

Mayor's Foreword

I have great pleasure in introducing **THE GISBORNE DISTRICT CIVIL DEFENCE AND EMERGENCY SERVICES VOLCANIC CONTINGENCY PLAN** to you all. Planning is the most crucial tool in the success of any activity even more so in those that happen infrequently.

I take this opportunity to thank the 'team' for putting this plan together for all of us. It has been achieved with minimal resources but is still able to provide a valuable resource for planning, dealing with and recovering from emergencies.

I can say that the Plan should give us more confidence that the Group will be able to cope with an emergency BUT the overall success still depends on the majority of the public being prepared and able to cope without assistance.

I have every confidence in our staff and our trained civil defence coordinators in our region, that all our planning and training will lessen the trauma in case of an emergency.

Our team has experience with Cyclone Bola and the close calls we have had since. This has meant that the team that developed the Plan has reality based knowledge and experience behind them when preparing the Civil Defence Emergency Group Management Plan.

But even so we should still not be complacent as the impact of any event can still provide the unknown and in reality Bola was a small emergency.

We have a good group of civil defence volunteers (community link) ready to provide leadership in an emergency, a good communication infrastructure ready to communicate with the remote parts of our region and our Council will continue to provide funds to ensure that a reasonable level of preparedness is maintained and a response structure is in place.

As long as communities prepare to a credible level and 'organisational' support is maintained we should be able to cope with the majority of disasters that the region can expect.

Meng Foon

Mayor

GISBORNE DISTRICT COUNCIL

Distribution

<u>Internal</u>	<u>Number of Copies</u>
Controller	1
Response Co-ordinators	3
Emergency Management Office	4
Manager Engineering & Works	1
Manager Environment & Planning	1
Utilities Asset Manager	1
Senior Environmental Health Officer	1
Media Officer	1
<u>External</u>	
Area Co-ordinators	3
District Welfare Manager	1
Police	
Regional Office Napier	1
Gisborne Station	1
Fire Service	
Regional Office Napier	1
Gisborne Station	1
Public Health Unit	2
Eastland Network	1
Downers (Telecom rep)	1
OPUS	1

Cover photo courtesy of IGNS

Contents

	<u>page no</u>
1. 1 Introduction	4
1. 2 Emergency Management Team	4
2. 1 Effects on District	4
Responsibilities	6
3. 1 Command and Control	6
3. 2 New Zealand Police	6
3. 3 Fire Service and Tairāwhiti Health Care Ltd	6
3. 4 Gisborne District Council (Civil Defence)	6
3. 5 Life Lines	7
3. 6 Government Agencies	7
3. 7 MAF	7
3. 8 Logistics	7
3. 9 Welfare	7
3.10 Media	8
3.11 Ashfall Monitoring	8
Operational Priorities	8
4. 1 Established Priorities	8
4. 2 Evacuation Planning	9
4. 3 Fuel	9
Warning Systems	9
5. 1 Institute of Geological and Nuclear Sciences	9
5. 2 Ministry of Civil Defence & Emergency Management	9
5. 3 Gisborne District Council (Civil Defence)	9
5. 4 Notification Documentation	10
Volcanic Eruptions	11
6. 1 Event Occurs Without Warning	11
6. 2 Significant Ashfall Event	11
6. 3 If Declaration of CD Emergency Warranted	11
6. 4 If Declaration of a CD Emergency is Not Warranted	12
7. 1 Refugees from Neighbouring Regions	13
8. 1 Recovery Matters	14
ANNEX A Warning System	15
ANNEX B Scientific Alert Levels	16
ANNEX C Summary Of Emergency Services Procedures	17
ANNEX D Aide Memoir For EMT Meeting	18
ANNEX E Evacuation Plan Guidelines	19
ANNEX F Public Information and Media Procedures	23
ANNEX G Ash Collection Procedures	24
ANNEX H Volcanic Products And Their Effects	25

Introduction

1.1 The purpose of this plan is to identify steps that the Emergency Management Team will use to manage the lead up to and eruptive stages of a volcanic event. The recovery phase will be managed with procedures contained in the Group Recovery Plan, except for the cleanup issue which will have to be planned at the time.

To achieve this the following factors are considered as the priorities for close co-ordination.

- warning systems
- media/public information management
- essential services management, water/power/communications/fuel
- evacuations (evacuation plan)
- Management of refugees – closure of Waioeka Gorge and SH 35
- Logistics

1.2 Emergency Management Team (EMT)

To manage the process prior to a declaration an EMT consisting of those listed below will meet as required to plan and implement strategies.

- Group Controller
- CDEM Officer
- New Zealand Police
- New Zealand Fire Service
- E & W Utilities Asset Manager
- GDC Rooding Manager
- Medical Officer of Health
- District Welfare Manager
- Media Officer

There are a number of others that may be included or receive notifications and they are shown in sec 5.3.

2.1 Effect on District

Ash fallout has the potential to be the most disruptive disaster in the District.

