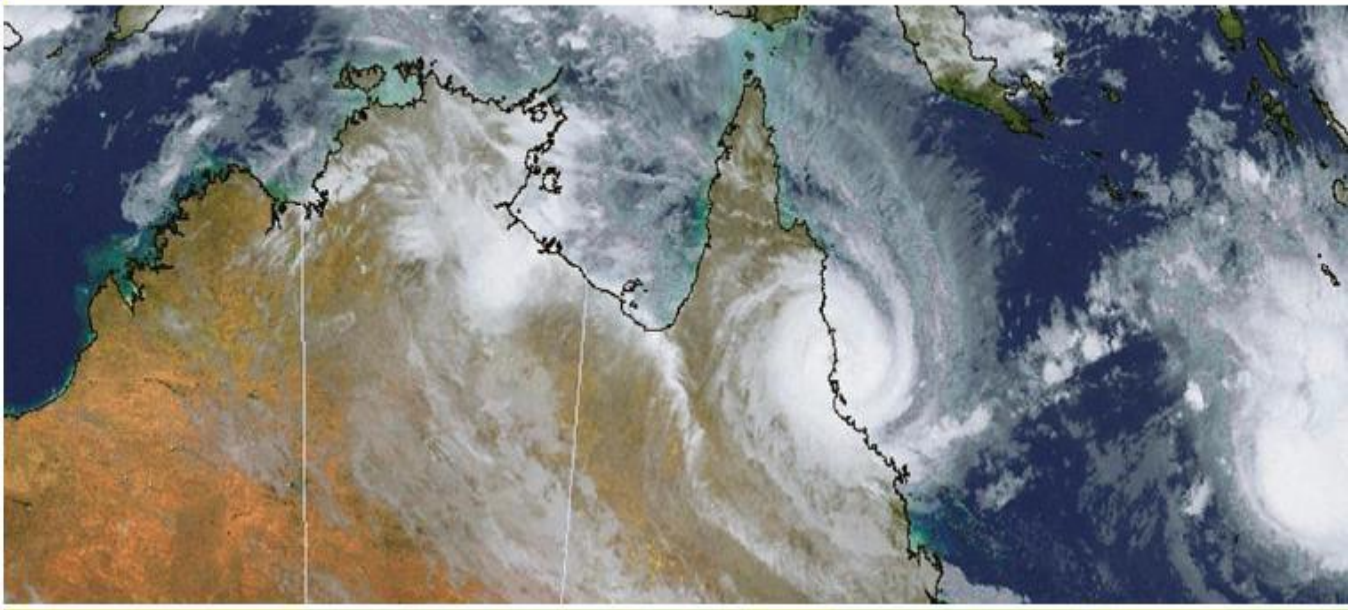

Local Disaster Management Plan

CAIRNS REGION

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Local Disaster Management Plan - Cairns Region

Foreword from the Mayor, Cairns Regional Council

Cairns Regional Council has an active Disaster Management philosophy which embraces prevention, preparedness, response and recovery strategies.

Three key principles of disaster management are coordination, collaboration and consultation. Effective management of any disaster relies on strong co-ordination arrangements, consultative decision making, collaboration and shared responsibility achieved through supporting relationships, trust and teamwork between individuals, agencies and the community.

The Local Disaster Management Group - Cairns Region was established to ensure a comprehensive and effective response to any event and a speedy return to a safe and secure environment for all residents, as soon as possible after a disaster event.

As a community we need to prepare for disasters such as cyclones, storm tide inundation, wildfire and flooding events; whether as an individual, a business, a Council or one of the emergency services, we should all have our plans in place to enhance our resilience to the potential impact of these threats and ensure the safety or our community.

_____

Councillor Bob Manning
Mayor
Cairns Regional Council

Date:

Local Disaster Management Plan - Cairns Region

Foreword from the Chair of the LDMG-CR

This document has been developed by the Local Disaster Management Group – Cairns Region (LDMG-CR) on behalf of Cairns Regional Council and endorsed through Council Resolution.

The Cairns Region can be subject to disaster incidents or events caused by a number of hazards and with little or no warning. These events can result in disruption and damage to the regions communities. In order to mitigate and respond to these events, the LDMG-CR has developed this Local Disaster Management Plan (LDMP). The LDMP describes the arrangements required under the Disaster Management Act 2003, outlining the disaster management system and specifying agreed roles and responsibilities. It also describes how the disaster management system works during an event.

The focus of the document is on using an 'all-hazards' functional approach, minimising impacts on disaster-affected communities by ensuring a coordinated effort by all levels of government and non-government entities with responsibilities or capabilities in comprehensive disaster management.

This plan sets out arrangements for the collation and application of resources in times of disasters so as to minimise the impact upon the Cairns regional communities by;

- Providing a clear plan for the mitigation of specified events and/or situations so as to eliminate or reduce the impact of a disaster upon the Community;
- Providing a clear assessment of the Cairns Region communities resilience;
- Providing a clear description of the risks potentially faced by Cairns Region Communities; and
- Providing a clear description of risk treatment that will be enacted at the time of a disaster to minimise its impact

Through comprehensive planning and preparation strategies and through effective response and recovery management, the LDMG-CR is able to minimise the adverse effects, both economic and social, that a disaster event has on the region.

_____

Councillor Terry James
Chairperson
Local Disaster Management Group – Cairns Region

Date:

Approval of the Cairns Local Disaster Management Plan

This plan has been produced by and with the authority of Cairns Regional Council pursuant to *Section 57* and *58 Disaster Management Act 2003*.

The Cairns Regional Council accepts its roles and responsibilities as described in the *Disaster Management Act 2003*.

This plan is the result of the co-operative efforts of the Local Disaster Management Group - Cairns Region after consultation with those agencies and organisations identified therein. This plan will be reviewed in accordance with *Section 59 Disaster Management Act 2003.*

The preparation of this Local Disaster Management Plan has been undertaken in accordance with the Disaster Management Act 2003 (the Act), to provide for effective disaster management in the local government area.

Cairns Regional Council has adopted this plan by resolution at Ordinary Meeting of Council in accordance with Section 80(1)(b) of the Disaster Management Act 2003 (QLD)

Endorsements

This plan is recommended for distribution by the Local Disaster Management Group - Cairns Region.

_____
Ian Fell
Local Disaster Coordinator
Local Disaster Management Group - Cairns Region

Date:

Plan endorsed for distribution by the Local Disaster management Group – Cairns Region.

_____
Councillor Terry James
Chair
Local Disaster Management Group - Cairns Region

Dated:

This plan is endorsed by Cairns Regional Council.

_____
Councillor Bob Manning
Mayor
Cairns Regional Council

Date:

Endorsed by the Far North District Disaster Management Group.

_____

Brett Scheffarius
District Disaster Coordinator
Far North District Disaster Management Group

Date:

Contents

Amendment Register and Version Control

This document is a controlled document and is not to be altered, amended or changed in any way other than those amendments issued by the Local Disaster Management Group - Cairns Region. From this, the plan is intended to be a "live" document, open to suggested amendments.

Plans will be amended as follows:

- Proposals for amendment to this plan should be made in writing to:

  The Local Disaster Coordinator
  Local Disaster Management Group - Cairns Region
  PO Box 359
  CAIRNS QLD 4870

- With the exception of minor changes, typographical changes and changes to position titles, all suggestions for amendments to the plan will be submitted to the LDMG-CR for discussion.

- If not supported, a written response will be provided to the submitter.

- When necessary, amendments to the plan will be ratified by Council.

Amendment Register

Version	Date	Prepared by	Comments
1	March 2007	Disaster Management Unit	Cairns Local Disaster Management Plan (LDMP) - first version under the DM Act 2003
1	2007	Douglas Shire Council	Douglas Local Disaster Management Plan – first version under the DM Act 2003
2	December 2008	CT Management Group (Qld)	Revised Plan to reflect Cairns Regional Council area
3	August 2011	C. Fitzgerald - DMU	Revised Plan incorporating revised Interim Local Disaster Management Planning Guidelines 2011 and Disaster Management Act Amendments 2010
4	September 2012	I. Fell – DMU	Revised Plan incorporating Local Disaster Management Planning Guidelines 2012 and LDMP Assessment 2012
5	November 2013	I. Fell – DMU	Revised Plan post de-amalgamation with Douglas Shire Council and inclusion of Cairns Region Natural Hazards Risk Assessment (AECOM 2014)
6	December 2014	I. Fell- DMU	LDMG-CR Approved 2014 version.
7	September 2015	I. Fell - DMU	Annual Review LDMG-CR - 2015 Approved Version
8	September 2016	I. Fell - DMU	Annual Review LDMG-CR – 2016 Endorsed Version
9	October 2017	I. Fell - DMU	Annual Review LDMG-CR – 2017 Endorsed Version

Distribution List

Distribution of this plan is controlled by maintaining two (2) versions of each document – one (1) containing personal details and one (1) where the personal details have been removed. The Local Disaster Management Group – Cairns Region complies with the Information Privacy Act 2009 by allowing only the version, which excludes personal details, to be made available to the public.

This plan has been distributed in accordance with the distribution list below;

Controlled Copies of Main Plan and *all* Operational Plans	
Organisation	**Controlled Copy #**
Cairns Regional Council ▪ Chairperson LDMG-CR ▪ Deputy Chairperson LDMG-CR ▪ LDC LDMG-CR ▪ Deputy LDC LDMG-CR ▪ Chief Executive Officer ▪ Disaster Management Operations Officer ▪ Community Support Coordinator LDMG-CR ▪ Principal Environmental Health Officer ▪ Manager Infrastructure Management ▪ Manager Corporate Communications ▪ General Manager Cairns Water ▪ General Manager Works & Services ▪ Disaster Management Unit (2 spare copies)	 **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13 & 14**
Cairns Airport ▪ LDMG-CR Representative	**15**
Cairns Ports (Seaport) ▪ LDMG-CR Representative	**16**
Ergon Energy ▪ LDMG-CR Representative	**18**
Queensland Ambulance Service ▪ LDMG-CR Representative	**19**
Queensland Fire & Emergency Services ▪ LDMG-CR Representative	**20**
Queensland Health, Cairns & Hinterland Health Service District (Cairns Base Hospital) ▪ LDMG-CR Representative	**21**
Queensland Police Service ▪ Cairns District Disaster Coordinator ▪ LDMG-CR Representative	 **22** **23**
State Emergency Service ▪ LDMG-CR Representative	**24**
Copies of Main Plan and Relevant Operational Plans	
Organisation	**No. of Copies**
Air Services Australia – Aviation Rescue & Fire Fighting	1
Australian Defence Force (JOSS)	1

Australian Red Cross	1
Bureau of Meteorology, Cairns	1
Cairns Chamber of Commerce	1
Cairns Private Hospital	1

Definitions

Alert
A heightened level of vigilance due to the possibility of an event in the area of responsibility. No action is required however the situation should be monitored by someone capable of assessing the potential of the threat.

All Hazards Approach
This approach recognises that although counter measures will often vary with specific hazards, it is desirable to establish a single set of management arrangements capable of encompassing all hazards.

Chair
The person appointed by the local government as the Chair of the Local Disaster Management Group

Command
The direction of personnel and resources from a single agency in the performance of its allotted task.

Community
A group of people with a commonality of association and generally defined by location, shared experience, or function *(Australian Emergency Management Glossary, 1998).*

Community Resilience
The adaptive capacity of its members to respond to and influence the consequences of disasters to continue an acceptable level in functioning and structure. (Adapted from the *United Nations International Strategy for Disaster Reduction; 2002* and *The Community Resilience Manual,* 2000*)*.

Coordination
The bringing together of organisations to ensure effective disaster management before, during and after an event. It is primarily concerned with systematic acquisition and application of resources (people, material, equipment, etc.) in accordance with priorities set by disaster management groups. Coordination operations horizontally across organisations and agencies.

Coordination Centre
A centre established at State, district or local level as a centre of communication and coordination during times of disaster operations.

Consequence
The outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage, or gain *(Australian Emergency Management Glossary, 1998).*

Declaration of Disaster Situation

A District Disaster Coordinator for a Disaster District may, with the approval of the Minister, declare a Disaster Situation for the District or part of it, if satisfied of a number of conditions as set out in *Part 4 – Provisions for Declaration of a Disaster Situation - Sect 64 Declaration (Disaster Management Act 2003).*

Deputy Chair
The person appointed by the local government as the Deputy Chair of the Local Disaster Management Group.

D**isaster**
A serious disruption in a community, caused by the impact of an event, that requires a significant coordinated response by the State and other entities to help the community recover from the disruption *(Disaster Management Act 2003, S13(1)).*

Disaster District
Part of the state prescribed under a regulation as a disaster district

Disaster Management
Arrangements to manage the potential adverse effects of an event, including, for example, arrangements for mitigating, preventing, preparing for, responding to and recovering from a disaster *(Disaster Management Act 2003, S14).*

Disaster Management Functions
The services essential to managing the impacts and consequences of an event.

Disaster Mitigation
The taking of preventative measures to reduce the likelihood of an event occurring or, if an event occurs, to reduce the severity of the event. *(Disaster Management Act 2003).*

Disaster Operations
Activities undertaken before, during or after an event happens to help reduce loss of human life, illness or injury to humans, property loss or damage, or damage to the environment, including, for example, activities to mitigate the adverse effects of the event *(Disaster Management Act 2003, S15).*

Disaster Preparedness
The taking of preparatory measures to ensure that, in an event occurs, communities, resources and services are able to cope with the effects of the event. *(Disaster Management Act 2003).*

Disaster Research
May be broadly understood as a systematic inquiry, before and after a disaster, into a relevant disaster management problem *(COAG, Natural Disasters in Australia: Reforming mitigation, relief and recovery arrangements: 2002)*

Disaster Response
The taking of appropriate measures to respond to an event, including action taken and measures planned in anticipation of, during, and immediately after an event to ensure that its effects are minimised and that persons affected by the event are given immediate relief and support. *(Disaster Management Act 2003).*

Disaster Response Capability
The ability to use Local Government resources, to effectively deal with, or help another entity to deal with, within the capacity of the Local Government and their resources an emergency situation or a disaster in the local government's area *(Disaster Management Act 2003, S80(2)).*

Disaster Response Operations
The phase of disaster operations that relates to responding to a disaster*. (Disaster Management Act 2003).*

Disaster Recovery
The taking of appropriate measures to recovery from an event, including action taken to support disaster affected communities in the reconstruction of infrastructure, the restoration of emotional, social, economic and physical wellbeing, and the restoration of the environment*. (Disaster Management Act 2003)*

Disaster Recovery Operations
The phase of disaster operations that relates to recovering from a disaster*.* (*Disaster Management Act 2003).*

Disaster Relief
The provision of immediate shelter, life support and human needs of persons affected by, or responding to, an emergency**. (***COAG, Natural Disasters in Australia: Reforming Mitigation, relief and recovery arrangements: 2002).*

Disaster Risk Assessment
The process used to determine risk management priorities by evaluating and comparing the level of risk against predetermined standards, target risk levels or other criteria. *(COAG, Natural Disasters in Australia: Reforming mitigation, relief and recovery arrangements: 2002).* Incorporates the process of risk identification, risk analysis and risk evaluation. *(ISO Guide 73:2009 Risk management – Vocabulary).*

District Disaster Coordinator (DDC)
The role of the DDC in addition to other duties is the responsibility for coordinating operations in the Disaster District for the District Disaster Management Group.

District Disaster Management Group (DDMG)
The group established under the Disaster Management Act 2003 to provide coordinated State government support and resources to Local Disaster Management Groups

District Disaster Management Plan (DDMP)
A plan prepared under the Disaster Management Act 2003 that documents planning and resource management to counter the effects of a disaster within the disaster district.

Event
An event means any of the following:

- A cyclone, earthquake, flood, storm, storm tide, tornado, tsunami, volcanic eruption or other natural happening;
- Bushfire, an explosion or fire, a chemical, fuel or oil spill, or a gas leak;
- An infestation, plague, or epidemic;
- An attack against the State; or
- Another event similar to the above events.

An event may be natural or caused by human acts or omissions *(Disaster Management Act 2003, S16(1)&(2)).*

Executive Officer DDMG
A person appointed to the position of Executive Officer to the District Disaster Management Group by the Commissioner, Queensland Police Service

Executive Team
The Chair, Deputy Chair and Local Disaster Coordinator of a local group. (*Disaster Management Act 2003*).

Functional Lead Agency
An agency allocated responsibility to prepare for and provide a disaster management function and lead relevant organisations that provide a supporting role.

Guidelines
Guidelines are developed under s63 of the Disaster Management Act 2003 to inform the SDMG, DDMGs and local governments about the preparation of disaster management plans, matters to be included in disaster management plans and other appropriate matters about the operation of a DDMG or LDMG.

Hazard
A source of potential harm, or a situation with a potential to cause loss *(Emergency Management Australia 2004).*

Lean Forward
An operational state prior to 'stand up' characterised by a heightened level of situational awareness of a disaster event (either current or impending and a state of operational readiness. Disaster coordination centres are on standby; prepared but not activated.

Local Disaster Coordinator
A person appointed under the *Disaster Management Act 2003* who is responsible for the coordination of disaster operations for the Local Disaster Management Group.

Local Disaster Management Group (LDMG)
The group established under the Disaster Management Act 2003 to manage disaster planning and operations on behalf of the local government

Local Disaster Management Plan
A plan that documents arrangements to manage disaster planning and operations within the local government area of responsibility.

Mitigation
Measures taken in advance of a disaster aimed at decreasing or eliminating its impact on society and environment *(Australian Emergency Management Glossary, 1998)*

National Emergency Risk Guidelines
The National Emergency Risk Assessment Guidelines (NERAG) provides a methodology to assess risks from emergency events and is principally concerned with risk assessment.

Natural Disaster Relief & Recovery Arrangements
NDRRA provide a cost sharing formula between the State and Commonwealth Governments as well as a package of pre-agreed relief measures that may be activated by the Queensland Government on a needs basis.

Post Disaster Assessment
Addresses performance during and the risks revealed by a disaster event in order to improve future development of mitigation measures. Post-disaster assessment forms

part of continuous improvement of the whole system. (Adapted from COAG, *Natural Disasters in Australia: Reforming mitigation, relief and recovery arrangements: 2002).*

Primary Agency
An agency allocated responsibility to prepare for and respond to a specific hazard based on their legislated and/or technical capability and authority

Preparedness
Measures to ensure that, should an emergency occur, communities, resources, and services are capable of coping with the effects *(Australian Emergency Management Glossary, 1998)*

Prevention
Measures to eliminate or reduce the incidence or severity of emergencies *(Australian Emergency Management Glossary, 1998)*

Queensland Disaster Management Arrangements (QDMA)
Whole-of-government arrangements to ensure the collaborative and effective coordination of planning, services, information and resources for comprehensive disaster management

Queensland Disaster Management Committee (QDMC)
Is established under the DM Act and provides the strategic direction and State-level decision making for disaster management across Queensland.

Reconstruction
Actions taken to re-establish a community after a period of rehabilitation subsequent to a disaster. Actions would include construction of permanent housing, restoration of all services, and complete resumption of the pre-disaster state *(Australian Emergency Management Glossary, 1998)*

Recovery
The coordinated process of supporting emergency affected communities in reconstruction of the physical infrastructure and restoration of emotional, social, economic, and physical wellbeing *(Australian Emergency Management Glossary, 1998).*

Rehabilitation
The operations and decisions taken after a disaster with a view to restoring a stricken community to its former living conditions, whilst encouraging and facilitating the necessary adjustments to the changes caused by the disaster *(Australian Emergency Management Glossary, 1998)*

Relief
The provision of immediate shelter, life support and human needs of persons affected by, or responding to, an emergency. It includes the establishment, management and provision of services to emergency relief centres *(Australian Emergency Management Glossary, 1998)*

Residual Risk
The level of risk remaining after implementation of a risk treatment. Residual risk can contain unidentified risk. Residual risk can also be known as ‘retained risk’ (*AS/NZS ISO 36000:2009)*

Response
Measures taken in anticipation of, during and immediately after an emergency to ensure its effects are minimised *(Australian Emergency Management Glossary, 1998)*

Risk
The chance of something happening that may have an impact on the safety and wellbeing of your community. It includes risk as an opportunity as well as a threat and is measured in terms of consequences and likelihood *(Adapted from AS/NZS ISO 36000:2009)*

Risk Identification
The process of identifying what can happen, why, and how *(Australian Emergency Management Glossary, 1998)*

Risk Management
The culture, processes, and structures that are directed towards realising potential opportunities whilst managing adverse effects *(AS/NZS ISO 36000:2009)*

Risk Management Process
The systematic application of management policies, procedures and practices to the activities of communicating, consulting, establishing the context, and identifying, analysing, evaluating, treating, monitoring and reviewing risk. (*ISO Guide 73:2009 Risk management - Vocabulary*)

Risk Reduction
Actions taken to lessen the likelihood, negative consequences, or both, associated with a risk *(AS/NZS ISO 36000:2009)*

Risk Treatment
Process of selection and implementation of measures to modify risk *(AS/NZS 4360:2004).* Risk treatment can involve avoiding the risk by deciding not to start or continue with the activity that gives risk to the risk; taking or increasing the risk in order to pursue an opportunity; removing the risk source; changing the likelihood; changing the consequences; sharing the risk with another party or parties; and retaining the risk by informed decision. (ISO Guide 73: 2009 Risk Management – Vocabulary and ISO 36000:2009).

Serious Disruption
Serious disruption means:

- loss of human life, or illness or injury to humans; or
- widespread or severe property loss or damage; or
- widespread or severe damage to the environment *(Australian Emergency Management Glossary, 1998)*

Stand Down
Transition from responding to an event back to normal core business and/ or recovery operations. There is no longer a requirement to respond to the event and the threat is no longer present.

Stand Up

The operational state following ‘lean forward’ whereby resources are mobilised, personnel are activated and operational activities commenced. Disaster coordination centres are activated.

State Disaster Coordinator
A person appointed under the Disaster Management Act 2003 who is responsible for the coordination of disaster response operations for the State Disaster Management Group.

State Disaster Management Plan
A planning tool for disaster managers which provides an overview of Queensland's disaster management arrangements, including agency roles and responsibilities

State Recovery Coordinator
A person appointed under the Disaster Management Act 2003 who is responsible for the coordination of disaster recovery operations for the State Disaster Management Group.

Vulnerability
The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impacts of hazards (National Emergency Risk Assessment Guidelines).

Abbreviations

The following abbreviations are used throughout the Local Disaster Management Plan – Cairns Region:

ADF	Australian Defence Force
AHD	Australian Height Datum
ASA	Air Services Australia
ARFF	Aviation Rescue & Fire Fighting
BoM	Bureau of Meteorology
CAPL	Cairns Airport Pty Ltd
CPA	Cairns Port Authority
CRC	Cairns Regional Council
DCS	Department of Community Safety
DDC	District Disaster Coordinator
DDCC	District Disaster Coordination Centre
DDMG	District Disaster Management Group
DDC	Deputy Disaster Coordinator
DM	Disaster Management
EMA	Emergency Management Australia
GBRMPA	Great Barrier Reef Marine Park Authority
HazMat	Hazardous materials (in the context of emergency response)
JCU	James Cook University
LDC	Local Disaster Coordinator
LDCC	Local Disaster Coordination Centre
LDMG-CR	Local Disaster Management Group – Cairns Region
LDMP-CR	Local Disaster Management Plan – Cairns Region
LRC	Local Recovery Coordinator
LRG	Local Recovery Group
MSQ	Maritime Safety Queensland
NDRP	Natural Disaster Resilience Program
NDRRA	Natural Disaster Relief and Recovery Arrangements
NPWS	National Parks and Wildlife Service
PPRR	Prevention, preparedness, response and recovery
QAS	Queensland Ambulance Service
QDMA	Queensland Disaster Management Arrangements
QDMC	Queensland Disaster Management Committee
QFES	Queensland Fire and Emergency Services
QPS	Queensland Police Service
Q-Rail	Queensland Rail
RFB	Rural Fire Brigade
SDCC	State Disaster Coordination Centre
SDMC	State Disaster Management Committee
SES	State Emergency Service
SITREP	Situation Report
TMR	Transport & Main Roads

PART 1 ADMINISTRATION AND GOVERNANCE

1.1 Authority to Plan

Cairns Regional Council has a legislative responsibility to develop a Disaster Management Plan in accordance with *Section 57(1) Disaster Management Act 2003*.

"s57 Plan for disaster management in local government area

> *(1) A local government must prepare a plan (a local disaster management plan) for disaster management in the local government's area.*
>
> *(2) The plan must include provision for the following—*
>
> *a) the State group's strategic policy framework for disaster management for the State, and the local government's policies for disaster management;*
> *b) the roles and responsibilities of entities involved in disaster operations and disaster management in the area;*
> *c) the coordination of disaster operations and activities relating to disaster management performed by the entities mentioned in paragraph (b);*
> *d) events that are likely to happen in the area;*
> *e) strategies and priorities for disaster management for the area;*
> *f) the matters stated in the disaster management guidelines as matters to be included in the plan;*
> *g) Other matters about disaster management in the area the local government considers appropriate".*

The Cairns Local Disaster Management Plan has been prepared by the Local Disaster Management Group – Cairns Region in accordance with the above section of the Disaster Management Act 2003 ("The Act") to confirm the effective coordination of resources and counter disaster operations in the Cairns Regional Council area.

1.2 Requirements of Plan

This plan is developed using the National Emergency Risk Assessment Guidelines, the Australian/New Zealand Standard AS/NZS ISO 31000:2009 Risk management – Principles and guidelines and the Department of Community Safety – Qld Disaster Management Planning Guidelines to effectively identify, analyse and treat risks faced by the local community.

In accordance with s58 of The Act this plan is prepared using the Queensland Local Disaster Management Guidelines and ensuring integration with the District Disaster Management Plan and the State Disaster Management Group strategies.

1.3 Purpose

1.3.1 The Disaster Management System in Queensland

The Disaster Management Act 2003 (the Act) provides the legislative basis for the Queensland Disaster Management Arrangements (QDMA) including:

- Establishment of disaster management groups for the State, disaster districts and local government areas;
- Detailing planning requirements at each level;
- The establishment of the office of the Inspector General Emergency Management (development of the Emergency Management Assurance Framework); and
- The conferring of powers on selected individuals and groups.

Note:
The Act previously dealt with maintaining the role and operations of the State Emergency Service (SES) and establishment of Emergency Service Units which is now part of the *Fire and Emergency Services Act 1990.*

Queensland's whole-of-government disaster management arrangements are based upon partnerships between government, government owned corporations, non-government organisations, commerce and industry sectors, and the local community.

These arrangements recognise each level of the QDMA must work collaboratively to ensure the effective coordination of planning, services, information and resources necessary for comprehensive disaster management.

The Australian disaster management arrangements are formed around three levels of government, Local, State and the Australian Government. The Queensland Disaster Management Arrangements acknowledge these three levels of government, however are based on a four tiered system to include an additional State government tier, between Local and State Governments and known as Disaster Districts, to enable a more efficient and effective operational service delivery in support of local communities.

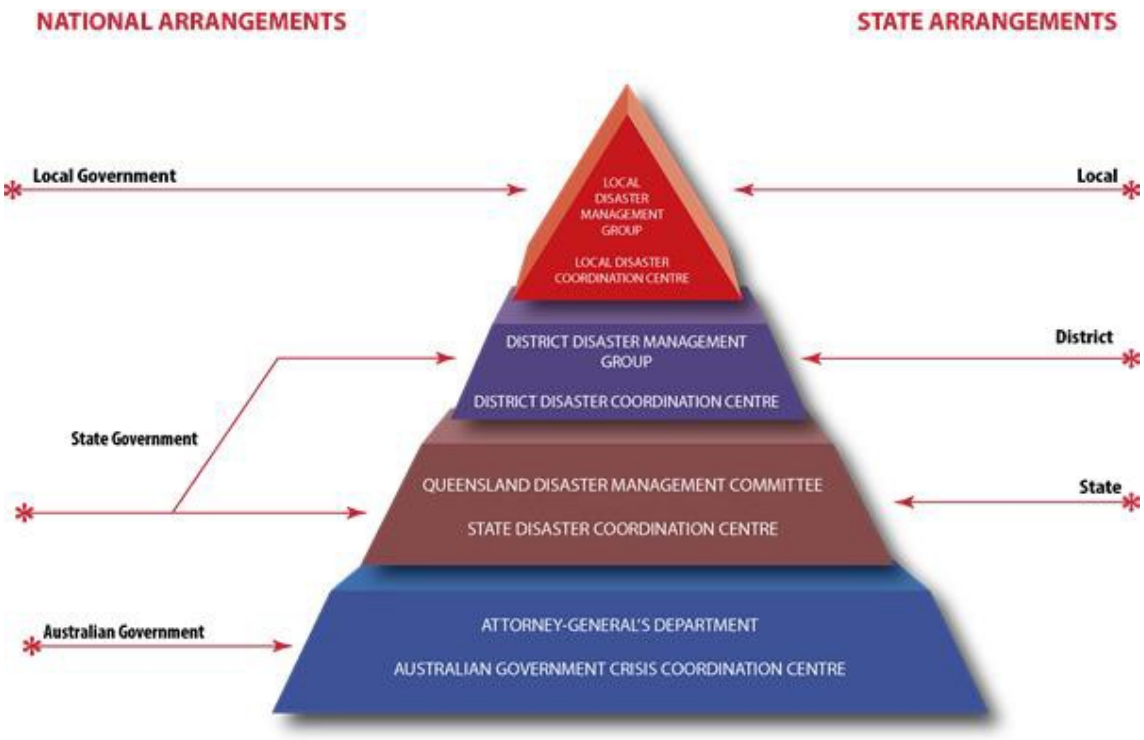
The disaster management arrangements in Queensland are made up of several key management and coordination structures through which the functions of disaster management for Queensland are achieved.

The principal structures that make up Queensland's disaster management arrangements are:

- Disaster management groups operating at local, district and state levels and which are responsible for the planning, organisation, coordination and implementation of all measures to mitigate/prevent, prepare for, respond to and recover from disasters;
- Coordination centres at local, district and state levels that support disaster management groups in coordinating information, resources and services necessary for disaster operations;

- State government functional agencies through which the functions and responsibilities of the state government in relation to disaster management are managed and coordinated; and
- State government threat-specific agencies responsible for the management and coordination of combating threats.

Figure 1: **STRUCTURE**



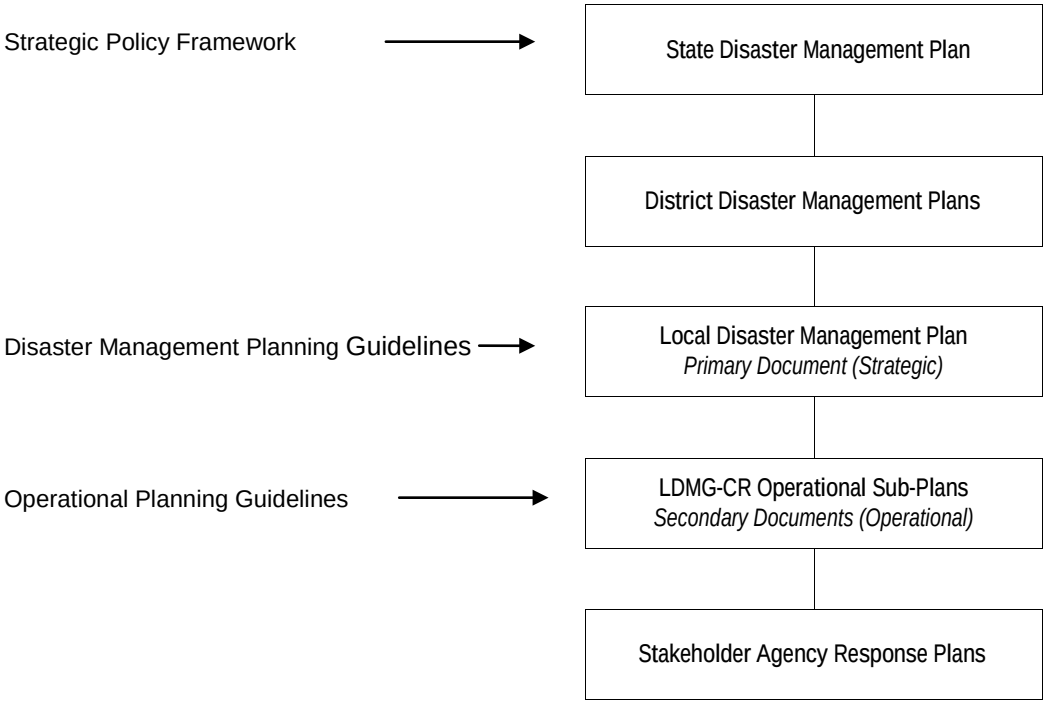
The principal structures comprising the Queensland Disaster Management Arrangements are:

- Local, District and State disaster management groups, responsible for the planning, organisation, coordination and implementation of all measures to mitigate, prevent, prepare for, respond to and recover from disasters.
- Local, district and State coordination centres to support disaster management groups in coordinating information, resources and services necessary for disaster operations.
- State government functional lead agencies through which the disaster management functions and responsibilities of the State are managed and coordinated.
- State government hazard-specific primary agencies responsible for the preparation of plans for, and management of, specific hazards.

HIERARCHY OF PLANS

Queensland Government:-

The following diagram depicts the hierarchy of disaster management plans for the Queensland Government.



Cairns Regional Council:-

The following diagram depicts the hierarchy of disaster management plans for Cairns Regional Council and the Local Disaster Management Group – Cairns Region.

1.3.2 Purpose of the Plan

The purpose of the Cairns Local Disaster Management Plan is to:

- Ensure the safety and sustainability of the Cairns Region community
- Reduce or eliminate risk to the community and community infrastructure
- Inform disaster management responses at the District and State levels
- Be consistent with best practice disaster management issues
- Promote effective liaison between the Council and other agencies involved in disaster management
- Ensure compliance with the Disaster Management Act 2003.

NB It is important that all agencies understand that there are major differences between 'Incident Management' and 'Disaster Management';

Incidents can be managed via the emergency services or other agencies, employing resources normally available to them. This includes traffic accidents, missing persons, etc. Incidents do not usually cause major community disruption.

Disasters require a coordinated multi-agency, multi-jurisdictional response, and usually result in some sort of community dislocation or severe disruption.

Table 1: Comparative features of Incident and Disaster Management

Incident Management	Disaster Management
• Single site response • Minor off-site co-ordination • Single agency responsibility • Resources available • Support available • Support agencies practiced • Day to day business • Core function • Short term effects	• Multi-site response • Major off-site co-ordination • Multi-agency responsibility • Multi-faceted problems • External resources required • External support required • Government Dept. involvement • Community affected • Long term effects

The Local Disaster Management Plan has not been developed for the management of:

(a) Commonly occurring incidents which are within the capacity of the individual combat Agencies for first response; or

(b) Major incidents which are within the capacity of the nominated lead agency with a threat specific role.

However, elements of the Local Disaster Management Plan may be activated in support of a lead agency responding to a major incident.

1.4 Objective

The objective of the Cairns Local Disaster Management Plan is to facilitate the implementation of effective and efficient disaster management strategies and arrangements including:

- The development, review and assessment of effective disaster management for the local government area, including arrangements for mitigating, preventing, preparing for, responding to and recovering from a disaster;

- Compliance with the Queensland Disaster Management Committee's (QDMC) Strategic Policy Framework; the State Disaster Management Plan; the Local Disaster Management Guidelines, and any other Guidelines relevant to local level disaster management and disaster operations;

- The roles and responsibilities of entities involved in disaster operations and disaster management in the area;

- The coordination of disaster operations and activities relating to disaster management performed by the entities above;

- Acknowledging the likely effects if identified hazards to the community, infrastructure and environment in the area;

- Identifying networks, strategies and priorities for disaster management established for the coordination of multi-agency response and recovery operations for the area;

- The matters stated in the disaster management guidelines as matters to be included in the plan;

- Other matters about disaster management in the area the local government considers appropriate

- The development, implementation and monitoring of priorities for disaster management for the local government area; and

- Providing information to build community resilience and better assist the community in preparing for disaster events

- To improve community safety through the identification, evaluation and mitigation of risks that might otherwise be classified as disasters.

Where it is not plausible or possible to mitigate the risks, the plan offers contingencies for disaster management response and recovery procedures for the Cairns Regional Council area.

1.5 Strategic Policy Statement

Disaster management and disaster operations in the Cairns Region are consistent with the Queensland Disaster Management 2016 Strategic Policy Statement objectives and strategies; communities are at the forefront of disaster impacts and the importance of supporting communities to prevent, prepare for, respond to, recover from and become more resilient to disasters. This will be achieved by;

- ensuring a comprehensive, all hazards, all agencies approach by achieving the right balance of prevention, preparedness, response and recovery.
- supporting the mainstreaming of disaster preparedness and mitigation into relevant areas of activity of government, non-government, small business and corporations.
- aligning disaster risk reduction, disaster mitigation, disaster resilience and climate change adaptation policy and actions with international and national reforms.
- promoting a transparent, systematic and consistent approach to disaster risk assessment and management, based on the Australian/New Zealand Standard AS/NZS ISO 31000:2009 Risk management – Principles and guidelines.
- recognising the commitment of stakeholders and the need for collaboration across all levels of government, industry, commerce, government owned corporations, private organisations, volunteer organisations and local communities in all aspects of disaster management.
- emphasising building and maintaining sincere relationships, trust, teamwork, consultative decision-making and shared responsibilities among all stakeholders
- promoting community resilience and economic sustainability through disaster risk reduction.
- Engage in a cycle of continuous improvement through knowledge management including the implementation of innovation, research and identified lessons

The QDMSPS approach and implementation is in line with the Council of Australian Governments (COAG) National Strategy for Disaster Resilience which can be found at www.ag.gov.au/EmergencyManagement/Documents/NationalStrategyforDisasterResilience.PDF

1.6 Scope

This plan details the arrangements necessary to undertake disaster management of the communities within the Cairns Regional Council local government area. This area adjoins Douglas Shire Council to the north, Cassowary Regional Council to the south and the Tablelands Regional Council and Mareeba Shire Council to the west.

1.7 Disaster Management Priorities

Cairns Regional Council (CRC) has an active Disaster Management philosophy which embraces prevention, preparedness, response and recovery strategies. Disaster management priorities for CRC ensure compliance with the disaster management legislation and provide sound legal grounding for disaster management within the Cairns region.

The Local Disaster Management Plan (LDMP) also identifies a number of issues which are addressed as part of the hazard and risk assessment process undertaken in concert with the development and maintenance of this Local Disaster Management Plan. Such issues include governance, collaboration, health, the environment, economic and infrastructure development; all of which can impact on the resilience of the community.

Not only has each area been identified as a priority for the general business of Council, but they are also priorities for Council's broader disaster management efforts; documented as a part of this Local Disaster Management Plan.

The Cairns Regional Council Local Disaster Management Group will ensure that the Local Disaster Management Plan and arrangements complies with the Disaster Management framework and all relevant legislation and policies (reviewed on a regular basis to ensure compliance).

1.8 Aim of Plan

The aim of this Plan is to minimise the effects of, co-ordinate the response to, and the recovery from, a disaster or major emergency affecting the community of the Cairns local government region.

Local Government underpins the Queensland Disaster Management System as the key management agency at the local level.

The primary focus of the Cairns Regional Disaster Management System is to mitigate the effects of disasters on the community wherever possible or practical, and being prepared to respond when disasters do occur. Plans and management arrangements have been developed with a community focus.

The plan shall:

- Ensure there is a consistent approach to disaster management in the Cairns Region;
- Create an auditing tool for disaster management functions;
- Demonstrate a commitment to the safety of our community;
- Ensure there is central coordination of disaster management in the Cairns Region;
- Demonstrate mitigation efforts and accountability for the purpose of eligibility for available funding;
- Reduce the impact of a disaster and consequences to the community following an event.

1.8.1 Principles of Disaster Management

Queensland has developed five main principles of disaster management which form the basis of the QDMA:

The Comprehensive Approach:
Section 4A of the Act provides that disaster management in Queensland should be planned according to the four phases of this approach - prevention, preparation, response and recovery. The use of the comprehensive approach ensures a balance between the reduction of risk and the enhancement of community resilience.

The all Hazards Approach:
This approach assumes that the functions and activities applicable to one hazard are most likely applicable to a range of hazards. This approach allows for a general, not specific, approach to the delivery of services. It does not however affect the need for specific plans and arrangements for identified hazards and risks that require specific technical capability or authority to effect or direct a response.

The all Agencies Approach:
This approach recognises that no single agency can prepare for and deal with the disruption to community life and infrastructure that can result from a disaster. Agencies have a responsibility for ensuring an understanding of the QDMA and contribute to the arrangements by giving effect to their legislation, as relevant to an event. It is necessary for a lead or primary agency to coordinate the activities of the large number or organisations and agencies involved as these can be drawn from all levels of government, non-government and private sectors.

Local Disaster Management Capability
Local level capability is recognised as the frontline of disaster management. Section 4A of the Act provides that local governments should primarily be responsible for managing events in their local government area.

A Prepared, Resilient Community
A high level of community resilience will reduce vulnerability and reliance on response agencies; and results in individuals and the community embracing and assisting those who are unable to provide for themselves.

In accordance with Section 4A(a) of the Act, disaster management is planned across the following four phases:

Prevention
(i) The taking of preventative measures to reduce the likelihood of an event occurring or, if an event occurs, to reduce the severity of the event

Preparedness
(ii) The taking of preparatory measures to ensure that, if an event occurs, communities, resources and services are able to cope with the effects of the event

Response
(iii) The taking of appropriate measures to respond to an event, including action taken and measures planned in anticipation of, during, and immediately after an event to ensure that its effects are minimised and that persons affected by the event are given immediate relief and support

Recovery
(iv) The taking of appropriate measures to recover from an event, including action taken to support disaster-affected communities in the reconstruction of infrastructure, the restoration of emotional, social, economic and physical wellbeing, and the restoration of the environment

The Cairns Regional Council undertakes the following actions through the Local Disaster Management Group – Cairns Region;

PREVENTION
1. Identify hazards and assess the risks to the community and Council
2. Implement measures to eliminate, mitigate or reduce potential loss to life or property and protect economic development

PREPAREDNESS
1. Develop and maintain Local Disaster Management Plan
2. Prepare disaster management operational plans and procedures
3. Prepare to take action to minimise loss of life and damage
4. Prepare to organise and facilitate effective rescue, relief and recovery in a disaster
5. Educate and train Council staff
6. Raise resilience in the community through:
a. Community education programs
b. Council's website and social network sites
7. Establish organisational structures to manage a disaster
8. Develop procedures that will ensure the rapid mobilisation and deployment of its resources to prevent/mitigate, prepare for, respond to and recover from a disaster situation

RESPONSE
1. Activate the Local Disaster Management Group-Cairns Region (LDMG-CR)
2. Activate the Cairns Local Disaster Coordination Centre (CLDCC)
3. Assist with disaster response activities
4. Assist with the provision of immediate relief for persons affected by the disaster
5. Maintain liaison and communications with other agencies
6. Ensure effective communication and engagement with the community

RECOVERY (in accordance with the National Strategy for Disaster Resilience)
1. Maintain liaison and communications with other agencies
2. Satisfy immediate, essential personal and community needs
3. Coordinate the recovery of the community
4. Coordinate the recovery of physical infrastructure (or to contribute to the infrastructure recovery function if that is being coordinated at Disaster District level)
5. Coordinate activities with relevant Disaster District initiatives and plans
6. Manage the process of restoring services to a normal level
7. Participate in long-term recovery, reconstruction and rehabilitation
8. Ensure effective community engagement occurs during the recovery stage

1.8.2 Inspector General Emergency Management (IGEM)

The role of Inspector-General Emergency Management (IGEM) was first established in 2013 following a review of police and community safety. The IGEM role was formalised as a statutory position in 2014. The functions of the Inspector General Emergency Management and the Office of the Inspector-General Emergency Management are prescribed in Part 1A of the Disaster Management Act 2003.

