining community awareness and preparedness of the hazard with examples of the past event. This can serve to keep the previous disaster "alive" in respect of community awareness.

6.2. The current Emergency management situation

Emergency management within the EBOP has evolved since 2004 in a number of areas. Some of the changes have been bought about as a result of national directives such as the recovery policy from MCDEM. Some changes have occurred where other districts and regions have identified improved systems and practice. ECS has been adopted along with a training regime from level two to Controller. A multi-agency Welfare Management Group meets on a regular basis and has been involved in national exercises such as Exercise Ruaumoko which involved a scenario of a major evacuation of parts of Auckland due to volcanic activity. Likewise, the Emergency Services Committee has regular meetings and interaction providing agencies with knowledge of each other's roles and responsibilities and establishing relationships and networks.

The Whakatane District Council has a Welfare Manager and Recovery Manager appointed to each role, both with previous experience relevant to their respective roles. The Council utilises employees in its EOC, making use of existing networks and relationships that will benefit the EOC operation in future. This is included in employment contracts for the Council staff detailing that they have obligations to make themselves available in the event of EOC activation.

There is active participation by Maori focused organisations in the Welfare planning that includes Te Puni Kokiri and Ngati Awa Social and Health Services, an Iwi based service provider.

The Whakatane District Council has now assumed responsibility for emergency management for the Eastern Bay of Plenty district including the areas of the Opotiki and Kawerau District Councils (J. Pryor, personal communication, February 11, 2010). This has resulted in responsibility for perhaps the highest percentage of Maori population for any civil defence organisation or emergency management office within New Zealand. There is a clear need to deliver culturally appropriate and tailored response and recovery obligations for disasters in this district.

Chapter 7

7.0. Conclusion

The objectives of this research were to examine the response and recovery process of the Whakatane flood event of 2004 to establish what worked well, what did not and what lessons could be learnt to improve response and recovery in future events. An examination of improvements that a second generation of the CIMS model in the form of ECS was carried out to establish if this model could improve the effectiveness of recovery practices in a Bay of Plenty setting.

The original CIMS model was established by emergency services to provide an incident management system that set rules for providing standardised structures and procedures for managing emergency incidents. It suited the quasi-military organisational and management structures of emergency services such as Police and New Zealand Fire Service.

The modern approach to comprehensive emergency management often involves a multi-agency and multi-jurisdictional approach of government agencies and NGO. This approach requires a concerted effort in the areas of coordination and communication in order to provide efficient and effective response and recovery phases.

CIMS is the cornerstone of the modernised ECS model. ECS provides greater coordination, improved communication and encompasses the multi-agency and comprehensive emergency mangement approach to incidents. It forms a step in the evolutionary process of emergency management.

Disasters affect the land, the built environment and the people. They are a social phenomenon and as such, the phases of comprehensive emergency management need to address the social issues if they are to be effective in restoring the ability of a community to

function without external assistance. Planning and management require the consideration of social and psychological impacts of decision outcomes.

The 2004 Whakatane flood event resulted in significant damage to the economy, properties and infrastructure in the district. The impact on the members of the community included fatalities, violence and psychological trauma. Recovery time spans varied with some properties under-insured or a significant number of properties having no insurance and this caused trauma. Psychological recovery was a lengthy process and in some cases was impacted by a further flood event in the same district at Matata in 2005.

At the time of the 2004 flood event, emergency management practices in the Eastern Bay of Plenty were not well developed with there being no current Emergency Plan, Recovery Plan or Emergency Mangement Officer at the Whakatane District Council. The flood event was managed under the 1983 Civil Defence Act provisions. A number of issues arose that included communication and coordination difficulties and a lack of knowledge of roles and responsibilities within organisations and between organisations that were involved in the response and recovery phases. The problems that arose from these issues impacted on the stress and trauma experienced by the victims of the flood.

When looked at in totality, some good decisions were made by the people involved in dealing with the challenges of the flood event. Although plans and structures were not in place in 2004 and indeed did not exist for the recovery phase, organisational structures were created based on identified welfare issues. Where problems occurred, it is important to identify the lessons to improve future response and recovery performance.

The four phases of comprehensive emergency management are interwoven and influenced by each other as illustrated by examples such as the use of Army trucks in the response phase creating secondary damage directly affecting the recovery phase. The methods that were utilised and how evacuees were dealt with at the evacuation centre likewise had a bearing on how any trauma they may have suffered was processed.

The communication of recovery requirements involved a number of networks and methods and some problems were experienced that created tension between the community and the Civil Defence organisation. Some of the communication problems occurred when community members felt that they were not being heard and this resulted in experiencing a sense of powerlessness. Communications were not always clear between organisations and within the Civil Defence organisation.