Any event has the potential to cause wide spread loss of services, including transport, power, phones, water supply, sewage and disruption to most commercial and farming activity in the District. A 700 year Okataina event could last for 3 years, which means the disruption to our social and economic systems will be significant. Clean up costs will run into the millions.

Isolation will become one of the more significant issues, with the likelihood of SH 2 (North and South closing for long periods. Closed also for unspecified periods will be the airspace/airport and the rail link.

Return Periods:

Source	Size (km ³)	Expected thickness In millimetres	Frequency
Okataina	1	1 – 150	700-5000yrs
Okataina	10	1 – 1500	700-3000yrs
White Island	0.1	1 - 10	1000-5000yrs
Ruapehu	0.15	1 – 5	100-500yrs
Taupo	0.05	1 – 5	1300-1600yrs
Taupo	0.5	1 – 50	1300-1600yrs
Taupo	5	1 – 600	2500-5000yrs
Taupo	50	100 – 4000	5000-10000yrs
Egmont	0.1	1 – 2	1300-1600yrs

There has not been a significant event from Okataina for ~ 700 years or any event from Taupo for ~ 1850 years. The last volcanic event to affect the Gisborne District was in 1995 when 1-2mm of ash fell from Ruapehu. The main affects where disruption of air travel and discolouration of cauliflower crops.

2.2 In large events ash carried down rivers could choke river channels and drains and causing flooding on the Flats and potentially the City for many years. There is evidence of ash on the Poverty Bay Flats of 500mms thick from 1 eruption.

2.3 The impact of ash on people, structures and equipment etc, will be dependent on the: (see annex H for further information)

- type of volcanic eruption,
- volume of volcanic material erupted,
- distance from the vent,
- height of column erupted,
- wind direction at all levels,
- wind speed at all levels,
- composition of ash,
- and size of ash particles falling.

2.4 For planning purposes, no particular size of ash particle has been selected, (except being so far from the vent finer particles of ash are more likely) but deposits of between 1-2 mm and 300 mm would not be unrealistic in the Gisborne District.

2.5 The EMT will need to take into count:

- transport restrictions – all modes
- loss or restriction of most lifelines
- early evacuation of at risk groups

Responsibilities

Individual groups recognised in this contingency plan are responsible for maintaining their own action plans required to mitigate against, prepare for, and respond to an ashfall event.

This Contingency Plan will be maintained by the Emergency Management Office.

3.1 Command and Control

New Zealand Police are acknowledged as the lead agency responsible for physical aspects of public safety. However, Police will require the Emergency Management Office to play a lead co-ordination role in providing assistance for public safety during the various stages of a volcanic alert, prior to and during a declared Civil Defence Emergency.

3.2 New Zealand Police

Statutory responsibility for the enforcement of law and order remains with the NZ Police at all times. Requirements for specific police functions prior to, and during, an emergency are detailed within the Civil Defence Emergency Management Act 2002, National CDEM Plan and the Group CDEM Plan. However, as a lead agency, some of the major roles that Police are expected to plan for, and undertake, during a volcanic emergency include the protection of life and property, identification of casualties and evacuees, road traffic safety, evacuation and movement control.

3.3 Fire Service

Statutory responsibilities for preparatory and response measures for the Fire Service during an emergency are detailed within the Civil Defence Emergency Management Act 2002, National CDEM Plan and the Group CDEM Plan. In brief they relate to fire, hazchem incidents and rescue of trapped people

3.4 Tairāwhiti District Health

Statutory responsibilities for preparatory and response measures for Health Agencies during an emergency are detailed within the Civil Defence Emergency Management Act 2002, National CDEM Plan and the Group CDEM Plan. In brief they relate to public health issues and medical issues and in addition particular attention to persons who would normally require evacuation for care, out of the District. There will also be the need for the prior preparation of commonsense advice for media release on health care during ash fallout.

3.4 Gisborne District Council (Civil Defence)

The Council has the responsibility of maintaining its CDEM Group Plan, Standard Operating Procedures and this Volcanic Contingency Plan. The Council (Civil Defence) under the authority of the Mayor (prior to declaration) will co-ordinate and release all general media statements, with advice from the EMT, on public preparedness activities and updated information about the status of the volcano. The Council (Civil Defence) is also responsible for calling meetings of the EMT identified in 1.2 and if necessary other key personnel, to plan courses of action and dependant on the size of the threat, a declaration. Civil Defence is also responsible for maintaining a District wide warning system and this contingency plan.

3.5 Life Lines

Essential industries (including utility companies and the Gisborne District Council utility providers) have a statutory responsibility for the maintenance and delivery of essential services such as power, gas, airport, roading, telecommunications, water, drainage and sewerage. As such they must prepare and maintain their own contingency plan to mitigate against, prepare for, respond to, and recover from the effects of any volcanic emergency within the Gisborne District. The process to do this must involve wide consultation with the users that are general recognised as essential users. (not the public). This process is dynamic and will involve some planning done just prior to and also during an eruption.