The vision of IGEM is to be a catalyst for excellence in emergency management so as to enable confidence in Queensland's emergency management arrangements. IGEM is responsible for providing the Premier, Government and people of Queensland an assurance of public safety, through the establishment and implementation of an assurance framework to direct, guide and focus work of all agencies, across all tiers of Government to the desired outcomes of the disaster and emergency management arrangements for Queensland.

Key accountabilities for the Office of the Inspector General Emergency Management are:

• Reviewing and assessing the effectiveness of disaster management arrangements within Queensland

• Reviewing and assessing cooperation between entities responsible for disaster management in the State, including whether disaster management systems and procedures employed by those entities are compatible and consistent

• Establishing standards for disaster management, reviewing and assessing performance against these standards and regularly reviewing the standards

• Monitoring compliance by Queensland government departments with their disaster management responsibilities

• Identifying and improving disaster and emergency management capabilities, including volunteer capabilities and opportunities for cooperative partnerships

• Reporting to and advising the Minister of Police, Fire and Emergency Services about issues relating to these functions

Emergency Management Assurance Framework

The Emergency Management Assurance Framework is a commitment by Queensland's disaster management stakeholders to position Queensland as the most disaster resilient State in Australia.

In reference to the Emergency Management Assurance Framework, the Inspector-General stated: ... "*the framework, which was developed in close consultation with stakeholders from across the disaster management sector, is designed to clearly identify areas of responsibility and ensure agencies, groups and individuals are able to deal with disasters effectively and ensure the requirements were relevant for both large and small communities"*. (Iain MacKenzie, IGEM).

The framework supports accountability and builds consistency across all levels of the disaster management arrangements and reinforces a shared responsibility for delivering better disaster management outcomes for the community.

The framework, the first of its kind in Queensland, promotes an end-to-end approach to the continual improvement of disaster management effectiveness and will enable a statement of confidence in Queensland's disaster management arrangements.

Developed in collaboration with disaster management practitioners, the framework provides a standard that can be applied by all Queensland disaster management stakeholders to ensure their legislative responsibilities are met and that disaster management programs are effective, aligned with good practice, encourage the best use of resources and meet the needs of Queensland communities.

For further information or to download a copy of the Emergency Management Assurance Framework, please visit www.igem.qld.gov.au

1.8.3 Agency – Roles and Responsibilities

The following Table describes the roles and responsibilities of agencies that may be involved in the Disaster Management arrangements.

It is to be remembered that no organisation will be required to be involved in any activity which is not part of that agency's core business. The roles and responsibilities outlined in this section are seen as an extension of the normal day to day business of the agencies involved.

All agencies should be involved in the formulation of the Local Disaster Management Strategies.

Table 2: Roles & Responsibilities of Core LDMG Agencies

Agency	Roles & Responsibilities
Cairns Regional Council	▪ Management and administration of the Local Disaster Management Group – Cairns Region and its sub-committees including the development and maintenance of disaster management plans and sub-plans ▪ Coordinate disaster operations and support response and recovery agencies ▪ Community awareness and education, issue of public warnings and information ▪ Coordination of communications between response and recovery agencies ▪ Maintenance of the Local Government function via Local Government Business Continuity Contingency Planning ▪ Maintenance of normal Local Government services to the community o Water o Sewerage o Refuse disposal o Public health o Animal control o Environmental protection o Roads o Drainage ▪ Maintenance of a disaster response capability ▪ Design, maintenance and operation of Local Disaster Co-ordination Centre, including the training of sufficient personnel to operate the Centre ▪ Maintenance of telemetry and warning systems

	▪ Collection and interpretation of information from telemetry systems, conjointly with the Bureau of Meteorology ▪ Coordination of immediate and short term welfare and recovery needs in conjunction with Department of Communities. ▪ Support for the Cairns region SES Units ▪ Advice to the Cairns District Disaster Management Group (DDMG) on local matters such as evacuation and longer term recovery ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations ▪ Undertake emergency response at referable dams; Copperlode Falls Dam and the McKinnon Creek and Moody Creek Detention Basins ▪ Determine the area of potential impact from a dam safety emergency ▪ Provide relevant disaster response agencies with timely notification of impending and actual emergencies including details of the emergency and potential impact downstream of the dams/detention basins ▪ Development and annual review of the respective Emergency Action Plans ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Local Disaster Management Group - Cairns Region	▪ Development of comprehensive Local Disaster Management Planning strategies ▪ Design and maintenance of public education/awareness programs ▪ Coordination of support to response agencies ▪ Post disaster reconnaissance and coordination of impact assessment ▪ Provision of public information prior to, during and following disaster impact events ▪ Recommendations re areas to be considered for authorised evacuation ▪ Public advice regarding voluntary evacuation ▪ Provision of locally based community support services ▪ Identification, resourcing, staffing and operation of Disaster Centres (Public Storm Tide Cyclone Shelter, Places of Refuge, Evacuation Centres and Recovery Hubs)
Queensland Police Service	▪ Preservation of peace and good order ▪ Assist the community to prepare for, respond to and recover from an event or disaster ▪ Control and coordinate evacuation operations ▪ Investigation of the criminal aspect of any event. ▪ Provide a Disaster Victim Identification capability ▪ Prevention of crime. ▪ Security of any site as a possible crime scene. ▪ Coronial investigation procedures. ▪ Assist Traffic c o n t r o l , including road closures and maintenance of road blocks. ▪ Crowd management/public safety. ▪ Primary agency for counter-terrorism ▪ Co-ordination of search and rescue operations. ▪ Security of evacuated areas. ▪ Assist with management of registration of evacuated persons and i n q u i r i e s in conjunction with Red Cross (where they have a presence). ▪ Provide a disaster victim identification capability. ▪ Respond to and investigate traffic, rail and air incidents ▪ Advice to the LDMG-CR and request and provide assistance
	▪ Functional lead agency for Warnings. ▪ Primary agency to provide control, management and pre-incident planning of fires (structural, landscape and transportation). ▪ Primary agency for chemical / hazmat related incidents.

Queensland Fire & Emergency Service	▪ Primary agency for bushfire response. ▪ Coordinate and advise on Resupply Operations. ▪ Coordinate and advise on Emergency Supply. ▪ Undertake fire control. ▪ Provide rescue capability for persons trapped in any vehicle, vessel, by height or in confined space. ▪ Rescue of persons isolated or entrapped in swift-water / floodwater events. ▪ Provide advice, chemical analysis and atmospheric monitoring at chemical / hazmat incidents. ▪ Provide mass and technical decontamination capabilities under State Biological Disaster and State Radiological Disaster response. ▪ Provide Urban Search and Rescue (USAR) capability. ▪ Advise and educate on events (all hazards approach) ▪ Assist in pumping out of flooded buildings. ▪ Support the Queensland Hazardous Materials Incident Recovery Plan. ▪ Support the Queensland Coastal Contingency Action Plan - Chemical Spill Response Plan. ▪ Arrange and perform the decontamination process of any persons. ▪ Coordinate, support and manage the deployment of SES resources and operations including: ▪ Storm damage response. ▪ Road Crash Rescue. ▪ Short term welfare support. ▪ Assistance with communications and lighting. ▪ Provide impact assessment, and intelligence gathering capabilities. ▪ Coordinate and facilitate Rapid Damage Assessments and intelligence gathering capabilities. ▪ Develop, implement and maintain the State's disaster management arrangements and systems. ▪ Deliver Queensland Disaster Management Arrangements (QDMA) training to DDMG and LDMG members in accordance with the Queensland Disaster Management Training Framework (QDMTF). ▪ Provide expert advice on disaster management related matters including Natural Hazard Risk Assessment. ▪ Provide facilitation of logistical and communications support to disasters within capabilities ▪ Provide advice and support in relation to disaster management and disaster operations. ▪ Advice on NDRRA and SDRA Funding. ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Queensland Ambulance Service	▪ Assessment, treatment and transportation of injured persons ▪ Provide, operate and maintain ambulance services ▪ Protect persons from injury or death during recue and other operations. ▪ Provide and support temporary health infrastructure where required. ▪ Assistance with evacuation (for medical emergencies) ▪ Participate in health Facility evacuations ▪ Participate in Search & Rescue operations, evacuations and victim reception operations. ▪ Provision of advice regarding medical special needs sectors of the community ▪ Collaborate with Qld Health in mass casualty systems ▪ Collaborate with Qld Clinical Coordination Centre for provision of paramedics for rotary wing operations ▪ Provide Disaster, USAR, Chemical Hazard, Biological,

	Radiological operations support with specialist logistics and paramedics ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
State Emergency Service	▪ Assisting the community to prepare for, respond to and recover from an event or disaster. ▪ Public Education ▪ Rescue of trapped or stranded persons (See State Rescue Policy) ▪ Search operations for missing persons. ▪ First Aid support ▪ Assist in debris clearance ▪ Emergency repair and protection of damaged or vulnerable buildings ▪ Traffic Control support ▪ Short term welfare support ▪ Assistance with impact assessment ▪ Assistance with communications ▪ Assistance with lighting ▪ Flood boat operations ▪ Assistance with evacuations ▪ Assistance with staffing of Disaster centres (FIFO RFA's) ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Ergon Energy	▪ Maintenance of electrical power supply ▪ Advice in relation to electrical power ▪ Restoration of power ▪ Safety advice for consumers ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Industry	▪ General contractors under existing contracts with Cairns Regional Council
Tourism Tropical North Queensland	▪ Tourism industry to provide assistance in the coordination of accommodation, travel, etc. for affected interstate and international tourists. ▪ Liaison with accommodation providers on emergency ▪ Accommodation ▪ Provide Tourists with advice & warnings on event / disaster ▪ Disseminating information to other Visitor Information Centres in the region ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Department of Housing & Public Works	• Building and engineering services • Emergency supply • Communications • Maintenance of Storm Tide Cyclone Shelter (Redlynch)
Department of Communities, Child Safety & Disability Services	▪ Coordination of community recovery effort across government and non-government agencies ▪ Chair of the FNQ Human and Social Recovery Committee ▪ Development and annual review of the FNQ Human Social and Recovery Plan ▪ Coordinate provision of human-social recovery services during recovery operations in partnership with local, State, federal and non-government agencies ▪ Work with affected individuals and communities to support their own recovery activities ▪ Distribution of financial assistance to eligible individuals and families affected by natural disasters ▪ Assist Council in establishing Community Recovery Centres

	▪ Assist Council in establishing outreach service teams to visit households and determine their recovery needs ▪ Co-ordinate the development of community recovery communication strategy messages (strategic and operational) to support the broader disaster recovery and disaster management public communication strategy. ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Queensland Health	▪ Coordination of medical resources including medical personnel ▪ Lead Agency for Health Services ▪ Primary agency for pandemic influenza, biological and radiological incidents. ▪ Development and maintenance of Health Emergency Management Plans. ▪ Ensure a whole of health emergency incident management capability to prevent, respond to and recover from any event ▪ Public health advice and warnings to participating agencies and the community ▪ Psychological and counselling services for disaster affected persons ▪ Ongoing medical and health services required during the recovery period to preserve the general health of the community ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Aviation Rescue and Fire Fighting	▪ Aviation specialists for large flammable fuel fire control, rescue of trapped persons, first aid, water rescue service and structural fire fighting. Mutual aid support to State based emergency services. ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Bureau of Meteorology	▪ Supply of meteorological information, intelligence and warnings ▪ Collection and interpretation of information from rainfall and flooding telemetry systems, jointly with the Council ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Queensland Rail	▪ Advisor on Qld Railway resources ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Transport & Main Roads	▪ To assist in the planning of the management of disaster within Cairns Region, with a focus on the safe and efficient transport of people along the state-controlled road network. ▪ To manage and operate the state-controlled road network prior, during, and post disaster as required. ▪ Provide advice on vehicle detour routes ▪ To provide engineering advice, inspect and repair road and bridge infrastructure on the state-controlled road network following a disaster and to assist with the provision of machinery and personnel resources through the DDMG, when called upon by the LDMG-CR. ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Telstra	▪ Restoration of telecommunication ▪ Provision of communication facilities ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Australian Defence Forces	▪ Defence aid to the civil community – local resources ▪ Defence aid to the civil community - Joint Operations Support Staff (JOSS) ▪ Advisor on Australian Defence resources ▪ Advice to the LDMG-CR and request and provide assistance
	through the local group as required during disaster operations

Cairns Port Authority	▪ Advisor on seaport infrastructure capability ▪ Advisor on possible asset availability for sea evacuation tasks ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Cairns Airport Pty Ltd	▪ Advisor on Airport operations and resources ▪ Development and maintenance of Airport Emergency Plans. ▪ Maintain airport operations ▪ Advisor on possible asset availability for air evacuation tasks ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Sunwater Limited	• Undertake emergency response at Tinaroo Falls Dam • Determine the area of potential impact from a dam safety emergency • Provide relevant disaster response agencies with timely notification of impending and actual emergencies including details of the emergency and potential impact downstream of the dam • Development and annual review of the Tinaroo Falls Dam Emergency Action Plan • Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Maritime Safety Queensland	Regulates the Safety of Vessels and the Marine Environment through: ▪ Vessel Registration ▪ Marine licensing ▪ Installation and maintenance of port navigational systems ▪ Vessel Traffic Management within Port and Coastal Waters (VTS Centre manned 24/7); ▪ Management of Marine Cyclone Contingency Plans; ▪ Marine Pollution response within Coastal Waters and GBR through MoU with GBRMPA ▪ Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
Australian Red Cross	▪ Provide representation at LDMC-CR meetings during activation. ▪ Provide advice and communication with the LDC and DDC. ▪ At request from LDMG-CR, activate staff to operate and manage Evacuation Centres ▪ Provision of community support and disaster relief to disaster affected Communities ▪ Assist the community to prepare for, respond to and recover from an event or disaster e.g. Public awareness and education campaigns ▪ Request and provide assistance through the LDCC as required during disaster operations
Surf Life Saving Queensland SLSQ	▪ Development and maintenance of a capacity to respond or assist other agencies respond to disaster and emergency situations. ▪ Management, coordination and support of Sunshine Coast Surf Lifesaving Clubs and members during disaster operations. ▪ Provision of advice and communication with the LDC and DDC. ▪ Request and provide assistance through the LDCC as required during disaster operations
Department of Energy and Water Supply	▪ DEWS water emergency responsibilities include: - Ensure emergency action plans are in place for referable dams to ensure appropriate action is taken in the event of incidents or failures of the dams - Exercise dam safety emergency powers if needed to minimise the risk of failure of a dam or to minimise the consequences of failure ▪ Oversight of drinking water and recycled water incident management

Office of the Inspector General of Emergency Management	▪ Regularly review and assess the effectiveness of disaster management by the State, including the State disaster management plan and its implementation ▪ Regularly review and assess the effectiveness of disaster management by district and local groups, including district and local disaster management plans ▪ Regularly review and assess cooperation between entities responsible for disaster management in the State, including whether systems and procedures employed by those entities are compatible and consistent ▪ Make disaster management standards ▪ Regularly review and assess disaster management standards ▪ Review, assess and report on performance by entities responsible for disaster management in the State against disaster management standard ▪ Work with entities performing emergency services, departments and community to identify and improve disaster management capabilities, including volunteers capabilities ▪ Monitor compliance by departments with their disaster management responsibilities ▪ Identify opportunities for cooperative partnerships to improve disaster management outcomes
Queensland Reconstruction Authority	▪ Administer NDRRA relief measures ▪ When requested, support the QFES with rapid damage assessments of housing in disaster impacted areas ▪ Undertake damage assessments of public infrastructure in collaboration with local governments ▪ Liaise with local governments and state agencies to gather information to ensure NDRRA disaster activations meet Commonwealth Government criteria ▪ lead agency responsible for disaster recovery, resilience and mitigation policy in Queensland
Department of Agriculture and, Fisheries	▪ Primary agency for the containment and eradication of emergency animal and plant diseases ▪ Coordinate efforts to prevent, respond to, and recover from pests and diseases, and livestock welfare ▪ Provide advice relative to stock ▪ Coordinate destruction of stock or crops in an emergency pest/disease situation ▪ Administer NDRRA relief measures
Department of Environment and Heritage Protection	▪ Functional lead agency for the Environment Recovery Group ▪ Provide oiled wildlife response, traditional owner liaison, environmental and shoreline assessments and waste management advice and approvals for ship sourced pollution at sea ▪ Provide information and advice with respect to regulated (tailings, contaminated water) dam locations, and coordinate expert advice on regulated dam safety and integrity ▪ Provide expert environmental advice in disasters
Department of State Development, Infrastructure and Planning	▪ Functional lead agency for economic recovery ▪ Advise the Local Disaster Management Group, and request and provide assistance through the local group, as required, during disaster operations.

1.9 Key Objectives

The broad objectives of the Local Disaster Management Group - Cairns Region (LDMG-CR) are to:

- Detail specific objectives to meet the overall purpose of the plan; and
- Include specific statements relating to Prevention, Preparedness, Response and Recovery (PPRR).

Prevention

- Increase adherence to and introduction of systems, procedures and regulations that reduce disaster risks.
- Lists the studies that have been conducted, provide a short summary and identify other studies which need to be conducted; and
- Ensure the community is aware of methods of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster in order to reduce the impact.

Preparedness

- Identify and implement risk treatment strategies that have been determined by studies;
- Increase community safety through public awareness, information and education;
- Detail how a multi-agency, all hazards approach will be used by the LDMG-CR and how some agencies will provide guidance for the group on specific hazards;
- Identifying resources to maximize response;
- Establish relationships to increase disaster management capability; and
- To ensure the community is aware of methods of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster so as to reduce the impact.

Response

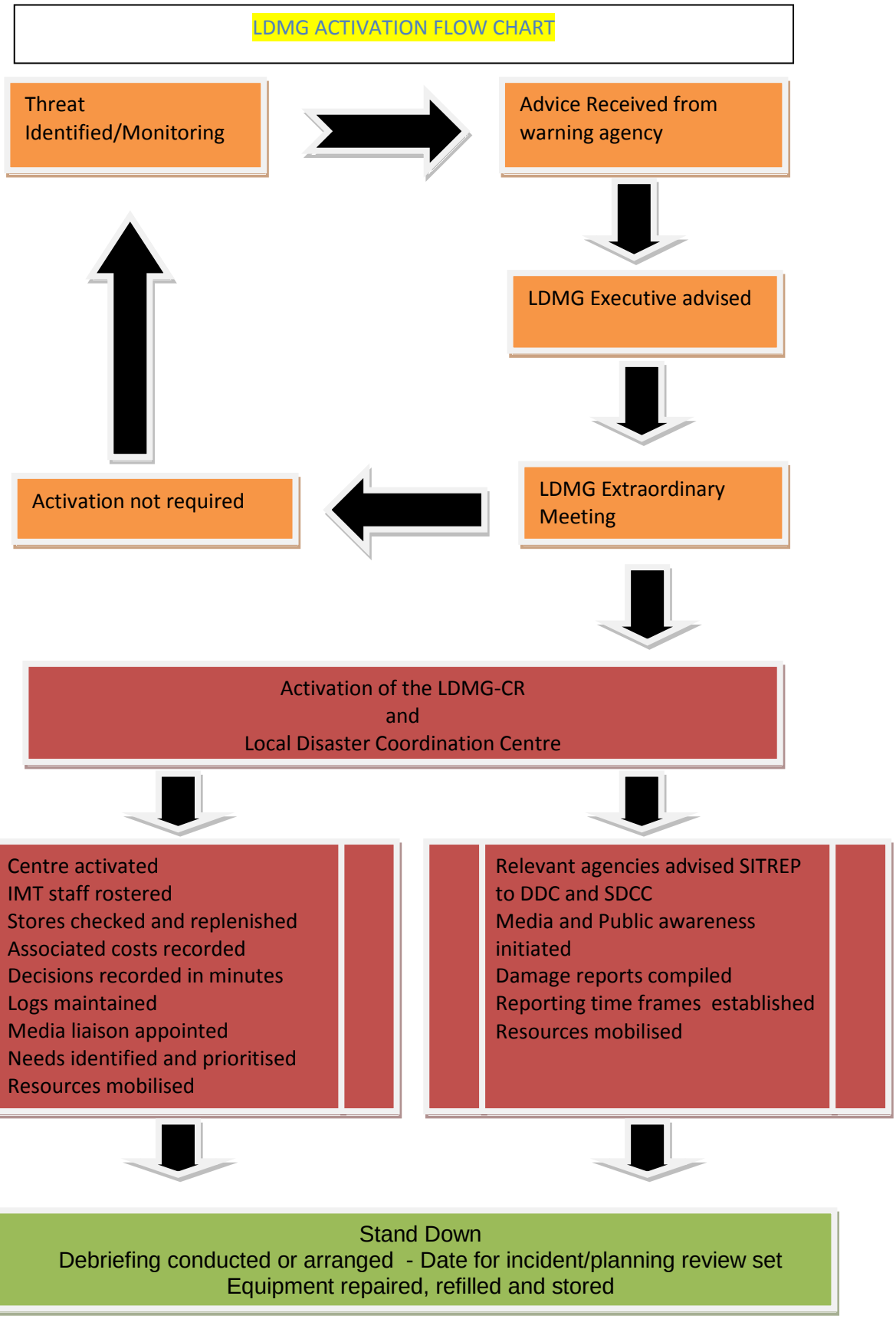
- Ensure there is centralised local co-ordination of disaster management;
- Try to minimize the impact on the community of a disaster event through good response;
- Assist with the re-establishment of the community as effectively and efficiently as possible;
- Detail the strategic manner in which elements of the LDMG-CR shall deal with day to day disaster management business and how information will be passed out on events that impact on the group; and
- Demonstrate a commitment to the safety of the Cairns Region communities.

Recovery

- Adequately provide immediate post event assistance and advice to the affected community;
- Ensure the recovery priorities of the community are met;
- Ensure the community is aware of action that can be taken after the impact to assist with a speedy recovery and return to normality;
- To reduce the community consequences following an event;
- Provide advice and/or support to the Cairns Disaster District Recovery Committee and State disaster management and recovery agencies;
- Ensure a consistent approach to disaster management; and
- Demonstrate a commitment to the safety of the Cairns Regional communities.

The following Activation Flow Chart outlines the steps taken during the activation. The procedure set out in this flow chart applies only to major to major events.

Figure 2



1.10 Local Government Policy for Disaster Management

This plan is consistent with the State Disaster Management Group Strategic Policy Framework which focuses on a comprehensive, all Agencies, all hazards approach with all levels of government working in partnership to reduce the effects of disasters.

The Cairns Regional Council and the Local Disaster Management Group – Cairns Region are committed to ensuring that the city's responsibilities under the Disaster Management Act 2003 are executed in full by:

- Working within the State Disaster Management Strategic Policy Framework, which focuses on a comprehensive, all hazards approach with all levels of government working in partnership to reduce the effects of disasters
- Protecting health, safety and quality of life and economic vitality
- Protecting our natural and built environment
- Recognising and valuing the benefits of partnership and collaboration across all levels of government, community and industry, in all aspects of disaster management
- Respecting the diversity of Queensland communities
- Ensuring accountability and transparency of disaster management in Queensland.

1.11 Local Government Functional Role

Section 80 of the Act outlines the functions of the local government:

a) To ensure it has a disaster response capability
b) To approve its local disaster management plan prepared under part 3
c) To ensure information about an event or a disaster in its area is promptly given to the district disaster coordinator for the district in which its area is situated
d) To perform other functions given to the local government under the Act

In addition to these functions; Section 29 of the Act specifies that local government must establish a Local Disaster Management Group (LDMG) for the local government's area.

- A 'disaster response capability' for a local government means the ability to provide equipment and a suitable number of persons, using the resources available to the local government, to effectively deal with or help another entity to deal with, an emergency situation or a disaster in the local governments area.
- Section 4A of the Act provides that District Disaster Management Groups (DDMGs) and the State Disaster Management Group (SDMG) should provide local governments with appropriate resources and support to help the local governments carry out disaster operations.

1.12 Integration with Council's Corporate, Strategic and Operational Planning Processes

Disaster Management is an integral part of Council's core business and is an activity identified within Council's new Corporate and Operational Plans.

The Corporate Plan is the strategic business plan of Cairns Regional Council. The Plan sets out the strategic direction for Council over the next five years. It defines the strategies and programs that Council aims to deliver and allows Council to respond effectively to key regional and local issues. The Corporate Plan also provides direction for Council to achieve a sustainable future for the region. Contained in the Corporate Plan are Strategic Goals, Outcomes and Strategic Actions forming the basis from which other Council plans, policies and strategies are developed. The Corporate Plan objectives will be delivered through its annual Operational plans which demonstrate Council's progress in implementation of the Corporate Plan.

The Corporate Plan 2013-2018 identifies the following key strategic action;

1.5 An effective disaster management response
1.5.1 Continue to liaise with emergency service providers regarding resource planning and provision.
1.5.2 Build resilience and capacity in our communities to manage natural or man-made events and adversity.
1.5.3 Implement responsible Town Planning measures to encourage resilient and adaptive community housing and infrastructure

Council incorporates Disaster Management into its core business functions through:

(a) Assigning Council resources to maintain a capability to coordinate the response and resources for an event or disaster within the Cairns Regional Council area.

(b) Actively providing information and warnings about an event or disaster to the public and appropriate emergency services as per legislative responsibility.

(c) Annually reviewing and exercising disaster management plans.

(d) Actively providing public education on and engagement in, disaster preparedness and resilience.

(e) Actively mitigating against potential disaster situations to reduce community vulnerability.

(f) Liaising with Queensland Fire & Emergency Services (QFES) on disaster management planning.

(g) Assisting local SES groups to maintain operational standards.

(h) Assisting SES Groups with annual recruitment program.

(i) Actively providing disaster management training to staff and the Local Disaster Management Group.

(j) Actively working with the community towards strengthening community resilience against disasters.

(k) Assisting State and Federal agencies in the recovery of the community after an event or disaster.

While it is a State Government role to oversee operations of the Local State Emergency Service (SES) Group, Council contributes funding for the maintenance and operations of vehicles, equipment, buildings and supplies used by nine (9) Cairns Region SES Units.

1.12.1 Local Government Development Priorities

In accordance with the '*State Planning Policy – Mitigating the Adverse Impacts of Floods, Bushfire & Landslide'*, development approvals (Planning and building) are adopted and assessed against the relevant legislation and Planning Scheme for the region.

1.13 Review and Assessment

1.13.1 Internal Review

In accordance with Section 59 of the Act, the LDMG-CR will review the effectiveness of the 'Cairns Local Disaster Management Plan' and all associated sub-plans annually. The Local Disaster Coordinator will instigate the annual review and will involve the LDMG-CR membership.

Table 3: The timeline for the annual review will be as follows:

June - August	Working group reviews and amends (as required) the main plan
September	Revised plan submitted to full Local Disaster Management Group for acceptance/amendment
October	Reviewed plan submitted to Council for approval
November	Updated plan submitted to the District Disaster Management Group

The master contact list for all organisations/persons involved in Council's disaster management arrangements shall be reviewed / updated at each meeting of the Local Disaster Management Group (and any subordinate Groups) and will be held by the Local Disaster Coordinator.

1.13.2 External Assessment

On completion of each internal review, the 'Cairns Local Disaster Management Plan' will be provided to the XO of the DDMG for the purpose of assessing consistency across the district and conducting external assessment of the Plan.

The IGEM department will also conduct an assessment within the context of the Quality Assurance Framework and make recommendations, if required.

The DDMG will ensure the review process addresses the external assessment requirements of Section 16A(b) and 23(d) of the Act.

Unless the external reviews highlight a critical change, the required amendments will be implemented with the next annual review of the Plan.

1.13.3 Other Triggers Requiring Review

In addition to the requirement for the annual review of the 'Cairns Local Disaster Management Plan', the following range of conditions may trigger the need for the

Plan to be reviewed independent of the review program. These include:

- an exercise or operational activation of the Plan highlights significant deficiencies in arrangements, systems or processes;
- changes to the boundaries to which the Plan is applicable resulting in altered risk levels;
- changes to the risk profile of the local government area resulting in altered risk levels;
- changes within the environment, community population, demographics or hazards resulting in increased risk levels;
- changes to available resources or agencies with a role in delivery of disaster management response and recovery which impacts on group capability;
- changes to legislation, policy or arrangements; or
- at the request of the DDC.

Where one or more of these triggers are identified within the local area, the review will be undertaken as soon as practical, regardless of the existing timeframes of programmed reviews.

PART 2 LOCAL DISASTER MANAGEMENT GROUP TERMS OF REFERENCE

2.1 Establishment

The Local Disaster Management Group - Cairns Region has been established in accordance with *Section 29 Disaster Management Act 2003* which states:

> ***"****s 29 Establishment*
>
> *A local government must establish a Local Disaster Management Group (local group) for the local government's area".*

2.2 Functions

The functions of the Group are set out in *Section 30 Disaster Management Act 2003* and below in Table 2.

Table 4: Legislated Functions of Disaster Management Groups

Function	Description
(a) to ensure that disaster management and disaster operations in the area are consistent with the State group's strategic policy framework for disaster management for the State;	Ensure local disaster management arrangements are consistent with the eight elements of the SPF.
(b) to develop effective disaster management, and regularly review and assess the disaster management;	Local disaster management arrangements are to be developed consistent with the Act, the SPF, the SDMP and any guidelines. Local arrangements should be tested annually by exercise or operational activity
(c) to help the local government for its area to prepare a local disaster management plan;	Development of disaster plan and sub-plans for the local government area that mitigates against the identified risks outlines roles and responsibilities of agencies and includes a comprehensive, all-hazards, all agencies and prepared communities approach.
(d) to identify, and provide advice to the relevant district group about, support services required by the local group to facilitate disaster management and disaster operations in the area;	Support services identified and communicated to the DDMG to inform district level planning.

(e) to ensure the community is aware of ways of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster;	Ensure community education and awareness programs include local hazards and their potential impact; local arrangements; mitigation strategies; and promote self-reliance and build resilience.
(f) to manage disaster operations in the area under policies and procedures decided by the State group;	Ensure disaster operations are managed in accordance with the SPF, the SDMP and any guidelines.
(g) to provide reports and make recommendations to the relevant district group about matters relating to disaster operations	LDMG representation on the DDMG will provide avenue for regular communication, reporting and recommendations.
(h) to identify, and coordinate the use of, resources that may be used for disaster operations in the area;	Identify those resources that will be required and are accessible within the local area. A gap analysis and contingencies are implemented to ensure the shortfall can be accessed from outside the local area, by request to the disaster district.
(i) to establish and review communications systems in the group, and with the relevant district group and other local groups in the disaster district of the relevant district group, for use when a disaster happens;	Establish, test and maintain communications systems, including redundancy systems, to ensure communication can be maintained during a disaster event.
(j) to ensure information about a disaster in the area is promptly given to the relevant district group;	Establish and maintain clear information reporting arrangements with the DDMG for use during disaster operations.
(k) to perform other functions given to the group under this Act;	Performance of other functions as delegated within the Act.
(l) to perform a function incidental to a function mentioned in paragraphs (a) to (k).	Performance of other functions which are required to be undertaken in support of the listed function.

2.3 Membership Details

2.3.1 Appointment of Members

The Queensland Local Disaster management group Guidelines 2012 (section 4.4) recommend the Local Disaster Management Group (LDMG) membership include representatives with the necessary expertise or experience and delegation authority to assist with the comprehensive, all-hazards, all-agencies approach to disaster management.

The LDMG must consist of the following Members;

- Chairperson (must be a Councillor) appointed by the relevant local government;

- Deputy Chairperson (recommended to be a Councillor) appointed by the relevant local government Local Disaster Coordinator (recommended to be the CEO of the local government) appointed by the relevant local government;

- At least one (1) person nominated by the Chief Executive, Department of Community Safety (normally the responsible QFES Area Director, appointed by the relevant local government);

- Other persons appointed by the relevant local government area, incl. Council representatives, local emergency services (i.e. Queensland Police Service, Queensland Ambulance Service, Queensland Fire and Emergency Services and State Emergency Service), non-government organisations, or other representatives as identified by the local; government's functional requirements.

Under Section 40A of the Act, LDMG Members must have an appointed deputy, who has the necessary expertise or experience and is appropriately trained to take on their responsibilities, should they be unavailable, or to provide additional support during extended operations.

Members and deputies to LDMG – Cairns Region (LDMG-CR) shall be appointed in writing with signed approval from the Chair of the LDMG-CR. As per Section 37(a) of the Act, the LDMG-CR will provide written notice of the members and deputies of the group to the District Disaster Coordinator and the Chief Executive, Department of Community Safety, at least once a year.

2.3.1 Appointment of the Local Disaster Coordinator

The Chief Executive Officer (CEO) for Cairns Regional Council has delegated authority to appoint the Local Disaster Coordinator for the LDMG-CR. It is the view of Council that the LDC appointee has the necessary experience or expertise to perform the function. The appointee has the authority and necessary delegations within Council to perform the role effectively.

2.3.2 Accountability and Authority of Members

The principal Local Disaster Management Group Members and Working Group Members and liaison officers from each organisation must have:

- The authority to commit their respective organisation to the Local Disaster Management Group's agreed decisions.

- The authority to commit their respective organisation's resources without having to confer with superiors.

- A sound understanding of the Local Disaster Management Plan.

The principal Local Disaster Management Group Members and Working Group Members and liaison officers from each organisation shall:

- Regularly submit appropriate disaster control or mitigation information to the Local Disaster Coordinator.
- Ensure adequate planning and control measures for disaster control are implemented within their own organisation
- Upon activation of the LDMG-CR in a disaster, to forward situation reports to the Local Disaster Coordinator at intervals as may be required by him on the activities of the members' organisations.

Absence from the locality of a principal LDMG-CR member, and the possibility of protracted operations, require that a standby representative (i.e. deputy) from each organisation be identified and briefed on the requirements of their roles and responsibilities under the plan.

The LDMG-CR consists of the following appointed positions and the relevant persons are appointed in accordance with *Section 33- 37 of the Disaster Management Act 2003*. The membership of the Group is to be reviewed annually.
.
The Mayor or another Councillor of the local government should be appointed Chair of a LDMG-CR. The chief Executive Officer, or another employee of the local government, should be appointed as the Local Disaster Coordinator (LDC).

Table 5: LDMG-CR Membership details

LDMG-CR Executive Membership		
Member Organisation	LDMG Position	Role
Cairns Regional Council	Chair, LDMG	Delegated Councillor
Cairns Regional Council	Deputy Chair, LDMG	Delegated Councillor
Cairns Regional Council	Local Disaster Coordinator	LDC
Cairns Regional Council	Deputy LDC	Disaster Management Officer
Cairns Regional Council	LDMG Secretariat	Disaster Management Officer/Disaster Resilience Officer

LDMG Core Membership	
Core members	**Organisational Role**
Cairns Regional Council	Coordinator Community Development
Cairns Regional Council	Manager, Marketing and Communications
Cairns Regional Council	Manager, Cairns Works Maintenance
Cairns Regional Council	Senior Environmental Health Officer
Cairns Regional Council	Manager Operations, Water & Waste
Cairns Regional Council	Manager, Buildings & Facilities Management
SES	Local Controller
QFES	Urban Fire representative SES Area Controller Emergency Management Coordinator
QPS	Metro Inspector
QAS	Officer in Charge - *position delegated to Operations Supervisor - Cairns & Coastal, Intensive Care*

	Paramedic
Department of Communities	Senior Service Officer (Recovery)
Cairns Hospital	Disaster Coordinator Cairns and Hinterland Hospital and Health Service
Cairns Airport	General Manager– *position delegated to Security and Emergency Services Coordinator*
Ports North (Seaport)	Manager Operations Seaport - *position delegated to Security and Emergency Manager*
Ergon Energy	Area Operations Manager

LDMG Advisors/Observers Membership	
Advisory members	**Organisational Role**
Cairns Regional Council	Senior Occupational Health & Safety Advisor
Cairns Regional Council	Manager Waste & Environment
Cairns Private Hospital	CEO– position delegated to *Emergency Services Coordinator*
Air Services Australia	Fire Station Manager
Bureau of Meteorology	OIC, Cairns Office
Chamber of Commerce	Chamber President
Qld Health	Director Environmental Health Tropical Population Health Unit
Telstra	Area Operations Manager
Surf Life Saving Queensland	Lifeguard Supervisor
Australian Defence Force	Manager JOSS/51st FNQR/HMAS Cairns
Tropical Tourism Nth Qld	Marketing Manager Operations
James Cook University	Coordinator Centre for Disaster Studies
QRail	Yard Supervisor
Transport & Main Roads	Principal Engineer
Education, Training & Employment	Facilities Services Officer – Redlynch College
Maritime Safety Qld	Manager Vessel Traffic Management
Salvation Army	Emergency Services Coordinator
Australian Red Cross	Emergency Manager
St John Ambulance	Divisional Superintendent
QFES Rural Fire Brigade	First Officer
Sunwater Limited	Emergency Coordinator
RSPCA	Divisional Superintendent

2.3.3 Advisors to the LDMG-CR

The LDMG-CR may invite participants from a range of entities, such as industry and community organisations to participate in the business of the group in an advisory capacity, as required.

It is suggested the list of LDMG-CR advisors is regularly reviewed to reflect current disaster management arrangements for the local government area. Whilst advisor input is considered by members in their decision making, meeting resolutions will only be carried by member consensus and advisors will not be included in the calculation of a quorum.

Where it is important that an advisor has full voting rights, the LDMG-CR should consider whether to appoint the person as a member under s. 33 of the Act.

It is recommended that contact details for advisors are maintained, updated and treated the same as member details in order to be prepared for operational and post-operational activities.

2.3.4 Induction to LDMG-CR

The LDC will ensure that all LDMG-CR Members including Deputies and replacement Members will undertake LDMG Induction as soon as possible

Records of LDMG-CR Induction will be maintained within the Queensland Disaster Management Training Framework Register.

2.4 LDMG-CR Sub-Groups

LDMGs may have cause to create sub-groups, whether permanent or temporary, to assist the group with its business. Examples of this may be a Local Recovery Group, an evacuation project team, a cyclone shelter operations management group or a sub-group formed to deal with a particular issue relating to that local government area.

In these circumstances, the creation of a sub-group must be passed as a LDMG meeting resolution. Terms of Reference should be established to give clear guidance on the establishment, role and function, required outcomes and conduct of business of the sub-group. All sub-groups should be required to provide the LDMG with regular updates at LDMG meetings.

It should also be noted that any decisions made or actions taken by or on behalf of these sub-groups should be endorsed by the LDMG during normal business, or during disaster operations by the LDMG or LDC, to ensure the validity of decisions under the Act.

At present the Local Disaster Management Group – Cairns Region has the following Sub Groups;

2.4.1 The Community Support Sub-Committee

The function and membership of the Community Support Sub-Committee is set out below.

Meetings:

- Meetings are held at least twice per year.

Chair:

- Coordinator Community Development, CRC

Membership:

- Local Disaster Coordinator LDMG-CR
- Environmental Health Services
- St John Ambulance
- RSPCA
- DOCCSDS
- Deaf Services Queensland
- ARC Disability Services
- FNQ Volunteers
- Centrelink
- Anglicare (Homeless Service Hub)
- Centacare Migrant Services
- Cairns Christian Ministers
- Division of General Practice
- Animal Care for Seniors at Home
- QAS
- QFES
- Lifeline

Responsible for:

- Reviewing Community Support Operational Sub-Plan and associated Standard Operating Procedures
- Reviewing of Public Storm Tide Cyclone Shelter and Disaster Centre Sub-Plans
- Revising the level of resources necessary to assist the LDMG-CR in its response to disaster events.
- Vulnerable Persons Evacuation Register
- Homeless Persons Plan
- Volunteer Coordination Sub Plan
- Providing regular reports to the LDMG-CR

2.4.2 Local Recovery Sub-Committee

The function and membership of the Local Recovery Sub-Committee is set out below;

Meetings:

- Meetings are held twice a year.

Chair

- Deputy Chair of LDMG-CR

Membership:

- Local Disaster Coordinator LDMG-CR
- Coordinator Community Development, CRC
- Disaster Resilience Officer, CRC
- Manager, Infrastructure Services CRC
- Manager, Cairns Works, CRC
- Manager, Marketing & Communications, CRC
- Manager, Development & Regulatory Services, CRC
- Area Coordinator, Emergency Planning QFES
- Senior Advisor, Community Recovery, Disability & Community Services

Responsible for:

- Develop, maintain and regularly review the Recovery Plan
- Provide an annual report to the LDMG-CR
- Coordinate training on disaster recovery
- Coordinate Council's community support recovery operations
- Establish priorities and strategies for mid and long term recovery
- Ensure the community's recovery needs are met
- Represent the community's recovery need in other forums
- Engage with the community on recovery issues and priorities
- Liaise with State and District agencies
- Liaise with NGO's
- Ensure local needs assessment is done and regularly updated
- Coordinate resource management priorities, including staff, locations, centres, depots, physical resources (e.g. hire, maintenance, etc.)
- Ensure appropriate management for Council staff on recovery tasks.

2.4.3 Evacuation Sub-committee

Meetings:

- Meetings are held at least annually (November)

Chair

- Disaster Management Officer, CRC

Membership:

- Local Disaster Coordinator LDMG-CR
- Cairns Airport Pty Ltd
- Ports North
- Dept. Transport and Main Roads
- Qld Rail
- Qld Police Service
- Maritime Safety Queensland
- Council's Infrastructure Services
- Emergency Management Coordinator, Operations and Emergency Management, QFES
- SES Area Controller, QFES

Responsible for:

- Reviewing and maintaining the list of transport resources available to assist the LDMG-CR with its response to disaster events
- Reviewing the evacuation process and evacuation routes required
- Providing a report to the LDMG-CR following each meeting

2.4.4 Babinda Community All Hazard Planning Committee

Meetings:

- Meetings are held at least annually (November)

Chair

- Disaster Management Resilience Officer, CRC

Membership:

- Local Disaster Coordinator LDMG-CR
- Division 1 Councillor
- Babinda CRC representative
- QPS OIC Babinda P.S.
- QFES
- SES Local Controller, QFES
- Others as listed in the Babinda Community All Hazards Action Plan

Responsible for:

- Activation of the Babinda Community All Hazards Action Plan
- Reviewing Action Plan procedures
- Reviewing Disaster Centre Sub Plan
- Providing regular reports to the LDMG-CR
- Providing SITREP's to the Cairns DCC when activated

2.5 Organisational Responsibilities

In undertaking LDMG-CR responsibilities, members must ensure that they:

- Attend LDMG-CR activities with a full knowledge of their agency resources and services and the expectations of their agency;
- Are available and appropriately briefed to actively participate in LDMG-CR activities to ensure that plans, projects and operations use the full potential of their agency or function, while recognising any limitations;
- Are appropriately positioned within their agency to be able to commit agency resources to LDMG-CR normal business activities; and
- Attend and complete appropriate disaster management training to ensure an adequate level of understanding of the Queensland Disaster Management Arrangements and Framework.

2.6 General Duties of the LDMG-CR

The Duties of the LDMG-CR include:

(a) Preparation and revision of the Local Government Disaster Management Plan;

(b) Provision of assistance to the Local Disaster Coordinator during Disaster Management operations.