The use of appropriate incident management systems with greater coordination of multi-agency activities and communication and provision of support and services can reduce the stress and trauma that disaster victims experience. Appropriate systems can improve communication between organisations and between organisations and disaster victims. The provision of timely and accurate information to disaster victims are also able to be improved which in turn impacts on stress and trauma reduction benefitting recovery.

The welfare needs survey was an important tool used to collect data to establish the needs of the disaster victims and to provide accurate data required for managerial decision-making. The survey was not fully developed when taken to the to the flood victims by a number of different agencies. The survey created an expectancy of a quick response to identified needs and this was not met. The survey lacked an electronic means of inputting data and delays in obtaining survey results effectively delayed the ability to respond to the flood victims' most requiring early assistance. The format of the survey included many non flood-related questions that caused further stress to flood victims. The welfare needs survey used in the 2005 Matata flood and debris flow event was much improved. The survey like other facets of emergency management must be dynamic and evolving.

There was a lack of preparedness at the main welfare centre at the Whakatane War Memorial Hall. Problems were experienced as a result of a lack of pre-event planning. This impacted on evacuees. Evacuation facilities had not been identified prior to the flood event and no planning or preparation for any evacuation had taken place. This resulted in a major lack of resources for providing the basic needs of evacuees when they first began arriving. The hall lacked adequate toilet and shower facilities for the elderly and disabled and had limited communication ability with the Civil Defence Headquarters. Heating and adequate security also posed problems.

The rapid evacuations that emergency services carried out had consequences on the flood victims. The degree of urgency and behaviour of the emergency services personnel heightened shock and commenced cognitive disruption for evacuees. Rapid evacuations where the evacuees are not given the opportunity to make their own decisions can be disempowering. In future events, it is important that evacuees are provided opportunity to make their own decisions, albeit that this may have to be a quick process. Organisations such as Police and Fire Service could train field supervisors on the psychological aspects of dealing with evacuees.

A lack of knowledge of defined roles and responsibilities within the welfare organisation created confusion within that organisation and with evacuees. A lack of pre-event relationships and networks contributed to this. The implementation of a management structure and regular interaction between the various agencies that form the welfare organisation now takes place and this addresses those problems that were experienced.

Many evacuees felt frustration from a lack of information and their concerns not being addressed. This added to the sense of loss of control of the individuals' situation and a feeling of not being able to move forward. Confident thinking and decision-making abilities were disrupted as a result of lives being disorganised. Frustrations were expressed as conflict or antagonism and promoted emotional overload and further cognitive disruption. This resulted in poor decision-making with adverse consequences creating further harm to some evacuees. Violence and drug abuse occurred. Information and communication networks can have significant impacts on stress and trauma for evacuees. They may also delay decision-making processes that ultimately delay individual and community recovery.

There is a need to establish where elected officials fit into any ICS or organisation that is created for a recovery role and what degree of executive influence they have in a disaster scenario away from an EOC. Although there is a representation obligation on elected governance office holders, roles and actions may conflict with emergency management key appointment holders in the response and recovery phases.

Volunteers form an important part of recovery and it is important to integrate them into the recovery organisation to improve the effectiveness of the recovery process. A command and control based ICS model may have a tendency to be a top down inflexible standardised approach that is not suitable. A management model with greater capacity for coordination such as ECS appears to be a more suitable alternative.

Registration forms an important part of disaster evacuee management. It is often the first opportunity to gather information on the needs of evacuees and to assess trauma that evacuees may be experiencing. Those involved in the registration process were not familiar with the process and some were not trained in dealing with people with trauma. Personnel responsible for registration processes should be suitably trained to deal with those suffering trauma and to identify those that may require professional assistance.

Evacuees were given tasks at the hall and within the community increasing resources and raising their self esteem. Providing useful roles and tasks to evacuees is empowering and helps preserve social organisation. This provides a positive step in personal recovery. Members of the community that did not experience the effects of the flood were also experiencing distress, empathy and helplessness. They were able to be involved in providing assistance to evacuees which was empowering for the community not flooded.

Media can create further trauma for victims where they encourage the person to recount or relive an event in an environment that does not provide appropriate support or protection to individuals that may be especially vulnerable. How the flooding was portrayed the flood raised anxiety in flood victims. Consideration of utilising CDEMG resources or MCDEM media liaison resources may be beneficial in any future disaster events along with the creation of a detailed media plan. This will better utilize media as an information vehicle and will also assist in the control of the media impacts on disaster victims and their exposure to media interviews when suffering trauma.