3.6 Government Agencies

Statutory responsibilities and functions of Government Agencies, both prior and during an emergency, are detailed within the Civil Defence Emergency Management Act 2002, National CDEM Plan and the Group CDEM Plan. This generally involves the continuation of service to the public, but may also involve some increase in core activity.

3.7 MAF

As a government agency, MAF has similar statutory responsibilities during an emergency as detailed above. As the effects of a volcanic event will also impact on rural communities MAF has a lead role in advising on such matters as effects of volcanic ash on livestock, horticulture, agriculture and pastoral based industries. During a major volcanic event MAF will play an essential role in response and recovery matters within the Gisborne District.

3.8 Logistics

During a civil defence emergency the available resources of the Gisborne District are under the control of the Controller to ensure they are best utilised for the protection of people. In a volcanic emergency policy's and priorities will need to be established relating to overall control for distribution of fuels, transport resources (including air assets) food stocks and water etc, as well as equipment for the protection of personnel, facilities and assets.

3.9 Welfare

Most care agencies and voluntary organisations already have a role in the response to local community needs during an emergency. They are recognised in the CDEM Group Plan and are responsible for preparing and maintaining their own contingency plans to ensure they fulfil their role during a volcanic emergency. However assistance, may be required with the co-ordination of some welfare activities, such as provision of food and water, housing, transport and counselling, during a volcanic event.

3.10 Media

The key function of media (both electronic and print) will be to keep the public informed and well advised during a volcanic emergency. News releases may be co-ordinated nationally by the Director of Civil Defence and Emergency Management (MCDEM). However, personal safety matters and local issues to the public, will be co-ordinated by the Gisborne District Council (Civil Defence).

3.11 Ashfall Monitoring

The Councils Environmental Health Section will be responsible for collecting ash samples and ensuring that timely analysis is undertaken: Procedures are at Annex F.

The Civil Defence Officer will establish prior to a declaration; potential for or the extent, intensity and depth of any ashfall. The mechanism to do this will be primarily through the MCDEM, IGNS, the civil defence network and other emergency services.

During a civil defence emergency the “civil defence organisation” is responsible for monitoring the ashfall.

Collated information will be passed to those listed in para 5.3.

Operational Priorities/Strategies

4.1 Established Priorities

Established priorities during any volcanic ashfall event will be:

- safety of people through the release of timely information and advice
- protection of vulnerable assets
- closure of the Waioeka Gorge and Coast Highway at Opotiki

Unless the size of the volcanic event dictates otherwise, general strategies for management of the emergency will be:

To advise people to undertake "in-house-sheltering" within their own local community, and

To co-ordinate all matters relating to clean up after an event, so as to return the local community back to normal as quickly as possible.

In a larger event some areas will need to be evacuated, especially in the Waikohu area, priorities will be given to those with medical problems, the elderly and children.

4.2 Evacuation Planning

Evacuation Plan Guidelines are shown at Annex E, it is not considered because of time and practical factors that it is logical to prepare and maintain evacuation plans for all the likely scenarios for volcanic events. The initial and subsequent meetings of the EMT will address the issue and if the event dictates prepare a plan from the guidelines for a given situation.

4.3 Fuel

Once a significant eruption starts the chances of getting fuel supplies to Gisborne will be severely reduced. The resource will need strict management with the need for a graduated scale of fuel rationing as the likelihood of an eruption increases. Refugees from the other regions should only be given enough fuel to get them to nearest town, as will Gisborne people who decide to self evacuate. Those who remain in the District will need to be rationed. The fuel contingencies shown in the Civil Defence plan will be activated and involve the use of the Caltex Stations in Gisborne and the Hikurangi Food Market in Ruatoria. Any power shut down and road conditions will also be a self limiting factor.

Warning Systems

5.1 Signs

The Institute of Geological and Nuclear Sciences (IGNS) is responsible for monitoring and assessing the state of New Zealand's volcanoes and issuing Scientific Alerts. Once a 'volcanic threat' exists IGNS is responsible for updating the status levels and supplying the MCDEM daily with Ashfall Predictions for the following 18-24 hours. Predictions will be based on expected wind strengths and direction, and will be given in the form of a map showing the area in which ash is expected to fall should an eruption occur.

5.2 MCDEM

I responsible for receiving the information from IGNS and other sources and passing it to the Gisborne Civil Defence Warning System.

5.3 Gisborne District Council (Civil Defence)

The Gisborne District Council (Civil Defence) is responsible for the initiation of the appropriate response to the level of warning received. This may involve a meeting or just notification. The Scientific Alerts and warnings are received by the Civil Defence Officer and will be acted on if:

- there is an Alert Level change (see annex Bi)
- there is the likelihood of an eruption
- there has been an eruption

Any status change upwards of a reawakening volcano will require a meeting of the VMT.