(c) Promotion of disaster management education to the community

Table 6 LDMG-CR Functional Register

Organisation/Person	Disaster Management Function	Key Role
Chairperson and local Disaster Coordinator	ACTIVATION OF LOCAL DISASTER MANAGEMENT GROUP	To determine an activation process for the LDMG-CR in response to a disaster event.
LDMG-CR Local Disaster Coordinator	OPERATION AND MANAGEMENT OF DISASTER COORDINATION CENTRE	To determine standard operating procedures for the activation and conduct of the Local Disaster Coordination Centre (LDCC) in response to a disaster event.
LDMG-CR Local Disaster Coordinator and CRC Finance	FINANCIAL MANAGEMENT	To outline Local Government and other responding agency internal financial arrangements in support of a disaster event and the eventual financial claiming process to recoup funds
Community Support Coordinator (*Community Support Sub Committee Chairperson)*	COMMUNITY SUPPORT – SHORT TERM WELFARE	The provision of immediate and continuing care of disaster affected persons who may be threatened, distressed, disadvantaged, homeless or evacuated and the maintenance of health, well-being and prosperity of such persons with all available community resources until their rehabilitation is achieved.
LDMG-CR Local Disaster Coordinator and QPS	EVACUATION	To provide for the planned relocation of persons from dangerous or potentially dangerous areas to safer areas and eventual return
Community Support Coordinator, CRC Community Dev. Coord., SES CRC Environmental Health	DISASTER CENTRE MANAGEMENT	To provide for the management of facilities which provide affected people with basic human needs; Storm tide cyclone shelters – shelter, food and water Places of Refuge/Evacuation

CRC Works Maintenance Australian Red Cross		Centres -accommodation, food and water, and welfare/recovery processes.
QFES/LDMG-CR Cairns Regional Council Infrastructure Services	IMPACT ASSESSMENT	To assist the LDMG-CR in planning, formatting and conducting a complete initial impact assessment. This assessment gathers information on the magnitude of the event, and the extent of its impact on both the population and the community infrastructure.
LDMG-CR Local Disaster Coordinator	LOGISTICS	To develop a process to manage the receipt and delivery of the appropriate supplies, in good condition, in the quantities required, and at the places and time they are needed.
Queensland Health	MEDICAL SERVICES	To provide coordination of the health and medical resources needed in responding to medical care needs following a disaster event.
LDMG-CR Local Disaster Coordinator And CRC Manager Marketing & Communications	PUBLIC INFORMATION & WARNINGS	To provide for the effective collection, monitoring, management and dissemination of accurate, useful and timely information and warnings to the public during disaster events
Cairns Regional Council Water & Waste	WATER SUPPLY & SEWERAGE	To provide for the continuity of service of essential water and sewerage services
Cairns Regional Council Infrastructure Services	PUBLIC WORKS & ENGINEERING IMPACT ASSESSMENT	Building inspections, road, rail, bridge assessment, maintenance or repair, and demolitions and debris clearing as required.
QPS/QFES/SES	RESCUE	Coordinate the use of resources in search and rescue in response to an actual or potential disaster condition
LDMG-CR Local Disaster Coordinator	TRANSPORT	To coordinate the use of transportation resources to support the needs of local government, voluntary organisations and other disaster support groups requiring transportation capacity to perform their emergency response, recovery and assistance missions.
LDMG-CR Local Disaster Coordinator GIVIT	DONATION MANAGEMENT / OFFERS OF ASSISTANCE/ VOLUNTEERS	To coordinate the delivery, storage and distribution of goods donated by the public that has not been donated directly to community services and clubs. To coordinate Offers of Assistance by the public.

2.7 Membership Records

The LDMG-CR is required to maintain a register of its current members and advisors for reference during both general business and operational periods. As a minimum, details should consist of:

- full name;
- designated position title;
- department/organisation or agency name;
- work address;
- business and after hours telephone numbers (both landline and mobile); and
- email address.

Membership records are collected, stored and disposed of in accordance with the Information Privacy Principles contained in Schedule 3 of the Information Privacy Act 2009.

The State Disaster Management Group and the District Disaster Management Group (DDMG) are advised annually of membership of the Group under the requirements of Section 37 Disaster Management Act 2003.

When the LDMG-CR member register is altered, an updated copy is provided to the relevant DDC. If the alteration relates to a member of the Executive Team of the LDMG-CR, the SDCC is also advised to maintain currency of contact details in case of a disaster event.

Refer to Appendix F for LDMG-CR contact details.

2.8 Meeting Schedules and Processes

Advisors, observers and guests may attend the meeting and participate in discussions but do not form part of the LDMG-CR or have voting rights

In accordance with s. 38 of the Act, the LDMG-CR may conduct its business, including its meetings, in a way it considers appropriate.

The Act prescribes the following requirements with regards to the conduct of meetings:

- Meetings must be held at least once every six months at times and places decided by the Chairperson (s. 39). Additional meetings may be held as required, but must be held if asked for in writing by at least one-half of LDMG members, or by the DDC.

- A quorum is required for meeting resolutions to be officiated (s. 40) equal to one-half of LDMG members plus one, or when one-half is not a whole number, the next highest whole number. An appointed deputy attending a meeting on behalf of a LDMG member is to be counted in the quorum (s. 40A). A template for recording attendance at LDMG meetings is available on the DM Portal.

- The Chairperson or Deputy Chairperson is to preside at meeting (s. 41). If both are absent the Chairperson or Deputy Chairperson may appoint another member of the group to preside. If both offices are vacant the group will choose a member to preside.

- Meetings may be held, or members may take part using any technology that reasonably allows them to hear and take part in discussions (s. 42). Members participating through these means are taken to be present at the meeting.

- Resolutions may be passed at meetings, however are also considered valid if a majority of members give written agreement and notice of the resolution is given under the group's approved procedures (s. 42).

- Minutes of meetings must be kept (s. 43).

A variety of templates to assist LDMGs to manage business and meetings are available on the DM Portal.

Attendance

If a member, or their appointed Deputy, continually does not attend LDMG-CR meetings the LDMG Executive Team will meet with the member to discuss the ongoing non-attendance at LDMG-CR meetings. A formal record of LDMG-CR member attendance is maintained and this is used to monitor member attendance across meetings.

The register monitoring progressive LDMG-CR meeting attendance is maintained by the Disaster Management Unit (DMU), CRC.

Meeting Minutes

The LDMG-CR meeting minutes provide a summary of key discussion points and resolutions and may be subject to public scrutiny under the Right to Information Act 2009. It should be noted in the minutes are produced whether or not a quorum was established at the meeting. The meeting attendance sheet is attached to the back as an accurate account of who attended the meeting and whether the meeting had a quorum, thus validating any resolutions or decisions made.

The LDMG-CR Meeting minutes are maintained by the DMU, CRC.

Flying minute

A flying minute may be used to progress business of an urgent nature in the instance where convening a meeting of the LDMG-CR is not practicable. The passing of resolutions via flying minute is allowed under s. 42 of the Act if a majority of members provide written agreement.

Records of LDMG-CR flying minutes, LDMG-CR briefing papers and LDMG-CR agendas are maintained by the DMU, CRC.

Resolution statement

In addition to meeting minutes, the LDMG-CR Secretariat maintains a resolution statement providing a running log of actions undertaken and an audit trail through to the acquittal of those resolutions. Once acquitted the resolution is recorded on a resolution register.

The resolution statement of LDMG-CR actions is maintained by the DMU, CRC.

Resolutions register
For governance purposes, a register detailing each resolution passed by the LDMG-CR and details of actions undertaken to acquit the resolution is kept by the LDMG-CR Secretariat. This provides an easy reference document and a historical record of past LDMG-CR resolutions.

The resolution register of LDMG-CR meetings is maintained by the DMU, CRC.

Letterhead/Logo
As LDMG-CR business is conducted on behalf of the Cairns Regional Council, the CRC letterhead and logos are used for all LDMG-CR business.

Records Maintenance
When managing LDMG-CR records, the LDMG-CR complies with the requirements of the Public Records Act 2002 and the Queensland State Archives General Retention and Disposal Schedule for Administrative Records which outlines the requirements for retaining documents in accordance with the Public Records Act 2002.

2.8.1 Meeting Deputies

S. 40A of the Act provides for Meeting deputies for particular members

- A member of a disaster management group may, with the approval of the Chairperson of the group, appoint by signed notice another person as his or her Deputy.
- The deputy may attend a group meeting in the member's absence and exercise the member's functions and powers under this Act at the meeting.
- A deputy attending a group meeting is to be counted in deciding if there is a quorum for the meeting.

Any member of the LDMG-CR may appoint a delegate to attend the meetings on the member's behalf, and the delegate will have the authority to make decisions and commit resources affecting that organisation.

2.8.2 Frequency of Meetings

The LDMG-CR meets bi-monthly except for the cyclone season when the group meets monthly from November to April.

2.9 District Disaster Management Group Representative

Section 24 of the Act requires CRC to nominate a representative to the Far North District Disaster Management Group (FN DDMG) and advise the Executive Officer of the State and District Groups of the appointment. The LDC, CRC has been appointed to this position. The LDMG-CR Chair or the LDC represents CRC at the FN DDMG extraordinary meetings through an activation event.

The role of Council's representative on the FN DDMG is to:

(a) Attend meetings of the FN DDMG.

(b) Assist the chairperson to coordinate the prevention, preparation, response and recovery activities associated with the disaster event at the district level.

(c) Commit the Council's resources, as required, in support of efforts to combat the disaster event.

2.10 Reporting Requirements

The LDMG-CR shall report its activities to:

- Cairns Regional Council in an annual report prepared by the Local Disaster Coordinator. The annual report shall be in accordance with the requirements of the *Disaster Management Act 2003.*
- Council in the form of meeting minutes; and
- FN DDMG– An annual and quarterly status report is supplied to the DDMG XO as required prior to scheduled meetings of the FN DDMG.
- Operational Reporting shall be as required during an event and be in accordance with; *A.2 Local Disaster Coordination Centre Operational Plan-Cairns Region.*

2.10.1 Agency Status Reports

Member status reports on behalf of member agencies are used to update other LDMG-CR members on the status of the member agency's disaster management initiatives, projects, training, community awareness, disaster management plans, operations or contact information.

This information assists the LDMG-CR to evaluate the status of the disaster management and disaster operations for the local government area. Member status reports are provided at LDMG-CR meetings.

2.10.2 Annual Reports

The LDMG-CR is required to complete a status report at the end of each financial year and provide the completed report to the District Disaster Coordinator, Cairns Disaster District.

The report will be furnished in the format and at the time stipulated by the DDC.

This report will also be furnished to Council as an Annual Report of the activities of the Local Disaster Management Group-Cairns Region.

The Local Disaster Coordinator is responsible for the development of the report.

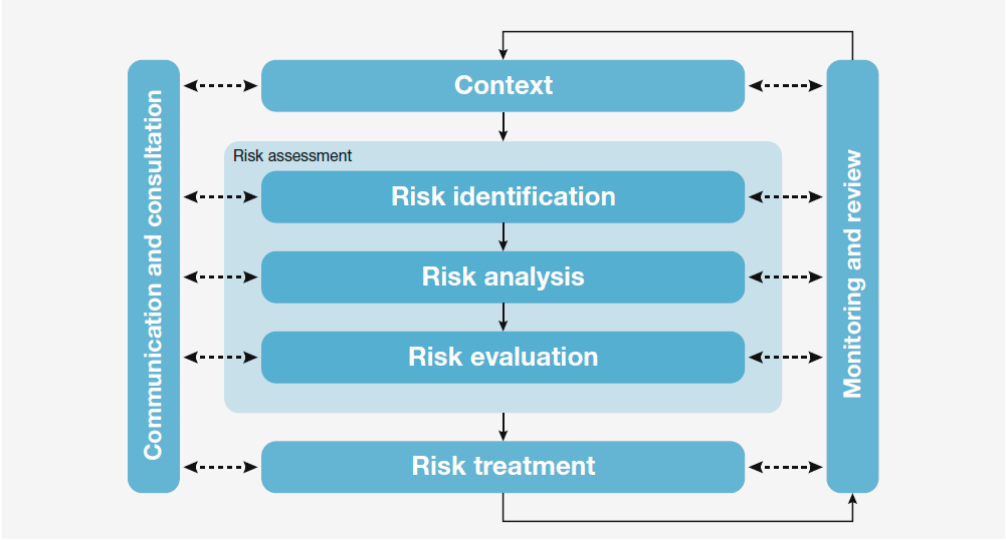
2.11 Roles and Responsibilities of LDMG-CR Members

Refer to ***Appendix B*** for the membership list and the Roles and Responsibilities for LDMG-CR members.

3.1 Disaster Risk Management Process

The Australian/New Zealand Standard on Risk Management (AS/NZS ISO 31000:2009) defines risk management as "the culture, processes, and structures that are directed towards realizing potential opportunities whilst managing adverse effects". In terms of disaster mitigation and management, risk management is a process of identifying risks and hazards to a community in the event of a disaster.

Main Elements of the Disaster Risk Management Process



IRM process as described in ISO 31000

This process encompasses an understanding of the community (establishing the context), identifying the "what, where, when, how, and why" (identifying the risks), identification of what is likely and probable to occur in that community and the consequences of these outcomes (analysing the risks), setting priorities for dealing with these risks (evaluate risk), and determining options and strategies for dealing with these risks (treat risk).

3.2 Community Context

The following is relevant information regarding Cairns Regional Council and the associated Disaster Management considerations.

3.2.1 Geography

Cairns Regional Council contains Queensland's most northern city of Cairns which is located approximately 1700 km (by road) from Brisbane.

The Cairns Regional Council local government area encompasses 1687 km2 of land on a narrow coastal strip between the Great Dividing Range and the Coral Sea. It

extends from the Eubenangee Swamp (near Mirriwinni) in the south to the Macalister Range (near Ellis Beach) in the north.

Cairns city is the principal centre of the region and is centrally located along the coastal strip with sub-regions to the north and south consisting predominantly good quality agricultural land and areas of high ecological significance. The region is an important gateway to the nearby Atherton Tablelands, Daintree and Wet Tropics rainforest, and the outback Savannah region beyond the Great Dividing Range.

The Cairns area is comprised primarily of a corridor of coastal flood plains bounded on the west by mountain ranges which mark the eastern edge of the Atherton Tablelands. The Barron and Russell/Mulgrave Rivers traverse these plains and have regularly flooded their river deltas, isolating Cairns. A network of small creeks flow into Trinity Inlet which acts as the harbour for the city. These small creeks can flood and together with a high tide could cause flooding in the city. The region also includes Double, Fitzroy and Green Islands.

The main arterial road south is the Bruce Highway. This highway and the railway line to the south, traverse the flood plain of the Russell/Mulgrave Rivers. Flooding can quickly isolate various communities. Other access roads to the Atherton Tablelands in the west and Cooktown to the north, are also prone to flooding and landslides.

The natural vegetation of the area consists mainly of eucalypt and woodland tropical rainforests. Extensive areas of this rainforest type exist along the ranges and are incorporated, under World Heritage listing, into the Wet Tropics Management Area with more than 80% of Far Northern Cairns subject to World Heritage listings, National Parks and/ or forestry reserves. Rainforest grades to various forms of eucalypt dominated forest or woodland and grassland are exposed to frequent burning. Most of the valley and coastal plain areas not occupied by urban development are under sugar cane cultivation or are covered by mangrove communities. The region hosts two of Australia's natural World Heritage areas, the northern half of the Great Barrier Reef and the Wet Tropics rainforest.

The region is characterised by extensive areas of steep, mountainous terrain in the north, west and south which defines limited areas of alluvial coastal plain, estuarine flats and coastal dunes. The mountainous areas generally retain their natural vegetation while the coastal plain and associated valleys have largely been cleared for cultivation, grazing and settlement. Although some areas have been cleared as a result of agricultural or urban development much of the foreshore riverine and estuarine vegetation remains intact (Refer to Figure 1).

The location of the Great Dividing Range has created many catchment areas which have well defined catchments with relatively quick run off times (12 hours or less) for rainfall.

The main drainage features are:

- The Barron River which rises on the Atherton Tableland and enters the coastal plain through the Barron Gorge

- Freshwater Creek which joins the Barron River below the Gorge and drains the Lamb and Whitfield Ranges. Freshwater Creek is dammed at Copperlode Falls to create Lake Morris – the main storage for Cairns water supply

- The network of small creeks which flow into Trinity Inlet. This system represents the original delta of the Mulgrave River

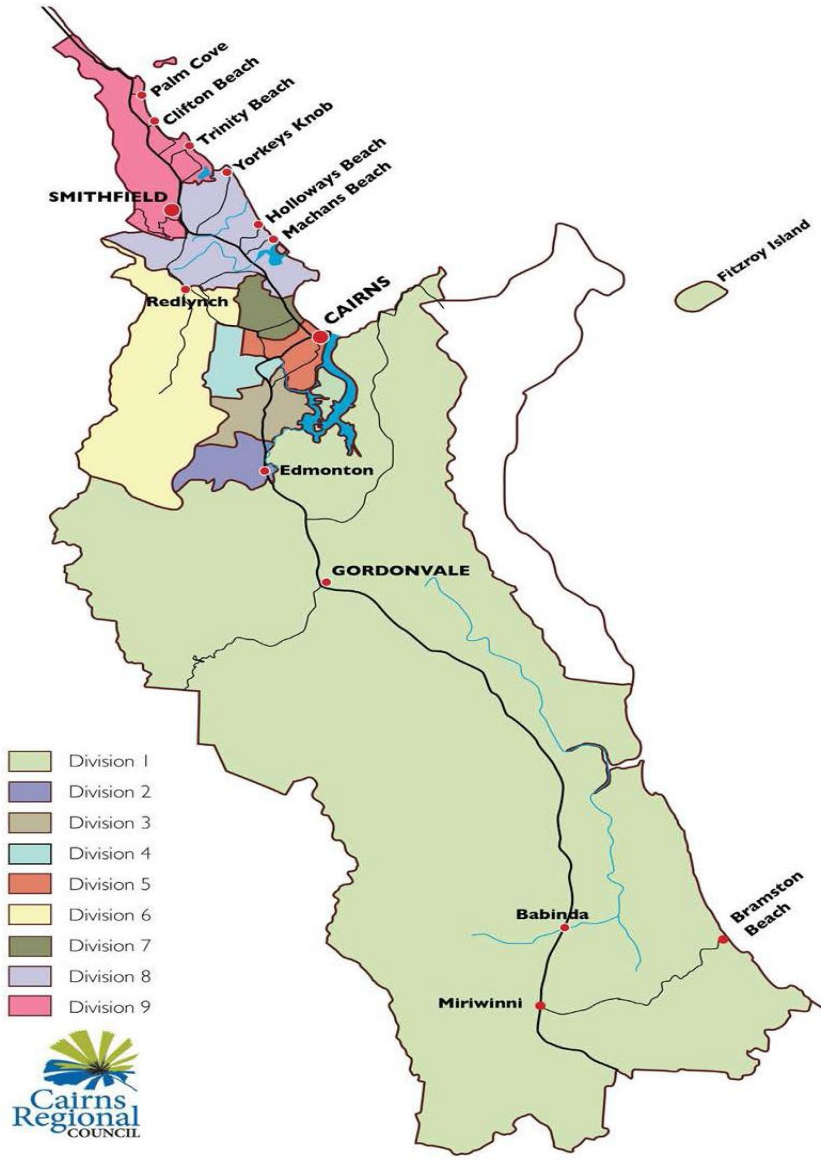
3.2.2 Geology

The simplified surface geological conditions are clearly reflected in the physiology of the landscape and may be summarised as:

- Coastal plain (flat coastal lowlands)
- Coastal ranges – isolated mountain masses

The marine sector (offshore) of Cairns City comprises the Continental Shelf (inner and middle) a shallow, gently sloping platform (with depth below sea level ranging from 30 to 200m) mantled by both marine and terrestrial sediments a few million years old, upon which the coral reefs of the Great Barrier Reef have grown. The complex structural domain that exists today can be inextricably linked to the regional plate tectonics in the development of the Coral Sea Basin.

Figure 3 *Map of Cairns Regional Council and Environs*



3.2.3 Human Settlement

The main population centre is based around Cairns itself.

In the Cairns area the northern beaches contain pockets of significant development with smaller towns to the south of Cairns such as Gordonvale, Babinda and Mirriwinni, situated along the main arterial road with a number of smaller townships in between.

The *Northern Beaches* consist of a number of beach communities extending north along the coast. In general, each beach suburb is located at the end of a spur road extending from the Captain Cook Highway. From south to north, these are Machans Beach, Holloways Beach, Yorkeys Knob, Trinity Park, Trinity Beach, Kewarra Beach, Clifton Beach, Palm Cove, and Ellis Beach.

The suburb of Smithfield is located inland against the mountains of the Great Dividing Range, between Yorkey's Knob and Trinity Park. It serves as the main hub for the Northern Beaches, with a modern shopping arcade, called Smithfield Shopping Centre.

Located south of Smithfield and inland from the Northern Beaches along the edge of the Barron River flood plain are the suburbs of Caravonica, Kamerunga, Freshwater, and Stratford. This area is sometimes referred to as Freshwater Valley, though it is actually the lower part of Redlynch Valley; further up the valley are the suburbs of Redlynch, on the western side of Redlynch Valley, and Brinsmead on the eastern side. Stratford, Freshwater, and Brinsmead are separated from Cairns city by Mount Whitfield (elevation 365 m (1,198 ft)) and Whitfield Range.

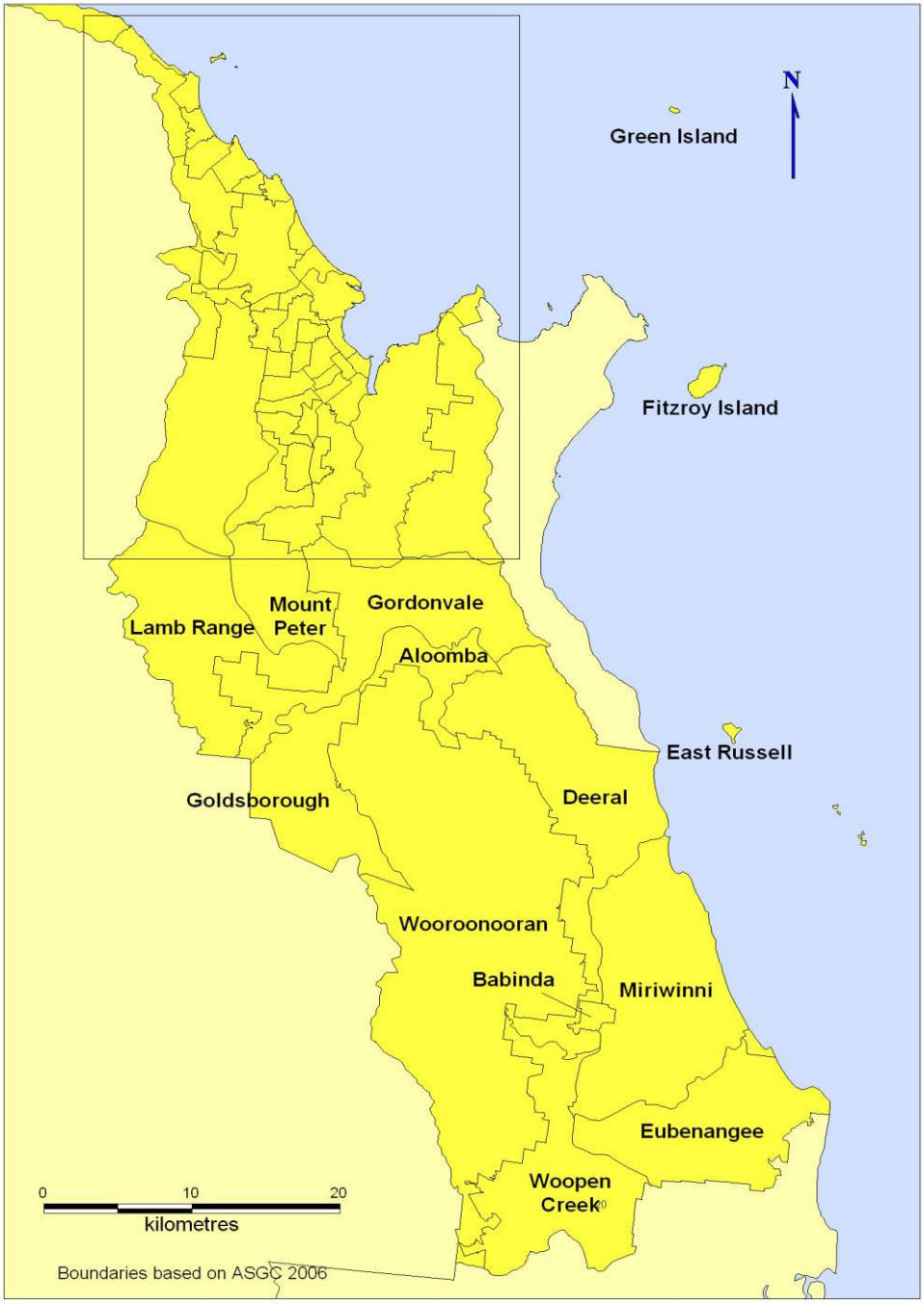
The city centre of Cairns is adjacent to the suburbs of Cairns North, and Parramatta Park, Bungalow, Portsmith, and close to Westcourt, Manunda, Manoora, Edge Hill, Whitfield, Kanimbla, Mooroobool, Earlville, Woree and Bayview Heights. The small suburb of Aeroglen is pressed between Mount Whitfield and the airport, on the Captain Cook Highway between Cairns North and Stratford.

Southside Cairns, situated in a narrow area between Trinity Inlet to the east and Lamb Range to the west, includes the suburbs of White Rock, Mount Sheridan, Bentley Park and Edmonton. The townships of Goldsborough, Little Mulgrave, and Aloomba are near Gordonvale, located on the Mulgrave River. This area is serviced by the Bruce Highway. Several other small towns and communities within Cairns' jurisdiction are sparsely located along the Bruce highway, the furthest being Mirriwinni, 66 kilometres south of Cairns city; the largest of these townships is Babinda, about 60 kilometres from the city.

The Cairns regional concentration of population is indicated in the following illustrations; Figure 2 depicts City (central) and Figure 3 depicts southern suburbs.

Figure 4: Cairns Regional Council – Central Suburbs

Figure 5: Cairns Regional Council – Southern Suburbs



Offshore Island Populations

Green Island, Fitzroy Island and Double Island, have some permanent staff on the islands and at the respective resorts. Temporary residents and day visitors can easily exceed 500.

Green Island

Green Island is a coral cay 27 km (17 mi) offshore from Cairns located within the Great Barrier Reef Marine Park World Heritage Area. The island is surrounded by coral reef and in the protected Green Island National Park. Most visitors come for the day. A luxury resort with 46 rooms is situated on the island. There are 35 permanent residents on the island.

Fitzroy Island

Fitzroy Island is a continental island out from (formally known as Cape Grafton), 29 km south east of Cairns. It is a large tropical island, with a rainforest covering and its own fringe coral reef system; total area being 339 hectares (838 acres), National Park Area 324 hectares (796 acres) and a Summit Height of 269 metres (882 feet). 97 percent of the four square kilometre continental island is National Park, covered in tropical rainforest and freely accessible to the public via an established network of walking tracks. The island has a number of 'Fast Cat' services travelling back and forth daily from Cairns. The island has one resort offering different types of accommodation ranging from deluxe rooms to campground and Day Visitor facilities. There are 16 permanent residents on the island.

Double Island

Double Island is approximately 1.5 km, north east of Palm Cove and about 30 km north of Cairns. Double Island is also the location of an exclusive resort. The privately held property is only for rental on a "whole-of-island" basis, meaning only one party has the exclusive use of the 19 x ½ km island and its facilities.

3.2.4 Climate and Weather

Cairns Regional Council lies on the coast of Queensland at approximately 17˚ south latitude and has a moist tropical climate. Rainfall is seasonal, with the heaviest rain occurring during the summer months. Extreme rainfall events are associated with tropical cyclones. Cairns comes under the influence of tropical cyclones on average at least once every two years. Temperatures rarely exceed 35˚C or go below 15˚C for extended periods.

The tropical climate of the Cairns Region is characterised by:

- relatively high temperatures with only small variations between daily maximum and minimum temperatures;
- relatively small, yet discernible, variations in seasonal temperatures;
- relatively high humidity with generally little variation between morning and afternoon humidity levels;
- relatively small, yet discernible, variations in seasonal humidity levels; and
- relatively high rainfall with greater concentrations of rainfall in the summer months (December to April).

These climatic characteristics have a number of implications for human activity and development in the Region, including:

- the marked seasonality of rainfall in the Region, together with more comfortable temperatures during the winter months, have given rise to a quite marked seasonality in tourist visitation;

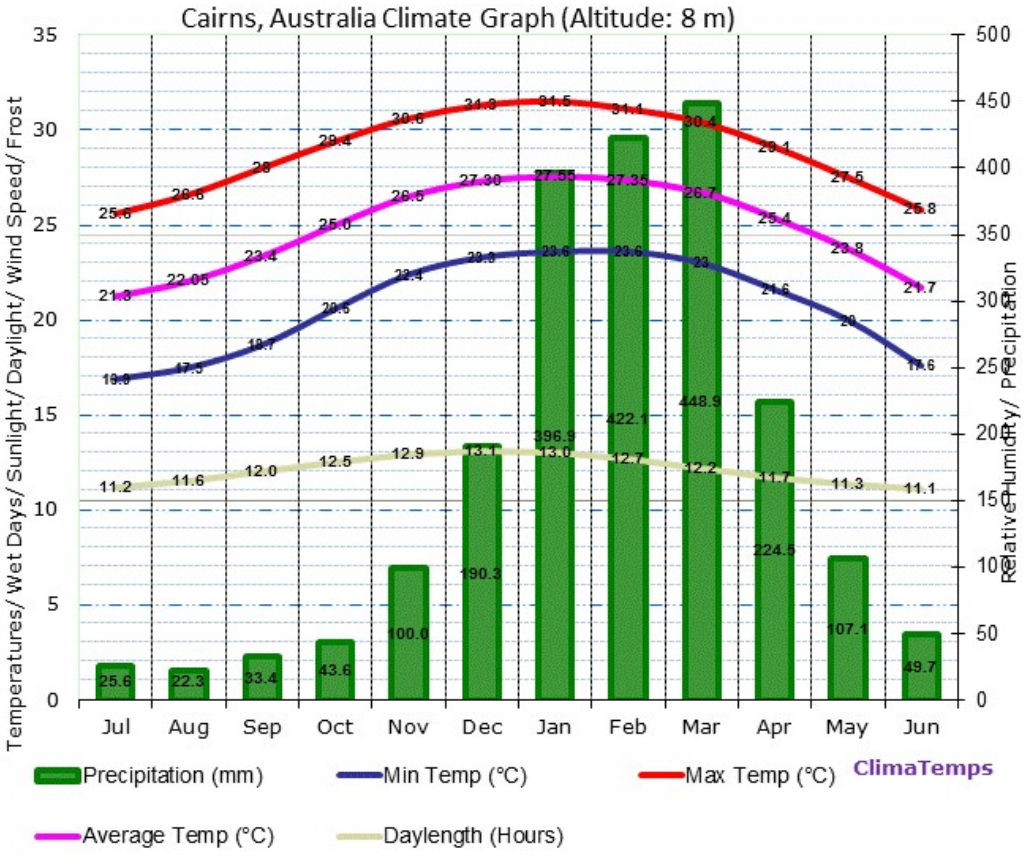
- the high number of rain days during the December to April period tend to restrict construction work during this period as it is more cost-effective to operate mainly during the drier months;
- in conjunction with the steep mountain slopes the high rainfall intensity has greater implications for soil erosion and land slippage;
- the high rainfall and its intensity also gives rise to greater road damage; and
- the high rainfall tends to render less effective septic and sullage waste disposal through absorption trenches.

Climate & Temperature

Cairns, Australia is at 16°52'S, 145°44'E, 8 metres altitude, and has a tropical monsoonal climate (Köppen-Geiger classification: Am) with a dry season and a heavy monsoon the rest of year, no cold season.

According to the Holdridge life zones system of bioclimatic classification Cairns is situated in or near the subtropical moist forest biome. Figure 6 below illustrates monthly annual rainfall and temperature figures for Cairns.

Figure 6:



Source: ClimaTemps.com

3.2.5 Population

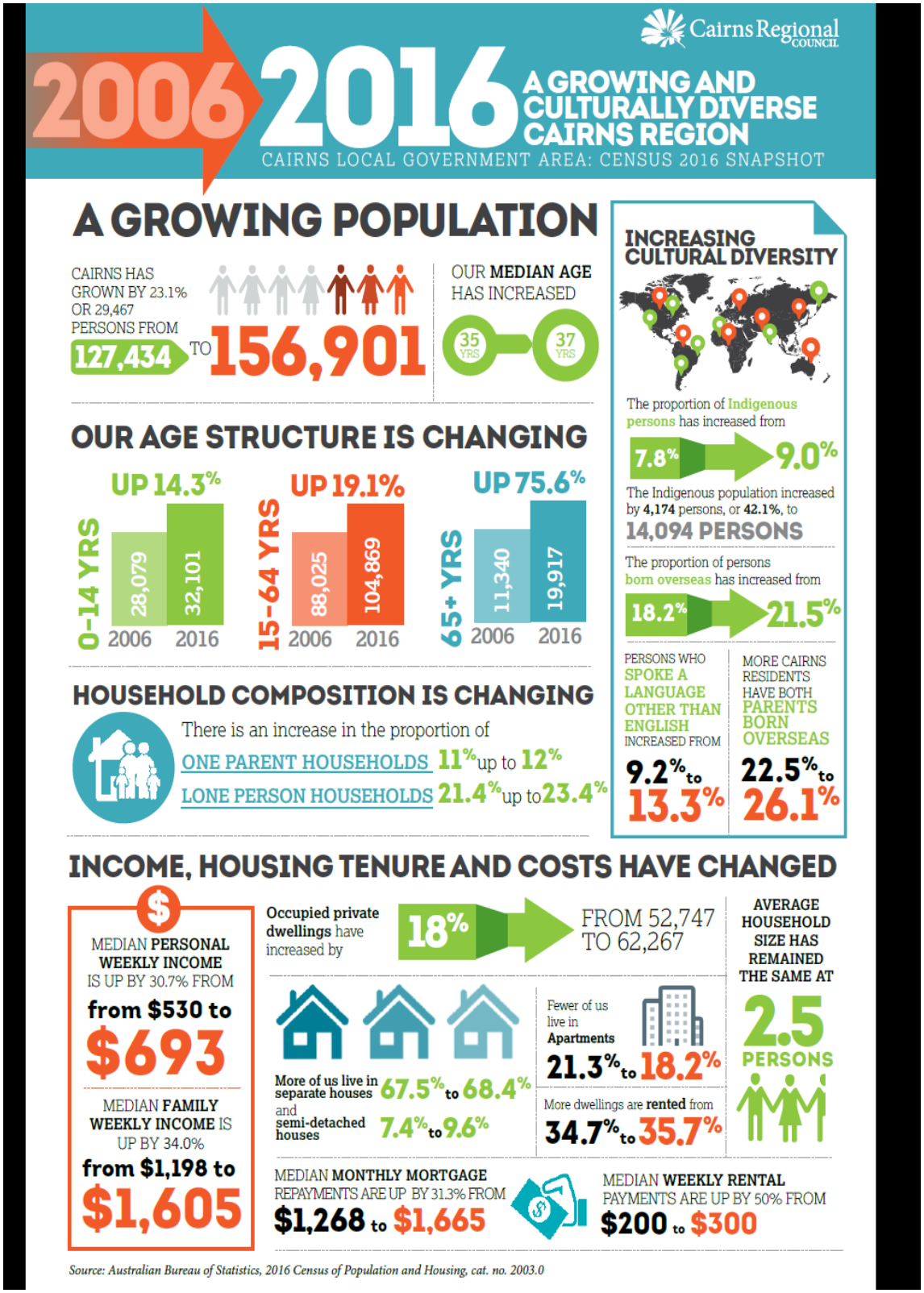
Cairns is the main point of entry to Far North Queensland and the region is a major tourist destination throughout the year. The peak tourist season are the months of July and August with the population increasing by approximately 27,000 visitors per night.

Populations are counted and estimated in various ways. The most comprehensive population count available in Australia is derived from the Census of Population and Housing conducted by the Australian Bureau of Statistics every five years.

The last collection of ABS Census data was conducted in 2016. The Census of Population and Housing provides a snapshot of the nation as well as key information that benefits the individual and community.

Cairns Regional Council has prepared a Snapshot of 2016 Census highlights (Figure 7 below). The data shows that the Cairns Local Government Area is a growing and culturally diverse community.

Figure 7: Cairns Regional Council Snapshot of 2016 ABS Census Headline Data



The following tables are representative of the information and are reproduced here as well as utilising socio-economic indicators (from ABS) in the assessment of community vulnerability; an indication of resilience can be gauged within the region through language profiles, to be used in the development of communication strategies

Table 7: **Selected Medians and averages taken from the last 3 census years**

SELECTED MEDIAN/AVERAGE	2006	2011	2016
Median age	36	37	39
Average household size	2.5	2.5	2.5
Average number of persons per bedroom	0.8	0.9	0.8
Median total personal income ($/weekly)	481	567	642
Median total family income ($/weekly)	1,122	1,294	1,475
Median total household income ($/weekly)	989	1,046	1,216
Median monthly mortgage repayments	1,170	1,664	1,597
Median weekly rent	180	240	280

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 data

Table 8: Total Population - Cairns Regional Council, 2016

Local Government Area (a)	Usual Residence (b)	Enumeration Count (c), (d)
Cairns Regional Council	— number —	
	156,901	180,569

(a) Based on ASGC 2011.
(b) Usual Residence represents the total number of persons who usually live within the local government area.
(c) Enumeration Count represents the total number of persons who were located within the local government area on the night of the 2011 Census.
(d) Includes overseas visitors.
Source: Australian Bureau of Statistics, Census of Population and Housing, 2011, Place of Enumeration Profile. Australian Bureau of Statistics, Census of Population and Housing, 2011, Basic Community Profile. (QRSIS database maintained by the Office of Economic and Statistical Research (OESR)).

3.2.6 Language

The diverse Indigenous history of the Far North Queensland region means that the Cairns area has been home to several dozen Indigenous languages, some of which are still spoken. The Torres Strait region has four language dialects, the Cape York region and the Gulf region traditionally have more than twenty languages, and the Wet Tropics has six language groups. Non-English language use is relatively high in some remote communities and occasionally indigenous languages are spoken in Cairns. The multilingual atmosphere of Cairns is increased by tourism and the proximity to other nations, which leads to high levels of non-English language speaking, signage, and translation services

Table 9**: Proficiency in Spoken English/Language**

	2011 Census			*2016 Census*		
	Males	*Females*	*Persons*	*Males*	*Females*	*Persons*
Speaks English only	93,250	93,407	186,663	95,413	95,002	190,417
Speaks other language:						
Afrikaans	132	126	253	167	162	332
Arabic	82	48	127	95	59	154
Australian Indigenous Languages	864	1,080	1,938	859	977	1,836
Bengali	10	10	15	33	29	56
Chinese languages:						
Cantonese	231	276	508	265	316	585
Mandarin	209	280	490	625	796	1,419
Other(b)	65	80	150	51	60	111
Total	*504*	*636*	*1,147*	*939*	*1,172*	*2,116*
Croatian	106	104	205	88	94	178
Dutch	271	293	562	259	279	540
Filipino	156	358	511	171	385	561
French	309	298	605	358	380	735
German	705	819	1,530	669	785	1,451
Greek	144	166	307	156	158	312
Hindi	97	89	188	152	155	300
Indonesian	87	137	223	95	145	244
Italian	1,456	1,461	2,921	1,287	1,313	2,597
Japanese	863	1,279	2,143	1,018	1,577	2,593
Korean	250	292	543	530	555	1,086
Macedonian	7	3	8	6	4	11
Persian (excluding Dari)	26	24	43	44	46	91
Polish	80	83	162	81	92	176
Punjabi	402	311	708	839	705	1,546
Russian	58	93	147	58	101	160
Samoan	109	126	237	90	85	172
Serbian	35	17	49	34	40	75
Sinhalese	44	51	93	74	69	140
Spanish	198	206	400	236	268	507
Tagalog	231	487	712	296	667	962
Tamil	44	33	79	40	45	92
Thai	128	255	382	183	372	559
Turkish	23	18	42	27	21	46
Urdu	33	23	52	34	37	77
Vietnamese	113	155	269	160	176	331
Other(c)	2,872	3,105	5,977	3,488	4,091	7,579
Total	*10,422*	*12,197*	*22,617*	*12,566*	*15,051*	*27,621*
Language spoken at home not stated	8,202	6,954	15,153	11,280	10,876	22,154
Total	**111,876**	**112,557**	**224,438**	**119,266**	**120,923**	**240,190**

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 data

3.2.7 Age Structure

Overall, Cairns has a young median age (as against typically higher age profiles of the Tablelands and Cassowary Coast areas). Cairns has an aging population however with 12 per cent proportion of the population aged over 65

Table 10: **Selected Person Characteristic by Sex**

	2011 Census			*2016 Census*	
	Males	*Females*	*Persons*	*Males*	*Females*
Total persons(a)	111,876	112,557	224,438	119,266	120,923
Age group(a):					
0-4 years	8,390	7,806	16,194	7,727	7,186
5-14 years	16,186	15,539	31,723	16,877	15,857
15-19 years	7,584	7,170	14,752	7,422	7,034
20-24 years	5,978	6,291	12,270	6,574	6,529
25-34 years	13,286	14,733	28,018	14,383	15,707
35-44 years	16,027	17,199	33,224	15,080	16,954
45-54 years	16,552	16,703	33,258	16,939	17,635
55-64 years	14,154	13,367	27,525	15,880	15,820
65-74 years	8,677	7,847	16,529	11,737	10,804
75-84 years	3,980	4,098	8,075	5,215	5,099
85 years and over	1,065	1,806	2,871	1,425	2,298
Overseas visitors	5,663	6,561	12,225	6,553	8,118
Aboriginal and/or Torres Strait Islander persons:					
Aboriginal	7,093	7,897	14,983	7,276	8,061
Torres Strait Islander	2,375	2,592	4,967	2,297	2,516
Both Aboriginal and Torres Strait Islander(b)	1,497	1,662	3,162	1,859	1,948
Total	*10,966*	*12,155*	*23,121*	*11,437*	*12,522*
Birthplace:					
Australia(c)	83,534	83,262	166,796	85,500	84,489
Elsewhere(d)	19,360	21,469	40,827	21,466	24,457
Language spoken at home(e):					
English only	93,250	93,407	186,663	95,413	95,002
Other language(f)	10,422	12,197	22,617	12,566	15,051
Australian citizen	94,542	95,281	189,827	98,910	98,839

This table is based on place of usual residence.

(a) Excludes overseas visitors.

(b) Applicable to persons who are of both Aboriginal and Torres Strait Islander origin.

(c) In 2016 includes 'Australia (includes External Territories), nfd', 'Norfolk Island' and 'Australian External Territories, nec'.

(d) Includes 'Inadequately described', and 'At sea'. In 2006 and 2011 includes 'Australia (includes External Territories), nfd', 'Norfolk Island' and 'Australian External Territories, nec'. In 2006 includes 'Not elsewhere classified'.

(e) Excludes overseas visitors and not stated.

(f) Includes 'Inadequately described' and 'Non-verbal, so described'.

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 data

3.2.8 Ethnicity and diversity

The region has a relatively high proportion of population born overseas. In addition, the region has a significant proportion of people born in Australia, but with non- English speaking backgrounds, particularly Italy, but also from China, India, and Indonesia. More recent migration has predominantly been from southern Australia. International tourists and strong links with Papua New Guinea and the Pacific Islands adds to the mix

Table 10: **Country of Birth of Person by Sex**

	2016 Census		
	Males	*Females*	*Persons*
Australia(b)	85,500	84,489	169,994
Canada	291	378	669
China (excludes SARs and Taiwan)(c)	373	519	885
Croatia	108	76	188
Egypt	45	35	75
Fiji	146	167	314
Germany	779	831	1,607
Greece	59	45	101
Hong Kong (SAR of China)(c)	116	157	272
India	1,131	974	2,102
Indonesia	159	238	400
Iran	45	36	82
Iraq	11	8	23
Ireland	270	230	503
Italy	870	742	1,614
Japan	531	1,330	1,865
Korea, Republic of (South)	493	537	1,029
Lebanon	12	6	21
Malaysia	179	211	389
Malta	75	67	147
Netherlands	441	398	844
New Zealand	3,286	3,296	6,583
Pakistan	51	37	85
Philippines	624	1,744	2,365
Poland	95	116	215
Singapore	58	102	162
South Africa	468	476	942
Sri Lanka	129	125	259
Thailand	272	545	816
The Former Yugoslav Republic of Macedonia	4	0	10
Turkey	27	28	53
United Kingdom, Channel Islands and Isle of Man(d)	5,206	5,078	10,289
United States of America	421	464	885
Vietnam	120	180	303
Zimbabwe	140	160	295
Born elsewhere(e)	4,423	5,114	9,537
Country of Birth not stated	12,292	11,973	24,269
Total	**119,266**	**120,923**	**240,190**

This table is based on place of usual residence.