Differences between those that were evacuated at the flood onset to those evacuated a few days later were identified at the evacuation centre. Those that arrived few days later were at a different stage in dealing with their trauma from the flood. This posed difficulties for

individuals integrating into their new temporary environment. Evacuations occurring at different stages during a disaster have potentially quite different consequences related to when they are evacuated in relation to other evacuees. Evacuees from multiple phase evacuations may require appropriate support and accommodation to address the different stages of trauma processing they may be experiencing compared to those evacuated earlier.

Trauma from disaster consequences can be far reaching with persons that are geographically distant from the occurrence experiencing trauma as a result of a sense of loss of people or items that they cherish. Often these distant disaster victims may not be identified although the trauma and grief that they experience may be significant.

The multi-agency service delivery groups (cluster groups) were an efficient and less intrusive method of delivering service to the flood victims. The method helped overcome a lack of knowledge of roles and responsibilities and avoided duplicity of support. It simplified the process of obtaining the appropriate support for the flood victims.

There was a marked increase in domestic violence in the district that is directly related to the flood event. This involved controlling behaviours with women featuring as the predominate victims. Flood related stress exacerbated pre-existing relationship behaviours where a number of factors were present that included poor anger and stress management skills. A loss of a sense of control contributed to controlling behaviours occurring that resulted in violence. In situations where domestic violence was occurring, the intensity elevated to more serious offending. Social support agencies such as Women's Refuges experienced much larger workloads and staff was subjected to additional pressure with housing their clients and families in their own homes. Research into disaster related domestic violence it is in its infancy and there is significant further research required in this area as to methods to reduce post-disaster domestic violence.

The closure of all schools and childcare facilities affected stress levels for parents that were flood victims. Children that would normally have been at school or childcare now required care and this was compounded where families were not able to be at home with family entertainment resources. There was little respite childcare available and this needs to be

considered in future disasters where families may require assistance to allow parents to be able to concentrate on recovery needs and commitments.

Maori form a large proportion of the population in the Eastern Bay of Plenty, and feature in many vulnerable sub-groups when disasters occur. This includes lower socio-economic representation and single parent families. They experience and disproportionately feature in pre-disaster social problems such as domestic violence offending. Their culture is unique and has qualities that sit well with emergency management practices for response and recovery that can be utilised in providing stability, orientation and trauma reduction for disaster victims. Maori evacuees are likely to experience less stress and find orientation, stability and certainty in a marae setting. The social order and social fabric of a marae are important factors in ending shock and psycho-social disruption. Marae as the primary evacuation centre for displaced Maori will provide culturally appropriate support and trauma reduction in a familiar environment and this should form part of emergency planning. This is particularly important in the Eastern Bay of Plenty due to the high Maori proportion of the population.

Variances occur at district and neighbourhood level in the cultural composition of communities, indicating that for emergency management practices to be effective, they must be adapted to the communities that they serve. They must also be dynamic, living and evolving to keep pace with demographic changes that occur within communities within New Zealand.

The Whakatane District Council has now assumed responsibility for emergency management for the eastern Bay of Plenty district including Opotiki, Kawerau and Murupara. This has resulted in responsibility for perhaps the highest percentage of Maori population for any civil defence organisation or emergency management office within New Zealand. This undertaking will require effective communication and coordination with a management model that lends itself to a consultative and participative style rather than a command and control style model. ECS will provide an effective model that is far better suited than the CIMS model.

Often public awareness of the trauma disaster victims may be suffering diminishes as the media coverage of the event wanes. This may impact on the support that the unaffected community, friends, family, and work colleagues provide to disaster victims. The psychological impacts of the flood event went on for a significant period of time after the event. Social support plays an important role in helping prevent PTSD. It is important to maintain awareness in the community and this may be achieved by planning for the provision of support services in the medium to long term. There opportunity to utilise the media with follow-up stories that maintain community awareness and this should be considered in recovery planning.

Social issues and problems that exist before a disaster will not disappear with the use of good emergency management practices and systems. It is the degree of magnification of issues such as domestic violence and social inequities that will be impacted by emergency management practices and systems by reducing stress along with early identification of needs and provision of support or problem intervention. Stress deriving from organisational coordination and communication deficiencies is an aspect of emergency management that may be positively influenced by an appropriate incident management system such as ECS.

A number of identified issues in the 2004 Whakatane flood event provided the basis for an improved response and recovery to the Matata event the following year. Emergency management within the Whakatane District Council has continued to evolve with development of plans, beyond Auf der Heide's (1989) paper plan syndrome with various exercises and training of Civil Defence organisational and Welfare staff. Consultation with stakeholders and Iwi and communication amongst agencies likely to be involved in response and recovery has been developed and occurs on an ongoing basis, building social capital within the Eastern Bay of Plenty.