- Civil Defence Controller
- CDEM Officer
- New Zealand Police
- New Zealand Fire Service
- Engineering & Works Utilities Asset Manager
- Engineering & Works Roading Manager
- Medical Officer of Health
- District Welfare Manager
- Media Officer
- Which may expand to include
- The Mayor
- Alternate Controllers
- Council Management team
- Eastland Infrastructure
- EOC Team Leaders
- Eastland Network
- Transit
- Telecom (Downers)
- Area Co-ordinators

The above that are Organisations and have offices/a presence in communities throughout the district or outside of the district are responsible for passing any information about the event to them.

The top part of this list is also the group that receives automatic notification from the Civil Defence Officer of any Alert Level changes others receive the changes on a need to know basis.

5.4 Notification Documentation

The following documentation is available prior to and during events to give more information about the characteristics, likely impacts and affected areas of an eruption. They can be used to assist in the decision making process and monitoring.

- Scientific Alert Bulletins – IGNS
- Ashfall Prediction maps – IGNS
- NOTAMS – CAA
- Volcanic Ash Advisory – MetService
- Wind Advice – MetService
- National Media statements – IGNS and MCDEM

A summary of the warning system is shown at Annex B.

Volcanic Eruptions

6.1 Event Occurs Without Warning

Notwithstanding warning actions in para 5, a situation may arise when ash is erupted into the atmosphere without detection. In this instance the first indication that may be received by the Gisborne District Council, are reports that ash is falling the district.

Once ashfall is reported to civil defence by anyone from within Gisborne District a co-ordination meeting will be called of the EMT. If the ash is too heavy to allow vehicle use then attempts will be made to consult by phone, if this is not possible then it must be assumed that a declaration is in force and the EOC will become operational as soon as possible.

The public will be advised via the media, when and where possible, of any additional precautions that may need to be taken within communities where ash is or could fall.

6.2 Significant Ashfall Event

Notification that a major ashfall event is about to happen or has happened will require an immediate meeting of the EMT. The Management Team will decide that:

1. no action will be needed,
2. monitoring of situation to continue with appropriate advice to the public and preparations of response activities, or
3. A Declaration of a State of Civil Defence Emergency will be made with appropriate actions taken as shown in 6.4.

6.3 If Declaration of a CD Emergency is Warranted

The following action will be taken:

- Declaration of a State of Civil Defence Emergency will be made
- Activation level of Gisborne District EOC will be increased to FULL ACTIVATION in accordance with the EOC Management and Activation Standard Operational Procedure.

Specific issues to be dealt with may include:

Road Closures

Roads may need to be closed by the Civil Defence Controller acting upon advice of the Police, Transit NZ, Community Link or the Gisborne District Council Engineer.

Power

Priorities for the maintenance of electricity distribution networks may need to be decided by the Civil Defence Controller, in consultation with Eastland Network.

Communications

Priority may need to be given to the maintenance of telephone systems to Essential Services, Emergency Services and Civil Defence, in accordance with Telecom's established procedures. Priority may also need to be placed on maintaining radio services for Emergency Services, Gisborne District Council VHF network Telemetry links and Civil Defence repeater networks.

Public Health

Tairāwhiti Healthcare will prepare advice for the public on measures to take to protect their health, dependant on the circumstance this can either be released under the auspices of the controller or independently. A contingency plan maintained by the Tairāwhiti District Health will detail how they will respond to medical emergencies in the event that aircraft and ambulance movement is restricted by ash.

Public Information

Both the Media aspects and the Public Enquiry system of the Civil Defence Headquarters will be established as a priority, so that timely and accurate information can be passed to the public. This aspect of the operation should be seen as one of the most critical parts of a successful response to a volcanic event. Particularly in a prolonged event panic and low morale in the community may become a major problem.

Evacuations

The need for any evacuations, whether self or compulsory will be made primarily in conjunction with the communities affected, health authorities and those responsible for at risk groups. As mentioned elsewhere in this document, decisions will have to be made early.

6.4 If Declaration of a CD Emergency is Not Warranted

Civil Defence will still have a role to play where there is ashfall but the declaration of a civil defence emergency is not necessary.

In this circumstance the role of the Gisborne District Council will include:

Road Closures

Gisborne District Council Engineering staff may be requested by Police to close roads due to poor visibility. The public will be advised of any road closures through the media and the Automobile Association.

Public Enquiry and Media Releases

The CDEM Group Plan gives Civil Defence the responsibility for issuing and co-ordinating media releases for a volcanic event, whether or not there is a declaration. These releases will be co-ordinated from the Emergency Management Office.

Public Health

As for a declaration Tairāwhiti District Health will still need to prepare advice for the public on measures to take to protect their health and dependant on the circumstance this will either be released with the general releases or more likely, after consultation, independently. A contingency plan maintained by Tairāwhiti Healthcare will still be required to show how they will respond to medical emergencies in the event that aircraft and ambulance movement is restricted by ash or predicted ashfall.