(a) Excludes overseas visitors.

(b) Applicable to persons who are of both Aboriginal and Torres Strait Islander origin.

(c) In 2016 includes 'Australia (includes External Territories), nfd', 'Norfolk Island' and 'Australian External Territories, nec'.

(d) Includes 'Inadequately described', and 'At sea'. In 2006 and 2011 includes 'Australia (includes External Territories), nfd', 'Norfolk Island' and 'Australian External Territories, nec'. In 2006 includes 'Not elsewhere classified'.

(e) Excludes overseas visitors and not stated.

(f) Includes 'Inadequately described' and 'Non-verbal, so described'.

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 data

3.2.9 Tourists

Tourist numbers are an important feature when looking at the Cairns population.

International visitation
International visitation to TNQ increased by 7.2%, slightly ahead of Queensland's growth rate of 6.8%, to 890,000 visitors in the year ending March 2017. The international market accounts for a third (33%) of total overnight visitation and 36% of total overnight expenditure to the region.

Domestic Visitation
Domestic visitors accounted for 67% of total overnight visitation and 64% of total overnight expenditure to the Tropical North Queensland (TNQ) region in the year ending March 2017. The region saw 1.8 million domestic overnight visitation in the year ending March 2017, down by 6.9% year on last year (visitation record high set in 2016)

Domestic visitor nights in the region were stable at 9.2 million (down 0.7%) in the year ending March 2017. The average spend per visitor per night was down by 7.8% to $205, which resulted in domestic overnight visitor expenditure decreasing by 8.4% (to $1.9 billion).

Table 11 **Visitor nights – Numbers**

Cairns - 2008/09 to 2015/16	Cairns			Queensland		
Year	International Visitor Nights	Domestic Visitor Nights	Domestic Daytrips	International Visitor Nights	Domestic Visitor Nights	Domestic Daytrips
2015/16	4,936,170	5,364,683	963,498	48,424,435	77,910,507	39,706,797
2014/15	5,009,118	4,663,253	879,851	46,977,193	78,057,386	34,891,261
2013/14	4,506,159	4,778,381	853,720	43,032,823	74,946,855	34,171,174
2012/13	4,784,860	3,778,093	1,304,437	44,840,738	74,292,519	38,428,301
2011/12	4,188,168	4,262,776	1,258,811	40,789,228	74,139,112	37,175,080
2010/11	4,417,018	3,855,632	917,293	39,548,406	69,289,686	34,686,803
2009/10	4,854,590	4,852,482	764,416	38,501,585	69,526,133	33,102,560
2008/09	5,293,139	3,857,118	1,012,095	39,518,316	65,201,706	30,414,529

Source: Tourism Research Australia 2017

3.2.10. Community Vulnerability Assessment / Socio-economic Indicators

Table 12: **Need for assistance with core activities**

	Has need for assistance		*Does not have need for assistance*		*Need for assistance not stated*		*Total*		
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*	*Persons*
					2006 CENSUS				
0-4 years	52	39	6,475	5,937	779	797	7,303	6,774	14,080
5-14 years	324	167	13,817	13,260	1,362	1,313	15,506	14,743	30,250
15-19 years	112	65	6,067	5,873	561	496	6,744	6,438	13,178
20-24 years	87	63	5,052	5,200	682	544	5,825	5,799	11,627
25-34 years	180	137	11,505	12,796	1,311	1,204	12,991	14,142	27,130
35-44 years	304	252	13,827	14,856	1,356	1,189	15,482	16,297	31,782
45-54 years	445	356	13,408	13,610	1,308	968	15,160	14,938	30,097
55-64 years	662	462	10,378	9,608	993	737	12,036	10,801	22,832
65-74 years	498	465	5,644	4,969	559	465	6,703	5,900	12,607
75-84 years	583	924	2,388	2,574	344	394	3,314	3,881	7,201
85 years and over	367	811	363	516	103	162	832	1,492	2,321
Total	**3,609**	**3,743**	**88,927**	**89,205**	**9,365**	**8,264**	**101,905**	**101,204**	**203,112**
					2011 CENSUS				
0-4 years	88	55	7,466	6,990	832	765	8,390	7,806	16,194
5-14 years	425	191	14,600	14,231	1,157	1,114	16,186	15,539	31,723
15-19 years	159	127	6,864	6,590	550	454	7,584	7,170	14,752
20-24 years	126	83	5,323	5,664	529	545	5,978	6,291	12,270
25-34 years	230	173	11,820	13,473	1,230	1,094	13,286	14,733	28,018
35-44 years	349	298	14,380	15,805	1,304	1,093	16,027	17,199	33,224
45-54 years	571	500	14,718	15,244	1,270	959	16,552	16,703	33,258
55-64 years	793	681	12,291	11,941	1,070	748	14,154	13,367	27,525
65-74 years	733	684	7,375	6,713	570	457	8,677	7,847	16,529
75-84 years	705	997	2,919	2,773	353	325	3,980	4,098	8,075
85 years and over	464	902	464	658	138	243	1,065	1,806	2,871
Total	**4,639**	**4,685**	**98,227**	**100,076**	**9,004**	**7,794**	**111,876**	**112,557**	**224,438**
					2016 CENSUS				
0-4 years	88	40	6,878	6,410	767	728	7,727	7,186	14,914
5-14 years	661	286	14,807	14,213	1,414	1,361	16,877	15,857	32,740
15-19 years	204	112	6,576	6,323	644	594	7,422	7,034	14,457
20-24 years	150	105	5,715	5,716	709	711	6,574	6,529	13,106
25-34 years	278	226	12,424	13,816	1,672	1,666	14,383	15,707	30,090
35-44 years	396	350	13,121	14,973	1,569	1,639	15,080	16,954	32,035
45-54 years	599	610	14,550	15,382	1,787	1,642	16,939	17,635	34,573
55-64 years	907	835	13,378	13,433	1,596	1,549	15,880	15,820	31,700
65-74 years	1,027	909	9,511	8,797	1,196	1,102	11,737	10,804	22,538
75-84 years	907	1,109	3,747	3,411	552	574	5,215	5,099	10,311
85 years and over	543	1,157	703	857	175	289	1,425	2,298	3,722
Total	**5,766**	**5,744**	**101,417**	**103,323**	**12,080**	**11,858**	**119,266**	**120,923**	**240,190**

This table is based on place of usual residence.

(a) A person's need for help or assistance in one or more of the three core activity areas of self-care, mobility and communication, because of a disability, long term health condition (lasting six months or more) or old age.

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 data

The first data from the 2016 Census will be released from 27 June 2017. The data will cover a wide range of Census topics and be presented in a variety of ways to cater for the needs of different users. Data will be released for almost all geographies for place of enumeration and place of usual residence.

Data regarding employment, qualifications and population mobility is scheduled to be released from October 2017. The complex nature of this data means that it requires extra time to be processed.

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Table 13: **Local labour force key statistics - All industry sectors**

Cairns	2011			2006			Change
Name	Number	%	Queensland %	Number	%	Queensland %	2006 to 2011
Local labour force							
Total local labour force	69,204	100.0	100.0	62,727	100.0	100.0	+6,477
Males	35,708	51.6	53.0	33,190	52.9	53.9	+2,518
Females	33,496	48.4	47.0	29,537	47.1	46.1	+3,959
Age structure							
15 - 24 years	9,993	14.4	16.5	10,177	16.2	18.1	-184
25 - 54 years	47,220	68.2	66.4	43,876	69.9	67.1	+3,344
55 - 64 years	9,876	14.3	14.0	7,374	11.8	12.5	+2,502
65 years and over	2,115	3.1	3.1	1,300	2.1	2.2	+815
Top three industries							
Health care and social assistance	8,856	12.8	11.9	6,103	9.7	10.2	+2,753
Retail trade	8,196	11.8	10.7	8,101	12.9	11.6	+95
Accommodation and food services	6,661	9.6	7.0	6,582	10.5	7.0	+79
Top three occupations							
Professionals	12,286	17.8	18.9	9,940	15.8		+2,346
Technicians and trades workers	10,983	15.9	14.9	10,452	16.7		+531
Clerical and administrative workers	10,009	14.5	14.7	8,946	14.3		+1,063
Method of travel to work							
Car driver or passenger	49,451	71.5	67.5	44,276	70.6	66.6	+5,175
Public transport	1,500	2.2	7.4	1,321	2.1	6.5	+179
Bicycle	0	0.0	0.4	7	0.0	0.3	-7
Walked only	2,516	3.6	3.7	2,280	3.6	4.0	+236
Hours worked							
Full time	44,302	64.0	63.9	41,842	66.7	64.7	+2,460
Part time	20,353	29.4	30.0	16,764	26.7	29.1	+3,589
Qualifications							
Bachelor or higher degree	13,057	18.9	21.5	9,775	15.6	18.0	+3,282
Advanced diploma or diploma	6,991	10.1	9.3	5,415	8.6	8.1	+1,576
Certificate level	19,035	27.5	24.8	16,030	25.6	22.8	+3,005
No qualifications	26,937	38.9	40.6	27,835	44.4	46.2	-898
Individual income							

Nil to $599	19,394	28.0	28.3				
$600 to $1,249	31,481	45.5	41.8				
$1,250 to $1,999	12,600	18.2	19.2				
$2,000 or more	4,345	6.3	8.9				
Other characteristics							
Speaks another language other than English	7,112	10.3	9.6	5,370	8.6	7.3	+1,742
Has broadband internet access at home	54,802	79.2	80.8	30,995	49.4	50.6	+23,807
Has child care responsibilities (own or others)	23,211	33.5	34.2	20,677	33.0	33.5	+2,534

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts

Cairns' employment statistics are an important indicator of socio-economic status. The levels of full or part-time employment, unemployment and labour force participation indicate the strength of the local economy and social characteristics of the population. 68,915 people living in Cairns in 2011 were employed, of which 64% worked full-time and 33% part-time

Table 14: **Employment status**

Cairns - (Usual residence)	2011			2006			Change
Employment status	Number	%	Regional QLD %	Number	%	Regional QLD %	2006 to 2011
Employed	68,915	92.6	93.8	62,713	95.7	94.9	+6,202
Employed full-time	44,132	59.3	59.1	41,848	63.9	60.7	+2,284
Employed part-time	23,081	31.0	32.5	19,154	29.2	31.5	+3,927
Hours worked not stated	1,702	2.3	2.2	1,711	2.6	2.7	-9
Unemployed (Unemployment rate)	5,477	7.4	6.2	2,810	4.3	5.1	+2,667
Looking for full-time work	3,672	4.9	4.0	1,791	2.7	3.2	+1,881
Looking for part-time work	1,805	2.4	2.2	1,019	1.6	1.9	+786
Total Labour Force	**74,392**	**100.0**	**100.0**	**65,523**	**100.0**	**100.0**	**+8,869**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts

Table 15 **Employment (total) by industry**

Cairns	2015/16			2010/11			Change
Industry	Number	%	Queensland%	Number	%	Queensland%	2010/11 to 2015/16
Agriculture, Forestry and Fishing	877	1.2	2.7	942	1.3	2.8	-65
Mining	280	0.4	2.4	303	0.4	2.4	-23
Manufacturing	3,130	4.4	7.7	3,570	4.8	8.6	-440
Electricity, Gas, Water and Waste Services	659	0.9	1.3	728	1.0	1.3	-69
Construction	6,292	8.8	9.3	7,447	10.0	9.3	-1,155
Wholesale Trade	2,357	3.3	3.8	2,359	3.2	3.8	-2
Retail Trade	8,779	12.3	10.7	9,190	12.3	10.7	-412
Accommodation and Food Services	7,632	10.7	7.2	7,830	10.5	7.0	-198
Transport, Postal and Warehousing	4,749	6.7	5.4	4,958	6.6	5.4	-208
Information Media and Telecommunications	719	1.0	1.3	770	1.0	1.4	-51
Financial and Insurance Services	1,307	1.8	2.8	1,407	1.9	2.8	-100
Rental, Hiring and Real Estate Services	1,450	2.0	2.0	1,548	2.1	2.0	-98
Professional, Scientific and Technical Services	4,001	5.6	7.1	4,166	5.6	6.9	-164
Administrative and Support Services	2,785	3.9	3.4	2,901	3.9	3.3	-116
Public Administration and Safety	6,288	8.8	7.1	6,550	8.8	7.1	-262
Education and Training	6,261	8.8	8.2	6,088	8.2	8.0	+173
Health Care and Social Assistance	9,187	12.9	12.0	9,359	12.6	11.6	-172
Arts and Recreation Services	1,486	2.1	1.4	1,360	1.8	1.4	+126
Other Services	3,130	4.4	4.1	3,084	4.1	4.1	+45
Total Industries	**71,369**	**100.0**	**100.0**	**74,559**	**100.0**	**100.0**	**-3,190**

Market Characteristics

The people who live in an area are one of the most important resources that an economy draws upon, both as a market that consumes goods and services and as a source of labour.

The table provides an overview of the Cairns population demographic and how the characteristics compare to those of the broader region. Cairns has a lower proportion of

households in the medium to high income category compared to the Queensland average.

Table 16 **Key statistics of local residents**

Cairns	2011			2006			Change
Name	Number	%	Queensland %	Number	%	Queensland %	2006 to 2011
Population summary							
Total residents	145,335	100.0	100.0	127,436	100.0	100.0	+17,899
Males	71,991	49.5	49.6	63,656	50.0	49.6	+8,335
Females	73,344	50.5	50.4	63,780	50.0	50.4	+9,564
Age structure							
0 - 14 years	31,812	21.9	20.2	28,063	22.0	20.7	+3,749
15 - 24 years	18,304	12.6	13.6	16,524	13.0	13.8	+1,780
25 - 54 years	64,407	44.3	41.5	58,546	45.9	42.0	+5,861
55 - 64 Years	16,418	11.3	11.6	12,965	10.2	11.2	+3,453
65 years and over	14,394	9.9	13.1	11,326	8.9	12.4	+3,068
Education institute attending							
Primary school	12,947	8.9	8.8	11,519	9.0	8.9	+1,428
Secondary school	9,019	6.2	6.0	7,558	5.9	6.1	+1,461
TAFE	2,682	1.8	1.8	2,061	1.6	1.7	+621
University	4,299	3.0	4.0	3,320	2.6	3.5	+979
Overseas born							
Total overseas born	29,490	20.3	20.5	23,101	18.1	17.9	+6,389
Non-English speaking backgrounds	15,597	10.7	9.5	11,688	9.2	7.8	+3,909
Speaks another language and English well or very well	13,893	9.6	11.0	11,413	9.0	10.0	+2,480
Qualifications							
Bachelor or higher degree	15,844	14.0	15.9	11,670	11.7	13.1	+4,174
Certificate level	24,941	22.0	19.9	19,979	20.1	17.9	+4,962
No qualification	48,519	42.7	45.8	45,191	45.5	49.6	+3,328
Household income							
Nil to $599	11,328	20.5	20.4				
$600 to $1,249	14,492	26.3	24.7				
$1,250 to $1,999	10,870	19.7	19.0				
$2,000 or more	11,286	20.5	24.6				
Housing tenure							
Owned	13,023	22.3	28.4	12,070	22.9	30.4	+953
Purchasing	18,265	31.3	32.6	15,841	30.0	31.4	+2,424
Renting	21,778	37.3	32.0	18,301	34.7	30.0	+3,477
Dwelling structure							
Separate house	43,199	66.8	75.7	38,292	66.2	75.4	+4,907
Medium house	13,114	20.3	15.2	12,671	21.9	15.0	+443
High density	6,447	10.0	6.5	4,923	8.5	6.8	+1,524

Cairns' household and family structure is one of the most important demographic indicators. It reveals the area's residential role and function, era of settlement and provides key insights into the level of demand for services and facilities as most are related to age and household types. In Cairns, 26% of households were made up of couples with children in 2011, compared with 27% in Regional QLD.

Table 17: **Household type**

Cairns	2011			2006			Change
Households by type	Number	%	Regional QLD %	Number	%	Regional QLD %	2006 to 2011
Couples with children	15,344	26.2	27.4	13,548	25.7	27.4	+1,796
Couples without children	13,906	23.8	27.5	11,945	22.6	26.9	+1,961
One parent families	7,058	12.1	10.4	5,760	10.9	10.0	+1,298
Other families	595	1.0	1.0	558	1.1	0.9	+37
Group household	2,582	4.4	3.9	2,402	4.6	3.7	+180
Lone person	13,631	23.3	21.9	11,304	21.4	20.8	+2,327
Other not classifiable household	3,219	5.5	3.9	3,760	7.1	4.8	-541
Visitor only households	2,131	3.6	4.1	3,472	6.6	5.3	-1,341
Total households	**58,466**	**100.0**	**100.0**	**52,749**	**100.0**	**100.0**	**+5,717**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts

In Cairns, 30.2% of the dwellings were medium or high density, compared to 22% in Regional QLD.

Table 18: **Dwelling structure**

Cairns	2011			2006			Change
Dwelling type	Number	%	Regional QLD %	Number	%	Regional QLD %	2006 to 2011
Separate house	43,228	66.9	74.1	38,292	66.2	72.8	+4,936
Medium density	13,113	20.3	15.4	12,671	21.9	15.7	+442
High density	6,432	10.0	6.4	4,923	8.5	7.3	+1,509
Caravans, cabin, houseboat	1,507	2.3	3.2	1,607	2.8	3.4	-100
Other	268	0.4	0.6	350	0.6	0.7	-82
Not stated	88	0.1	0.2	36	0.1	0.1	+52
Total Private Dwellings	**64,636**	**100.0**	**100.0**	**57,879**	**100.0**	**100.0**	**+6,757**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011.

Table 19: **Dwelling type**

Cairns	2011			2006			Change
Dwelling type	**Number**	**%**	**Regional QLD %**	**Number**	**%**	**Regional QLD %**	**2006 to 2011**
Occupied private dwellings	58,467	90.0	87.7	52,747	90.8	88.4	+5,720
Unoccupied private dwellings	6,197	9.5	11.9	5,133	8.8	11.3	+1,064
Non private dwellings	298	0.5	0.4	204	0.4	0.3	+94
Total dwellings	**64,962**	**100.0**	**100.0**	**58,084**	**100.0**	**100.0**	**+6,878**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts

In 2016, 63.7% homes in Cairns City had an internet connection

Table 20 **Type of internet connection**

Cairns City - Households	2016			2011			Change
Connection type	**Number**	**%**	**Cairns %**	**Number**	**%**	**Cairns %**	**2011 to 2016**
Internet connection	637	63.7	75.6	706	70.8	72.7	-69
No internet connection	114	11.4	13.5	134	13.4	17.7	-20
Not stated	249	24.9	10.9	157	15.7	9.6	+92
Total households	**1,000**	**100.0**	**100.0**	**997**	**100.0**	**100.0**	**+3**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016. Compiled and presented by .id , the population experts.
(Enumerated data)

An internet connection is now an important utility for most households in Australia. It is increasingly required for accessing essential information and taking part in the digital economy. Australia-wide in 2016, nearly 80% of all households had internet access. This decreases with age however as seniors are less likely to have internet access at home.

The lack of internet access is likely to indicate a level of disadvantage and could be related to socio-economic factors, age, or geographical isolation. Internet connectivity in Cairns City should be looked at in conjunction with Household Type, Age Structure, and Education Levels.

Analysis of car ownership in 2016, indicates 48% of households in Cairns had access to two or more motor vehicles, compared to 52% in Regional QLD.

Table 21: **Car ownership**

Cairns	2011			2006			Change
Number of cars	Number	%	Regional QLD %	Number	%	Regional QLD %	2006 to 2011
No motor vehicles	4,934	8.4	6.5	5,016	9.5	7.5	-82
1 motor vehicle	21,287	36.4	34.7	18,711	35.5	35.8	+2,576
2 motor vehicles	19,605	33.5	35.1	16,663	31.6	33.6	+2,942
3 or more motor vehicles	7,345	12.6	16.2	6,129	11.6	14.4	+1,216
Not stated	5,281	9.0	7.5	6,229	11.8	8.7	-948
Total households	**58,452**	**100.0**	**100.0**	**52,748**	**100.0**	**100.0**	**+5,704**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts

The ability of the population to access services and employment is strongly influenced by access to transport. The number of motor vehicles per household in Cairns quantifies access to private transport and will be influenced by Age Structure and Household Type, which determine the number of adults present; access to Public Transport; distance to shops, services, employment and education; and Household Income.

Depending on these factors, car ownership can be seen as a measure of advantage or disadvantage, or a neutral socio-economic measure, which impacts on the environment and quality of life.

Socio-Economic Indexes for Areas (SEIFA)

Cairns SEIFA Index of Disadvantage measures the relative level of socio-economic disadvantage based on a range of Census characteristics. It is a good place to start to get a general view of the relative level of disadvantage in one area compared to others and is used to advocate for an area based on its level of disadvantage.

The index is derived from attributes that reflect disadvantage such as low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. When targeting services to disadvantaged communities, it is important to also look at these underlying characteristics as they can differ markedly between areas with similar SEIFA scores and shed light on the type of disadvantage being experienced. A higher score on the index means a lower level of disadvantage. A lower score on the index means a higher level of disadvantage.

The percentile column indicates the approximate position of this small area in a ranked list of Australia's suburbs and localities. It's meant to give an indication of where the area sits within the whole nation. A higher number indicates a higher socio-economic status. For instance, a percentile of 72 indicates that approximately 72% of Australia's suburbs have a SEIFA index lower than this area (more disadvantaged), while 28% are higher.

Table 22: **Index of Relative Socio-economic Disadvantage**

Cairns' small areas and benchmark areas		
Area	2011 index	Percentile
Kanimbla	1,079.7	88
Brinsmead	1,077.4	88
Redlynch - Lamb Range	1,072.8	86
Bayview Heights	1,060.1	79
Kewarra Beach	1,053.0	76
Kamerunga - Caravonica and District	1,048.1	73
Clifton Beach	1,045.4	72
Freshwater - Stratford - Aeroglen	1,041.1	69
Trinity Park	1,039.0	68
Whitfield	1,029.7	63
Palm Cove - Ellis Beach	1,027.1	61
Mount Sheridan	1,026.2	61
Trinity Beach	1,020.3	57
Smithfield	1,016.5	55
Edge Hill	1,007.6	50
Cairns City	1,004.4	48
Australia	1,002.0	47
Queensland	1,001.5	47
Bentley Park	989.7	41
Regional QLD	986.3	39
Holloways Beach - Machans Beach	982.0	37
Gordonvale - Goldsborough - Mount Peter	981.7	37
Cairns	980.6	36
Yorkeys Knob	973.5	33
Queensland (excl. SEQ)	969.3	31
Babinda - Rural South	960.3	28
Cairns North	958.9	28
Edmonton	958.7	27
Mooroobool	956.9	27
Earlville	942.8	22
White Rock	924.2	17
Parramatta Park	921.9	16
Bungalow - Portsmith	881.2	9
Woree	869.5	8
Westcourt	843.2	6
Manunda	841.9	6
Manoora	801.8	4

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts

3.3 Community Capacity

The community is regarded as having the capacity to respond to and recover from most situations but the Cairns Region is not a self-sufficient community. It depends on outside sources for its food, energy and material requirements as well as its principal sources of income. Such dependence imposes limits to the community resilience.

3.3.1 Community Resilience

The population of the Cairns region continues its annual increase with people moving to Far North Queensland for either employment opportunities or staying for the lifestyle. This has created a community where a significant percentage of residents are new to the Far North Queensland environment and weather.

Long term residents with previous experiences of disaster events (particularly rural), are generally resilient and to a large extent self-supportive, at least for several days, during after a natural disaster.

Newer and younger residents with no memory or experience of a disaster event, such as Tropical Cyclone Larry and more recently Tropical Cyclone Yasi, are likely to be less prepared to cope and more dependent on government services.

As Cairns is the major regional centre in the Far North Queensland area, there is a considerable range of State and Federal Department support readily available to the community. There is also an extensive range of non-Government organisations (NGOs) and community groups established within the region. However, the Australia wide trend of these organisations experiencing ageing and dwindling membership numbers places pressure on the ability and effectiveness of community service groups to respond in emergencies.

3.3.2 Cairns Regional Council

Cairns Regional Council is one of the major employers in the region, and has sufficient resources and competent personnel to contribute considerably to the physical response demands of any disastrous event.

Cairns Regional Council Administration Building is located at 119-145 Spence Street, Cairns.

Other Customer Service Centres are;

- Smithfield Library Office - 70 Cheviot Street, Smithfield
- City Library, 151 Abbott Street, Cairns
- Stratford library – 11 Kamerunga Road, Stratford
- Manunda library – Raintrees Shopping Centre, Cnr Alfred & Koch Streets
- Earlville library - Stockland Shopping Centre, Mulgrave Road
- Gordonvale library - 88 Norman Street, Gordonvale
- Babinda Library - 24 Munro Street, Babinda

The main Cairns Regional Council Operational Works Depots are located at Babinda, Gordonvale, Martyn Street (city), Arnold Street (Stratford) and Buchan's Point. The main Water & Waste Depots are situated at Magazine Street, MacNamarra Street and Gordonvale.

3.3.3 Cairns Area Commercial Facilities

There is a large retail industry in Cairns with over 1000 retail shops in the Cairns region. Major retail centres include the Cairns CBD, Cairns Central and Stockland Cairns, with a number of other significant centres (Mt Sheridan Plaza, Raintrees, Redlynch Central, Smithfield, The Pier and Westcourt Plaza

There are 10 Bowls Clubs, 3 Surf Life Saving Clubs, 4 Golf Clubs, 2 Yacht Clubs, 15 boat ramps, 2 marinas, 311 km of bikeways/footways, 2100 ha. of recreational parks and reserves, Cannon Park Racecourse, several football clubs and numerous other sporting clubs.

Major Industrial Precincts include Bungalow, Edmonton (north-eastern part), Portsmith, Stratford (northern part) and Woree Business Centre

3.3.4 Industry

Tourism is considered the major industry for the Cairns Region with Cairns City being the tourism hub and the resultant service industries reliant on tourism (accommodation, transport, entertainment).

Some of the important natural tourism features include the Great Barrier Reef and the many resort islands situated off the eastern coastline, world heritage listed rainforests and National Parks.

Council aims to increase the value of tourism in the Cairns region through enhancing the cultural and environmental values of the region, capitalising on our diverse natural surroundings through ecotourism. Council strongly supports the growth of nature-based development in the region with key goals including environmentally sustainable buildings.

Rural industry in the district is predominantly sugar cane, fruit and vegetable cropping on the coastal areas, and fishing and prawning off the coast.

Cairns ship building industry is dominated by one company NQEA. They have developed a reputation as one of the leading ship building companies in the world. Cairns possesses a large maritime servicing sector that is fostered by a large fleet of small vessels (fishing and tourism, trading in the region and the Australian Navy's operational base). Marine services markets extend into the Pacific due to a lack of land transport infrastructure in the Cape and Cairns' strategic position in relation to Papua Indonesia. However, there are currently no direct international shipping services to PNG or Asia.

Cairns is the base for a large fishing fleet, predominantly prawn fishing for the Gulf of Carpentaria and Torres Strait. The port also services freighters from around the world picking up various export produce such as sugar and mineral ores.

Cairns Airport is recognised as the leading hub airport in the north and Australia's major north-eastern gateway. More recently, a large regional and general aviation

sector has led to the development of an aviation servicing cluster including aircraft maintenance and training at Cairns airport, again with markets stretching up into PNG and the Pacific.

The region has a significant bulk sea port at Cairns Trinity Inlet which also receives eleven (11) cruise ships annually.

Cairns Regional Council area's Gross Regional Product is estimated at $8.67 billion, which represents 3.1% of the state's GSP (Gross State Product).

The Cairns region is also serviced by a range of economic development associations including:

- Advance Cairns
- Cairns Chamber of Commerce
- Tourism Tropical North Queensland

3.3.5 Workforce and Employment

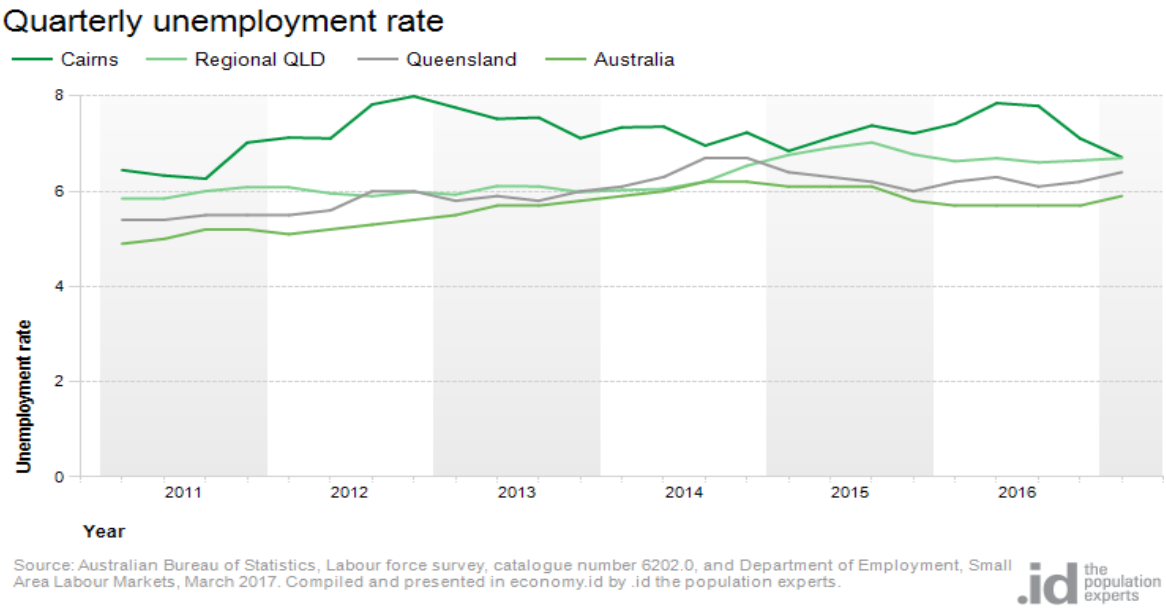
The region has the largest workforce in the Far North area of Queensland. The Cairns region offers lifestyle advantages and has little trouble attracting and holding population. The key employment sectors are tourism, retail, education, health and manufacturing. The following table provides a breakdown of employment by industry.

Table 23: **Employment (total) by industry**

Cairns	2014/15			2009/10			Change
Industry	Number	%	Queensland %	Number	%	Queensland %	2009/10 to 2014/15
Agriculture, Forestry and Fishing	834	1.2	2.8	642	0.9	3.1	+192
Mining	249	0.4	2.5	209	0.3	2.3	+40
Manufacturing	3,840	5.6	7.8	3,176	4.3	8.8	+664
Electricity, Gas, Water and Waste Services	537	0.8	1.3	547	0.7	1.2	-10
Construction	6,064	8.8	9.5	8,487	11.6	10.5	-2,423
Wholesale Trade	2,603	3.8	3.6	3,063	4.2	3.8	-460
Retail Trade	8,625	12.5	10.6	9,857	13.5	10.8	-1,232
Accommodation and Food Services	6,330	9.2	7.4	9,171	12.6	7.0	-2,841
Transport, Postal and Warehousing	4,108	6.0	5.2	3,853	5.3	5.3	+255
Information Media and Telecommunications	531	0.8	1.3	855	1.2	1.3	-325
Financial and Insurance Services	1,524	2.2	2.7	1,529	2.1	2.8	-5
Rental, Hiring and Real Estate Services	1,150	1.7	1.9	2,000	2.7	2.0	-850

Professional, Scientific and Technical Services	3,293	4.8	6.9	4,623	6.3	6.5	-1,331
Administrative and Support Services	3,432	5.0	3.3	3,752	5.1	3.2	-319
Public Administration and Safety	5,811	8.4	7.0	4,815	6.6	7.0	+996
Education and Training	6,556	9.5	8.2	4,935	6.8	7.9	+1,621
Health Care and Social Assistance	8,383	12.2	12.2	7,406	10.1	11.2	+977
Arts and Recreation Services	1,500	2.2	1.4	1,061	1.5	1.4	+438
Other Services	3,497	5.1	4.3	3,080	4.2	4.0	+417
Total Industries	**68,865**	**100.0**	**100.0**	**73,061**	**100.0**	**100.0**	**-4,195**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts



Understanding the economic role of Cairns provides a framework for understanding what policy responses and investment may be appropriate to support the growth of businesses and maintenance of a vibrant economy in the future.

The chart below provides a broad overview of the role and function of the Cairns economy.

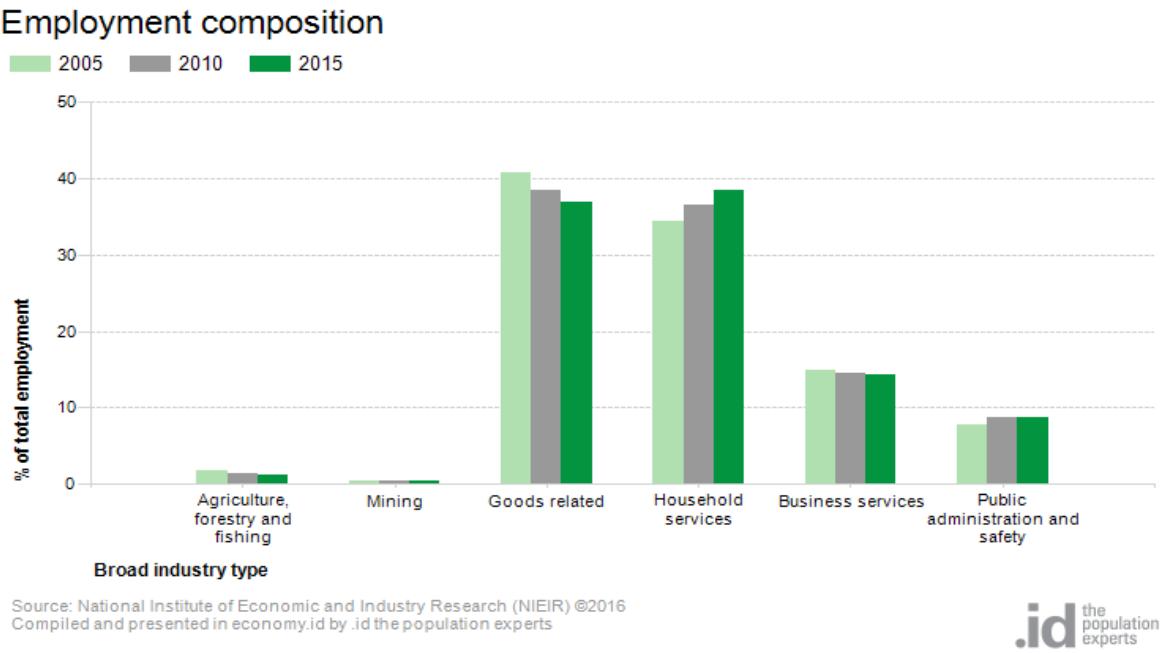


Table 24: **Local labour force - Characteristics of the unemployed**

Cairns	2011			2006			Change
Name	Number	%	Queensland %	Number	%	Queensland %	2006 to 2011
Key statistics							
Total persons	5,020	6.8	6.1	2,833	4.3	4.7	+2,187
Males	2,744	54.7	52.9	1,475	52.1	50.2	+1,269
Females	2,276	45.3	47.1	1,358	47.9	49.8	+918
Age structure							
15 - 24 years	1,561	31.1	37.2	900	31.8	35.6	+661
25 - 54 years	2,840	56.6	52.0	1,635	57.7	54.1	+1,205
55 - 64 years	565	11.3	9.6	274	9.7	9.5	+291
65 years and over	54	1.1	1.2	24	0.8	0.8	+30
Looking for							
Full-time work	3,334	66.4	62.2	1,801	63.6	60.6	+1,533
Part-time work	1,686	33.6	37.8	1,032	36.4	39.4	+654
Qualifications							
Bachelor or higher degree	394	7.8	11.0	232	8.2	8.8	+162
Advanced diploma or diploma	341	6.8	6.3	142	5.0	5.8	+199
Certificate level	1,167	23.2	21.9	545	19.2	17.1	+622
No qualifications	2,784	55.5	56.2	1,704	60.1	62.4	+1,080
Highest level of schooling							

Year 12	2,203	43.9	47.9	1,099	38.8	41.6	+1,104
Year 11	623	12.4	10.2	376	13.3	9.9	+247
Under Year 10	1,716	34.2	33.4	1,133	40.0	39.7	+583
Still attending	254	5.1	6.0	83	2.9	5.6	+171
Individual income							
Nil to $599	4,247	84.6	86.5				
$600 to $1,249	462	9.2	8.1				
$1,250 to $1,999	108	2.2	1.9				
$2,000 or more	30	0.6	0.9				
Other characteristics							
Speaks a language other than English at home	816	16.3	14.6	348	12.3	11.6	+468
Has broadband internet access at home	3,131	62.4	72.3	990	34.9	41.9	+2,141
Has child care responsibilities (own or others)	1,546	30.8	30.9	914	32.3	32.4	+632

Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by id. the population experts

3.3.6 Emergency Services

There is a solid base of emergency service response capacity spread across the region, with Queensland Police Service, Queensland Fire & Emergency Service, both urban and rural volunteer, Queensland Ambulance Service, and State Emergency Service (SES) volunteers are represented in some most communities.

SES Groups are located in the Cairns Area at Buchan Point, Trinity Beach, Yorkey's Knob, Holloways Beach, Machans Beach, Cairns, Edmonton, Gordonvale and Babinda. The SES Headquarters is located at the Cairns Unit in McNamara Street.

Police Stations are located at Babinda, Gordonvale, Edmonton, Cairns and Smithfield. To enhance community safety, Police Beats are located at Cairns Central Shopping Centre, Cairns Esplanade, Holloways Beach, Manoora, Mooroobool, Raintrees Shopping Centre, Earlville Shopping Centre, Trinity Beach, White Rock and Yorkeys Knob.

3.3.7 Transportation – Road System

Cairns Area

In the Cairns Area, public transport infrastructure is focused around main trunk roads and numerous collector roads. This means that most people who are living further way from the city have to rely on private transport to travel to work and to access some services like shopping centres, afterhours medical services, etc. Most communities are connected by a network of sealed roads, but there is no train network; only a public bus network which is operates mainly between 7.00 am and 10.30pm 7 days a week. Taxi and car rental services are also available in the region.

Although transportation services are available up to some degree hazardous driving condition and road closure may cause problems in the response to a major event. It is not uncommon in the wet season one of the major roads in the Cairns region to be

closed for a period of time due to flooding or landslide.

The major road transport routes are:

North: The Captain Cook Highway, from Cairns to Ellis Beach. This road is subject to flooding between Yorkeys Knob and Holloways Beach roundabouts. During severe weather conditions this road is also subject to closure at Arnold Street, Stratford. Fallen rocks have been reported many times between Palm Cove and Port Douglas. Landslides have occurred in the past along this road as well.

The Cairns Western Arterial Road also services the western suburbs north of Cairns CBD. It provides an alternate route from the city to the northern suburbs in the case where the Captain Cook highway is closed, although it does become prone to severe congestion when this occurs

South: The Bruce Highway, from Cairns to Babinda and onto Innisfail. This road is subjected to flood mainly between December and March at many locations. It is the only corridor to the south.

West: The Kennedy Highway through the Kuranda Range, from Smithfield to Kuranda. This road is subject to landslides.

The Gillies Highway from Gordonvale to Atherton via the Gillies Range. This road is subject to regular landslides and flooding at the bottom of the range, within the Cairns Regional Council area.

East: The Kennedy Highway from Mareeba to Cairns via the Kuranda Range. This road is subject to landslides.

3.3.8 Transportation – Railway

Cairns Area
Though there is no proper intra-city train network in the region Queensland Rail and private rail operators provide regular passenger and/or freight services to and from Cairns to Mareeba and Brisbane. Railway passenger and freight facilities are provided at some of the following locations; Portsmith Marshalling Yards, Cairns Station, Freshwater station, Redlynch maintenance depot, Gordonvale Station and Babinda Station. All rail freight currently carried in and out of the Cairns is done by Private Rail Operators; QR National and Pacific National Queensland. Passenger services are operated by Queensland Rail and Kuranda Steam (private rail operator). Queensland Rail operates 3 services per week with the Sunlander services to and from Cairns and Brisbane as well as 2 services for the tilt train. Queensland Rail also operates 2 Kuranda Scenic Rail trains to and from Kuranda on a daily basis. Kuranda Steam operates a weekly service on Wednesday from Cairns to Forsayth and return however this is a tourist enterprise only

The rail line traverses the Kuranda range and much of the line is not accessible by road transport. Past weather events have seen the line closed for a number of days,

- In February 2000, when the Granite Creek Bridge in Mareeba was washed away. This was replaced in 8 days.
- In February 2007, a landslip caused the tourist attraction to be suspended for nearly three months while stabilisation work was carried out. This incident led to the installation of 40 metre long and seven metre high, mesh barrier

Queensland Rail sits under department of Transport and Main Roads portfolio at District Disaster Level.

3.3.9 Airports

Throughout the region there are numerous locations where rotary wing aircraft can land in emergency situations and comprise of sporting fields, resorts, school ovals, etc.

Cairns International Airport

The Cairns International Airport is the seventh biggest airport in Australia which has a 3200 metre long runway capable of handling 737-400, 747-800 and 767 aircrafts. Qantas, Jetstar, Air New Zealand, Cathay Pacific, Hong Kong Airlines, SilkAir and Air Nuigini are some of the international airlines that are serviced by Cairns International Terminal. Domestic servicing airlines include Qantas, Jetstar, Tiger, Regional Express Airlines, Hinterland Aviation, Skytrans and Virgin Australia. The airport accommodates light aircraft and rotary wing aircrafts as well. Average daily aircraft movement of the airport is about 220. This includes jets, non- jets and helicopters.

The airport has 2 terminals that are two separate buildings set 200 metres apart. The Domestic terminal is terminal number 2 and it has five jet bridges and 17 gates, while the International Terminal is terminal number 1 and it currently has six jet bridges and ten gates in total

There are helicopter landing points located at Cairns Airport (General Aviation), near Cairns Base Hospital and a commercial heliport (Cairns City Heliport) at the Pier Marketplace.

3.3.10 Sea Ports

The Cairns seaport is located in the sheltered natural harbour of Trinity Inlet and is owned and operated by Ports North. It is the most northern port on the eastern seaboard and is the closest port to the Great Barrier Reef. It is a small multi-purpose regional port that caters for a diverse range of customers.

The Port's bulk cargo includes petroleum products, sugar, fertiliser and liquid petroleum gas. It has long been the natural consolidation and redistribution centre for supplies that are shipped to the coastal communities north of Cairns as well as the Torres Strait Islands and the Gulf of Carpentaria. The Port is also a supply and service centre for mine operations in Papua New Guinea and Indonesia with regular mine servicing shipping operations out of the Port.

The Port is one of the countries busiest cruising destinations with both major international cruise ships and a number of domestic cruise vessels operating out of Cairns on a regular basis. The Cairns Marlin Marina is a 217 berth Marina accommodating a variety of cruising vessels, super yachts and reef vessel operations servicing the Great Barrier Reef.

Sailfish Quay, within the Cairns Marlin Marina, provides world class super yacht berths for vessels up to 80m. The recently constructed Reef Fleet Terminal provides the gateway to the Great Barrier Reef for more than 650,000 passengers that visit the reef from Cairns each year.

The Port is home to Australia's largest fishing fleet. It offers extensive and experienced ship building and repair services with a number of slipways and dry docks up to 3,000 tonne capacity for a diverse range of ship maintenance requirements. The shipyards offer some of the most experienced, quality assured luxury repair facilities for super yachts in the southern hemisphere.

HMAS Cairns Naval base is located in Draper Street, Portsmith on the northern shore of Trinity Inlet. The base has a responsibility extending from Rockhampton to Thursday Island and has 900 Navy and civilian personnel and is the homeport for 14 Naval Vessels.

3.3.11 Essential Services

Telecommunications

The telecommunication network has a number of providers the main provider being Telstra. Mobile telephone communication is generally readily available to most inhabited localities of the Region. Mobile telephone communications in the Brampton Beach locality and in the Goldsborough Valley is generally less reliable, however NextG mobile network and the use of satellite telephones has improved this, but many smaller centres are still devoid of coverage..