The response and recovery phases of the 2004 Whakatane flood event suffered from problems of communication, coordination, a lack of pre-event planning, and a lack of knowledge of roles and responsibilities within and between agencies. Much has changed as emergency management has evolved in the district with the adoption of ECS and the establishment of plans, training, networks and inter-agency relationships. The challenge now

lies in maintaining emergency management evolution and activity as time passes since the last significant event.

7.1. Recommendations for Further Research

Emergency management practices evolve through the development of knowledge by way of research and experiences. This thesis research has identified areas where further research may be beneficial in reducing disaster victim trauma and improving effective emergency management practices. Areas where further research is recommended are described.

An examination of the role of elected representatives at the levels of local , territorial and central government and how they fit into emergency management and incident management structures where they are not empowered by statute or appointment in a disaster specific role.

An examination of the relationships and trauma experienced in a long onset disaster involving a multiple phase evacuation over a period of time where evacuees are taken to a Centre already occupied by those evacuated earlier and at a different stage in personal trauma processing.

Establish the methods and practices that will assist with reducing domestic violence incidents that increase within New Zealand communities following disasters.

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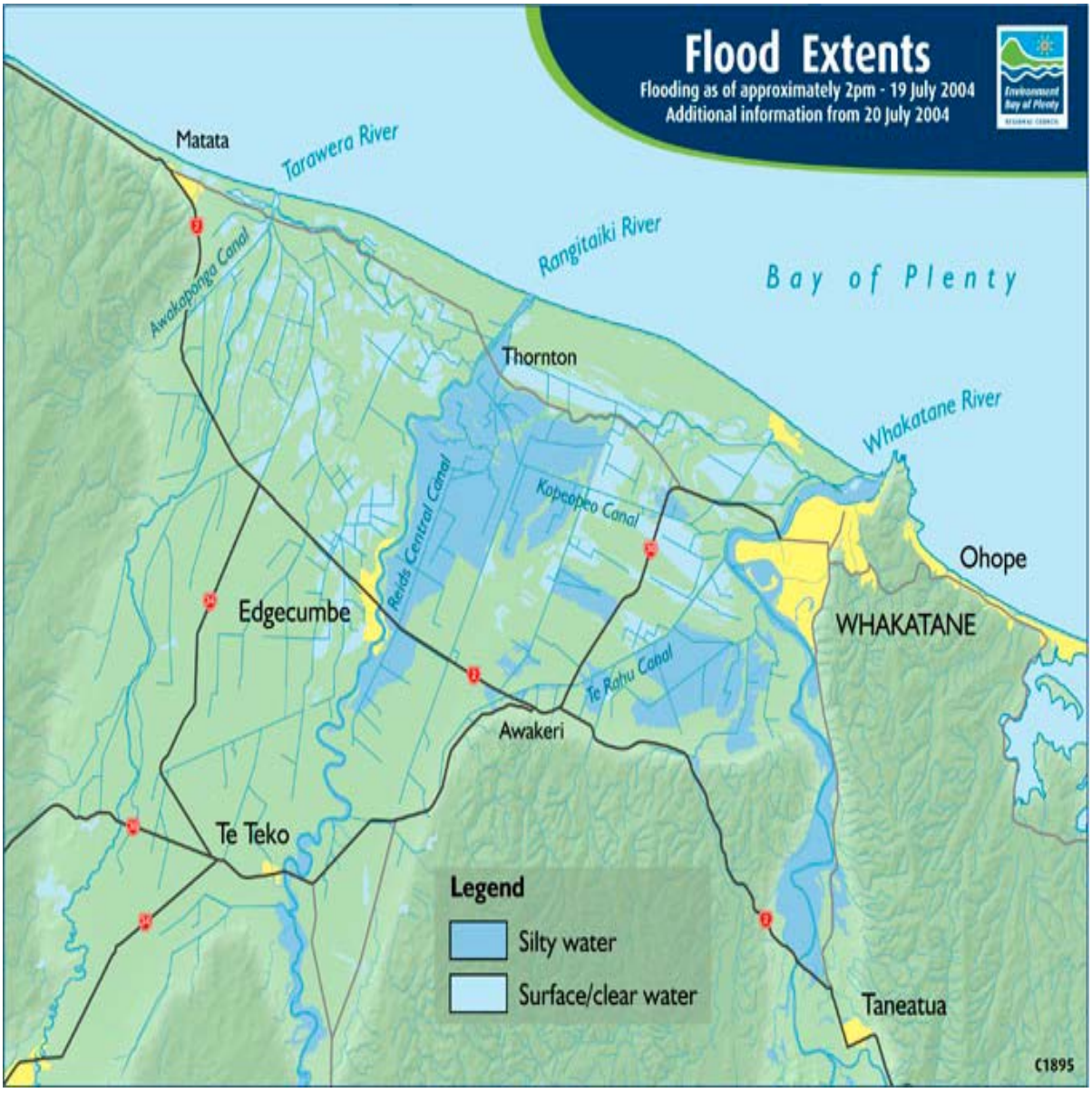
Appendix 1 Extent of Flooding