Monitoring

Ashfall will continue to be monitored and information passed on to other key agencies as outlined in paragraph 5.3.

7.1 Refugees From Neighbouring Regions

Any significant event that occurs whether we have ashfall here or not could generate an unplanned and/or planned influx of evacuee from other regions particularly the Bay of Plenty or Hawkes Bay (Wairoa). Early communications must be established with the civil defence authorities to ensure co-ordination is put in place. If ash is to fall in the Gisborne District priority will be given to closing the Waioeka Gorge and Coast Highway at Opotiki.

In the event that we are not affected and are unlikely to be, then the refugees will have to be cared for in the Gisborne District until a National solution is found. Whether we declare or not to care for them, will depend on the scale of the problem.

How we are involved in the event, then again, depending on the scale and the future scenario, will dictate our response. Only in a minimal event will we be able to support any major influx of refugees. It is more likely that we will have to act as a staging point for the onward movement of the refugees. It will become a priority to move them on prior to ashfall, by road and during the worst case scenario by sea, as air transport will be unlikely and road movement will only put them at risk.

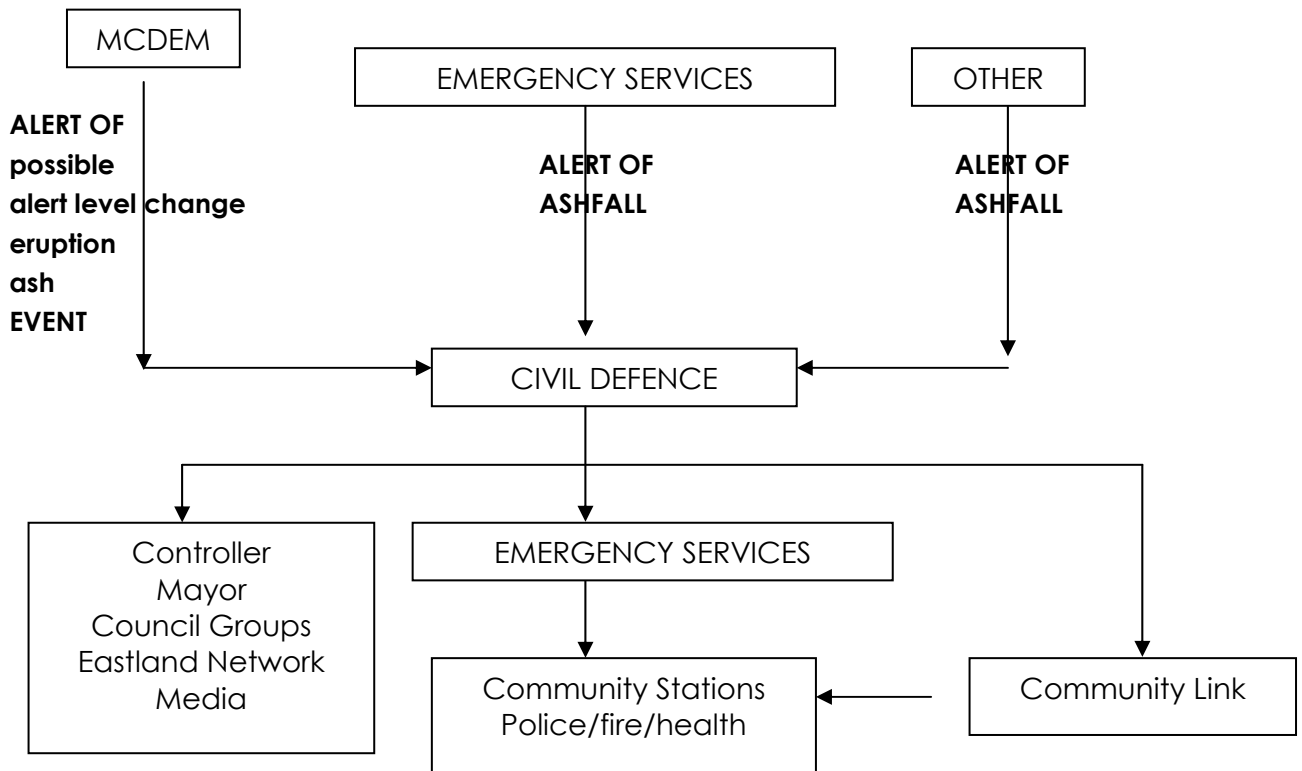
Border control will need to be established at all routes into the District, in practical locations, to establish and maintain control of the situation. Any refugees entering the District must be left in no doubt that they will have to conform to our plan.

8.1 Recovery Matters

If the event is serious enough to warrant recovery activities and as a volcanic eruption is likely to impact over a wide area of New Zealand, it is likely that a Disaster Recovery Co-ordinator (DRC) will be appointed by Central Government to co-ordinate all matters relating to disaster recovery.