Many rural properties rely on solar-powered telephone systems, utilising a battery back-up, which is vulnerable to failure in extended periods of inclement weather.

Similar problems have been experienced with the failure of batteries and generators at exchanges.

The whole area is covered by broadcast radio, via ABC Far North on either AM or FM frequencies. Commercial radio providers have variable coverage of the area. The area is reasonably well served by free to air broadcast television, and subscription satellite television is becoming more popular in all areas. Broadcast radio and TV services are provided from studios in the City, Earlville and Parramatta Park and transmitters are located on Mt. Bellenden Ker, near Gordonvale and Trinity East. Dedicated telecommunications networks are also operated by the ADF units, Air Services Australia and numerous private sector networks such as fishing and mining. Council also has a dedicated UHF radio frequency network, which is the first line of communication for out-side Council staff and can be utilised as an alternative communication means during an event.

High speed internet connection is available in the larger centres, but dial-up or satellite-based access is still required in the more remote areas. The internet is a communication medium used more and more but it is not 100% reliable. The scheduled National Broadband Network commenced roll-out throughout the Cairns region in 2013 and the speed of internet services should be increased as a result of this service to a large section of the community.

Many of the private UHF and VHF networks such as taxis, police, emergency services, Council, etc. operate from base stations on Bellenden Ker and/or on prominent features on the coastal escarpment.

The above-ground telecommunications infrastructure has similar vulnerabilities to that of the power supply network and is also very heavily power-dependent.

Telstra land-line infrastructure is all underground reticulation. The system is therefore designed and installed to be robust against the ingress of water. The pit and conduit system is regularly inundated with water as part of the natural storm-water dissipation. The cable connection pillars, which are located above ground, are also sealed and positively pressurised to prevent the ingress of water.

Since events surrounding STC Yasi and TC Dylan, Telstra's has improved current infrastructure providing triple redundancy (one coastal Queensland, one inland Queensland and the third from the Northern Territory into Mount Isa).

Generally a network site will continue to operate if power is maintained, water ingress

is prevented and the link to the control exchanges is maintained. Telstra will determine the priority of site restoration in consultation with Emergency Services. Restoration of sites that have immersed may not be possible until water levels return to normal. Increase in site generation back-up and fuel storage following STC Yasi in 2011.

It should be noted that mobile phone base stations may be out of service due to high winds that can damage towers; therefore, the use of mobile phones should not be relied upon during emergencies. The mobile network can also become overloaded when a large number of people try to make calls on the one local cell.

Power Supply

Power supply for the Cairns Area is managed by Ergon Energy and is sourced from power stations near Rockhampton and Gladstone to the Bulk Supply Station at Caravonica for the Northern Beaches, Woree for the city and Edmonton for the southern area. There are two transmission lines into Cairns via the escarpment.

Cyclones are a major issue for power infrastructure. Lighting storm, landslide and wildfire could also affect major power transmission lines. In December 2008 at least 33,000 Cairns residents were left without power due to simultaneous lighting strikes to the major power supply lines of the region.

Referable Dams

Dams are deemed to be referable based on a failure impact assessment (FIA) which states that the dam has or will have a Category 1 (these put between two and 100 people at risk) or Category 2 (which put more than 100 people at risk) failure impact rating. Cairns has three such dams listed below;

- Copperlode Dam, Lake Morris Road
- McKinnon Creek Detention Basin, Edmonton
- Moody Creek Detention Basin, Kanimbla (under construction)

Water Supply

The Cairns community is supplied with water from Copperlode Falls Dam and Behana Creek. Water from Copperlode Dam supplies areas to the north of Cairns and the Cairns city. The Behana Creek source supplies areas south of Cairns as well as the Cairns city. This water is treated at the Freshwater Creek Treatment Plant at Tunnel Hill. Supply is distributed to consumers by gravity feed from at least 16 reservoirs and water towers throughout the Cairns Area. Reticulation involves over 1,909 km of water mains of various sizes, material and age.

Small supply systems provide for residents south of Aloomba and the Mulgrave Valley. These systems range from bores to creek supplies, Treatment includes disinfection prior to being sorted in a supply reservoir for delivery to customers. A source and water quality report table can be found at http://www.cairns.qld.gov.au/water-waste-roads/water/water-sources-supply

Sewerage

Wastewater treatment plants are located at Babinda, Gordonvale, Edmonton, Southern (Portsmith), Marlin Coast (Smithfield) and Northern (adjacent to Cairns Airport) for the Cairns Area.. There are in excess of 100 wastewater pumping stations throughout the Cairns Area, most being in the low-lying areas.

The northern, southern, Marlin Coast and Edmonton plants recently underwent a major upgrade to improve the quality of wastewater being discharged into the local marine environment. Details of each WWTP are provided below:

a) Marlin Coast WWTP

Location: McGregor Rd, Smithfield
Service Area: Yorkeys Knob, Kewarra Beach, Palm Cove, Trinity Beach, Clifton Beach and suburbs in between including Caravonica.
Capacity: 30740 people or 8.3 ML/day
Treatment Standard: Tertiary
Treatment Process: The liquid stream is a 5 stage EBPR (Enhanced Biological Phosphorus Removal) configuration with 3 Clarifiers. Effluent is treated with UV and discharged to a feeder drain that enters Half-moon Creek. Sludge is dewatered from an Aerobic digestion system using a Belt filter press.
Recycled water initiatives: Yorkeys Knob State School, Half Moon Bay and Paradise Palms Golf Courses, Marlin Coast recycled water network. Scroll down for more information on the Marlin Coast Recycled Water network.

b) Northern WWTP

Location: Greenbank Rd, Aeroglen
Service Area: Brinsmead, Edge hill, Cairns North, Parramatta Park, Cairns City, Portsmith (from Fearnley St), Holloways, Machans and suburbs in between including Redlynch, Kamerunga.
Capacity: 71851 people or 19.4 ML/day.
Treatment Standard: Tertiary
Treatment Process: The liquid stream is a 5 stage EBPR (Enhanced Biological Phosphorus Removal) configuration with separate reactor tank for Submerged Membrane filtration (SMF). Effluent is discharged to the Barron River. Sludge is dewatered from an Aerobic digestion system using a Belt filter press.
Recycled water initiatives: some on-site use

c) Southern WWTP

Location: Machonachie St, Woree
Service Area: Mt. Sheridan, Whiterock, Westcourt, Bungalow, Portsmith to Fearnley St, Manunda, Manoora and suburbs in between.
Capacity: 71851 people or 19.4 ML/day
Treatment Standard: Tertiary
Treatment Process: The liquid stream is a modified Oxidation Ditch with separate anaerobic reactor and with separate reactor tank for Submerged Membrane filtration. Effluent is discharged to Trinity Inlet. Sludge is dewatered from an Aerobic digestion system using a Belt filter press.
Recycled water initiatives: Cairns Golf Club plus some on-site use

d) Edmonton WWTP

Location: Swallow Rd, Edmonton
Service Area: Southern estate on Peterson Road to Foster Road (western side of highway) and to Griffin Road on the Eastern side of the highway, Edmonton, Part Mt Sheridan, Part Whiterock.
Capacity: 24814 people or 6.7 ML/day
Treatment Standard: Tertiary
Treatment Process: The Liquid stream treatment is an Oxidation ditch with Clarifier. Effluent is treated with UV and discharged to Trinity Inlet. Sludge is dewatered directly out of the Bioreactor using a Belt filter press.

e) Gordonvale WWTP
Location: Rushworth Rd, Gordonvale
Service Area: Gordonvale

Capacity: 7037 people or 1.9 ML/day
Treatment Standard: Secondary
Treatment Process: The Liquid stream treatment is an Oxidation ditch with Clarifier. Clarifier Effluent is chlorinated and discharged to the Mulgrave River. Sludge is dewatered from anaerobic lagoons via centrifuge as required.

f) Babinda WWTP
Location: Clyde Rd, Babinda
Service Area: Babinda
Capacity: Just over 1000 people
Treatment Standard: Secondary
Treatment Process: Biological Trickle Filter system. Effluent is chlorinated and discharged to Babinda Creek. Sludge is sucked out of the Primary digester and taken to another plant as required

Cairns Regional Council operates a remote monitoring and operational system (SCADA) that enables instantaneous feedback on all water and sewerage infrastructure.

Backup power supplies are located at each WWTP and at major pump station facilities.

Solid Waste & Recycling Facilities

There are a number of transfer stations located throughout the region, however in the event of storm damage easy accessible sites will be required for the disposal of green waste.

The transfer stations are located at:

- Lyons Street, Portsmith
- Dunne Road, Smithfield
- Bruce Highway, Aloomba
- Kruckow Road, Babinda

Council's waste and recycling services aim to minimise waste disposal to landfill. Council operates a materials recovery facility (MRF), four waste transfer stations and a buy back shop. The waste and recycle facilities recycle and reuse materials such as:
Garden waste
Household waste
Metals
Recyclable materials - steel cans, aluminum cans, plastics, glass
Paper and cardboard
Reusable household items
Reusable building materials

Historically in the wake of significant events green waste dump areas have been established in the local community for community members to access.

All general waste from kerbside collections is taken to the Advanced Resource Recovery Facility, operated under contract by SUEZ Recycling and Recovery, Portsmith. General waste is processed into compost. Any residual waste (non-

organic waste that cannot be processed) is transported to landfill on the Atherton Tablelands.

Two Community Initiatives (Free Green Waste Disposal & Free Mulch Giveaway are offered twice a year around the beginning and end of the 'cyclone season'.

Reticulated Gas Supplies

There are limited (part of Forest Gardens, the CBD and Port Douglas) reticulated gas supplies for Cairns and Far Northern Areas with the main method of supply for the region being in bottles.

Storm-water

Piped storm-water systems, culverts, open channels, bridges and floodways are in place in the more populated areas of the Cairns Regional Council area. Stormwater infrastructure in rural areas is typically limited to bridges, culverts, open channels and flood-ways.

Control of storm-water is essential to:

- providing access for emergency vehicles, residents, farms and businesses; and
- controlling damage to property and the environment.

Council has in place a series of Drainage Management Plans for the major catchments across the Council area and strategies to systematically address known problem areas to improve management of flooding issues. Given the catchment area, it can be considered that flooding is a part of life.

Given the low lying nature of the majority of the Council area along the coastal fringe, the development of effective drainage strategies is essential for maintaining access to many of the suburbs in the area. Over the last five years, Council has invested nearly $25 million on drainage works around various suburbs to upgrade pipes and concrete drains, install new culverts and increase the capacity of existing drains.

CBD flood mitigation scheme
Featuring a $9 million tidal outlet and underground pump station in Lake Street, the scheme can move four tonnes of stormwater per second into Trinity Inlet. Designed to cope with 1-in-100 year flooding events, the project has significantly reduced the impact of king tides and intense rainfall on businesses and properties in the Cairns CBD.

Lake Placid flood mitigation scheme
This $1.4 million project delivered a series of levee walls and flood gates to protect more than 400 homes, businesses and infrastructure in suburbs along the Barron River delta.

Tide gates
Three sets of tide gates are installed at the sea-facing end of waterways in central Cairns. The gates are lowered into the waterway when very high tides (king tides) are forecast to stop saltwater from flooding low-lying areas of land. When stormwater levels are higher than tidal water levels, the tide gates open wider to allow stormwater to flow to the ocean.

Backflow prevention devices
Backflow prevention devices have been installed in various locations around the Cairns locality as another form of tide control to prevent the re-entry of tidal waters into the stormwater network. Council has various types in service including a memory rubber

type which opens with minimal water pressure behind it to allow free drainage and any pressure on the front seals the opening. These devices can still drain even with sand or debris built up at the front of the device.

Education

The Cairns region has a number of world-class educational facilities. Education services in Cairns feature three tertiary institutions (James Cook University, Central Queensland University, Great barrier reef international Marine College and the Tropical North Queensland Institute of TAFE).

Strong public and private education systems exist in the Cairns region with a choice of State Government, Catholic education and independent schools. Boarding facilities are also available in two schools. The schools have a reputation for academic excellence supplemented by outstanding achievements in music, performing arts, sport vocational programs, the integration of technology into all aspects of learning and an international curriculum demonstrate a commitment to meeting student needs in a rapidly changing environment. The area is serviced by 24 State run primary schools, 15 privately run primary schools, seven State high schools, five catholic high schools, three independent high schools and eight special schools.

Medical Facilities

Queensland Health provides public hospitals in Cairns, Babinda and Gordonvale. Primary Health Care Centres are located in Cairns North, Edmonton and Smithfield. Ramsay Health provides a private hospital and day surgery facilities in Cairns.

Cairns Base Hospital

Cairns Base Hospital provides community and specialist hospital services for Cairns and its immediate surroundings and is the major referral centre for Tropical North Queensland. Services include all major health specialties (medicine, surgery, women's health, pediatrics and mental health) and more than 30 sub-specialties. The hospital also is a major provider of outreach specialist services to remote and rural areas, including:

- Division of surgery
- Obstetrics and Gynecology
- Speech pathology
- Anesthetics
- Orthopedics
- General Medicine
- Renal Medicine
- Diabetes
- Thoracic Medicine

The hospital has around 450 overnight beds. A $454 million redevelopment of the Cairns Base Hospital has recently been completed resulting in an additional 168 beds.

In addition to cyclones, The Cairns Base Hospital is located in a storm surge zone which is a major natural hazard issue for the hospital. On 2nd of February 2011 the hospital was evacuated due to Severe Tropical Cyclone Yasi. Critical patients were sent to Brisbane hospital and other patients who required medications were sent to regional/private hospitals. In an emergency situation Queensland Health, Ramsay Health Care (Cairns Private Hospital) and Cairns Day Surgery, communicate and assist each other and surgery facilities can be provided by each party, if required.

In an emergency situation normal operations of the hospital are suspended including some elective surgeries. Only emergency services and temporary medical services like first Aid are provided. Communication of QLD Health staff is by two-way radios, two fixed in satellite phones at Cairns Base Hospital and other satellite phones. These satellite phones can only be used outside of the building. Telecommunications will not be affected if power is maintained to computer racks and the PABX. Information Technology Systems are primarily affected by the availability of power and network links. The information Division identify and prioritise essential communications services like medical imaging and paging system for the disaster and recovery period. All hospitals have generators which are tested each month.

Cairns Base Hospital has 6 emergency power supply generators 4 of them in Block B and 2 of them are located at Block C. In an emergency situation these generators can supply Cairns Base Hospital power demand independently for 3 to 4 days. Cairns Base Hospital has standby power generator (trailer mounted) to supply power to alternative site if necessary. Generator rating is 100kVA 3 phase 415V 50Az – Olympian GEH100-2. Generator base fuel tank is 300 litres and extra mobile 1000 litre fuel bladder also acquired for back up fuel purposes. Cairns Base Hospital has a total of 150,000 litres of water on site; 30,000 litres in Block A, 60,000 litres in Block B and 60,000 litres in Block C. Essential services-water will last for 2 days whereas normal-services water capacity is 1 day.

Three alternative care sites have been identified if Cairns Base Hospital is required to evacuate due to a disaster incident. These alternative sites are TAFE (1.7 km form Cairns Base Hospital), James Cook University (14 km from Cairns Base Hospital) and Woree State Primary School (5.8 km form Cairns Base Hospital). Utilization of each alternative site is depends on type and size of the disaster.

TAFE Nursing Education Block J located in the TAFE facility Eureka Street, Manunda is the closest alternative to Cairns Base Hospital and was built in 2010. It offers stretcher access, vehicle flow ability, large open area for triage, 16 bed bays, patients/staff - toilet/shower access, three phase power and power outlets, digital two-way communication network access and multiple buildings are some of the core facilities of the site.

JCU Nursing Education Building A2 and JCU Dental Building 1 located in the JCU facility, McGregor Road, Smithfield. None of the buildings are in a flood zone and have an undercover drop off zone, vehicular flow, stretcher access 6 bed bays (2 offer privacy), toilets, kitchen, staff rest area and generator on site.

Woree State Primary School (sporting building) was built in 2011. It is not in a flood zone and has stretcher access, vehicular flow, access to other buildings, three phase power, kitchen/staff area and good lighting are some of the core facilities of the site.

Each of the above sites has helicopter landing facilities.

Babinda Hospital

The Babinda Hospital is a 20 bed facility providing Accident & Emergency; Acute Medical; Restorative Care Services; Palliative Care; Emergency in-hospital Respite Care; Pharmacy; Radiography and limited inpatient physiotherapy. It also provides community health nursing services.

It provides outreach ATSI health services and receives significant visiting specialist services.

Gordonvale Hospital

The Gordonvale Hospital comprises of a 12 bed Palliative Care inpatient unit, an Outreach Palliative Care Service and Sub-acute services in the 12 bed Older

Persons Evaluation Rehabilitation and Assessment Unit (OPERA Unit).

While the hospital primarily provides Palliative Care and Sub-acute Services, there is an emergency response service in which patients are treated and referred appropriately.

Cairns Private Hospital
Cairns Private Hospital's medical services cover a range of needs including:

- Cardiology
- Endocrinology
- Gastroenterology
- Respiratory Medicine
- Dermatology

Cairns Private Hospital has a fully-equipped 7 bed intensive and coronary care unit. An extensive range of surgical services is offered including orthopedic, vascular, urological, gynecological and general services.

Private Medical Practitioners

Private medical practitioners are located throughout the Cairns region including Cairns, Edmonton, Gordonvale, and Babinda.

Community Health Centres

Community health services include: before and after hospital care; cardiac rehabilitation; community nursing; counseling services; hearing health screening; health education and promotion; home care services; immunisation services; oral health (dental clinics); Positive Parenting Program; school health; baby clinics. Community Health Centres are located at:

- Cairns North
- Edmonton
- Smithfield

Mortuary Capacity (formal)
The following facilities have mortuary capacities available for use in the event of a natural hazard. The LDMG-CR is undertaking further discussions with these facilities to determine the actual capacity available.

- Cairns Base Hospital
- Cairns Private Hospital
- Gordonvale Hospital

3.4 Public and Other Major Buildings, Spaces, and Events

Cairns has a number of major shopping centres and a CBD area that attracts a significant number of shoppers and tourists on a daily basis. Two of the major shopping centres include cinema complexes and the CBD has a very active entertainment precinct along with many restaurants.

Public and Other Buildings
Throughout the Region there are a number of public and other major buildings, including but not limited to:

- Cairns Regional Council Administration Building
- Cairns Regional Council Local Disaster Coordination Centre
- Cairns Regional Art Gallery
- Cairns City Library plus seven branch libraries
- Cairns Civic Theatre (Cairns Performing Arts Centre under construction)
- Cairns Convention and Conference Centre
- Cairns Reef Casino
- Cairns Corporate Tower
- Major resorts and accommodation precincts.

Major Public Spaces

- Cairns Esplanade located in the City
- The Pier Shopping Precinct located in the City
- Cairns Night Markets located in the City
- Beaches and Foreshores located from Ellis Beach to Bramston Beach
- Bill Wakeham Park located in Babinda
- Alley Park located in Gordonvale
- Petersen Park located in Edmonton
- Johnson Park located in Gordonvale
- Goomboora Park located in Brinsmead

Annual Special Community Events

- New Year's Eve Family Fun Concert - Cairns Esplanade
- Australia Day celebrations
- ANZAC Day
- Babinda Harvest Festival
- Cannon Park special race-days;
- Cairns Festival;
- Sustainable Living Expo
- Seniors week
- Chinese New Year
- Cairns Show;
- Cairns Airport Adventure Festival
- Carols by candlelight
- Christmas events
- Ellis Beach Surf Life Saving Carnival
- Festival of the Knob - Yorkeys Knob
- Great Pyramid Race & Country Fair - Gordonvale
- Cairns Indigenous Art Fair

3.5 Hazardous Sites

There are a number of potential hazards and hazardous sites in the Cairns Region as follows:

- The Bruce Highway to the south, the Captain Cook Highway to the north, the Kennedy Highway to the west and the rail links to the south and west all carry bulk hazardous substances in a variety of containers
- Bulk fuel and gas storage facilities are concentrated in Portsmith, with secondary (especially operational) storage of specialist products at facilities such as the airport (avgas and jet fuel), HMAS Cairns (bunker and diesel fuel) and some of the larger industrial and transport facilities (mostly diesel)
- There are major hardware and cooperative warehouses at Portsmith,

Bunning's in Cairns CBD and Smithfield, Cairns Hardware in Bungalow, and Masters Hardware in Cairns CBD
- Marine facilities adjacent to Portsmith
- Bulk storage and distribution centres for products such as cement, paint, agricultural chemicals, pharmaceuticals, raw sugar, molasses, timber and hardware, as well as transport and handling equipment are concentrated close to the port and rail- head facilities of Portsmith
- Gordonvale Sugar Mill

Asbestos Probability Risk Mapping

Cairns Regional Council has undertaken mapping of residential areas in Cairns where the potential of the houses to contain asbestos has been identified. In large post event clean-up (e.g. Tully Heads post TC Yasi), these maps will enable the LDMG-CR and Council to better understand the magnitude of task and better execute its management plans.

These maps will also allow the different organisations that would carry out refurbishment / demolition of residential properties after a disaster event, to be aware of the potential for asbestos to be present and therefore take appropriate measures to deal with the asbestos disposal.

In Cairns, the Portsmith Waste Transfer Station is the only waste transfer station that is nominated to accept the disposal of asbestos. Asbestos must be in small manageable size and total quantity has to be less than 250kg to be accepted at the Portsmith Transfer Station.

The Springmount Waste Transfer Station on the Tablelands is the nearest facility to accept large volumes of Asbestos for disposal.

PART 4 IDENTIFIED NATURAL HAZARDS

The *Cairns Natural Disaster Risk Management Report 2002* was adopted by the City of Cairns in 2002 and the *Cairns Natural Hazard Context Report (*AECOM, 2013*)* was adopted by the Cairns LDMG in 2014.

The studies were undertaken to provide updated information on risks within the previous Council areas and took into consideration earlier studies.

A significant element of the process was the consideration of how a reduction in disaster risk can protect the community against loss of infrastructure, damage to the natural environment, compromised standard of living and economic failures brought about by disasters.

Other studies and relevant reports are:

- Community Risk in Cairns – AGSO Cities Project 1999, this report considered threats from earthquake, landslide, flood and cyclone and their effect on the Cairns community;
- The Flood Risk in Cairns – Bureau of Meteorology 2001;
- Treating Risks in Cairns – Ken Durham 2000;
- Cyclone and Storm Surge Threat to Cairns Regional Council Area C. Norris Cairns CC;
- The Tropical Cyclone Risk in Cairns – BoM 2001;
- Cyclone Surge and Community Preparedness – James Cook University 1999;
- Cairns Counter Disaster Plan – 1999;
- Freshwater Creek Flood Study –Stage 1 (2013) & Stage 2 (2014)
- CairnsPlan - 2005
- CairnsPlan – Consolidated Planning Scheme 2009;
- Natural Disaster Risk Management Study – 2002
- Cairns Region Storm Tide Evacuation Strategy
- Cairns Natural Hazard Risk Assessment 2013
- AS/NZS 31000:2009 – Risk Management.

4.1 Context

The natural disaster risks in the Cairns Regional Council boundaries range from low to extreme (based on previous studies) and require continuing management by Council to offset the risks.

As defined in the Disaster Management Act 2003:

> "*A **disaster** is a serious disruption in a community, caused by the impact of an event, that requires a significant coordinated response by the State and other entities to help the community recover from the disruption*."

Included in the impacts of a disaster is the threat to cause any of the following:

- widespread or severe property damage
- widespread or severe human injury or illness
- loss of human life.

A **natural disaster** includes any of the following:

- cyclone
- storm surge
- flooding
- landslide
- severe thunderstorm
- wildfire
- earthquake
- Tsunami.

In disaster risk management, a risk is defined as a concept used to describe the likelihood of harmful consequences arising from the interaction of hazards, communities and the environment. Consequences may include loss of life, personal injury, property damage, persons isolated from essential services and supplies and economic activity disrupted. Risk is measured in terms of likelihood and consequences.

Management is the policy, administrative decisions and operational activities relating to disaster prevention and mitigation, preparedness, response, and recovery.

Drought and non-natural disasters, such as an explosion, any accident; any disease; a failure of or disruption to an essential service or infrastructure; and an attack directed against the State are not included in the scope of a natural hazard.

4.2 All Hazards Description

A significant volume of work has been undertaken on the description and impacts of natural hazards in the Cairns region. The following commentary has been based on extracting information from those reports. A key document in preparing the following commentary has been the *"Community Risk in Cairns - A Multi-Hazard Risk Assessment"*, prepared by the Australian Geological Survey Organisation in 2001. Rather than rework the existing information it has been reproduced below with the intention of updating it with more recent information as the study progresses.

4.2.1 Cyclones

Tropical cyclones pose a considerable threat to Cairns. In the 134 years since the settlement was established there have been in excess of 60 cyclones that have had some effect on the town - that is, an average of a cyclone every two years. They bring with them the multiple threats of destructive winds, heavy rain and storm tide inundation.

Due to its latitude the Cairns region is vulnerable to tropical cyclones from two directions, either from the Pacific Ocean to the east or from the Gulf of Carpentaria from the north-west.

The conventional response to an impending cyclone impact is for people to take shelter in their own homes. In those areas that would be subject to storm tide inundation, however, this is not an appropriate option as many people in such areas would be exposed to a significant risk of drowning, especially if the level of inundation exceeds 1 m over floor level. Recent experiences with Cyclone Yasi highlighted issues associated with voluntary and forced evacuations of at risk areas in the community.

Evacuation of those people at risk must be completed before the cyclone impact reaches certain strength, typically 75 km/hour; the strength at which it ceases to be safe for anyone to be out of doors. For storm tide events with annual exceedance probabilities of 1% or greater (an average recurrence interval of at most 100 years) the numbers of people involved are relatively small and could be easily managed with appropriate warning, planning and community awareness. Beyond that level, however, a considerable effort would be required to manage the numbers of evacuees involved unless the vast majority were prepared to undertake their own evacuations beginning at least 24 hours before the forecast cyclone impact time. Delay in commencing a major evacuation process will increase the risk of people being caught in the open or in their transport when the cyclone hits because of gridlock on the roads leading out of the danger area.

Figure 8: Australian Tropical Cyclone Categories

Category	Strongest Gust (km/h)	Typical Effects (indicative only)
1 (Tropical Cyclone)	Less than 125 (Gales)	Negligible house damage. Damage to some crops, trees and caravans. Craft may drag moorings.
2 (Tropical Cyclone)	125-169 (Destructive winds)	Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small craft may break moorings.
3 (Severe Tropical Cyclone eg. *Roma*)	170-224 (Very destructive winds)	Some roof and structural damage. Some caravans destroyed. Power failure likely.
4 (Severe Tropical Cyclone eg. *Tracy*)	225-279 (Very destructive winds)	Significant roofing loss and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.
5 (Severe Tropical Cyclone eg. *Vance*)	More than 280 (Very destructive winds)	Extremely dangerous with widespread destruction.

Whilst a severe cyclone will have a major immediate impact on Cairns with potentially significant loss of life and massive damage, the long term impact will also be catastrophic. In an extreme event, most survivors would need to be evacuated to centres as far away as Brisbane and Sydney (as was the experience of Darwin following the impact of Cyclone *Tracy* in 1974). The loss of facilities on which the community relies would be such that the city would be virtually uninhabitable for an extended period. Figure 9 shows the annual number of cyclones in Australia.

The application of building code standards for domestic structures since 1982 and the inclusion of storm tide hazard as a constraint in the urban planning process in Cairns since the early 1990s have certainly slowed the rate at which risk would otherwise have increased. Significant reduction in risk will not be possible until the concentration of population, economic activity and community services in the highest risk areas of Aeroglen, Cairns North, City, Machans Beach, Manunda, Parramatta Park and Portsmith is reduced significantly. Figure 10 displays the tracks of tropical cyclones for the "Eastern Region" of Australia from 1970 to 2004.

Figure 9: Average Annual Number of Tropical Cyclones in Australia

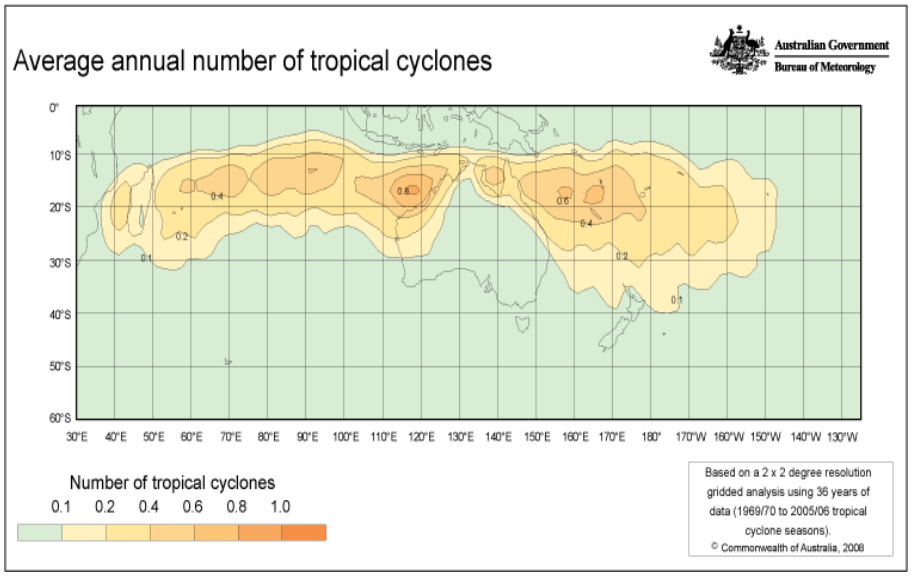
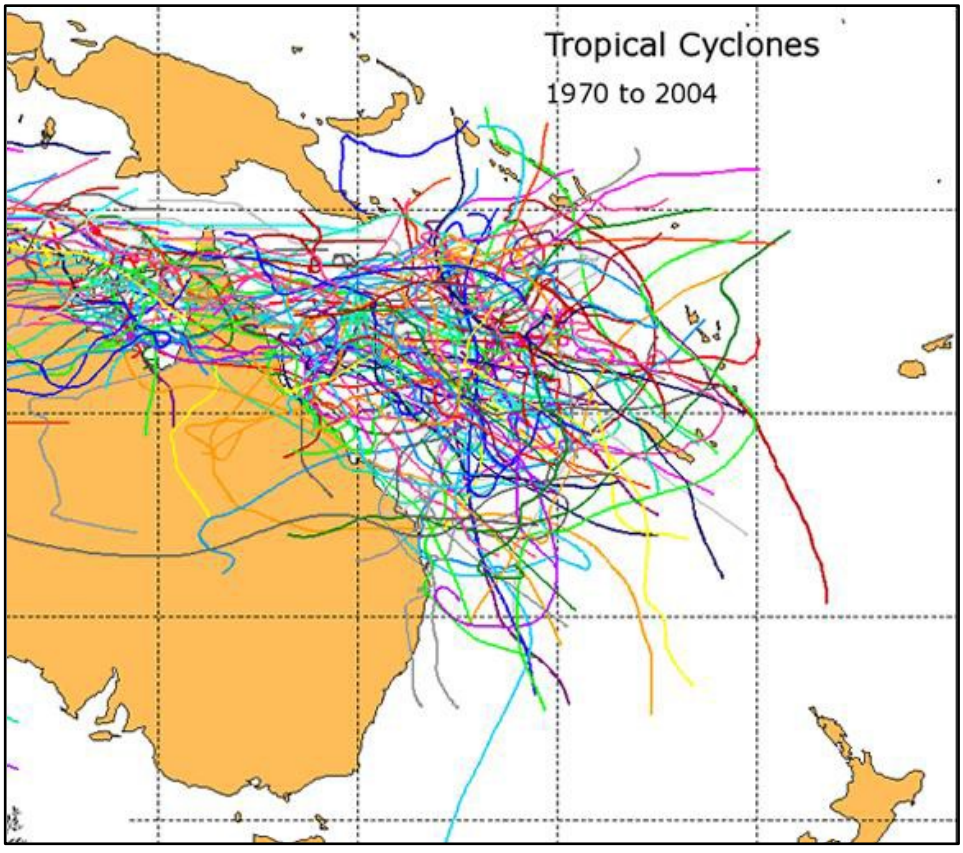


Figure 10: Incidence of Tropical Cyclones 1970 – 2004



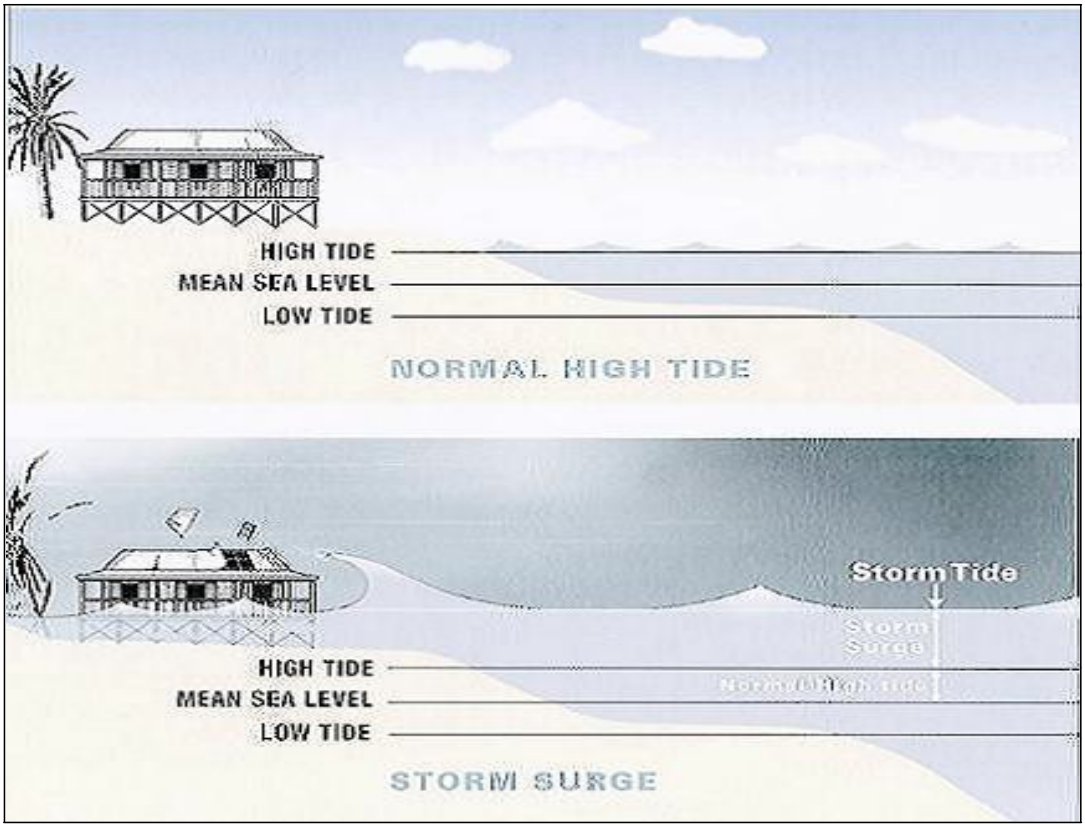
4.2.2 Storm Surge

The Bureau of Meteorology describes a storm surge as a rise above the normal water level along a shore that is the result of strong onshore winds and/or reduced atmospheric pressure. Storm surges accompany a tropical cyclone as it comes ashore. They may also be formed by intense low-pressure systems in non-tropical areas.

The combination of storm surge and normal (astronomical) tide is known as a 'storm tide' (refer to Figure 11 Storm Surge).

The worst impacts occur when the storm surge arrives on top of a high tide. When this happens, the storm tide can reach areas that might otherwise have been safe. On top of this are pounding waves generated by the powerful winds. Communities that front the coast line are at most risk from storm surge.

Figure 11: Storm Surge



(http://www.bom.gov.au/info/cyclone/storm_surge/storm_surge.shtml)

Storm surge is of particular concern to the Cairns local authority area coastline. Significant damage to coastal communities to the south of Cairns during cyclone Yasi in 2011 provides a clear example of the risks facing Cairns in the event of a direct impact from a severe tropical cyclone.

The need to evacuate “at risk” populations in the period leading up to the impact of the cyclone has been discussed in section 3.2.3 above.

Generally the Cairns coastline is at severe risk of storm surge.

The first recorded instance of a significant storm tide in Queensland is the 3.1m surge in 1884 at Bowen however Green Island was reputedly overtopped by waves in 1858 (Jones 1976). Much of the earliest collected data remains in unpublished form with the Bureau of Meteorology in Brisbane.

Table 30: Significant storm tide events on the Far North Queensland east coast

Year	Place	Event	Est. Central pressure (hPa)	Surge height (m)	Reference
1899	Bathurst Bay	Mahina	880	13=	Prof Nott, Green, Townsend & Callaghan (2013)
1918	Innisfail	-	928	<3	Harbours & Rivers Dept. (1918)
1920	Cairns	-	988	>1.5	Jones 1976
1934	Port Douglas	-	968	>1.8	Moorhouse (1936)
1934	Cape Tribulation	-	978	9.1	Bureau of Meteorology
20	Mission Beach	Yasi	929	5	Bureau of Meteorology

(= exceeded HAT)

(Source: Storm Tide Threat in Qld, History, prediction and relative risks, B Harper 1998)

4.2.3 Flooding

Flooding is caused by prolonged periods of monsoonal rains, severe thunderstorms and rain from cyclonic weather systems. When runoff from heavy rainfall becomes concentrated in creek and river systems that are unable to cope with these large quantities of water, the breaching of creek and river banks occurs and the inundation of normally dry land results.

Slow onset flooding occurs in areas of vast, flat, low-lying topography. Slow onset flooding generally results in major losses of livestock, damage to crops and extensive damage to rural communities and to roads and rail links.

Flash flooding results from relatively short, intense bursts of rainfall quite often from severe thunderstorms. Flash flooding poses the greatest threat of loss of life as people are often swept away after entering floodwaters on foot or in vehicles. These floods can also result in significant property damage, dislocation and isolation of people.

For the purpose of classification, the Bureau of Meteorology divides floods into the following descriptive categories depending on their frequency and associated consequences:

- Minor flood: Occurs quite frequently, results in some inconvenience such as temporary closure of local and rural access roads and water over low level causeways and culverts;

- Moderate flood: Expected to occur every few years, low-lying areas affected, removal of livestock and/ or evacuation of some homes necessary, low-lying access roads and culvert and bridge structures submerged, generally minor to moderate impacts, some response action required;
- Major flood: Average Recurrence Interval (ARI) > 10 years, extensive areas affected including higher areas, towns and properties isolated, evacuations of many houses and business premises necessary, widespread flooding of rural areas, major disruptions to road and rail links, possible loss of life, major response and recovery action required.

Extreme flood: ARI > 100 years, large areas of developed and rural land severely flooded, severe to catastrophic impacts, likely loss of life, major response action, recovery may take years.

Whilst flooding causes inconvenience and some dislocation in Cairns on average about once every two/three years, it poses a relatively limited threat to people and buildings because urban development has largely been excluded from the most flood-prone areas of the Barron River delta. This exclusion reflects the community's experience of at least nine episodes of major flooding since the establishment of the Trinity Inlet settlement in 1876.

The loss of sugar cane and damage to roads and other infrastructure on the delta and along Freshwater Creek carries with it a significant economic loss. The most significant inconvenience caused by moderate to major flooding in the Barron River system is the isolation of the northern beachside suburbs from downtown Cairns, with its critical facilities such as hospitals and airport. The Cairns Western Arterial Road will be inundated in a Q50 flood or greater at sections of the road adjacent to Caravonica and Lake Placid. Refer to figure 7 below.

Road and rail access to Cairns can also be blocked from the south by flooding in the Mulgrave and Russell Rivers. A recent upgrade of the Mulgrave River bridge has improved southern road access to Cairns.

Limited flood mitigation works have been established, the main work being the levees that protect the airport. The flood warning system for the Barron River operated by the Bureau of Meteorology is very effective and provides residents in flood-prone areas with adequate time to prepare for flood and/or to evacuate if that is indicated. Formal land use planning constraints on development within the area likely to be affected by a flood with an average recurrence interval of 100 years have been in force since the early 1990s.

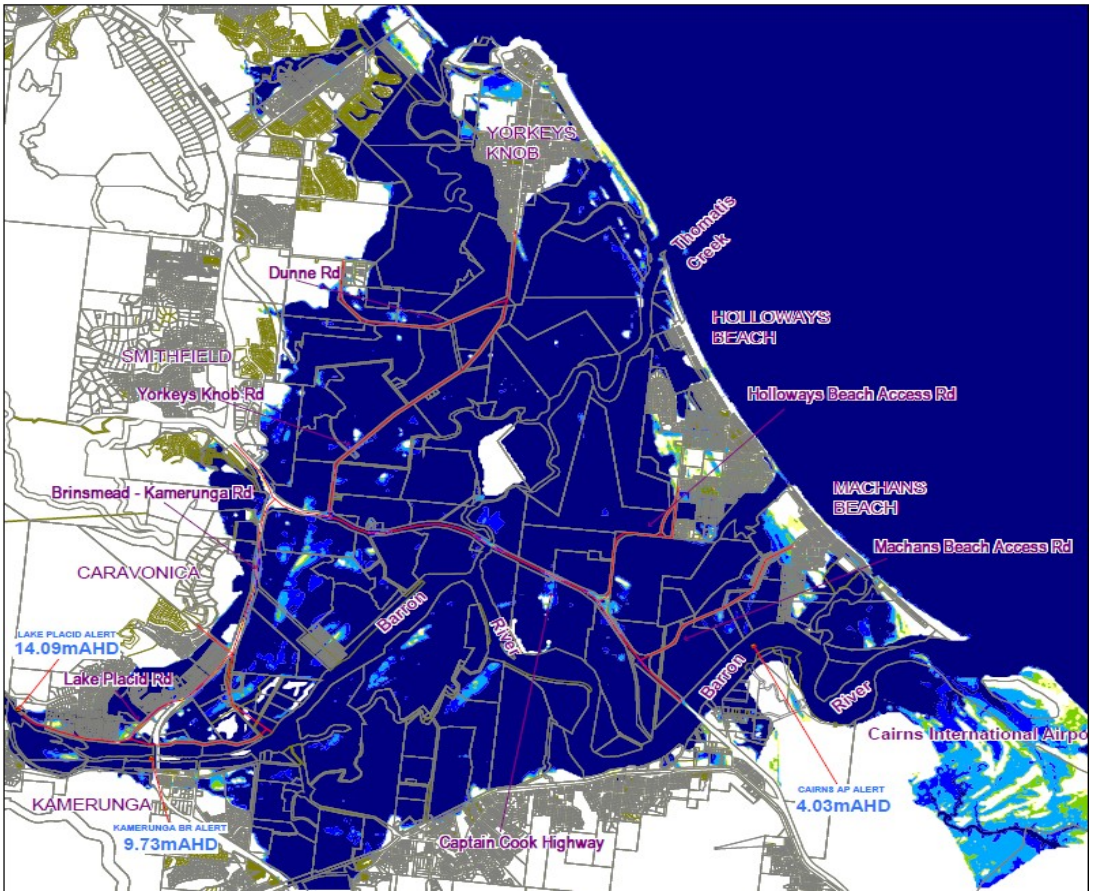
Other mitigation works in the CBD south catchment and in the Caravonica area have been undertaken since 2005.

Flash flooding in the other catchments, especially the streams that flow into Trinity Inlet, is a potentially significant problem. Not only are there significantly more properties exposed to urban drainage surcharge in the downtown area than there are on the Barron delta, but also the risk to life is significant because of the rapid onset of flash floods and the propensity for careless or foolish behaviour by some people in and around floodwaters.

The *Community Risk in Cairns* report assessed the number of buildings, length of roads and area of cane land in each of the Barron River delta suburbs which would be affected by Barron River flood scenarios of various annual exceedance probabilities (average recurrence intervals). The impact on these communities, emergency management issues, and key facilities affected are discussed in that report.