Map from Environment Bay of Plenty

Appendix 2 Information Sheet

(Massey Letterhead)

I am writing to request your participation in a research project about Incident Management Systems being carried out by me as part of study for the degree of Master of Philosophy in Emergency Management. The study aims to evaluate incident mangement system effectiveness in coordination during the recovery phase of a disaster and to establish lessons that may be learnt from a particular event.

The Whakatane flood event of 2004 is being studied as a part of this project. You are being approached for participation in this research because of your experience in this event.

What would I have to do?

If you agree to take part, I would like to meet with you at a time and place convenient for you for an interview which will take approximately 30-45 minutes.

Your participation in the interview is subject to Massey University's ethical requirements as listed below. With your permission, notes will be taken during the interview which will then be typed by me. The typed record may be forwarded to you for verification. Notes will be kept in a secure place until the research is completed. At that time they will be destroyed.

The interview will be subject to the following ethical guidelines as established by the University's Human Ethics Committee:

- You have the right to refuse to answer any questions, to withdraw from the study and to withdraw any information supplied at any time.
- You have the right at any time to ask further questions about the study.
- You have the right to ask for note-taking to be stopped at any time during the interview.

- You have the right to have access to your notes and to be able to make comments on it or make changes to it.
- You will be given access to a summary of the findings of the study when it is concluded.
- The information you provide is completely confidential to the researcher. All records will be identifiable only by code number and will be seen only by the researcher and the research supervisor. Excerpts from the interview may be included in publications of the research.

What next?

I look forward to meeting with you to discuss your experiences of the Whakatane 2004 flood event. I will telephone within the next few days to find out if you are able to participate in this research and would be happy to answer any questions you may have then, but am also happy for you to contact me at any other stage as well.

Yours sincerely,

Erle Busby

NB: This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher named above is responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone 06 350 5249, email humanethics@massey.ac.nz.

Appendix 3 Recovery Questions

1. What was the role of your organisation during the flood recovery and how was this fulfilled?
2. How were the Recovery requirements or expectations communicated to your organisation and by whom?
3. What role did the coordinated incident management system play in the recovery process from your organisation's perspective?
4. What impact did this have on coordination of your organisation's activities?
5. What problems did your organisation encounter in the recovery process?
6. What changes could have been made that may have benefitted coordination?
7. How effective was the inter-organisational communication within the Civil Defence Recovery organisation?
8. What could have improved this?
9. How effective was the inter-organisational coordination?
10. How could this have been improved?
11. What worked well during the recovery process and why?
12. What did not work well and how could this be improved?
13. What influence did the management procedures and structure used during Recovery coordination play in the outcome of this process?
14. What if anything, was missing in the Recovery Process that could have improved it?
15. What training exists within your organisation in relation to Civil Defence Emergency Management?
16. How long was your organisation involved in the Recovery?

Appendix 4 Consent Form

(Massey Letterhead)

Incident Management System Coordination Research

CONSENT FORM

I have read the information sheet for this study and have had the details explained to me. My questions about the research have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I also understand that I am free to refuse to answer any particular questions, withdraw from the study and to withdraw any information supplied at any time.

I agree to provide information to the researcher on the understanding that it is completely confidential and will not be used for any purpose other than this research and any publications that may result from the research.

I agree to the researcher taking notes during the interview and know that I have the right to ask for the note-taking to be stopped at any time during the interview.

I agree to the researcher using the typed record of this interview for the purposes of this research.

I understand that direct quotations from the interview may be used in reports of the study provided these do not identify me in any way.

I wish to participate in this study under the conditions set out on the information sheet.

Signed:

Name (please print):

Date:

Appendix 5 Interviewees by Organization

(No particular order)

Victim Support

New Zealand Police

Whakatane District Council

Citizens Advice Bureau

Elected Councillor

Te Puni Kokiri

Women's Refuge

Community Mental Health