8.2 Unless there is large scale devastation over a wide area, it is likely that only one DRC will be appointed to undertake this task. Whether there is one or more, the Councils own Recovery Manager will be activated to act as the District representative and to liaise with the DRC. (see Disaster Recovery SOP for further information)

Warning System



Civil Defence Pre Determined Levels of Activation

ACTIVE CONE			REAWAKENING	
	LEVEL	STATUS	LEVEL	STATUS
	0-1	NIL	0-1	NIL 1
	2-4	ALERT	2	ALERT
	5	STANDBY 2	3-4	STANDBY
			5	FULL

Notes

- 1 A change for 0-1 will require a meeting of the EMT to be called
- 2 Wind direction and volume of ash will determine change to full activation.

Scientific Alert Levels

Frequently Active Cone Volcanoes

Reawakening Volcanoes

White Island, Tongariro-Ngauruhoe, Ruapehu		SCIENTIFIC ALERT LEVEL	Kermadecs, Northland, Auckland, Mayor Island, Rotorua, Okataina, Taupo, Taranaki	
Volcano Status	Indicative Phenomena		Indicative Phenomena	Volcano Status
Usual dormant, or quiescent state.	Typical background surface activity; seismicity, deformation and heat flow at low levels.	0	Typical background surface activity; deformation, seismicity, and heat flow at low levels.	Usual dormant, or quiescent state.
Signs of volcano unrest.	Departure from typical background surface activity.	1	Apparent seismic, geodetic, thermal or other unrest indicators.	Initial signs of possible volcano unrest. No eruption threat.
Minor eruptive activity.	Onset of eruptive activity, accompanied by changes to monitored indicators.	2	Increase in number or intensity of unrest indicators (seismicity, deformation, heat flow etc).	Confirmation of volcano unrest. Eruption threat.
Significant local eruption in progress.	Increased vigour of ongoing activity and monitored indicators. Significant effects on volcano, possible effects beyond.	3	Minor steam eruptions. High increasing trends of unrest indicators, significant effects on volcano, possible beyond.	Minor eruptions commenced. Real possibility of hazardous eruptions.
Hazardous local eruption in progress.	Significant change to ongoing activity and monitoring indicators. Effects beyond volcano.	4	Eruption of new magma. Sustained high levels of unrest indicators, significant effects beyond volcano.	Hazardous local eruption in progress. Large scale eruption now possible.
Large hazardous eruption in progress.	Destruction with major damage beyond volcano. Significant risk over wider areas.	5	Destruction with major damage beyond active volcano. Significant risk over wider areas.	Large hazardous volcanic eruption in progress.

Summary of Procedures

Incident	Civil Defence Status (note 1)	Action	Emergency Services Action
initial volcanic alert or level change (note 2)	ALERT	Civil Defence Officer assess threat, Emergency Services notified, meet if necessary to plan response (see Aide Memoire Annex D)	notify senior officer notify community stations core business
eruption possible	ALERT	notification per para 5.3 procedures reviewed, meet if necessary	notify senior officer notify community stations core business
eruption occurs	STANDBY (note 3)	threat assessed, meet if necessary, notification per para 5.3, contact between liaison officers occurs	notify community stations core business presence at Civil Defence
ashfall imminent or falling	STANDBY	contact between liaison officers, procedures reviewed, meet if necessary	notify community stations core business presence at Civil Defence
magnitude increases	STANDBY	Emergency Services Liaison Officers to Civil Defence EOC	notify community stations core business presence at Civil Defence
significant threat to public safety	FULL ACTIVATION	establish full Civil EOC notify community stations	civil defence activates move to EOC core business

- notes**
1. These automatic status levels are a guide only and could change once the threat has been assessed
 2. Which volcanic centre the alert is issued for will dictate the pace and urgency of the following actions
 3. The threat from some volcanic centres could require a move to full activation at this point.

Aide Memoire

The following are the key points to be considered at volcanic planning meetings of the EMT.

Public Information/Media Plan

- what needs to be told at this point
- who's going to do what
- what medium
- frequency

Communications

- need to establish common net
- security of remote sites

Evacuations

- need
- which areas
- at risk groups
- self
- compulsory

Logistics

- transport
 - vehicle protection
 - road restrictions
 - road blocks
 - Airport
- resources
 - fuel
 - food
 - water
 - power

Welfare

- internal evacuations
- external evacuations

Refugees from outside Regions

- close roads
- reception

Extra Planning Considerations

- need to get people home
- affect on river catchments

Evacuation Plan Guidelines

The following format will be used as a guide for writing an evacuation plan in the event of a particular volcanic event requiring evacuation from within the Gisborne District. Parts of the format may also be used to formulate a policy for the handling of refugee's from other regions.

1. Background

- a. Outline of events which are occurring/have occurred/may occur which make evacuation imperative.
- b. Detail the area affected or likely to be affected.