Subsequent to the *Community Risk in Cairns* report being prepared CRC has undertaken significant flood studies and associated mapping to identify inundation areas. Figure 12 below is indicative of the types of mapping products produced.

Figure 12: Q50 Flood Mapping for Barron River Delta



4.2.4 Landslides

Generally until recent events such as the Thredbo landslide there had been little public recognition that landslides were a significant threat to life in Australia. Where landslides occur, their physical impact is typically confined to a few properties or a short length of road or railway. Their effect, however, can be disturbing and disruptive and occasionally fatal.

Insurance policies in Australia do not normally cover landslide, and this can add to the anguish of property owners.

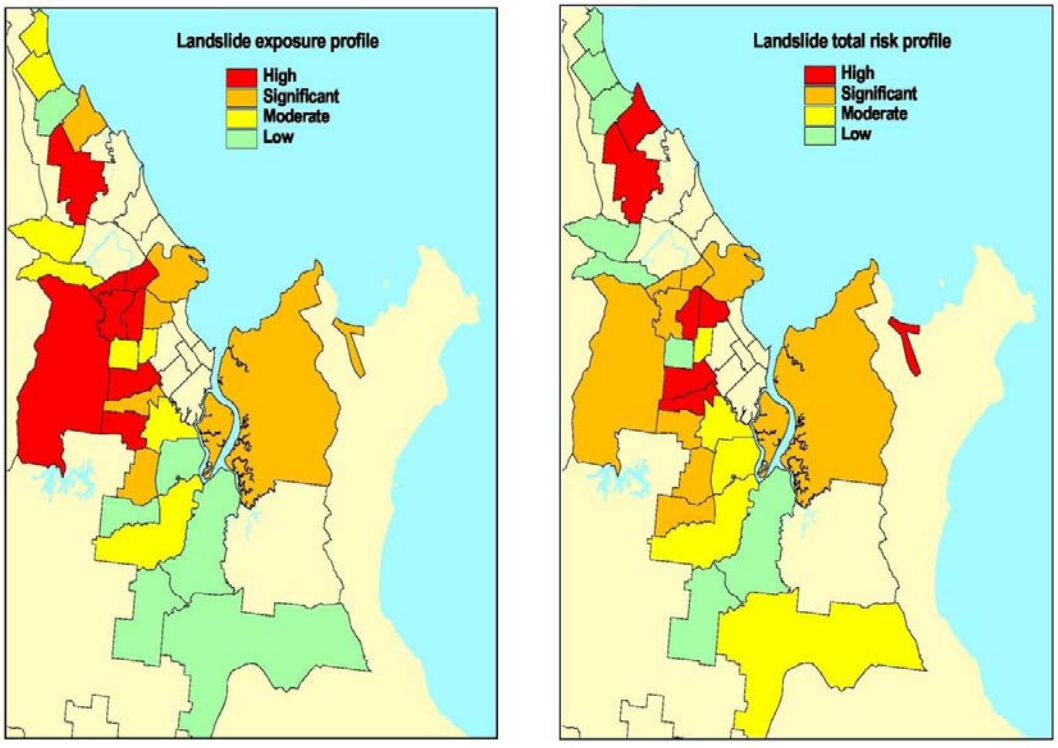
For Cairns, landslide has been, and remains, a significant risk, as evidenced by events such as the massive Ellis Beach debris flows that buried 10 km of the Captain Cook Highway in 1951, and the frequent impact on road and rail links to Kuranda and elsewhere. Recent wet seasons have seen significant repeated closures of the Captain Cook Highway to Port Douglas as well as the above referenced Kuranda Range impacts, closing the road for periods. Minor landslides occur in and around Cairns disrupting local traffic for short periods e.g. the Cairns West Arterial Road near Park Ridge.

Most landslides recorded in the Cairns area appear to be associated with disturbances of the natural surface by activities such as the construction of roads and the excavation of building sites. As development extends increasingly onto the hill slopes in areas such as the Freshwater valley, the risk of landslide impact will increase unless appropriate mitigation strategies and engineering design standards are adhered to. Experience over at least 70 years has demonstrated that flash flooding and/or debris flows in the Freshwater valley have the potential to severely dislocate the Cairns water supply.

The landslide study undertaken as part of the *Community Risk in Cairns* report was a quantitative landslide risk assessment carried out at a relatively broad reconnaissance level. The mapping below was developed however should not be interpreted, without more detailed geotechnical investigation, at the individual property level.

Figure 13 below show the profile of exposure to landslide and the total risk (based on community vulnerability). Again, similar mapping is not available for the old Douglas Shire local government area.

Figure 13: Cairns Landslide Profile



4.2.5 Wildfires

There is a broad variance in wildfire risk across Cairns.

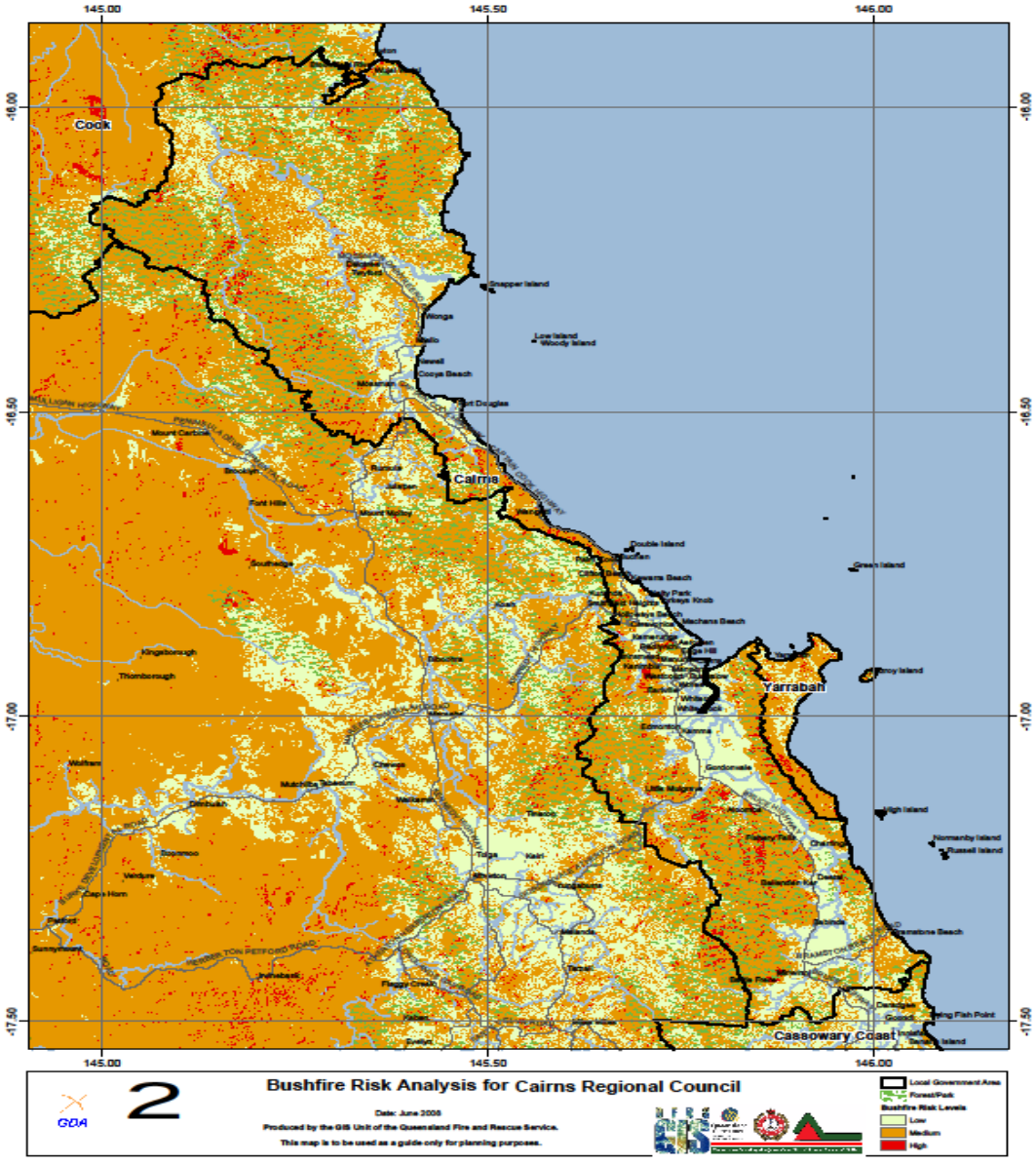
In the more built up areas of the city the risk is minimal due to the lack of vegetation. Moving out of the built up areas and into the more heavily treed hill slope areas the risk rises to medium risk in many areas to extreme risk in others.

During the drier moths it is not uncommon to observe bushfire in isolated areas throughout the local government area.

With the increase in development across the region it is quite important that where rural residential lots impinge into the bushlands appropriate risk analysis be conducted and mitigation strategies be applied to reduce the threat of bush fire.

Mapping of the bushfire risk across the local government area is contained in the planning schemes for Cairns Regional Council for each planning area. Figure 14 below shows a consolidated plan for Cairns.

Figure 14: Bushfire Risk Analysis for the Cairns Regional Council



4.2.6 Severe Thunderstorms

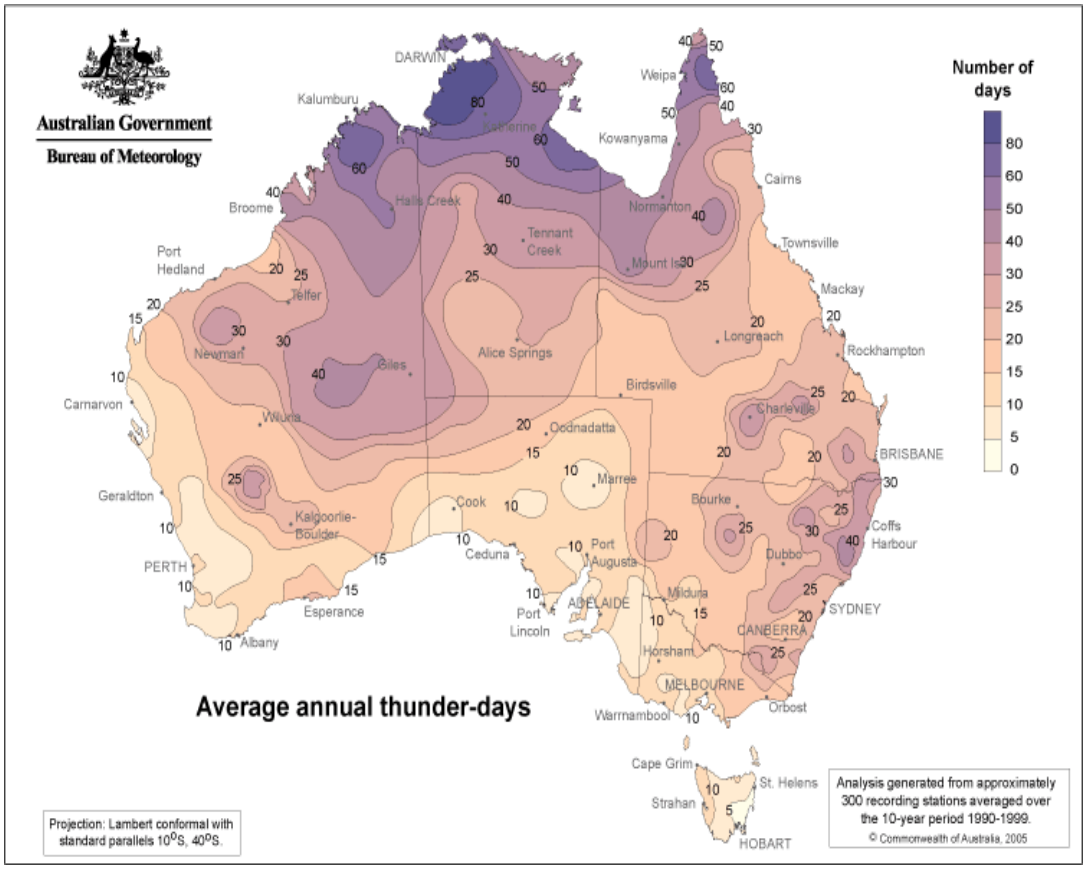
A thunderstorm is deemed severe if it produces one or a combination of the following events:

- flash flooding
- hailstones (2cm diameter or greater at the ground)

- destructive wind gusts (90km/ h or greater)
- tornado vortexes.

Thunderstorms that lack the intensity required to produce the above phenomena, although not regarded as severe, still have potential to cause death, injury and damage to infrastructure due to lightning strikes.

Figure 15: Average Annual Thunder Days in Australia



Impacts of storms are generally very isolated, with strong downdraughts and mini tornado vortices causing damage to small areas of trees or one or two buildings only. The duration of impact is generally limited to under an hour and the area of coverage is isolated. Impacts usually occur suddenly but the build-up of a severe storm is generally noticeable.

The sparse distribution of meteorological observation stations and population in Far North Queensland makes the compilation of information on the characteristics and frequency of severe thunderstorms difficult. The recording of such information is currently reliant on observations and the submission of reports from people who experience the thunderstorm.

The Cairns area is known to be subject to severe thunderstorms on a regular basis.

4.2.7 Earthquakes

An earthquake is a release of energy to the earth's surface that occurs when stresses stored in rocks are suddenly converted to horizontal, vertical and lateral

displacements. Stresses are created at the interfaces of the tectonic plates of the Earth's crust by plate movement and collision.

Vibrations in the forms of waves (seismic waves) are produced and travel outwards in all directions at up to 14 kilometres per second. The waves cause peak ground velocity or acceleration, which are horizontal, vertical and lateral ground motions.

The epicentre is the point on the Earth's surface directly above the source, or focus, of the earthquake. It is at this point on the surface that the effects of an earthquake will be most strongly felt.

Small, low energy faulting events that cause little or no damage to the environment and to man-made structures occur more frequently than do large severe events. They can last for only a few seconds or for minutes. After an initial impact, after-shocks usually of lesser intensity can impact in a series over a number of hours or days.

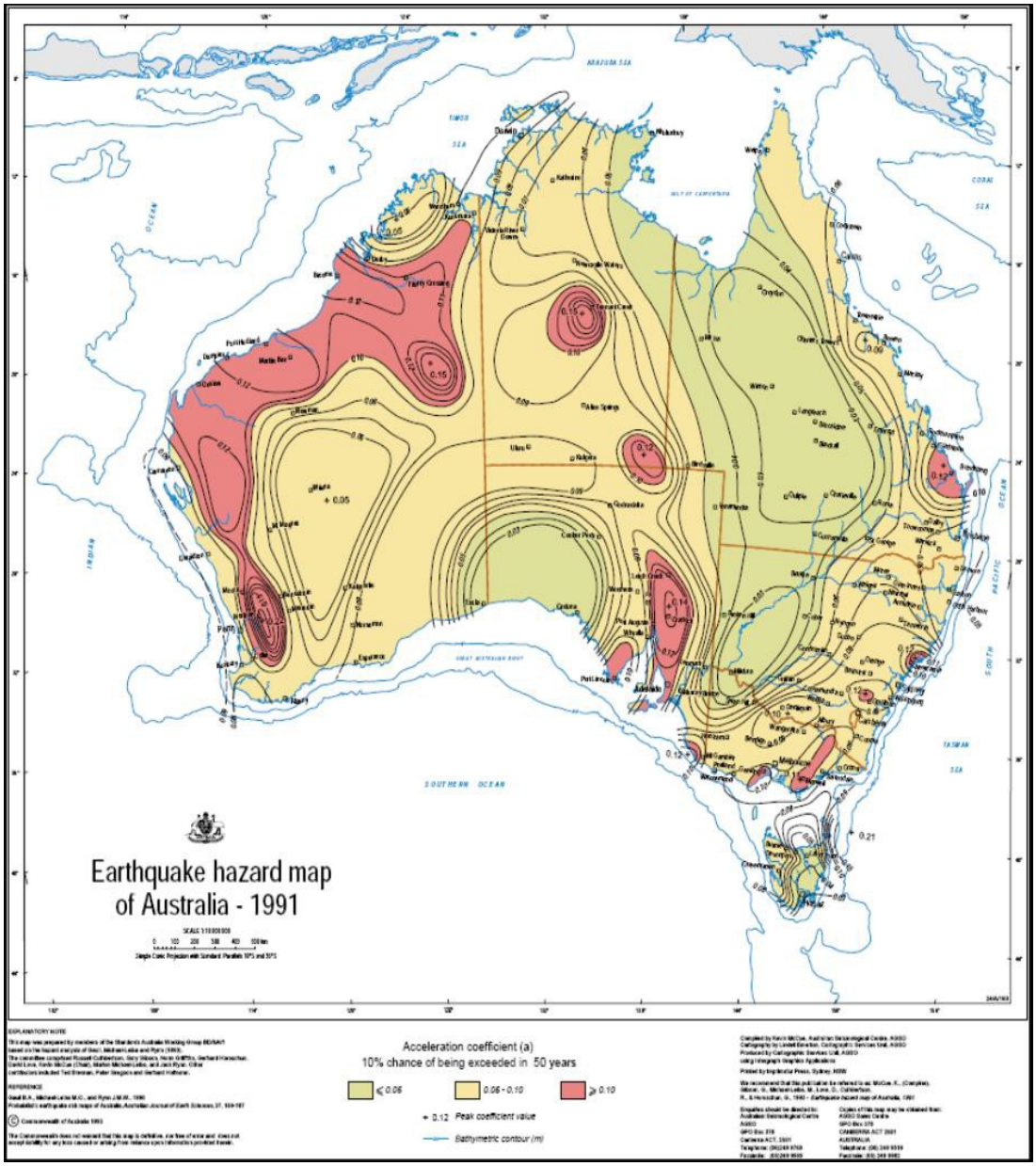
The Magnitude Scale is used to measure the magnitude of an earthquake. For every unit increase in magnitude on the Magnitude Scale, there is roughly a thirty-fold increase in the energy released by an earthquake, i.e. a magnitude 2 earthquake releases 30 times more energy than a magnitude 1 earthquake.

Table 8 displays the general effects of earthquakes of differing magnitudes on populated areas.

Table 31: General Effect of Earthquakes of Differing Magnitudes

Earthquake Magnitude	General Effect
2.0 – 3.4	May be felt within a few kilometres of the epicentre only otherwise recorded only by seismographs
3.5 – 4.2	Felt by some people who are indoors
4.3 – 4.8	Felt by many people and windows rattle
4.9 – 5.4	Felt by everyone, while dishes break and doors swing
5.5 – 6.1	Cause slight building damage with plaster cracking and bricks falling
6.2 – 6.9	Cause much building damage and houses move on their foundations
7.0 – 7.3	Cause serious damage with bridges twisting, walls fracturing, and many masonry buildings collapsing
7.4 – 7.9	Cause great damage and most buildings collapse
> 8.0	Cause total damage with waves seen on the ground surface and objects are thrown in the air
> 8.6	Unlikely to occur due to limited amount of stress that rocks can store before breaking

Figure 16: Australian Earthquake Hazard Map



The movement of the ground in an earthquake is seldom the direct cause of death or injury. Most casualties result from falling objects and debris resulting from damage to buildings and other infrastructure. The failure of man-made structures during an earthquake is due to the horizontal and vertical ground displacements caused by earthquake action.

People and infrastructure in large population centres are the most vulnerable to earthquake impacts. The effects of earthquakes on populated areas depend on factors including the distance from the earthquake epicentre, the type and profile of the soil on which infrastructure is situated, and the building construction of the area.

Only since 1993 for the whole of Australia, and previously since 1979 for specific locations in Australia, has earthquake loading for specific building types had to be considered. However, buildings designed in accordance with Australian Standards code requirements for design against wind loads initiated in the 70's and 80's will generally fare better than other buildings constructed prior to wind code requirements due to the provision of lateral bracing.

Generally, braced, low set timber framed houses will fare considerably better than a rigid, tall, heavy concrete or masonry buildings under earthquake loading. Fallen power lines are a hazard, as are fires that may be caused by broken gas lines, fuel reservoirs or by chemical spills, with the fire hazard amplified by broken water mains hindering fire-fighting efforts.

Earthquakes have not in the immediate past been a major threat in the Cairns area. *Recent* historical data exists in relation to tremors which have caused minor damage, but none has caused any great concern.

Notwithstanding, the existence of even a slightly volatile seismic environment acts as a prompt for maintaining situational awareness of the threat, and its possible consequences.

Table 32: The ten strongest recorded earthquakes in the environs of Cairns

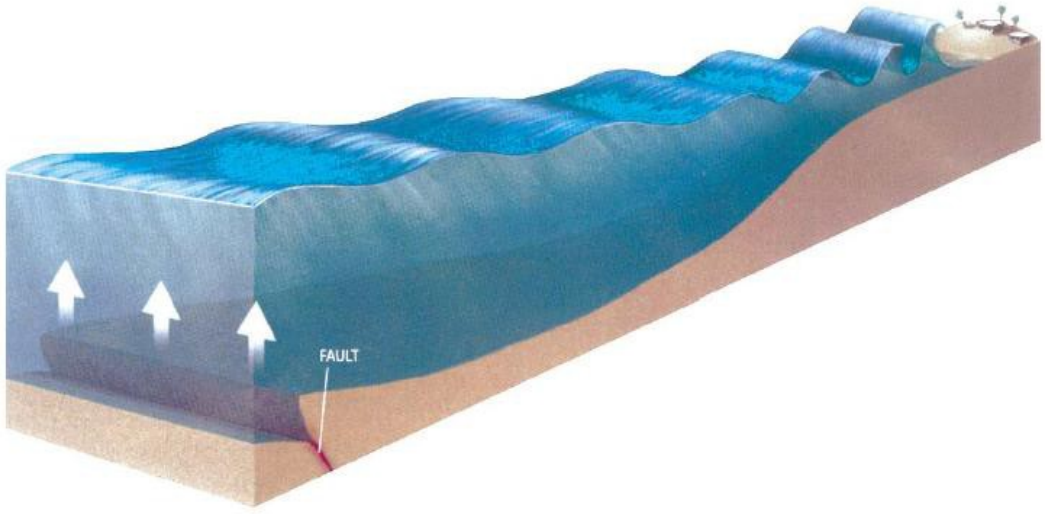
Date	Magnitude (Richter Scale)	Location
04 Sep 1994	4	18km NNW of Chillagoe
27 Feb 1961	3.7	15km N of Wrotham Park
15 Mar 2011	3.6	11km E of Russell Heads
06 Nov 1992	3.5	3 km S of Ravenshoe
11 Feb 1999	3.4	21km NE of Almaden
19 Jun 1950	3.2	1km ESE of Evelyn
20 Mar 2000	3.1	3.7km SE of Yungaburra
24 Jun 1961	2.9	25km SE of Ravenshoe
20 Aug 1993	2.9	35km SW of Wrotham Park
1 Dec 2013	2.8	27km N of Mareeba

4.2.8 Tsunamis

A Tsunami is a series of ocean waves that are generated by underwater disturbances, most commonly caused by earthquakes or landslides. Tsunami is a Japanese word meaning: harbour (tsu) and wave (nami). Tsunami's can travel across large tracts of ocean in relatively short periods of time and can range from a few centimetres to tens of metres in height. Waves can be a few minutes or over two hours apart. In most cases, the first Tsunami wave is not the largest. Subsequent waves, sometimes the fifth or sixth, can be many times larger.

Figure 17 below shows how a rupture with one tectonic plate slipping under another causes a Tsunami wave.

Figure 17: Causes of a Tsunami



In the deep ocean Tsunami waves have extremely long wavelengths. In comparison to wind-driven waves, Tsunami waves may have wavelengths up to hundreds of kilometres between wave crests. Tsunamis are therefore much more destructive than normal waves because the huge flooding body of water can continue to rush onto land for an extended period of time. This may be anything from a few minutes up to an hour, compared to seconds for wind-driven waves.

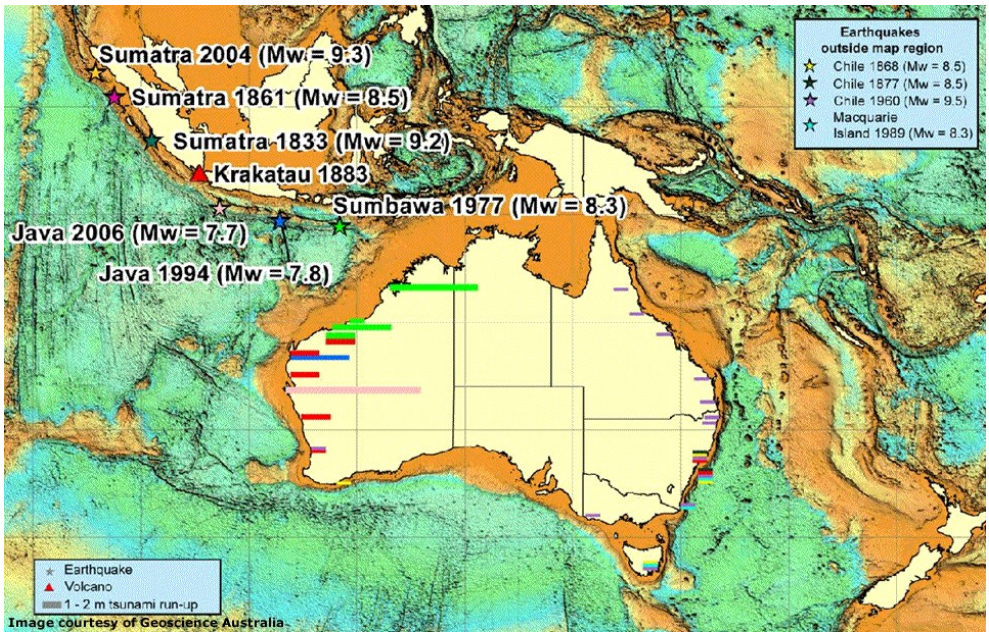
The impact of a Tsunami can vary widely. A small Tsunami may result in unusual tides or currents that can be dangerous to swimmers or cause damage to berthed boats. A large Tsunami can cause widespread flooding and destruction such as that seen off the west coast of Northern Sumatra on 26 December 2004. The south Java Tsunami (17 July 2006) was caused by a relatively small earthquake (magnitude 7.7) that generated a 0.5 metre Tsunami. This Tsunami inundated the coast by up to four meters in some places, killing over 600 people. Large Tsunamis cause strong rips and currents in oceans around the world for up to a few days after the initiating earthquake.

The Australian coastline has experienced tsunami through recorded history, as evidenced by shell, coral and boulder deposits found well above sea level and several kilometres inland. Most tsunami have been marine based threats and have presented little threat of land inundation to our coastal communities. Despite this, unusual rips or currents caused by even relatively small tsunami can be dangerous to marine users and boats.

Minor Tsunami's are recorded about every two years in Eastern Australia, but most are small and present little threat to coastal communities. The largest Tsunami recorded off the east coast of Australia occurred in 1960 as a result of an earthquake in the sea off Chile. The event created waves of approximately 1 metre high.

Figure 18 shows a map of the location of tsunami which have impacted on the Australian coastline. Each event is colour coded and relates to actual undersea earthquakes and volcanic events. The length of each line indicates a tsunami impact showing the known tsunami **run-up** height. The 2006 Steep Point event has the highest run-up height recorded and is indicated by the pink line on the image.

Figure 18 Tsunami Map of Australia



The occurrence of a tsunami impacting on Cairns is real however is considered a 'relatively low" hazard level occurrence. Significant areas of Cairns urban areas are below RL 6 which can be considered as "at risk" areas. CRC has produced a Tsunami Evacuation Guide posted on its website for public information.

4.3 Cost of the Community of Disaster Events

4.3.3 Tangible Costs

In the years 2008 to 2013, recorded disaster management costs (Natural Disaster Relief and Recovery Arrangements) to Cairns Regional Council totaled approximately $51,743,059 for damage to local government assets and for counter-disaster operational expenses.

4.3.4 Intangible Costs

While extreme events are relatively rare, when they do occur they can have a major impact on the health outcomes of the community. Obviously, such events can claim many lives and disrupt the provision of basic services, but they can also have other more subtle effects on the mental health of the population.

For example, following Cyclone Larry in 2006 residents in the affected region reported experiencing a number of emotional highs and lows. Sleep disturbance, lack of concentration and forgetfulness have also been reported as side effects of the disaster. Some of these symptoms may be associated with Post Traumatic Stress Disorder and many residents also reported feeling anxious as the next cyclone season approached.

PART 5 RISK ASSESSMENT PROCEDURE

5.1 Risk Assessment Methodology

Risk assessment is a process of evaluating the source and possible consequence of the risk, and the likelihood that those consequences will occur. This is achieved through the Risk Classification Matrix below, where the consequence of the risk is mapped against the likelihood that the risk will occur, which provides a risk classification level – low, medium, high or extreme. An explanation of the criteria for risk likelihood descriptors and risk consequence descriptors appears in the following tables. The risk assessment of the potential for disaster informs Council's disaster management arrangements. Council's risk management processes are based on Australian Standard AS/NZS ISO 31000:2009.

The following risk assessment tables for natural and non-natural disasters takes a regional approach toward risks and considers both the urbanized areas of the city along with the rural southern corridor. It is recognised that Cairns City is a community of communities, and the risks facing mainland hinterland regions will differ in severity from those of mainland coastal regions which will differ again from those facing the offshore islands.

Each of the natural hazards identified has an associated element of risk to the people, social structures, buildings, engineering infrastructure, critical facilities, employment, business and industry and environment of the Cairns region. This risk is defined by the likelihood and consequences of the impact of the natural hazard on these vulnerable elements within the community.

For each risk, analysis will be undertaken to estimate the level of risk and to provide input for evaluation and development of risk treatment options. Risk analysis will be undertaken using the following tables and explanatory notes, which provided a structured ranking system allowing risks for each hazard to be prioritised.

Table 33, the 'Risk Classification Matrix', uses the elements of, 'Likelihood', and 'Consequences', to determine the 'Level of Risk'.

Once the risks are rated and tabulated a prioritised listing of the 'extreme risks' through to the 'low risks' will allow the necessity and priority of risk treatment options to be decided.

Table 33: Risk Classification Matrix

		CONSEQUENCES				
LIKELIHOOD		Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Almost Certain	A	Medium	Medium	High	Extreme	Extreme
Likely	B	Low	Medium	High	High	Extreme
Possible	C	Low	Low	Medium	High	High
Unlikely	D	Low	Low	Medium	Medium	High
Rare	E	Low	Low	Low	Medium	Medium
Very Rare	F	Low	Low	Low	Low	Medium
Almost Incredible	G	Low	Low	Low	Low	Low

Table 34: Likelihood

Likelihood level	Frequency	Average Recurrence Interval
A - Almost Certain	Once or more per year	< 3 years
B - Likely	Once per ten years	3 – 30 years
C - Possible	Once per hundred years	31– 300 years
D - Unlikely	Once per thousand years	301 – 3,000 years
E - Rare	Once per ten thousand years	3,001 – 30,000 years
F - Very Rare	Once per hundred thousand years	30,001 – 300,000 years
G - Almost Incredible	Less than once per million years	> 300,000 years

Risk Assessment for Natural Disasters

EVENT	CONSEQUENCE	LIKELIHOOD	RISK RATING
Wildfire	Moderate	Likely	**High (H-30)**
Severe Storms	Moderate	Almost Certain	**High (H-30)**
East Coast/Tropical Low	Moderate	Likely	**High (H-24)**
Cyclone	Major	Almost Certain	**Extreme (E-32)**
Earthquake	Major	Possible	**High (H-24)**
Storm Surge	Major	Likely	**High (H-24)**
Dam Overflow- Moody/McKinnon Ck	Moderate	Possible	**Medium (M-16)**
Heat Wave	Moderate	Possible	**Medium (M-12)**
Prolonged Flooding	Moderate	Unlikely	**Medium (M-12)**
Tsunami	Major	Rare	**Medium (M-8)**
Dam Failure – Copperlode Dam	Major	Very Rare	**Low (L-8)**
Landslip	Low	Unlikely	**Low (L-8)**

Risk Assessment for Non-natural Disasters

EVENT	CONSEQUENCE	LIKELIHOOD	RISK RATING
Marine Oil Spill	Major	Possible	**High (H-24)**
Pandemic	Major	Possible	**High (H-24)**
Major Industrial Accident	Moderate	Possible	**Medium (M-18)**
Major Utilities/Infrastructure Failure	Moderate	Possible	**Medium (M-18)**
Major Ground Transport Accident	Moderate	Possible	**Medium (M-18)**
Major Commercial Shipping Accident	Moderate	Possible	**Medium (M-18)**
Aircraft Crash	Major	Unlikely	**Medium (M-16)**
Hazardous Material Accident (HAZMAT)	Major	Unlikely	**Medium (M-16)**
Building Collapse	Major	Rare	**Medium (M-8)**

Table 35: – Consequence table

Consequence Level	People	Environment	Economy	Public Administration	Social Setting	Infrastructure
Catastrophic	Widespread multiple loss of life (mortality > 1 in ten thousand), health system unable to cope, displacement of people beyond ability to cope.	Widespread severe impairment or loss of ecosystem functions across species and landscapes, irrecoverable environmental damage.	Unrecoverable financial loss > 3% of the government sector's revenues, asset destruction across industry sectors leading to widespread business failures and loss of employment	Governing body unable to manage the event, disordered public administration without effective functioning, public unrest, media coverage beyond region or jurisdiction	Community unable to support itself, widespread loss of objects of cultural significance, impacts beyond emotional and psychological capacity in all parts of the community	Long-term failure of significant infrastructure and service delivery affecting all parts of the community, ongoing external support at large scale required.
Major	Multiple loss of life (mortality >1 in one hundred thousand), health system over-stressed, large numbers of displaced people (more than 2 hours)	Severe impairment or loss of ecosystem functions affecting many species or landscapes, progressive environmental damage	Financial loss 1.3% of the government sector's revenues requiring major changes in business strategy to (party) cover loss, significant disruptions across industry sectors leading to multiple business failures and loss of	Governing body absorbed with managing the event, public administration struggles to provide merely critical services, loss of public confidence in governance, media coverage beyond region or jurisdiction	Reduced quality of life within community, significant loss or damage to objects of cultural significance, impacts beyond emotional and psychological capacity in large parts of the community	Mid-to-long term failure of significant infrastructure and service delivery affecting large parts of the community, initial external support require.

Consequence Level	People	Environment	Economy	Public Administration	Social Setting	Infrastructure
			employment			
Moderate	Isolated cases of loss of life (mortality > than one in one million), health system operating at maximum capacity, isolated cases of displacement of people (less than 24 hours)	Isolated but significant cases of impairment or loss of ecosystem functions, intensive efforts for recovery required	Financial loss 0.1-0.3% of the government sector's revenues requiring adjustments to business strategy to cover loss, disruptions to selected industry sectors leading to isolated cases of business failure and multiple loss of employment	Governing body manages the event with considerable diversion from policy, public administration functions limited by focus on critical services, widespread public protests, medical coverage within region or jurisdiction	Ongoing reduced services within community, permanent damage to objects of cultural significance, impacts beyond emotional and psychological capacity in some parts of the community	Mid-term failure of (significant) infrastructure and service delivery affecting some parts of the community, widespread inconveniences
Minor	Isolated cases of serious injuries, health system operating within parameters	Isolated cases of environmental damage, one-off recovery effects required	Financial loss 0.1 -0.3% of the government sector's revenues requiring activation of reserves to cover loss, disruptions at business level leading to isolated cases of loss of	Governing body manages the event under emergency regime, public administration functions with some disturbances, isolated expressions of public concern, media coverage within region or	Isolated and temporary cases of reduced services within community, repairable damage to objects of cultural significance, impacts within emotional and psychological capacity of the community	Isolated cases of short to mid-term failure of infrastructure and service delivery, localised inconveniences

Consequence Level	People	Environment	Economy	Public Administration	Social Setting	Infrastructure
			employment	jurisdiction		
Insignificant	Near misses or minor injuries, no reliance on health system	Near misses or incidents without environmental damage, no recovery efforts required	Financial loss >0.1% of the government sector's revenues to be managed within standard financial provisions, inconsequential disruptions at business level	Governing body manages the event within normal parameters, public administration functions without disturbances, public confidence in governance, no media attention	Inconsequential short term reduction of services, no damage to objects of cultural significance, no adverse emotional and psychological impacts	Inconsequential short-term failure of infrastructure and service delivery, no disruption to the public services

Table 36: – Level of Risk

Descriptor	Description
Extreme Risk	Immediate action required
High Risk	Senior management attention required
Moderate Risk	Management responsibility must be specified
Low Risk	Managed by routine procedures

Consequences are to be considered across the following categories:

People – Relates to the direct impacts of the emergency on the physical health of people / individuals and emergency services' (i.e. health system) ability to manage.

Environment – Relates to the impacts of the emergency and its effects on the ecosystem of the area, including flora and fauna

Economy – Relates to the economic impact of the emergency on the governing body as reported in the annual operating statement for the relevant jurisdiction, and industry sectors as defined by the Australian Bureau of Statistics

Public Administration – Relates to the impacts of the emergency on the governing body's ability to govern

Social Setting – Relates to the impacts of the emergency on society and its social fabric, including its cultural heritage, resilience of the community

Infrastructure – Relates to the impacts of the emergency on the area's infrastructure/lifelines/utilities and its ability to service the community

- Long term failure = Repairs will take longer than 6 months
- Mid to long term failure = Repairs may be undertaken in 3 to 6 months
- Mid-term failure = Repairs may be undertaken in 1 to 3 months
- Short to mid-term failure = Repairs may be undertaken in 1 week to 1 month

5.2 Risk Evaluation

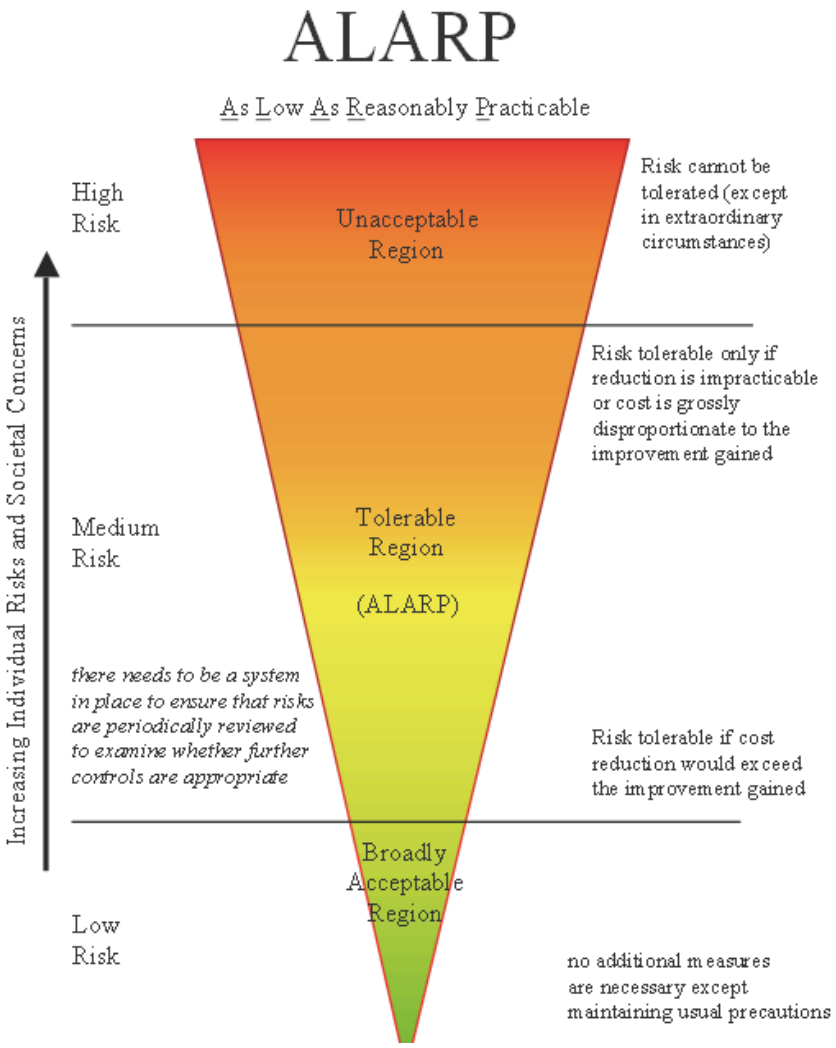
Under the National Emergency Risk Assessment Guidelines (NERAG) risk evaluation is defined as the process of comparing results of risk analysis with risk criteria to determine whether the risk and its magnitude is acceptable or tolerable. Its purpose is to assist decision-making on which risks require further detailed analysis and treatment, and the requirement to implement measures to modify the risks.

The NERAG guidelines groups risks as follows:

- **Generally Intolerable**: Risks that require risk treatment measures whatever their costs, or elimination of the risk.
- **Tolerable subject to ALARP** (As Low As Reasonably Practicable): Risks that are considered tolerable because they are as low as reasonably practicable.
- **Broadly Acceptable**: Risks that are so small that no additional risk treatment measures are required and should be managed by existing systems.

The ALARP principle is represented in the following figure:

Figure 19: ALARP Model



The factors that influence which category a risk falls in are discussed below:

The following risk consequences are considered to be intolerable:

- Fatalities;
- large numbers of persons severely injured and/ or afflicted by illness;
- large numbers of persons requiring hospitalisation for prolonged periods;
- widespread devastation to community infrastructure and facilities;
- road, rail and aerodrome closures for greater than 2 days;
- medium term closures of arterial and access road network (wet season period – up to three to four days);
- large scale and long term damage to environment;

- huge economic loss undermining future community viability;
- extensive personal and financial support necessary; and
- community unable to function without large scale and long term support.

The following risk consequences are considered to be tolerable subject to ALARP:

- some hospitalisation and medical treatment required;
- some damage to community infrastructure;
- short term displacement of people (i.e. 24 hours);
- short term closures of road, rail and aerodrome (i.e. less than 2 days);
- personal support satisfied through local arrangements;
- localised damage which is rectified by routine arrangements;
- community functioning fairly normally with some inconvenience;
- some impact on environment with no long term effect; and
- some financial loss resulting in short term impacts on resident's quality of life.

Risks will be categorised differently depending on what degree of confidence is placed in the ratings that have been determined in the preceding process.

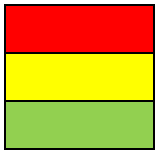
Confidence levels are generally assessed against three criteria being Data/Information, Team Knowledge and Agreement as defined in the following table.

Table 37: Confidence Levels

Confidence Criteria	Low Confidence	Moderate Confidence	High Confidence
Data / Information	Neither community nor hazard specific; anecdotal only	Community or hazard specific; validated historical or scientific	Community and hazard specific; validated historical and scientific
Team Knowledge	Neither hazard nor process (risk assessment) specific	Hazard or process specific	Hazard and process specific
Agreement	Neither on interpretations nor on rankings	On interpretations or ratings	On interpretations and ratings

The use of confidence levels in determining the tolerability of the risk utilises the tables below. Utilising the confidence levels, and applying them to the tolerability matrices below;

Table 38: Tolerability Matrices



Intolerable

Tolerable subject to ALARP

Broadly Acceptable

High Confidence Level

LIKELIHOOD	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain					
Likely					
Possible					
Unlikely					
Rare					
Very Rare					
Almost Incredible					

Moderate Confidence Level

LIKELIHOOD	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain					
Likely					
Possible					
Unlikely					
Rare					
Very Rare					
Almost Incredible					

Low Confidence Level

LIKELIHOOD	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain					
Likely					
Possible					
Unlikely					
Rare					
Very Rare					
Almost Incredible					

Once risk ratings and tolerability levels have been determined, treatment strategies need to be considered.

It is entirely appropriate and accepted practice that risks may be tolerated, provided that the risks are known and managed. The risk evaluation and treatment needs to consider whether any control implementation or improvement opportunity would shift the risk rating, hence indicating key areas and options for risk treatment. For this, assuming that the control implementation or improvement has been completed and satisfies the adequacy requirements, each risk is re-assigned qualitative consequence and likelihood ratings to determine the level of residual risk.

PART 6 RISK ASSESSMENT PRODUCTS

6.1 Risk Analysis and Evaluation Table

Using the procedure outlined in Section 5.0, a risk register was developed and is attached to the LDMP at Appendices J.

Various risk statements were developed and analysed. Each risk statement was made as specific as possible to limit the potential for it to overlap multiple impact categories. The risk statements developed were listed in a table and are presented with a risk rating for each of the natural hazard sources discussed in Section 3 of this plan.

The Summary of Risk Ratings table is attached to the plan at Appendices F.

6.2 Risk Evaluation Table

After analysis, the risk statements were evaluated to determine whether they were intolerable, tolerable subject to ALARP or broadly acceptable as referenced in Section 4.

A summary of the risk evaluation results is provided in the table attached at Appendices G.

6.3 Risk Treatment Strategies

Risk Treatment Option summaries are provided at Appendix H.

Risk Treatment Evaluation, Responsible Agency for Treatment, Consequential Actions and Implementation Timeframe are included in the register at Appendix I.

State Government agency roles and responsibilities, including primary responsibility against disaster management functions, are outlined within the SDMP, which can also be accessed at www.disaster.qld.gov.au/publications.

6.4 Residual Risk

Residual risk is the disaster risk that remains even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained. The presence of residual risk implies a continuing need to develop and support effective capacities for emergency services, preparedness, response and recovery, together with socio-economic policies such as safety nets and risk transfer mechanisms, as part of a holistic approach.

As the implementation of respective natural disaster mitigation plans is an ongoing process, each residual risk will be analysed according to monitoring and review process principles and in terms of likelihood and consequence.

One outcome of this process may be the decision to partially mitigate and/or transfer the risks. The monitoring and review process also provides for the continuation of studies and investigations that may yield associated strategies for residual risk reduction or removal.

The Residual Risk Register is attached at Appendix J.

PART 7 IDENTIFICATION OF OTHER HAZARDS

A Hazard is defined as a source of potential harm, or a situation with a potential to cause loss (Emergency Management Australia 2004). The following identifies the major hazards that may pose a risk to the Cairns Region (Note: Hazards are listed in alphabetical order).

7.1 Exotic Animal or Plant Disease

There are various types of animals in existence in the Region, so the possibility of an occurrence of exotic animal disease is always present. There are holdings of animals susceptible to an outbreak of disease, in the region. Disease source, identification, tracking and quarantine are a major issue once livestock has reached a focal point.

Australia is currently free of the world's worst animal diseases such as foot-and-mouth disease and avian influenza, but has been recently impacted by other diseases, such as Equine Influenza and Australian bat lyssavirus.

Australia‘s agricultural industries are fortunate to experience a relative freedom from many pests that adversely affect plant industries worldwide. Maintaining this pest and disease freedom is vital for the ongoing productivity, sustainability and quality of Australia‘s agricultural industries. The introduction of pests can cause serious production losses to plant industries, jeopardise exports of plants and plant material, and have a significant impact on the environment and economy.

Far North Queensland was affected by papaya fruit fly from 1995 to 1998. This affected a large range of fruit and vegetable crops. Over 700 growers were affected within a 15,000 square kilometre quarantine area. The incursion cost Queensland industry around $110 million in lost trade, control, treatment and eradication. The Australian Quarantine and Inspection Service (AQIS), through the Northern Australian Quarantine Strategy maintain a system of fruit fly traps across northern Australia.

March 2015 saw a number of cases of Panama topical race 4 in North Queensland (Tully and Mareeba) investigated and confirmed by Biosecurity Qld. Tropical race 4 strain poses a most serious threat to the commercial banana industry as the disease can survive in the soil for as long as 30 years and there is no known cultural or chemical cure; disease prevention is the best strategy.

In the event of an outbreak of exotic animal or plant disease immediate implementation of QPlan (DPI plan of action) would be required and may necessitate the provision of assistance from local resources

7.2 Explosion

The occurrence of a major explosion is obviously unpredictable however has a high probability and may occur in some form at any time. The locations at risk are the various industrial enterprises, storage of liquid petroleum gas (LPG) containers of

various sizes, bulk depots of oils and petrol, motor service stations and similar establishments throughout the region.

Potential explosion of road tankers of petrol and gas is likely to be confined to the major traffic routes and the railways. Casualties would be likely and depending on location of the event, evacuations may be required.

7.3 Hazardous Material Incidents (Including Oil spills)

Spills of hydrocarbons and chemical substances can seriously affect Cairns infrastructure systems and produce harmful conditions to the natural environment.

Land based Incidents
Many hazardous materials of varying types are transported by road and rail within and through the Cairns Region. For this reason the potential for an incident of this type is ever present. Queensland Railways include this risk in their operations plan.

Although managed under dangerous goods legislation the potential for an incident involving dangerous goods and chemicals is moderate. Areas most likely to be affected include industrial areas of the region and major transport corridors and evacuations may be required if such an incident were to occur.

Queensland Fire & Rescue Service would control the incident with assistance from other agencies including the Chemical Hazards & Emergency Management Unit (CHEM Unit), local government and SES. Assistance will vary depending on the location and severity of an incident.

Water based Incidents
The possibility of a hazardous material or oil spill into the storm water system within Cairns or other major urban areas, and the Barron, Mulgrave and Russell Rivers is always present however the probability of such an occurrence is low. Such an incident would be relatively small and managed by QFRS with assistance from Cairns Regional Council in terms of clean up etc. The Environmental Protection Agency may also be involved.

The potential for oil/fuel spills in Trinity Inlet is another possibility and has occurred before. Maritime Safety Queensland (MSQ), Department of Transport and Main Roads (TMR), is the lead agency in responding to such incidents. The Queensland Coastal Contingency Action Plan (QCCAP) outlines prevention, preparation, response and recovery arrangements for ship-sourced marine pollution incidents (oil and/or chemical spills).

TMR and the Local Government Association of Queensland have signed a protocol agreement to facilitate ongoing cooperation. MSQ, as the combat agency, may seek council's assistance during a significant marine pollution incident. The 'Port of Cairns First Strike Oil Spill Response Plan', a supplement to the QCCAP, lists roles and responsibilities for local marine incidents.

Such an incident would be the responsibility of “Ports North and/or Queensland Transport Department under the Queensland Coastal Contingency Action Plan. Local resources may be called upon to assist.

7.4 Influenza Pandemic

Since avian influenza broke out in late 2003, the World Health Organisation (WHO) has warned that, should the virus mutate and be easily transferred from human to human, the world could be facing an influenza pandemic with significant consequences.

An influenza pandemic is a disease outbreak that occurs when:

- A new strain of influenza virus emerges to which no-one is immune;
- The virus causes disease in humans; and
- The virus is easily spread between humans.

In the absence of immunity, a new influenza strain can rapidly spread across the globe, causing epidemics or pandemics, infecting large numbers of people. The risk of an outbreak of disease throughout the population could cause the health system to be taxed to its limits and may involve the isolation and quarantine of large numbers of people for a protracted period.

The Influenza Pandemic of 2009 H1N1 (commonly known as swine flu) provided an example of how quickly a pandemic can travel across the world, and affect millions of people. The influenza strain that is still causing some concern is named H5N1 (also known as avian influenza or bird flu). At present a new strain, H7N9 Avian Influenza, is being monitored in China where there has already been fatalities by transmission to humans.

The outbreak of an epidemic or pandemic would overwhelm the medical resources of the region, and given that the impacted area may very well be at a state-wide level, there would be minimal likelihood of external assistance.

Queensland Health are the lead agency in such an event and could require support from various organizations including local government depending on the severity and spread of the disease.

The Australian Health Management Plan for Pandemic Influenza was released on 30 May 2006 (www.health.gov.au/pandemic).

7.5 Medical Epidemics and Infectious Diseases

With the possibility of large numbers of overseas tourists visiting the Region, either in residence, at resorts or in transit to other locations, the likelihood of the introduction of an infectious disease is a distinct possibility.

A notable diseases of concern is dengue fever which is a viral infection transmitted by the mosquito. Dengue is not endemic (ie. naturally occurring in north Queensland). The dengue mosquito is common in north Queensland and outbreaks can occur when the virus is transmitted to the local mosquito population in north Queensland by infected international travellers or residents returning home from overseas.

Dengue is endemic in over 100 countries worldwide and is found primarily in urban settings in the tropics. Between 50 and 100 million cases of dengue are reported around the world each year and over 2.5 billion people are at risk of infection. Several hundred thousand dengue cases each year result in dengue hemorrhagic fever which usually affects children under 15 years of age. The average fatality rate with dengue hemorrhagic fever is 5%.

Ebola virus disease (EVD) is a serious and often fatal disease caused by the Ebola virus. EVD was previously called Ebola hemorrhagic fever and there are several strains of the virus. The outbreak of EVD in Guinea, Liberia and Sierra Leone (West Africa) has led to more than 10,000 cases and 4800 deaths (cases continue to occur). The outbreak in West Africa is the most serious outbreak of EVD in recorded history.

Queensland Health is prepared to identify and respond to any suspected cases of EVD and prevent transmission should a case occur. Also, there are systems in place to ensure Queensland Health is notified immediately if anyone entering Australia from an affected country reports exposure to EVD and/or is showing symptoms of EVD.

Queensland Health are the lead agency should such an event occur and could require support from various organisation including local government depending on the severity and spread of the disease

7.6 Major Road/Rail Accidents (Including Bus)

The need for the Local Disaster Management Group to become involved in a road accident would probably only be occasioned by a significant accident involving a tourist coach, semi-trailer or the like and would be for welfare requirements.

With resort development on the Far North Tropical Coast and close lying islands of the Great Barrier Reef, many tourist coaches traverse the roads from Cairns to the Cape Tribulation on the Cook highway as well as south along the Bruce Highway.

The main northern rail route passes through the southern part of the Region with a terminus at Cairns. The Kuranda Scenic railway operates most days out of Cairns. There is also a network of sugar cane train tracks throughout the region. This means that there are many rural and urban railway crossings including several inner city intersections. The potential for a major rail disaster exists in the event of an accident, especially if a train is carrying dangerous goods. Residences and business houses close to rail lines, railway stations, goods yards, shunting areas, industrial areas and diesel sheds could be affected by a rail disaster.

Queensland Rail has its own emergency management plans for any accidents on the rail network.

7.7 Terrorism

The September 11, Bali bombings and Madrid bombings have placed terrorism on the agenda for all levels of government. The likelihood of an event occurring is somewhat unknown however the Cairns Region regularly hosts high profile events 2014 G20 Financial Ministers Summit}. It is important that facilities are assessed and measures taken in relation to security. Casualties could be anticipated in the event of a terrorist activity and may range from a few to hundreds.

Potential targets include but are not limited to:

- Mass gatherings
- Hazardous storage sites
- Transport hubs and corridors
- Critical & essential infrastructure i.e. water supply, telephone system, electricity infrastructure

The Queensland Police Service is the responsible agency and may require support from various Local, State & Federal agencies depending on the severity of the incident.

7.8 Climate Change

While climate change is not in itself a hazard, it has the potential to affect the frequency and intensity of severe weather events.

Projections for the Far North Queensland region include a slight decline in rainfall with increasing temperature and evaporation, in conjunction with more extreme climate events and sea-level rise. The temperature projections for inaction on climate change suggest a temperature increase well outside the range of temperatures ever experienced over the last 50 years. The projections for temperature and number of hot days are in direct proportion. (Source: *Climate Change in Far North Queensland - Queensland Office of Climate Change)*

The Cairns Region is particularly susceptible and vulnerable to the impacts of climate change as changes in temperature or rainfall could have significant impacts on the natural resource assets of the region and other habitation aspects as most of the population centres in the region are located along the coastal strip. People will also be affected, as the rate of heat stress and heat-related health problems increases and increased risk exposure to catastrophic events, such as cyclones and flooding endanger will increasingly endanger lives and property.

Table 39 Overview of climate projections

2030 **medium emissions scenario**	**2050** **low and high emissions scenarios**	**2070** **low and high emissions scenarios**
Annual and seasonal temperature: Annual mean temperature is projected to increase by 0.9 °C. There is little variation in	**Annual and seasonal temperature:** Annual temperature will increase by 1.1 °C and 1.8 °C under the low and high emissions scenarios respectively. There is little	**Annual and seasonal temperature:** Annual temperature is projected to increase by 1.5 °C and 2.8 °C under the low and high emissions scenarios

projections across the seasons. **Annual and seasonal rainfall:** Annual rainfall is projected to decrease by one per cent (-13 mm). The largest seasonal decrease of five per cent (-7 mm) is projected for spring. **Annual and seasonal potential evaporation:** Across all seasons the annual 'best estimate' increase is projected to be around three per cent (60 mm), with some models projecting up to a five per cent increase in autumn (21 mm), summer (27 mm) and winter (20 mm).	variation in projections across the seasons. **Annual and seasonal rainfall:** Annual rainfall is projected to decrease by one per cent (-13 mm) and two per cent (-25 mm) under the low and high emissions scenarios respectively. The largest seasonal decrease of 10 per cent (-13 mm) under the high emissions scenario is projected for spring. **Annual and seasonal potential evaporation:** Under a high emissions scenario an increase in annual potential evaporation of up to nine per cent (180 mm) is projected with the best estimate being six per cent (120 mm). Summer is projected to have the greatest increase of up to 11 per cent (58 mm).	respectively. There is little variation in projections across the seasons. **Annual and seasonal rainfall:** Annual rainfall is projected to decrease by two per cent (-25 mm) and three per cent (-38 mm) under the low and high emissions scenarios respectively. The largest seasonal decrease under a high emissions scenario of 16 per cent (-21 mm) is projected for spring. **Annual and seasonal potential evaporation:** Under a high emissions scenario, annual potential evaporation is projected to increase by as much as 15 per cent (300 mm). Autumn, summer and winter are projected to be the seasons most impacted with increases up to 17 per cent (73 mm, 90 mm and 67 mm respectively) in some models.

There has been minimal change in the average annual temperature in Far North Queensland over the last decade (from 24.4 °C to 24.5 °C).

There is no definitive projected temperature variation specific data for Cairns, but an approximation may be extrapolated from the following:

- Projections indicate an increase of up to 3.9 °C by 2070, leading to annual temperatures well beyond those experienced over the last 50 years.
- By 2070, Cairns may have more than eight times the number of days over 35 °C (increasing from an average of four per year to an average of 34 per year by 2070).

7.8.1 Potential Impact of Climate Change on Cyclones and Sea-Level Rise

Projections of sea surface temperatures near tropical north Australia indicate an increase of approximately 0.7°C by 2030 and by approximately 1.7°C by 2070.

According to the Intergovernmental Panel on Climate Change (IPCC), global sea-level is projected to rise by 18 to 59 cm by 2100, with a possible additional contribution from melting ice sheets of 10 to 20 cm (IPCC, 2007).

Some studies indicate an increase in the proportion of tropical cyclones in the more intense categories, but a possible decrease in the total number.

7.8.2 Climate Change Response Implications for Cairns Region

The potential impact of climate change on the frequency and intensity of severe weather events will be factored into the annual reviews of the disaster risk treatment strategies.

- The risk of bushfire is predicted to rise as result of the hotter, drier conditions associated with climate change.
- Due to the impact of climate change there will be an increase in the number of high fire danger days.
- An informed public can add significantly to the protection of life and property during bushfire.

The risk of increased frequency and intensity of tropical cyclones, floods or severe storms will be addressed by the Local Disaster Management Group via community awareness campaigns and community engagement sessions conducted throughout the year as part of the community engagement strategy.

The Cairns Region Storm Tide Evacuation Strategy takes into account predicted climate change with the Cairns Planning Scheme recognising sea level rise projections to the year 2100.

7.9 Hazard Specific Arrangements

The Queensland Disaster Management Arrangements include plans and procedures for specific hazards such as influenza pandemic, animal and plant disease, terrorism and bushfire. Primary agencies are allocated responsibility to prepare for, and respond to, the specific hazard based on their legislated and/or technical capability and authority. The broader arrangements may be activated to provide coordinated support to the hazard specific arrangements.

The State Disaster Management Plan identifies a number of Specific Hazards which are subject of special planning.

Details of the associated State and National Plans, along with the identified Primary Agency responsible for the development and implementation of these plans are included in the following table.

Table 40: State and National Plans Primary Agency

Specific Hazard	Primary Agency	State and National Plans
Biological (human related)	Queensland Health	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents
Wildfire	Queensland Fire and Rescue Service	Wildfire Mitigation and Readiness Plans (Regional)

Chemical	Queensland Fire and Emergency Services	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents
Influenza Pandemic	Queensland Health	Queensland Pandemic Influenza Plan National Action Plan for Human Influenza Pandemic
Heatwave	Queensland Health	Qld Heatwave Response plan can be found at https://www.health.qld.gov.au/__data/assets/pdf_file/0032/628268/heatwa
Radiological	Queensland Health	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents
Terrorism	Queensland Police Service	Queensland Counter-Terrorism Plan National Counter-Terrorism Plan Queensland Counter-Terrorism Strategy 2013 – 2018
Oil Spill at sea	Queensland Transport (Maritime Safety Qld)	Qld Coastal Contingency Action Plan
Exotic Disease Avian influenza Swine fever Foot & mouth disease Screw-worm fly Transmissible spongiform encephalopathies (TSEs).	Biosecurity Qld	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents

Functional Lead Agencies are nominated on the basis of their core functions and are given Lead Agency status within the State Government for the provision of specific services or support. The specific requirements for each function are established under Memoranda of Understanding between each of the Functional Agencies and the Department of Emergency Services. The allocation of Functional Lead Agency status to Government departments is shown below:

The above Lead Agencies are responsible for:

- combating specific threats as shown;
- ensuring that effective threat specific plans are prepared;
- ensuring that appropriate resources are identified for use during operations;
- providing liaison officers to coordination centres, as required.

Lead agency threat specific plans are normally activated by a threat specific regional representative. The Executive Manager, QFES and the relevant DDC are advised of the activation as soon as practical.

7.9.1 Hazard Assessments

Table 41: Hazard Assessments for Cairns Region

Hazard	Suggested Actions
Terrorism	Local information campaign targeting critical infrastructure owners/operators to ensure they are aware of the document "Securing Queensland's Critical Infrastructure Guidelines for owners/operators", to assist them to determine the terrorism threat in relation to their organisation. This would include managers of Council controlled/owned critical infrastructure The Local Disaster Management Group and other selected/relevant participants should conduct a security review of critical infrastructure owned/operated by Council or critical infrastructure that may impact on Council operations or the community. Mass gathering locations, events, and hazardous sites should also be considered in the review. The Local Government Counter Terrorism Risk Management Kit advises that the kit should be used by Local Disaster Management Groups with input from key stakeholders including, QFES, Police, major industries & peak bodies, owners and operators of critical infrastructure and mass gathering venues & major event organisers.
Heatwave	This risk is relevant due to not only our tropical climate but also projections of 'Climate Change'. Information is included in editions of the Cairns Cyclone Guide distribution to residents annually.
Pandemic Influenza	Queensland Health is developing relevant plans as the lead agency in this area. Local Governments have been requested to nominate relevant facilities that may be utilized for purposes such as mass vaccination or assessment facilities. The LDMG should consider what other planning is required in this area to identify & address social consequences of a flu pandemic. For Local Government planning the Queensland Government have advised that local government has two main roles in relation to preparing for any influenza pandemic, being; • Ensure Council's business continuity arrangements adequately cater for the nature of a pandemic; and • Identify, plan for, and establish measures to reduce the consequences or impact of a pandemic on local communities (e.g. identify & address the social consequences of a pandemic on the community). The special needs of particular groups i.e. children, aged, disabled, dementia, indigenous persons and culturally and linguistically diverse groups need to be considered.

Exotic Animal or Plant Disease	The DPI&F is the lead agency in this event with the following plans and manuals relating to pest and disease emergencies; • AUSVETPLAN – the national disease response plan; • QLDVETPLAN – the exotic animal disease threat specific sub plan of the State Disaster Plan • Queensland Emergency Animal Diseases Operations manual; • Queensland Emergency Operations Manual for Pests of Plants • Specific pant pest contingency plans; and • AQUAVETPLAN – the national aquatic animal disease response plan The LDMG needs to give consideration to the level of assistance and required resources that may be needed in the event of such an outbreak.
Oil Spill at Sea	Queensland Transport (Maritime Safety Queensland) is the lead agency.
Dam Failure	An emergency action plan (EAP) exists for the Copperlode Falls Dam (hazard specific sub-plan of the LDMP). Cairns Regional Council Water & Waste are the dam owners. The Copperlode Falls Dam is located some 11km south west of Cairns near the headwaters of Freshwater Creek The dam is of an earth and rock fill construction with concrete gravity spillway structure. Dam height is 45 m and is 121 m in length The reservoir has a storage capacity of approximately 37,100 ML and a surface area of 332 ha with a catchment of 44 km². Dam break modelling has developed a range of hydraulic models. Flood maps have been developed to identify areas at risk due to dam failure and extreme floods passing through the dam. The maps define the extent of flooding and categorise the maximum depths of inundation and the time to maximum depth. There are two other referable dams in Cairns (Moody Creek and McKinnon Creek detention basins). These dams are flood mitigation infrastructure and are not for the permanent storage of water. In keeping with their referable dam classification both have a respective EAP that deals with dam failure and inundation of population at risk (PAR).

PART 8 PREVENTION

Prevention refers to the regulatory and physical measures taken to ensure that emergencies are prevented or their effects mitigated.

Mitigation strategies can include:

- Design improvements to provide more resilient new infrastructure, update or to harden existing infrastructure or services
- Land use planning that recognises the potential hazard-scape
- Prepared communities and response agencies and arrangements in place and exercised
- Resilience activities including partnerships between sectors and the community and
- A clear understanding of hazards, their behaviour and interaction with vulnerable elements (Queensland State Disaster Management Plan)

Strategies aimed at preventing disaster events incorporate the utilisation of:

8.1 Building Codes and Building Use Regulations

In Cairns Regional Council the following codes and regulations apply:

- *Building Code Australia*
- *Building Act 1975*
- *Building Standards Regulation 1993*
- *Building Regulations 2006*
- *Building Fire Safety Regulation*
- *Body Corporate and Community Management Act 1997*
- *Building Units and Group Titles Act 1980*
- *Building and Other Legislation Amendment Act 2009*
- *Building Services Authority Act 1991*
- *CairnsPlan*
- *CairnsPlan – Consolidated Planning Scheme 2009;*
- *Integrated Planning Act 1997*
- *Local Government Act 2009*
- *Queensland Development Code*
- *State Planning Policy 1/03 guideline: mitigating the adverse impacts of flood, bushfire and landslide*
- *State Coastal Management Plan-Mitigating the Effects of Storm Tide Inundation*
- *Sustainable Planning Act 2009*

8.1.1 Integrated Planning Act 1997

The Integrated Planning Act 1997, commonly referred to as IPA, forms the foundation of Queensland's planning and development assessment legislation.

The purpose of IPA is to:
Coordinate and integrate planning at the local, regional and State levels
Manage the process by which development occurs; and

Manage the effects of development on the environment (including managing the use of premises)

The main element of IPA that relates to builders and sub-contractors on a day to day basis is the Integrated Development Assessment System (IDAS). IDAS is the step by step process for lodging, assessing and deciding development applications.
Building Act 1975.

The Building Act governs all building work in Queensland. The Act empowers the regulation of certain aspects of buildings and structures and includes the administrative terms necessary to give effect to the legislation.

It is a requirement of the Building Act 1975 that buildings in Queensland be constructed in accordance with the Building Code of Australia (BCA) Building Code of Australia**.**

The Building Code of Australia is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia. The BCA is given legal effect through the Building Act 1975.
The BCA is supported by a number of "reference documents". These documents provide specific detail on how to comply with the BCA and include a number of Australian Standards.

The BCA, which must be read in conjunction with the Building Act, is published in two volumes:

- Volume 1 related to Class 2 to 9 buildings.
- Volume 2 (also known as the Housing Provisions).

8.1.2 Australian Standards

Numerous building and construction standards have been developed that add to the safety, efficiency and cost-effectiveness of building in Australia. A Standard is a document which provides rules, guidelines and often detailed technical specifications for activities undertaken in the industry.

A number of the building and construction standards are referenced in regulations including the Building Code of Australia, which means it is compulsory to undertake work in the way in which it is specified. A few examples include:
Product standards and test methods related to windows, doors and roofing;
Internal and external waterproofing of dwellings;
Installation and product standards for smoke detectors;
Design standards related to access for the disabled.

These are applicable as they ensure that buildings meet an established standard to prevent damage and injury in an event.
Compliance with building regulations/codes will reduce the effects form; floods, cyclones, severe storms, landslides and earthquakes in particular.

8.2 Legislation

In addition to the *Disaster Management Act 2003* the following Acts are relevant to Cairns Region Disaster Management;

- *Aboriginal and Torres Strait Islander and other Communities (Justice, Land Matters) Act 1984.*
- *Agricultural Chemicals Distribution Control Act 1966*
- *Ambulance Service Act 1991*

- *Chemical Usage (Agricultural and Veterinary) Control Act 1988*
- *Coastal Protection and Management Act 1995*
- *Criminal Code Act 1899*
- *Dangerous Goods Safety Management Act 2001*
- *Environmental Protection Act 1994*
- *Exotic Diseases in Animals Act 1981*
- *Explosives Act 1999*
- *Fire and Rescue Services Act 1990*
- *Gas Supply Act 2003*
- *Health Act 1937*
- *Information Privacy Act 2009*
- *Public Health Act 2005*
- *Integrated Planning Act 1997*
- *Land Act 1994*
- *Liquid Fuel Supply Act 1984*
- *Local Government Act 2009*
- *Major Sports Facilities Act 2001*
- *Marine Parks Act 2004*
- *Marine Parks (Great Barrier Reef Coast) Zoning Plan 2004*
- *Marine Parks Act 2004*
- *Native Title (Queensland) Act 1993*
- *Nature Conservation Act 1992*
- *Petroleum Act 1923*
- *Public Safety Preservation Act 1986*
- *Police Powers and Responsibilities Act 2000*
- *Right to Information Act 2009*
- *Sustainable Planning Act 2009*
- *Terrorism (Commonwealth Powers) Act 2002*
- *Water Act 2000*
- *Workplace Health and Safety (Miscellaneous) Regulation 2008*

8.3 Community Awareness

Section 30e Disaster Management Act 2003 requires Local Government to be involved in an education program *"to ensure the community is aware of ways of mitigating the adverse effects of an event, and preparing for, responding to, and recovering from a disaster*".

Cairns Regional Council is committed to an ongoing public awareness campaign.

The Local Disaster Management Group – Cairns Region takes a coordinated approach to community awareness programs, recognising that when it comes to disaster preparedness, response and recovery "we're all in this together". The National Strategy for Disaster Resilience discusses a shared responsibility between government and the community for being prepared for disaster events. In line with the national strategy, CRC, in partnership with members of the LDMG-CR deliver community engagement programs that are aimed at empowering individuals and the community to understand their local risks and take pre-emptive action to prepare themselves, their families, homes and businesses in the event of disaster.
You can view the National Strategy for Disaster Resilience at www.coag.gov.au

The Queensland Strategy for Disaster Resilience 2017 provides the framework for which Queenslanders from disparate communities across the state can build their resilience to disaster events

The following are methods and mediums Cairns Regional Council uses to assist with promoting community awareness:

- BOM Weather Warnings;
- The LDMG-CR encourages all members of the LDMG-CR to provide public education programs in their area of responsibility;
- SES Group Leaders provide information sessions to various organisations throughout the Region;
- QFES community presentations;
- Annual community information sessions in relation to natural hazards involving information sessions and workshops throughout the region's communities and organisations (including annual State pre-cyclone/storm season "Get Ready" seminar in October);
- Visits to local primary schools with presentations and education activities on various hazards relevant to the local community and mitigation actions that may be taken;
- Development of a disaster information pack for distribution to new residents to the region;
- Brochures displayed and available at all Council Offices, Libraries and various community outlets;
- Local Media including local television and radio, as well as articles in community and Council newsletters and local newspapers
- Cairns phone book BoM Cyclone Information and tracking map;
- Cairns Regional Council "*Cairns Tsunami Evacuation Guide*"
- Cairns Regional Council Storm Tide Inundation Mapping online
- Cairns Regional Council online Storm Tide Property Search
- Cairns Regional Council Evacuation Strategy publication
- Cairns Regional Council web site and media releases;
- Information sessions to vulnerable communities;
- Information sessions to aged care and retirement villages; and
- Production of multi-lingual *"Cyclone Emergency Action Guide"* in Hmong, Nepali, Italian, Simplified Chinese, Arabic, French, Japanese, Tagalog, Swahili, PNG Pidgin and Korean.
- Various Cairns-specific publications on preparation for and self-management during natural hazards including "*Plan.Pack.Listen*." for cyclones, storm tide cyclone shelters
- Various public promotion mechanisms including buses, billboards and poster advertising.
- Ongoing disaster resilience education project for CALD communities (Cultural Ambassador project), particularly new migrants.
- Basic natural disaster warning messages translated into several languages through ABC Regional Radio, Cairns Community Radio and Bumma Bippera Media
- Curriculum linked, Cairns-specific education resources for schools throughout the region
- Ongoing liaison with Animal Care for Seniors at Home Group to develop an emergency pet fostering programme
- Liaise with local small business and advise on Business Continuity Planning
- Design and print brochure for Storm Tide Cyclone shelters (2 in CRC region)
- Translation of Storm Tide Cyclone Shelter Brochures into Auslan video online
- Key information translations into Auslan, Braille and talking book.
- Visits and 'Open Days' at the LDCC
- Participation in community events and activities such as markets, expos, shows and fairs.

The Local Disaster Management Group – Cairns Region also aims to enhance community disaster awareness and preparedness by providing access to the 'Cairns Local Disaster Management Plan' on Cairns Regional Council's public website and having disaster planning information available through Council's social media sites. Hard copies of the 'Cairns Local Disaster Management Plan' are available at Council's Customer Service Centres for public viewing. Hard copies can be purchased from Council for a fee of $100 AUD.

Refer also to ***A.10 – Public Information and Warnings Operational Plan.***

8.4 Land Use Management Initiatives

8.4.1 State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire & Landslide

The Queensland Government considers that development should minimise the potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment.

Purpose of Policy 1/03

The State Planning Policy sets out the State's interest in ensuring that the natural hazards of flood, bushfire and landslide are adequately considered when making decisions about development.

Under the Integrated Planning Act 1977 the State Planning Policy has effect when development applications are assessed, when planning schemes are made or amended and when land is designated for community infrastructure.

The Cairns Plan contains Overlay Codes for the Cairns Area which regulates assessable development where the site is subject to possible landslip, bushfire or flooding and is referenced in:

- *3.5.1 Hill slopes*
- *3.5.11 Bushfire Hazard*
- *3.5.12 Flood management*

Overlay codes have been developed for the above and are:

- *4.6.4 Hill slopes Code*
- *4.6.7 Bushfire Hazard Code*
- *4.6.8 Flood Management Code*

8.5 Local Government Counter Terrorism Risk Management Guidelines

The counter-terrorism risk assessment has been carried out in accordance with *the Local Government Counter-terrorism Risk Management Kit.*

PART 9 PREPAREDNESS

Preparedness is having “arrangements or plans to deal with a threat situation or a disaster, that is, the mobilisation of the disaster response structure and resources” (Emergency Management Australia, 2004).

Preparedness can include:

- Establishing or refining procedures regarding early warning systems, and a public education plan to inform the community of these systems;
- Training relevant response personnel on operational implementation;
- Considering and planning for the finances and capital required in the event of activating the disaster management plan;
- Establishing emergency communications procedures; and
- Developing and testing plans

9.1 Event Coordination

Overall management of the coordinated response is the responsibility of the Local Disaster Coordinator of the LDMG-CR. The LDC is also responsible for the Coordination of the LDCC-CR

Activation at the LDMG-CR will be in response to a local event that demands a coordinated community response to respond. The authority to activate the Local Disaster Management Group - Cairns Region (LDMG-CR) is vested in the Chair of the LDMG-CR. It is the duty of the Chair to inform the District Disaster Coordinator (DDC) regarding the Plan’s activation. The plan may also be activated at the request of the DDC.

9.1.1 Local Disaster Coordination Centre

The Cairns Local Disaster Coordination Centre (LDCC) is a facility provided within the Cairns local government area to facilitate the response of the LDMG-CR to a disaster event. The Cairns LDCC is required to provide prompt and relevant information to the DDCC concerning any disaster event or potential disaster event occurring within their area

The Primary Cairns LDCC is located at the Woree Disaster Coordination Centre located at 61 – 79 Windarra Street, Woree.

Should this facility become unusable for any reason, an alternative disaster coordination centre will be established at the secondary site located at the Babinda RSL Memorial Hall, 26 School Street, Babinda.

9.1.2 Functions

The functions of the Cairns Local Disaster Coordination Centre (LDCC) are:

- To co-ordinate Cairns Regional Council and community resources in support of agencies involved in response and recovery operations including those allocated from the Commonwealth, State and Disaster District, in support of the disaster affected community;
- To co-ordinate additional resources allocated to Cairns Regional Council through the District Disaster Coordination Centre.
- To coordinate the collection, collation and dissemination of information to the Cairns District Disaster Coordination Centre and the community.
- Implementation of operational decisions of the LDMG-CR

Operational staff for the Disaster Coordination Centre is provided from a list of specialised and trained Council officers. The incident management system in the LDCC is based on the integration of activities and resources from multiple agencies for the resolution of disaster events through functional management. When activated in emergency/disaster events, the LDCC utilises a combination of Council's Incident Management Team (IMT) and supporting Council officers. The IMT contains specialised role-specific qualified Council staff that maintains a state of readiness for the "cyclone season". The IMT is supported by trained Council officers that are available on a casual basis. The LDMG-CR core combating and support organisations may send an External Agency Liaison Officer (EALO) to the Disaster Coordination Centre to integrate capabilities and logistical support.

These liaison officers should have the authority to commit their respective agency resources if so required. The EALO should of necessity, be of senior rank and have established communication networks with their own organisations.

Each control authority and support organisation will establish its own headquarters to control its own resources. The relevant Control Authority will determine the siting and location of any Forward Command Post.

For Activation and Standard Operating Procedures refer to ***A.1 Activation of LDMG- CR Operational Plan*** and ***A.2 – Local Disaster Coordination Centre - Cairns Region Operational Plan*****.**

Communication procedures are included in ***A.2 Local Disaster Coordination Centre - Cairns Region Operational Plan*****.**

9.2 Community Warning & Alert Systems and Dissemination

Cairns Regional Council's communication strategy provides an overarching framework for communicating with the community and stakeholder groups. The strategy has a key focus on pre-impact activities in line with Council's responsibility as outlined in the Disaster Management Act 2003.

In 2015, Queensland's Inspector General of Emergency Management (IGEM) released a report based on a review of Local Government's Emergency warning capability. One of the recommendations was that local governments provide effective warning systems and arrangements that support the continuous flow of critical, up-to-date and relevant information between key stakeholders.

To act on these recommendations Cairns Regional Council (CRC) offers two platforms for public notification; Cairns Alerts and the Cairns Disaster Dashboard. Both tools leverage off existing local context and content with information interpreting weather information, inclusion of safer locations, key road closures, and predicted impacts on critical infrastructure. All entities with specialist knowledge or particular information that might help Council effectively warn the community, cooperatively plan and respond at the local level through the LDMG who tailor dissemination approaches through an annual strategy.

CRC is well placed to provide best practice in this regard possessing vital attributes including;

- The capacity to value-add to warnings due to a good understanding of our community profile through completed works of social mapping, community survey and resilience tools
- Well-developed stakeholder relations and risk based planning
- The capability to source relevant data
- The personnel with the expertise in interpreting sources of information to issue clear, timely and contextualized warnings/alerts.

9.2.1 Cairns Disaster Dashboard

The Cairns Disaster Dashboard is a real-time information gateway with a website integrating public map overlay, social media feeds, live Flood and Traffic Cams, live road closure information, weather warnings and alerts, web sourced data feeds (Bush Fire Alerts - Ruralfire.qld.gov.au; Current Temp (BoM); Weather Warnings (BoM) Planned power Outages (Ergon); Unplanned Power Outages (Ergon; 'Guardian' generated public information bulletins and map overlays and Customizable Data / Links including Emergency Contacts – (LDMG Emergency Contact Info); River Heights – (Link to BOM Page), social Media (Shows CRC Social Media Feeds – E.g. DCC Twitter/Facebook & QPS); Get Disaster Ready (Link to CRC Disaster Info Page); Historic Floods – (Map From QLD Gov.)

The ability to communicate with the public using email, web, mobile and social networks results in greater community resilience. This is a mechanism and opportunity to help educate people in high-risk regions to prepare for and respond to a potential emergency or natural disaster. A contemporary mass notification platform should provide Council with an efficient way to manage an incident and coordinate automated, rapid communication across a broad network of recipients.

The benefits of a modern mass notification system include increased efficiency, reliability, and accountability, all of which are often limited under the constraints of manual phone trees, unassisted notification, and other dated alerting systems. Through contemporary mass notification systems, quick communication to a broad contact base – across a variety of devices – can be simplified and streamlined.

9.2.2 Cairns Alerts

A successful Early Warning System platform is the combination of the mechanism for sending warnings such as Emergency Alert (EA) combined with a dedicated operation which continuously monitors threats and is responsible for the issuing of alerts and warnings specific to a locality. Cairns Alerts provides that dedicated platform, providing contextualized disaster information to the local community

A dedicated communication platform warning capability delivers a different psychology within emergency management. No longer is the responsibility of warning or awareness splintered over various disciplines and authorities. There is instead a sharp focus on all threats and what the community needs to know.

'Cairns Alerts' is able to be manipulated to maintain contact list files for various king and storm tide events as well as areas prone to flash flooding. These people can subsequently be warned over multiple channels with the click of a button. This ensures only those that need it; get it, thus avoiding confusion and panic. These capabilities can be further augmented with stream and flood gauges that trigger alerts into warning systems when water levels reach a certain height or rainfall over a thirty minute period exceeds set parameters of flood studies.

The provision of an opt-in service, offers high take-up with significant penetration of the Community. Residents who opt-in are actively seeking more information in a timely manner. This permission to warn and inform over multiple channels results in a community far better prepared instead of waiting to the last minute. Opt-in permits local emergency management and councils to cover a far greater range of contingencies and greater control of informing their communities than EA can reasonably be expected to. This is not a criticism of EA, but a recognition of the additional benefit of a permission based system running in parallel with EA.

The ability to communicate with the public using email, web, mobile and social networks results in greater community resilience. This is a mechanism and opportunity to help educate people in high-risk regions to prepare for and respond to a potential emergency or natural disaster.

In the first moments of a severe business disruption, timely communication can save lives, resources, and reputation. Unfortunately, it is often during these very moments that critical lines of communication are cut off, and that making contact becomes more difficult than ever. A contemporary mass notification platform should provide Council with an efficient way to manage an incident and coordinate automated, rapid communication across a broad network of recipients.

Connection between Council's Disaster Management Plan and Business Continuity Plan (BCP)

Where damage/loss is sustained to Council infrastructure during a disaster event, giving rise to the activation of the Local Disaster Management Plan and BCP, it is critical for Council to be able to quickly recover its ability to perform its functions to adequately fulfil its role in the response to the disaster event. The Local Disaster Management Plan details Council's responsibilities to the community during a disaster event and provides for a coordinated approach to disaster management.

Business continuity planning is about Council's 'internal' responses to challenges that restrict its ability to provide services. The BCP is a resource to the whole of Council and contains a series of individual business recovery plans specifically designed to ensure that critical business functions resume within specified time frames.

9.2.3 Standard Emergency Warning Systems (SEWS)

In 1999, an agreement was reached between all States and Territories on the need for a Standard Emergency Warning Signal (SEWS) to be used in assisting the delivery of public warnings and messages for major emergency events. The States and Territories further agreed to accept responsibility for the preparation and implementation of procedures related to the use of SEWS in each jurisdiction and to develop and conduct appropriate public awareness programs.

Function of Sews
SEWS is intended for use as an alert signal to be played on public media to draw listeners" attention to a following emergency warning. It is meant to attract listener's attention to the fact that they should take notice of the emergency message.

Management of SEWS
Responsibility for the management of SEWS in Queensland rests with the Executive Officer of the State Disaster Management Group (SDMG), in coordination with the Queensland Regional Director of the Bureau of Meteorology (BOM) for meteorological purposes

9.2.4 National & State Emergency Alert Systems

Emergency alert (EA) is an emergency warning system capable of sending warning messages to landlines and mobile phones based on the registered service address or geographic location within a particular area defined in the EA system. The SEWS sound will precede each emergency warning message sent from the EA system

Cairns Regional Council can also request (through the member of QFES on the LDMG-CR) 'Emergency Alert' arrangements to be delivered via landline and text messages to potentially affected constituents.

It is the role of the LDMG-CR in ensuring the notification and dissemination of warnings to members of the LDMG-CR and elements of the community that may fall under the responsibility of LDMG-CR member agencies (section 7.10.1 of the Local Disaster Management Guidelines).

9.2.5 BOM Warnings

Warning products are issued by the BOM and include, but are not limited to, severe weather warnings, tropical cyclone advice and tsunami warnings.

The Table below depicts examples of different sources in connection with a number of hazards.

Table 41: Weather Events & Respective Sources of Information

Severe Weather Event	Bureau of Meteorology
Hazardous Materials Incident	Queensland Police Service or Queensland Fire and Emergency Services.
Public Health	Queensland Health, Council Water & Waste or Council Environmental Health Officers
Major Infrastructure Failure	The owner of the facility – e.g. Ergon, etc.
Wildfires	Queensland Fire & Emergency Services
Animal or Plant Disease	Biosecurity Queensland
Space Debris Re-entry	Emergency Management Australia
Potential Terrorism Threat	Queensland Police Service

The release of information to the community regarding the emergency and associated threats, will normally be approved by the Chairperson and distributed through the Media Liaison Officer after discussions with the Officer in Charge of the Lead Agency and the Local Disaster Coordinator.

Refer to ***Sections 8.3 Community Awareness and s9.4 Public Education*** in this plan, and also to ***A.10 Public Information and Warnings Operational Plan***

9.3 Response Capability/Operational Limitations

Cairns Regional Council has human, plant and equipment resources available to respond to a disaster event; a full list is included in ***Appendix G – Resource List***

If additional resources are required, the resources will initially be sourced through local suppliers that are:

- contracted to Council to provide a service or resource
- are capable of providing the resources
- can support Council in responding to a disaster through the provision of resources

Cairns Regional Council facilitates and financially supports the following SES groups within the Region. These groups are based in the following areas:

- Babinda
- Gordonvale
- Edmonton
- Cairns
- Machan's Beach
- Holloways Beach
- Yorkey's Knob
- Trinity Beach
- Buchan Point

Support for the community when disasters occur is provided in the first instance from the Local Government Authority. Such assistance would be provided in cooperation with local emergency service providers, government and non-government agencies and community groups. An appropriate contact list of relevant agencies and groups and resource list of appropriate local resources available to assist in this respect is maintained as part of this local disaster management plan.

When the resources of Local Government are exhausted, not appropriate or are not available, then District or State support is to be provided via request to the District Disaster Coordinator. Commonwealth support can also be requested should State resources be exhausted or not available.

9.4 Training

9.4.1 Public Education Program – Be Ready! Cairns

The *LDMG-CR Education & Public Awareness Strategy* details the annual roll-out of planned community education and awareness activities. The objectives of the strategy include;

- Building community awareness of the local effects of Cairns tropical weather and all hazards approach

- Building community resilience by being prepared for natural disaster events; and

- Imparting knowledge regularly to guard against community complacency.

Programs within the strategy include:

- School education program
- Community group education programs
- CALD Community Leader Education and Support
- Cultural Ambassador
- Regular and consistent media promotions
- Cyclone season advertising campaigns (radio, TV, newspaper, billboard)
- Information for new residents and tourists
- Displays at community events
- Specific information for indigenous and migrant groups
- Advice to business and industry
- Information for aged and disabled care groups
- Support for SES & QFES Community Education programmes.

The strategy is supported by the Disaster Resilience Officer's five (5) year strategic plan "*Be Ready Cairns*" which is reviewed annually.