2. Aim of the Plan

State the aim in clear and concise terms eg 'The aim of this plan is to effect an evacuation of all persons from the expected impact areas, and their removal to places of safety in'

3. Executive Summary

4. Responsibilities

- a. Identify person ordering the action and their authority to do so.
- b. Identify person controlling the evacuation.
- c. Identify other key personnel for key functions by name and service

6. Communications Plan

- a. Summary of points from following headings
- b. Nets to be used and control factors
- c. Special maintenance features and redundancies

7. Public Information/Media Matters

- a. Management of information release.
- b. Media Liaison
- c. Help line info.
- d. Timings.
- e. Assembly areas/pick-up points for those without own transport.
- f. Limits on personal luggage for those without transport.
- g. Self evacuees routes and suggested destinations
- h. Help en route
- i. Self evacuees actions on reaching destination.
- j. Advice as to personal effects and documentation.
- k. Actions to be taken to secure homes eg. electricity, water, gas.
- l. Security matters eg. area patrols, cordons on evacuated areas etc. (reassurance of those departing).
- m. At risk groups.
- n. Policy on domestic pets.
- o. Advice re livestock
- p. Advice to tourists and tourism industry.
- q. Insurance and financial matters.

8. Evacuation Routes

- a. From communities to assembly/reception areas.
- b. From assembly/reception areas to.....
- c. Roads closed/to be closed for general use(notification).
- d. Identification of possible problem areas/planned solutions/diversions/road clearance teams.
- e. Allocation of routes.
- f. Traffic control points.
- g. Alternate routes.
- h. Key link points.
- i. Establishment and maintenance of traffic priorities.
- j. Control of self evacuees.

9. Assembly and Embarkation

- a. Manning and control of assembly points.
- b. Identification of personnel.
- c. Vehicle allocation.
- d. Care en-route.
- e. Special needs categories.
- f. Baggage identification.
- g. Communications to Central Control Point.
- h. First aid/infant-care/welfare facilities.
- i. Catering at assembly points and en-route.
- j. Institutions.

10. Reception at Debarcation Points and onward Movement (if applicable)

- a. Reception/welfare facilities.
- b. Staffing.
- c. Temporary accommodation and catering.
- d. Arrangement of onward movement to final destination.
- e. Communications to Central Control Point.
- f. Registration/recording onward movement.
- g. Schooling.
- h. Arrangements for ISS/benefit/unemployment etc. payments.

11. Registration

- a. Policy eg. in or out of area.
- b. Staffing.
- c. If out of area, alternate location.
- d. Co-ordination of Registry matters.

12. Movement Control

- a. Liaison with transport agencies/operators.
- b. Route control (in area and out of area eg. control of incoming/returning traffic).
- c. Manning of checkpoints and control points.
- d. Route surveillance.
- e. Clearance policy.
- f. Communications co-ordination.

- g. Progress reports.
- h. Route status reports.
- i. Administrative support for control and checkpoint personnel.
- j. Pre-positioned support vehicles eg. plant, emergency services etc.
- k. Management/control responsibilities.

13. Security

- a. Responsibilities.
- b. Street/area clearances.
- c. Cordons/patrols.
- d. Progressive shut-down of utilities.
- e. Safety information for security personnel.
- f. Protective equipment for security personnel.
- g. Communications.
- h. Withdrawal Plan.
- i. Specialised protected transport.
- j. Administrative support for security personnel.

14. General Matters

- a. System for checking/marking evacuated properties.
- b. Monitoring self-evacuation (mail re-direction ?).
- c. Problem areas foreseen ? (eg. reluctant movers).

Public Information and Media Procedures

Media statements concerning public safety and preparedness prior to a declaration will be issued under the authority of the Mayor, and after by the authority of the Controller.

All messages should be preceded by

“This a message from the Mayor/Civil Defence Controller.....”.

Messages prior to declaration should be issued after first consulting with the, - Police, Fire, Health and the Council Utilities Asset Manager.

Public Information Checklist

- water supply safety
- in house protection
- protection of vital/electrical equipment
- air conditioners
- who to call for assistance
- motor vehicle protection
- house care
- animal welfare
- personal services
- ash Information
- travel restrictions
- power related issues
- communication issues

Alternate Information methods

The CDEM website will be updated regularly with information bulletins, and these will be duplicated on the Qphone system 868 1066 1460.

Maximum use will be made of the QPhone system with general information about the event and specific information targeting the above check list. 868 1066 box no. 1460.

Prior to any evacuation community meetings will be held to present preparedness information.

Ash Collection Procedures

Ash collection will be co-ordinated by the Environmental Health section of the Gisborne District Council.

Ash will be collected by placing clean ice cream containers in an open area, this should be done as soon as possible after the ash starts falling or if possible prior to. It may be necessary to secure the containers or raise them above the ground to stop them tipping over or being contaminated from ground splash.

The containers will be left out either for a set time or until a suitable quantity of ash has been collected. The exposure time should be recorded and sent with the sample to an appropriate laboratory. The type of analysis will depend on what concerns are associated with it. ie for water supplies a water leaching test will be performed rather than the straight chemical analysis of dry ash.

It is hoped that the analyses will be directed from a national level to ensure a co-ordinated program.

In addition the Council's high volume sampler will be operated for a minimum 24 hour period to action the airborne component below 10 microns. The Hydro-Tech Laboratory will also be able to give an indication of the pH.

Volcanic Products and their Effects

Pyroclastic Fall Deposits -

1.1 Tephra is a collective term for all material which travels through the air during a volcanic eruption. Clasts greater than 64 mm are bombs or blocks; lapilli are between 2 and 64 mm diameter, and ash is smaller than 2 mm. The widespread ash falls associated with most eruptions consist of ash and lapilli, which decrease in clast size with distance from the volcano. Ash is composed of various proportions of glass (shards), crystals and older rock particles (lithic's). Ash particles commonly have sharp broken edges which make volcanic ash a very abrasive material. Due to surface electrical charges, fine ash can cluster into interlocking aggregations.

1.2 The thickness of fall deposits is dependent on volume of material erupted, distance from the vent, wind strength and wind direction. Large clasts (blocks and bombs) follow ballistic trajectories and are termed projectile. This material is usually greater than 10 cm (100 mm) diameter. These clasts may land in a hot state and are capable of starting fires. Finer material (ash and lapilli) is convected upwards in the eruption column before settling out downwind to form at ground level. Fine ash can therefore be deposited hundreds to thousands of kilometres away from its source.

Impact Zones for Convected Airfall Tephra -

2.2 The impact of tephra fall on people and animals, flora and fauna, structures and equipment, depends largely on ash thickness. In order to simplify hazard analysis, and to allow the definition of risk within certain areas, four main impact sizes are used. The thicknesses given are for un-compacted tephra.

The affects given in each group of course carry into the next group and in most cases worsen.

<10 mm (<1 cm) thickness

A light dusting of ash.

Possible closure of airports.

Light damage to vehicles, houses and equipment caused by fine abrasive ash.

Possible contamination of water supplies, particularly roof catchment water tank supplies and river catchment supplies.

10-100 mm (1-10 cm) thickness

Falling ash will act as an irritant to lungs and eyes. Where possible, masks should be worn by people in the open.

Ash will affect vegetation, causing burial of pasture and low plants. Foliage may be stripped off some trees but most will survive.

Livestock will not be unduly stressed but may suffer from lack of feed, wear on teeth, and possible contamination of water supplies. Most pastures will be killed by over 50 mm (5 cm) of tephra.

Most buildings will support the ash load but weaker roof structures may collapse at 100 mm (10 cm) ash thickness, particularly if wet. Minor damage to houses will occur if fine ash enters buildings.

Electricity may be cut; ash shorting occurs at substations if the ash is wet and therefore conductive.

Electrical supply through the National Grid may be affected once ashfall reaches 20 mm (2 cm), particularly if the ash is wet.

Telecommunications may be affected due to ash in components and overloading of circuits. Air born ash will also restrict or cut signals from any microwave towers.

Disruption to radio communication due to electrical interference and disruption to microwave transmission network due to ash particles, particularly if wet.

Reception of broadcast radio transmissions will be similarly affected.

Water supplies may be cut, or limited, due to failure of electricity to run the pumps.

Unprotected water pumps may suffer mechanical failure due to ash restricting air intakes.

Contamination of water supplies by chemical leachate's may occur.

Storm water systems may become blocked.

Sewage systems may be blocked by ash, or disrupted by loss of electrical supplies.

Road transport may be halted to the build up of ash on roads making road surfaces slippery. Poor visibility will result from dust clouds if ash remain dry. If ash falls are heavy, near total darkness may result (headlights are ineffective due to light being unable to penetrate and being reflected back)

Engines may soon stop due to clogging of air filters.

Rail transport may be forced to stop due to signal failure brought on by short circuiting if ash becomes wet.

Airports will close due to the potential damage to aircraft, and lack of control facilities.

Damage to electrical equipment and machinery may occur.

100-300 mm (10-30 cm) thickness

All of the effects that occur with 10-100 mm (1-10 cm) of ash will be amplified, with additional impacts for:

Buildings that are not cleared of ash will run the risk of roof collapse especially large flat roofed structures, and if the ash becomes wet.

Severe damage to trees, stripping of foliage and breaking of branches.

Loss of electrical reticulation due to falling tree branches and shorting of power lines.

>300 mm (30 cm) thickness

All of the effects described above with additional impacts of:

Heavy kill vegetation. Complete burial of soil horizon.

Livestock and other animals killed or heavily distressed.

Kill of aquatic life in lakes and rivers.

Major collapse of roofs due to ash loading.

Loading and possible breakage of power and telephone lines.

Roads unusable until cleared.