Resilience Capacity Building

Building community capacity is a combination of the capability and the resources available to the LDMG-CR that can reduce the level of risk, or the effects of a disaster on the community. Capacity can be built through a combination of training and exercise programs targeted to specific local requirements as well as building the local community's awareness and resilience.

The practice of continuous improvement involves disaster management processes and arrangements being regularly evaluated and improved to ensure they remain relevant, efficient, effective and flexible. The implementation and delivery of training and exercises are critical elements in the continuous improvement of disaster management capacity building. Capacity Building occurs across the phases of Prevention and Preparedness.

9.4.2 LDMG-CR Training

The focus for disaster management training is to ensure all LDMG and LDCC staff meet the minimum required standard for training required under the Queensland Disaster Management Training Framework.

In accordance with the provisions of the Queensland Disaster Management Training Framework and the Disaster Management Training Handbook, the following members of the LDMG are required to undertake disaster management training:

Chair and Deputy Chair of the LDMG

Induction
- Local Disaster Management Group Member Induction

Core Training Courses
- Queensland Disaster Management Arrangements
- Introduction to Evacuation
- Evacuation Planning
- Resupply
- Warnings and Alert Systems

Local Disaster Coordinator

Induction
- Local Disaster Management Group Member Induction
- Local Disaster Coordinator Induction

Core Training Courses
- Queensland Disaster Management Arrangements
- Disaster Management Planning
- Disaster Coordination Centre - Modules 1,2 and 3
- Introduction to Evacuation
- Evacuation Planning
- Evacuation Centre Management
- Recovery - Modules 1 ,2 and 3
- Resupply
- Warnings and Alert Systems
- Disaster Relief and Recovery Funding Arrangements

LDMG Members

Induction
- Local Disaster Management Group Member Induction

Core Training Courses

- Queensland Disaster Management Arrangements
- Disaster Management Planning
- Introduction to Evacuation
- Evacuation Planning

Local Disaster Coordination Centre Staff

Core Training Courses
- Queensland Disaster Management Arrangements
- Disaster Coordination Centre - Modules

Local Disaster Coordination Centre Liaison Officers

Core Training Courses
- Queensland Disaster Management Arrangements
- Disaster Coordination Centre - Modules 1 and 2

Local Recovery Coordinator

Induction
- Local Recovery Coordinator Induction

Core Training Courses
- Queensland Disaster Management Arrangements
- Recovery Modules 1, 2 and 3

9.4.3 Certification of Training

Participants who successfully complete a course or induction under the Framework will be issued with a Certificate of Achievement and their details will be entered into the Disaster Management Training Database which is maintained by QFES.

The database will be used to report on the completion of training by stakeholders in accordance with their training requirements under the Framework. The Local Disaster Coordinator will be responsible for training management within the Cairns LDMG, and will ensure that a training register encompassing all involved personnel is commenced and maintained.

Details of training issues (training conducted, training gaps identified, etc.) will be included in the annual report of the LDMG.

9.4.4 Incidental Training

Extra training may be provided to relevant members of the various responding agencies. Such training may include instruction in the Australasian Inter-service Incident Management System (AIIMS).

9.4.5 LDCC Council Staff Training

The Disaster Management Unit is responsible for the role-specific training of CRC staff in the 'Guardian Control Centre' computer operating system utilised by CRC in the LDCC. Augmenting these sessions are instructional training days for the IMT and supporting Council staff facilitated by QIT Plus representatives (the developers of the Guardian Control Centre software).

Table 42: LDMG-CR Training Matrix

Training	Who	Facilitator	When
Introduction to Council's Disaster Management Process	Council staff and members of Disaster Coordination Centre(DCC) Group	Disaster Management Unit (DMU)	Annually (September - November)
Qld Disaster Management Arrangements	Councillors, Council staff and members DCC Group	QFES	Course held at least three times per year
Disaster Coordination Centre Course	LDMG-CR Members, Council staff & DCC Group	QFES	Annually
Guardian Incident Management System – role specific	LDMG-CR members & Members of DCC Group	DMU trainers	Annually (September - November)
Guardian Phone Operators Course	Members of DCC Group	DMU trainers	Annually (September - November)
Guardian Control Centre Operations	LDMG-CR members & IMT	QIT Plus DMU trainers	Annually

9.5 Exercises

A disaster management exercise is *a scenario-driven activity used primarily to train* personnel and test capabilities. It is low-risk and involves varying degrees of simulation or 'pretending'.

Exercises are controlled objective based activities used to practice, evaluate or test plans or procedures and resources. The purpose of an exercise is to practice/test the knowledge and ability of the agencies of the disaster management system to coordinate disaster operations for a potential disaster or emergency scenario. Exercises can enhance capacity and confidence of the people that participate in them. The conduct of an exercise is one way in which the LDMG-CR can undertake a review of the Local Disaster Management Plan.

Prior to participating in disaster and emergency exercises it is preferred that participants have received training as outlined in the section above. This is so that participants have a basic understanding of the policies and procedures that apply to working in a disaster management environment and that the experience and learning's from the exercise can be maximised.

Exercises can be small scale one to two hour activities through to a three day event. More frequent smaller exercises can be an effective alternative to a single large scale activity. Each year, Cairns Regional Council will hold one or more of the following exercises, to improve the LDMG-CR capacity across preparedness, prevention, response and recovery:

Table No.43: Exercise Types

Exercise styles	Exercise types	Description
Discussion Exercises	Orientation Seminar	The 'walk through' - especially for inductees
	Agency Presentation	Prepare an agency specific action plan and present it in plenary.
	'Hypothetical'	Responses may be prepared in groups, in plenary, or under the guidance of a facilitator who maintains the pace and asks probing questions (the 'hypothetical'). A cost effective and highly efficient exercise method that might be conducted in conjunction with a field exercise as part of a series.
	Table Top Exercise	Indoor discussion exercises. May feature a model of the area on which a prepared scenario is played out, or simply using a projected map. The model or map is used to illustrate the deployment of resources, but no resources are actually deployed
Functional Exercises	Operational Exercise	An exercise in which emergency management organisations and agencies take action in a simulated situation, with deployment of personnel and other resources, to achieve maximum realism. It is conducted on the ground, in real time but under controlled conditions, as though it were a real emergency. A full scale (or Field) exercise might be characterised by some, or all, of: noise, realism, stress, heat and real time. This is resource and cost intensive.

Exercises may be conducted internally, at the instigation of the Local Disaster Coordinator, and with the assistance of personnel from QFES. Exercises may also be conducted on a district-wide basis, involving a number of different Local Disaster Management Groups, and managed externally, either by the DDMG or by the State Disaster Coordination Centre in Brisbane.

9.5.3 Evaluating the exercise

In determining whether an exercise achieved its original aim, it is important to evaluate to what extent the exercise objectives were met and how the exercise was conducted generally. At the conclusion of an exercise it is also important that debriefs are conducted to capture issues and areas for improvement.

It is recommended that the LDMG consider the use of hot debriefs, conducted immediately following participants' involvement in the exercise; and a more detailed After Action Review conducted within a few days of the exercise, to allow participants time to provide a more considered view of the exercise.

When feedback is being collected it is important to consider issues and action items in two separate categories:

- Exercise design and conduct – issues and feedback relating to the exercise format, design and conduct. This feedback will help to inform the design and conduct of future exercises.

- Achievement of exercise objectives – the exercise evaluation process should examine to what extent the exercise objectives were achieved. Any gaps or issues identified during this process can be reported as 'findings'. Tabling these findings allows for the development of appropriate treatment options designed to address identified gaps and issues. Exercise findings and treatment options should then be captured in a wider Post-Exercise Report.

Each year one or more of the following exercises shall be held:

- a table top exercise; and
- a Local Disaster Coordination Centre - Cairns Region exercise.
- a small scale exercise involving the SES and the testing of the LDCC-CR; and
- involvement in a District Disaster Exercise

The purpose of these exercises is to test the resource and response capabilities of the LDMG-CR and other agencies. The DMU resource, *Measurement of Capability Table,* shall be updated after each exercise.

9.6 Measurement of Capability

The table below sets out a measurement of response capability. This may be achieved through operational activation or by the conduct of exercises (see table below).

Table 44:

Date	Type	Process or Event	Participants	Action Plan *(actions derived from lessons learnt)*	Completion Date *(for evaluation of implementation of Action Plan)*
Oct 2005	Annual LDCC Exercise	*Ex Cyclone Ruth* – Functional Ex	Coordination Centre Council and liaison officers	Completed	Completed
20 – 25 Mar 2006	Activation	Cyclone Larry/ Monica	All disaster management staff, Council and external emergency liaison officers	Completed	Completed
14 Dec 2006	Annual LDCC Ex	*Ex Cyclone Gary* - Functional Ex	Coordination Centre Council and liaison officers	Completed	Completed
26 Feb 2007	Community Support Evacuation Ex	Discussion Ex	Community Support Sub-Committee Members	Completed	Completed
10 Dec 2007	Annual LDCC Ex	*Ex Cyclone Brigid*- Functional Ex	Coordination Centre Volunteers and liaison officers	Completed	Completed
11 Jun 2008	QFES Multi-Agency Ex	Exercise *Harbour Wave* – Discussion Ex	Council Officers	Completed	Completed
09 Oct 2008	Copperlode Dam EAP Ex	Ex *Cool Waters*- Desktop/ Discussion Ex	Council Officers and External Emergency Service agencies	Completed	Completed
27 Nov 2008	Annual LDCC Ex	Ex *Cyclone Jason* – Functional Ex	Coordination Centre Council and liaison officers	Completed	Completed
10 Dec 2009	Annual LDCC Ex	Ex *Cyclone Ava* – Functional Exercise	Coordination Centre Council and liaison officers	Completed	Completed
30 July 2009	Copperlode Dam EAP Ex	Ex *Deluge* Desktop/ Discussion Ex	Council Officers and External Emergency Service agencies	Completed	Completed
8-10 June 2010	Regional LDMG & DDMG Exercise	Ex *Poseidon* – Functional Ex	Regional Local and District Disaster Management Group agencies and Local DCC	Completed	Completed

8 Dec 2010	Annual LDCC Ex	Ex *Cyclone Elia* – Functional Ex	Coordination Centre Council and external liaison officers	Completed	Completed
1-6 Feb 2011	Activation	STC Yasi	All disaster management staff, Council and external emergency liaison officers	Completed	Ongoing
15 Dec 2011	Annual LDCC Ex	Ex *Cyclone Meghan* – Functional Ex	Coordination Centre Council and external liaison officers	Completed	Completed July 2012
8 Dec 2012	Annual LDCC Ex	Exercise *Cyclone Linda*– functional exercise	Coordination Centre Council and external liaison officers	Completed	Completed Feb 2013
11 Dec 2013	Annual LDCC Ex	Exercise *Cyclone Petra* – functional exercise	Coordination Centre Council and external liaison officers	Completed	Completed Dec 2013
8-12 Apr 2014	Activation	STC Ita	All disaster management staff, Council and external emergency liaison officers	Completed	AAR Completed – August 2014 with recommendation for implementation of an Incident Management Team
27 Nov 2014	Annual LDCC Ex	Exercise *Cyclone Otis* – functional exercise	Coordination Centre Council Operations (IMT) and external liaison officers	Completed	Completed Jan 2015
Mar 2015	Activation	STC Nathan	All disaster management staff, Council and external emergency liaison officers	Completed	Completed Oct 2015
Nov 2015	Annual LDCC Ex	Exercise *Cyclone Noah* – functional exercise	Coordination Centre Council Operations (IMT) and external liaison officers	Completed	Completed May 2016
Nov 2016	Annual LDCC Ex	Exercise *Cyclone Kepi* – functional exercise	Coordination Centre Council Operations (IMT) and external liaison officers	Completed	Completed Mar 2017
27 Mar 2017	Activation	STC Debbie	Coordination Centre Council Operations (IMT) and external liaison officers	Completed	Case Study Report & Brief completed for LDMG, DDMG and IGEM July 2017

9.7 Post Disaster Assessment

A hot debrief is to be conducted immediately following the conclusion of the exercise and a cold debrief conducted not longer than 4 weeks following the exercise. The cold debrief allows participants time to provide a more considered view of the exercise outcomes. Learnings from the exercise are to be consolidated into a plan for action usually contained within an After Action Operational Review

9.7.1 Debriefing

Debriefing is a valuable tool in the ongoing improvement of disaster management. Effectively undertaken, debriefing will identify areas of concern in the existing planning or response arrangements, as well as identifying areas of appropriate activity.

There are two different levels of debriefing activity, for two distinct purposes.

1. Hot Debrief

2. (Post-Event) Operational Debrief

1. The Hot Debrief

This is a style of Debrief undertaken immediately after operations are complete, giving participants the opportunity to share learning points while the experience is still very fresh in their minds.

Multiple hot debriefs during protracted operations may be appropriate to identify significant issues and provide prompt solutions for immediate implementation - in protracted operations, hot debriefs are to be conducted daily. Debriefs are to be conducted by the Local Disaster Coordinator.

2. The (Post-Event) Operational Debrief

Post event debrief is a more formalised debrief of the event by the Local Disaster Management Group, conducted days or weeks after an operation, when participants have had an opportunity to take a considered view of the effectiveness of the operation.

Ideally this debrief should occur after each participating agency has had the opportunity to have a single agency debrief of the activity.

The LDMG may consider having the Debrief facilitated by an independent person or organisation.

An effective debrief will:

- seek constructive information from those being debriefed
- analyse the operation to determine what went right, what went wrong and why without trying to apportion blame
- acknowledge good performance
- focus on improving planning and procedures
- record relevant information to enable reports to be compiled;

The Debrief should address:

- What happened during the event
- Areas which were handled well
- Areas where the coordination or the response could be improved
- Identified areas for amendment of plans, procedures, or training programs

The required amendment to documentation should be included in the regularly programmed review of the Local Disaster Management Plan.

9.7.2 After Action Operational Review

A post event 'After Action Operational Review Report' is completed in association with the LDMG-CR members, and any perceived gaps in capacity or process is addressed in the ongoing disaster management program.

PART 10 RESPONSE

The principle purpose of the emergency response is the preservation of life and property. Response is defined as the "actions taken in anticipation of, during, and immediately after an emergency to ensure that its effects are minimised, and that people affected are given immediate relief and support" (*EMA 2004*).

10.1 Warning Notification and Dissemination

LDMG members will receive warning products via a number of means.

The DDC will receive notification directly from the State Disaster Coordination Centre (SDCC) and internally through Queensland Police Service Communication Centres and will ensure the dissemination of warnings to vulnerable LDMGs within the district

The LDC and a number of agencies will also receive warnings directly from the Bureau of Meteorology. The LDMG-CR will be notified by the LDC and may also receive notification from internal agency offices. LDMG-CR members will receive warning products via a number of means including text messaging, email and/or direct phone calls.

Details regarding responsibility for notification processes within LDMG-CR member agencies are detailed in respective agency plans. Agency plans will include detailed contact registers to achieve dissemination of warnings.

The Chair of the LDMG-CR, or delegate, is responsible for the dissemination of public warnings and information and is the official source of public and media information. The Chair of the LDMG-CR, or delegate, is the chief media spokesperson.

Other alerts or warnings such as those delivered through the use of SEWS Standard Emergency Warning System) or the national Emergency Alert (EA) telephone and SMS messaging system will be used to support and reinforce the warning messages provided through broadcast media and Council's 'Cairns Alert' and Cairns Disaster Dashboard.

10.2 Activation

The authority to activate the Local Disaster Management Group - Cairns Region is vested in the Chair (or delegate) of the Local Disaster Management Group - Cairns Region. It is the duty of the Chair to inform the DDC regarding the Plan's activation.

Activation may occur as:

- A response to a worsening situation; or
- At the request of the responsible Lead Agency (in situations where no prior warning is possible).

The four levels of activation are:

Alert
This level is characterised by a heightened level of vigilance due to the possibility of an event in the area of responsibility. No action is required however the situation should be monitored by someone capable of assessing the potential of the threat.

Lean Forward
This level refers to the operational state prior to 'stand up' characterised by a heightened level of situational awareness of a disaster event (either current or impending) and a state of operational readiness. Disaster coordination centres are on standby; prepared but not activated.

Stand Up
This level of activation is the operational state following 'lean forward' whereby resources are mobilised, personnel are activated and operational activities commenced. Disaster coordination centres are activated.

Stand down
This level is the transition from responding to an event back to normal core business and/or recovery operations. There is no longer a requirement to respond to the event and the threat is no longer present

Refer to ***A.1 Activation of LDMG-CR Operational Plan.***

The Local Disaster Coordination Centre - Cairns Region (LDCC-CR) is activated by the Local Disaster Co coordinator of the LDMG-CR. The LDC has overall responsibility for the establishment and operation of the LDCC. The LDC should ensure appropriate levels of staff are identified and trained in the operation of the LDCC. The LDC, in consultation with the LDMG Executive Team, is responsible for establishing and maintaining financial management procedures for the LDCC.

For Activation and Operating Procedures refer ***to A.2 Local Disaster Coordination Centre - Cairns Region Operational Plan***

Local Disaster Coordination Centre (LDCC)

The main aim of the Cairns Local Disaster Coordination Centre is to coordinate resources, information and assistance in support of local agencies and stakeholders who are engaged in disaster operations. The LDCC also provides forward planning which requires consideration of the unfolding event and its likely impacts on the Cairns community.

Primary responsibilities of the Cairns LDCC include:
• Analysis of probable future requirements and forward planning including preliminary investigations to aid the response to potential requests for assistance
• Implementation of operational decisions of the local disaster coordinator (LDC)

- Advice of additional resources required to the DDMG
- Provision of prompt and relevant information to the DDMG concerning any disaster event occurring within their district

Concept of Operations

The LDCC operates under the Australasian Inter-agency Incident Management System (AIIMS v4) to ensure effective coordination of disaster response operations.

Document Management

Document Management throughout the disaster operations will be achieved through the Guardian Control Centre software which will maintain logs, formal records and file copies of all expenditure (including personnel timesheets), in order to provide clear and reasonable accountability and justifications for future audit and potential reimbursement purposes. Once the Cairns LDCC has been stood down, all record related to the disaster event will be recorded into Redland City Council's records management system.

10.3 Authority to Activate

The authority to activate the Local Disaster Management Group - Cairns Region is vested in the Chair of the Local Disaster Management Group - Cairns Region. It is the duty of the Local Disaster Co Coordinator to inform the DDC regarding the Plan's activation.

The Plan provides the basis for the Local Disaster Management Group - Cairns Region to co-ordinate the response to a disaster through various response authorities.

Those incidents of local concern, and can be managed using local resources will be managed by the LDMG-CR, however when local resources are exhausted, the Far North District Disaster Management Plan and State Disaster Management Plan provide for external resources to be made available, firstly from the District, and then secondly on a State-wide basis.

Only the Local Disaster Coordinator and Chairperson are authorised to seek external resources through the sub plan ***A.2 Local Disaster Coordination Centre - Cairns Region Operational Plan.***

Refer also section 9.1 of this plan.

10.4 Operational Reporting

The LDC will ensure operational reporting from LDMG-CR to Far North DDMG commences once the LDMG-CR is activated. Situation Reports (SITREPS) will be forwarded at times as requested by the Far North DDMG – usually 12 midday and midnight daily.

Once the Local Disaster Coordination Centre is activated, all reporting will be as listed in the 'DCC Standard Operating Procedures'.

Situation Report (SITREP)

Situation reports (SITREP) capture accurate information from the day's operations by detailing current and forecast situation during a disaster event. The LDC, through the operation of the Cairns LDCC, is responsible for the preparation of the SITREP. The SITREP will be distributed at intervals as requested by the DDMG.

Tasking Log (Guardian)
Cairns LDCC uses the Guardian software during activations to record actions taken and the responsible agency or officer. The Guardian System functionality as a tasking log and mapping system records the specific operational task to be undertaken; the date and time of commencement and completion of the task; the responsible agency/officer; the actions taken and contextual comments; and plots all tasks on reference mapping. Various operational reports, including the SITREP can be generated based on taskings and/or location.

10.5 Accessing Support

In the LDCC-CR Council shall provide land line telephones, computer access, two way radios, desk space and administrative resources to agency Liaison Officers.

10.5.1 Requests to DDMG

- All requests to the DDC will go through either the Local Disaster Coordinator or Chair of the LDMG-CR or their delegate after confirming all available local resources have been exhausted.

10.5.2 Support from External Agencies (Public and Private)

- All of Council's preferred suppliers are outlined within the 'List of Suppliers' held by the CRC Procurement Officer.
- Support is requested through the agency Liaison Officers or via the usual Council procedures. Requests to the DDC are as described previously.

Should support be withdrawn for whatever reason all agencies affected will be advised.

Where the LDMG-CR has exhausted it capacity and requires additional logistics support and/or resources to meet operational requirements that are beyond local capacity and capability, the LDMG-CR will formally seek assistance through a Request for Assistance forwarded to the DDCC via the Cairns LDCC.

10.6 Operational Plans

Operational Sub-Plans have been written for specific functions refer to ***Section 7 Appendices - Appendix A – Operational Plans:***

- *A.1 Activation of LDMG-CR* – sets out the process for the activation of the LDMG-CR.
- *A.2 Local Disaster Coordination Centre - Cairns Region* – standard operating procedures for activating, staffing and management of the LDCC-CR during an event.
- *A.3 Financial Management* – establishes the procedure for purchasing, procurement, emergency purchase orders and the process for tracking agency costs for response and recovery from a disaster.
- *A.4 Community Support* – includes the Community Support Sub Plan and provides procedures and processes to be used during both the response and recovery phase of an event.
- *A.5 Evacuation* – this plan sets out the process for evacuation, who makes the decision, how it is activated, who gives direction to evacuate and to which

centre.

- *A.6 Disaster Centre Management* – establishes the roles and responsibilities for the opening up, staffing, registering and in general caring for evacuees. Includes the Storm Tide cyclone Shelter Sub-Plans
- *A.7 Impact Assessment* – this plan provides the LDMG-CR with the tools to carry out an initial and then a more detailed impact assessment on the effect of the disaster on infrastructure, private property and the people in the community.
- *A.8 Medical Services* – this Plan provides a list and contact details for medical support in the Cairns Region.
- *A.9 Public Health* – Cairns Regional Council Health Plan sets out the responsibilities of the Environmental Health Officer in the event of a disaster and the support given by Queensland Public Health.
- *A.10 Public Information and Warnings* – provides the guidelines for the public awareness and education programs undertaken by members of the LDMG-CR and also the procedure for issuing warnings or advice pre, during or post event.
- *A.11 Public Works and Engineering* – protection and restoration of infrastructure before, during and after an event is paramount and this plan identifies key resources and assistance that can be deployed.
- *A.12 Transport* – transport plays a key role in a disaster in not only ensuring access to the area for response teams but also to evacuate people if required.
- *A.13 Logistics* – resource management, particularly of material resources, is an area that can cause extreme problems in response to a major event. This plan addresses the issues and provides process to be followed during a major event.
- *A14 Resupply* – provides for emergency supply of isolated persons/communities
- *A.15 Recovery* - provides a framework for the coordination of recovery operations within the local government area and is supported by the procedures outlined in the Queensland Recovery Guidelines
- *A16 Asbestos Management* - provide a framework for the management of asbestos containing material (ACM) in the response to a civil or natural disaster between Council, LDMG and other government stakeholders
- *A17 Edmonton Storm Tide Cyclone Shelter* - provide effective and coordinated management of the Edmonton Storm Tide Cyclone Shelter before, during and after the impact of a severe tropical cyclone.
- *A18 Redlynch Storm tide Cyclone Shelter* - provide effective and coordinated management of the Redlynch Storm Tide Cyclone Shelter before, during and after the impact of a severe tropical cyclone
- *A19 Tsunami Response Sub*-Plan - outlines the tsunami specific preparedness, prevention and response for the LDMG-CR and residents of the Cairns Region, who may be threatened by a tsunami.
- *A 20 Babinda Community All Hazards Disaster Action Plan* - covers the procedural arrangements for responding to a known disaster affecting, or with the potential to affect, the community of Babinda.
- *A21 Volunteer Coordination Sub-Plan* - The purpose of the Plan is to ensure appropriate coordination of volunteers and donations in the response, transition and recovery phases of a disaster event

Hazard Specific Operational Sub-Plans

- Copperlode Falls Dam Emergency Action Plan (EAP)
- Moody Creek Detention Dam EAP
- McKinnon Creek Detention Dam EAP
- Tsunami Response Plan
- Wildfire Management Plan

10.7 Risk Treatment Arrangements

As this Local Disaster Management Plan is based on the ***all-hazards*** approach where each identified threat or event is responded to in a similar manner and the key to a successful operation is to manage the consequences of the event to produce the best outcome for the community.

The types of threat or disaster/emergency vary significantly and could be any of the following, cyclone and severe storm, counter terrorism, exotic animal disease, bushfire, flood, storm surge, oil spill, pollution, contamination of town water supply, major road/rail Incident, major aircraft accident, etc. Each type of event will have its own special requirements however the response will be in accordance with the Main Disaster Management Plan and supporting Operational Plans.

The Operational Plans are applicable to all hazards and some or all of the Operational Plans would be implemented depending on the particular event.

Risk Treatment Arrangements have also been prepared for specific risks.

Refer to *Appendix J - Risk Treatment Arrangements.*

10.8 Initial Impact Assessment

Impact assessment is the organised and coordinated process of collecting and analysing information after a disaster, to estimate casualties, damage and immediate needs of the impacted community. The purpose of conducting an impact assessment is to provide planning groups with a comprehensive situational awareness of what has occurred and what is required to address the problems in the response and recovery stages.

The details of who carries out initial inspections and assessments, the procedures for reporting and action to be taken is set out in ***A.7 Impact Assessment Operational Plan*****.** During the risk analysis process many events will be identified as having the potential for causing fatalities, injuries, property and environmental damage. The timely and accurate assessment of the health impact on the community along with the damage to public or private property and the associated implications for business and government continuity, which is of vital concern during a disaster event which will have a great bearing upon the manner in which response and recovery are managed.

The LDMG-CR conducts Rapid Impact assessment analysing

- the extent of the affected area;
- affected population including the characteristics and condition;
- Emergency - medical, health, nutritional, water and sanitation.
- Priority infrastructure

10.9 Establishment of Forward Command Post

The establishment of a Forward Command Post (FCP) will be governed by the scale and location of the event. Emergency Services agencies will normally establish a FCP as per their respective operating procedures and if warranted. As per Council's 'Emergency Response Plan', the Martyn Street Depot for Works and Maintenance will be utilised to coordinate and task Council and other agencies'/organisations crews with works to be undertaken in the field. This will be reviewed for each event.

10.10 Disaster Declaration

Where there is a requirement for a person or a class of persons to exercise the additional powers available under the provisions of s.77 of the Act, the District Disaster Coordinator may with the approval of the Minister, declare a disaster situation for the Disaster District or a part of the Disaster District).

The District Disaster Coordinator should take reasonable steps to consult with Council prior to any declaration.

There is also provision for the Premier of Queensland and the Minister for Emergency Services to declare a Disaster Situation for the State of a part of the State.

The chairperson of the State Disaster Management Group or the District Disaster Coordinator only may authorise the exercise of additional powers.

The declaration of a disaster situation does not affect Council's responsibilities in relation to the coordination of the response to and recovery from the disaster event.

10.11 Financial Management

There is a need for Council and other responding agencies to manage specific internal financial arrangements in support of a disaster event, and the eventual financial claiming process to recoup funds.

Cairns regional Council addresses this responsibility through specifically tailored computer software (Resolve) and the Operational Plan *A.3 Financial Management*.

There are two sets of financial arrangements which, if activated by the Minister, provide financial support to Queensland communities impacted by a disaster event through the reimbursement of eligible expenditure:

10.11.1 State Disaster Relief Arrangements (SDRA)

The intent of the SDRA is to assist in the relief of communities whose social wellbeing has been severely affected by a disaster event (natural or non-natural). The SDRA is State funded, and therefore not subject to the Australian government imposed event eligibility provisions or activation threshold. As a consequence, SDRA is able to address a wider range of disaster events and circumstances where personal hardship exists.

10.11.2 Natural Disaster Relief and Recovery Arrangements (NDRRA)

The intent of the NDRRA is to assist the relief and recovery of communities whose social, financial and economic wellbeing has been severely affected by a disaster

event. The arrangements provide a cost sharing formula between the State and Australian Government and include a range of pre-agreed relief measures.

Eligible disasters under NDRRA include: Cyclone, Flood, Landslide, Meteor Strike, Storm, Bushfire, Storm Surge, Terrorist Event, Tsunami, Tornado and Earthquake. Drought, frost, heatwave, epidemic events relating from poor environmental planning, commercial development or personal intervention are not eligible events under NDRRA.

To claim for expenditure reimbursement under SDRA or NDRRA arrangements the relevant arrangements must be activated;

- the relevant relief measures must be activated and the expenditure must meet the eligibility requirements of that measure; and
- documentary support for all eligible expenditure detailed in the claim must be provided by the claimant.

10.12 Media Management

Refer attached Operational Plan *A.11 Media Management* – strategically providing information to the media that is consistent, appropriate and reliable with consideration to factors like target audience, frequency of messaging, demographics and geographic situation.

10.13 Resupply

Although Cairns is basically a large urban environment, a disaster event may create some issues in supplying essential goods to isolated communities, isolated rural properties and stranded persons. The infrastructure, topography and location of population centres are such that it is considered that resupply will not be regularly experienced in the area with disaster events.

All issues of resupply will be undertaken as per the 'Queensland Resupply Guidelines' issued by the State Disaster Management Group.

The LDMG-CR is responsible for the management of, and the community education and awareness in relation to the resupply of isolated communities and isolated rural properties.

Further details of the State Resupply Policy can be found at http://www.disaster.qld.gov.au/Disaster-Resources/Pages/pgf.aspx.

10.14 Management of Volunteers

The LDMG-CR works with FNQ Volunteers to manage volunteers for disaster events. Volunteers, who contact Council, are directed to FNQ Volunteers. FNQ Volunteers is an advisory member of the LDMG-CR and member of the Community Support Sub-committee.

The LDMG-CR coordinates volunteers by utilising the Volunteer Coordination Sub-Plan with procedures based on the "*Spontaneous Volunteer Management Resource Kit*" from the Australian Government Department of Social Services and with reference to the Southern Cross University working paper*, "Spontaneous volunteering during natural disasters*" (2013).

10.15 Management of Donations

Donations to Council from the community for disaster events will be managed as follows:

- Donations of goods, clothing, toys and bedding – managed by St. Vincent de Paul Society, Cairns
- Donations of food – managed by the Community Support Sub-committee.
- Offer to volunteer to assist – FNQ Volunteers (refer 10.14 above)
- Donations of money, services, plant and equipment – managed through the Disaster Coordination Centre utilising GIVIT (during times of disaster, GIVIT works alongside local Government agencies and not-for-profit organisations to identify and source needed donations by location, enabling the rapid delivery of quality goods in a timely manner). GIVIT Provides a 'virtual' warehouse, eliminating storage, distribution and disposal issues.

GIVIT offers all Queensland Local Governments a free Disaster Recovery Service that supports charities, front-line services, agencies and governments by coordinating the deluge of donations that commonly occurs post-disaster and ensures offers of good quality goods and services are allocated to meet specific need.

Cairns Regional Council has signed an MOU with GIVIT to be able to manage all offers and requests of goods and services as well as receive financial donations which are used to purchase items from local providers.

Donations will be managed in accordance with:

- Australian Government 'National Guidelines for Managing Donated Goods'; and
- Queensland State Recovery Office 'Tools to assist with managing donated goods'.

PART 11 RECOVERY

11.1 Recovery Principles

Recovery is a remedial and developmental process encompassing the following activities (*the source document for Recovery is the EMA Recovery Manual*):

- Regeneration of the emotional, social and physical well-being of individuals and communities;
- Reducing future exposure to hazards and associated risks;
- Reducing the consequences of the disaster on a community; and
- Taking opportunities to adapt to meet the physical, environmental, economic and psychosocial future needs of the community.

Disaster recovery is most effective:

- When management arrangements recognise that recovery from a disaster is a complex, dynamic and protracted process;
- When agreed plans and management arrangements are well understood by the community and all disaster management agencies;
- When community service and reconstruction agencies have input to key decision making;
- When conducted with the active participation of the affected community;
- When recovery managers are involved from initial briefing onwards;
- When recovery services are provided in timely, fair, equitable and flexible manner; and
- When supported by training programs and exercises.

11.2 Recovery Concepts

The major themes of the Recovery Concepts are:

- Community Involvement – recovery processes are most effective when affected communities actively participate in their own recovery;
- Local Level Management – recovery services should be managed to the extent possible at the local level;
- Affected Community – the identification of the affected community needs to include all those affected in any significant way whether defined by geographical location or as a dispersed population;
- Differing Effects – the ability of individuals, families and communities to recover depends upon capacity, specific circumstances of the event and its effects;
- Empowerment – recovery services should empower communities to manage their own recovery through support and maintenance of identity, dignity and autonomy;
- Resourcefulness – recognition needs to be given to the level of resourcefulness evident within an affected community and self-help should be encouraged;
- Responsiveness, Flexibility, Adaptability and Accountability – recovery services need to be responsive, flexible and adaptable to meet the rapidly changing environment, as well as being accountable;

- Integrated Services – integration of recovery service agencies, as well as with response agencies, is essential to avoid overlapping services and resource wastage;
- Coordination – recovery services are most effective when coordinated by a single agency; and
- Planned Withdrawal – planned and managed withdrawal of external services is essential to avoid gaps in service delivery and the perception of leaving before the task has been completed.

11.3 Recovery Components

There are five (5) elements of recovery and all components are interdependent of each other and one cannot operate effectively without the others. The Recovery Plan considers in detail each component and addresses the issues identified:

- Community Recovery – families and individuals:
    - Community characteristics;
    - Resources necessary to assist in recovery;
    - What government agencies and non-government organisations would be necessary during recovery; and
    - What financial assistance is available to the community and how to access this assistance.
- Infrastructure Recovery (Roads):
    - Restoration of essential transport linkage services;
    - Community access to services;
    - Facilitation of restoration of living conditions and security;
    - Prioritising the rebuilding of infrastructure and community lifelines;
    - How to communicate with the community; and
    - How to integrate arrangements with other agencies.
- Infrastructure Recovery (Built environment):
    - Restoration of essential services;
    - Community access to services;
    - Facilitation of restoration of living conditions and security;
    - Prioritising the rebuilding of infrastructure and community lifelines;
    - How to communicate with the community; and
    - How to integrate arrangements with other agencies.
- Economic Recovery – business continuity, industry restoration:
    - What impact will the disaster have on business continuity and job security;
    - Who needs to be involved in rebuilding economic viability in the community; and
    - Management of damaged reputation regionally, nationally and internationally.

- Environmental Recovery – our natural surroundings:
    - Identification of issues to be considered in managing environmental damage caused by the disaster; and
    - Identification of who should be involved in this process.

The recovery phase of disaster management also involves disaster relief in the provision of immediate shelter, life support and human needs to persons affected by, or responding to, a disaster. For this reason the timely coordinated establishment of disaster recovery strategies is equally as important as, and should be activated in conjunction with, an effective disaster response.

Recovery can be a long and complex process which extends beyond immediate support to include repair, reconstruction, rehabilitation, regeneration and restoration of social wellbeing, community development, economic renewal and growth, and the natural environment.

11.4 Community Recovery

Community Recovery Services aim to assist communities to recover from the effects of disasters. It is recognised that where a community experiences a significant natural disaster there is a need to supplement the personal, family and community structures, which have been disrupted by the disaster. The need for specific services, the service provided and the duration of the operation will be dictated by the type, size and effect of the particular disaster.

Financial Assistance
Once a Disaster Declaration has been approved, the following grant assistance can be accessed by eligible recipients under the Natural Disaster Relief and Recovery Arrangements (NDRRA) or Disaster Relief Funding Schemes administered by the Department of Communities:
1. Immediate Hardship Assistance Grant
2. Immediate Hardship Assistance – Essential Services Grant
3. Essential Household Contents Grant
4. Structural Assistance Grant
5. Essential Services Safety and Reconnection Scheme Grant

Commonwealth Government assistance, administered by Centrelink, may be provided to recipients who meet eligibility requirements in regards to:
• Disaster Relief Payments
• Special Benefit
• Crisis Payment

Crisis Counselling and Support
Crisis counselling and support services are available to community members suffering emotional reactions to a disaster. These services are delivered by a counselling team coordinated by the Department of Communities. Members of the counselling team may be deployed to evacuation centres and community recovery centres.

Emergency and Longer-term Accommodation
Assistance provided will include:
• Emergency and medium- to long-term housing to address the immediate and longer-term accommodation needs of disaster-affected persons
• Bond loan assistance
• Negotiations/assistance with rental moratoriums

Coping with Stress
Disasters can be stressful and frightening, placing strain on household and family relationships and you may see behavioural changes in adults and children.
Most people involved in a traumatic incident or disaster will experience some kind of emotional reaction. It is reassuring to know that, even though these feelings can be very unpleasant, they are normal reactions in a normal person to an abnormal event. It is important to remain calm during and after the disaster event.

Remember that you, your family and your community are not alone. Support is available through a number of Queensland Government agencies and community organisations**.**

Lifeline Australia Call 13 11 14	Lifeline Australia provides a telephone counselling service in addition to providing information, referral and associated services from local service centres
Australian Red Cross Call 1800 811 700	The Australian Red Cross has two publications; 'Coping with a major personal crisis' and 'After the emergency for children', which provide tips on dealing with stress during and after an emergency. Download a copy from www.redcross.org.au and print it out to keep in your Emergency Kit.
Additional help and information	Can be obtained from your general practitioner, local Community Health Centre or local Mental Health Service. Please refer to the White Pages telephone directory.

11.5 Recovery Sub Plan

The Cairns Regional Council Local Disaster Recovery Sub Plan provides a framework for the coordination of recovery operations within the Cairns local government area and is supported by the procedures outlined in the Queensland Recovery Guidelines and the Queensland Recovery Plan

This recovery strategy is being developed to:

- include all functions of recovery (human-social, infrastructure (Roads and Built environment), economic and environmental);
- define broad parameters for the effective coordination of recovery operations within the local government area; and
- identify constraints to the coordination of recovery operations within the local government area.

The Cairns Local Recovery Committee is set up by the LDMG-CR as a sub-group to oversee the implementation of the Recovery Sub-Plan and coordination of Council's recovery activities.

The plan focuses on Council's role and responsibilities but recognises;

- the lead agency role of various State agencies in providing support for community recovery services,
- It takes a cooperative, multi-agency approach to community recovery.

Activation of Recovery Arrangements

The Local Recovery Group will be activated by the Chair of the LDMG-CR when a community has been impacted by a disaster to provide and coordinate recovery services. The Cairns Local Recovery Group may establish separate recovery committees for each of the five functions as required. The Cairns Local Recovery Group will activate the Cairns Local Community Recovery Plan to provide a coordinated approach to the provision of recovery services to the community.

The diagram below depicts the structure of the Cairns Local Recovery Group.

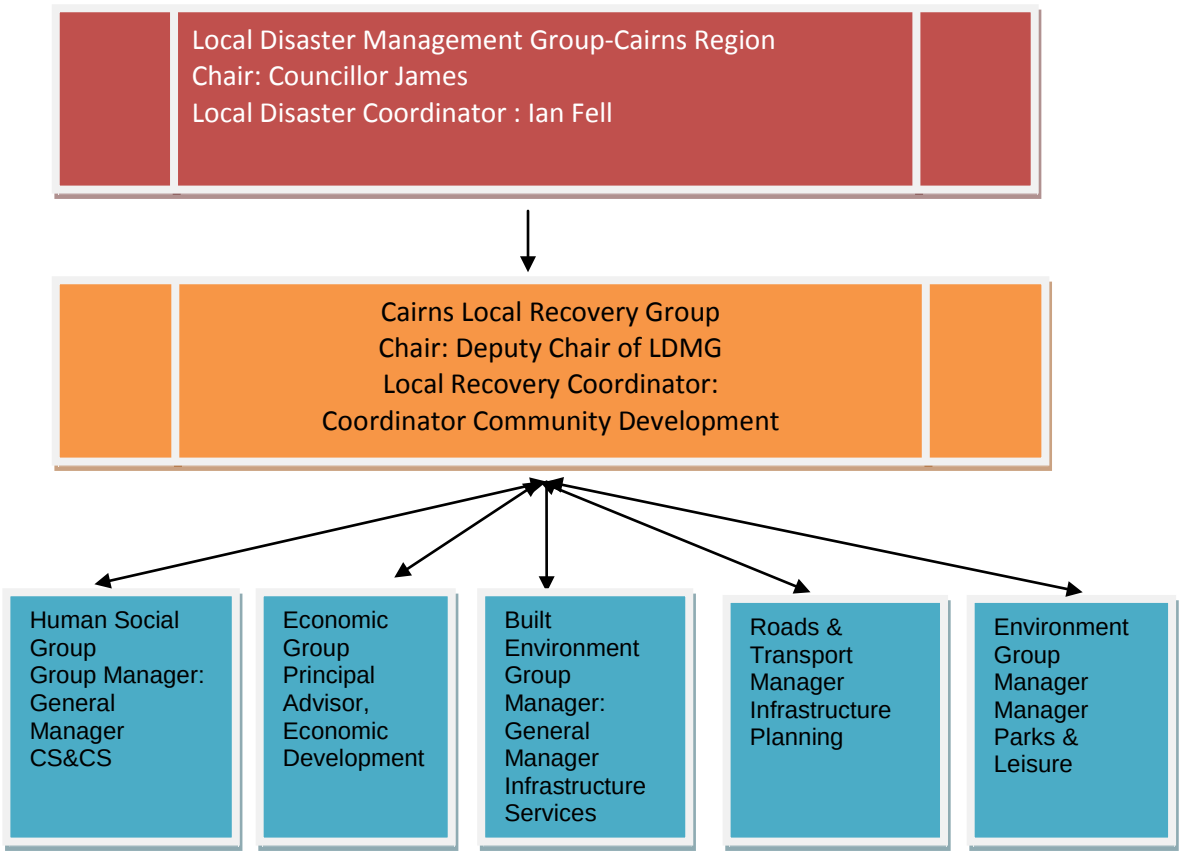


Table 46: Local Levels of Activation for Recovery Arrangements

Response ALERT		Triggers	Actions	Communications
Response LEAN FORWARD	Recovery ALERT	Response phase at 'lean forward' level of activation	Appointment of LRC as appropriate • Potential actions and risks identified • Information sharing commences • LRC in contact with LDCC/LDC • Initial advice to all recovery stakeholders	LRC and LRG members on mobile remotely
Response STAND UP	Recovery LEAN FORWARD	Response phase at 'stand up' level of activation Immediate relief arrangements are required during response phase	Monitoring of response arrangements • Analysis of hazard impact or potential impact • Relief and recovery planning commences Deployments for immediate relief commenced by recovery functional agencies	LRC and LRG members on mobile and monitoring email remotely Ad hoc reporting
	Recovery STAND UP	Immediate relief arrangements continue	LRG activated at LDCC or alternate location • Recovery plan activated • Deployments for immediate relief response • Action plans for four functions of recovery • activated as required • Community information strategy employed	LRC and LRG members present at LDCC or alternate location, on established land lines and/or mobiles, monitoring emails

Response STAND DOWN	Recovery STAND UP	Response phase moves to 'stand down' level of activation. Medium term recovery commences	Participate in response debrief • Transition arrangements from 'response and recovery' to 'recovery' activated including • handover from LDC to LRC • Action plans for four functions of recovery continue • Community information strategies continue	LRC and LRG members involved in medium term recovery continue as required Regular reporting to Response Stand Down LDMG/LDC
	Recovery STAND DOWN	LRG arrangements are finalised. Community returns to normal activities with ongoing support as required.	• Consolidate financial records • Reporting requirements finalised • Participate in recovery debrief • Participate in post event debrief • Post event review and evaluation • Long term recovery arrangements transferred • to functional lead agencies • Return to core business	LRC and LRG members resume standard business and after-hours contact arrangements Functional lead agencies report to LRC/LRG as required

11.6 District Recovery

District Recovery Committees are necessary because many of the services required in recovery management are administered or delivered on a District basis. The FNQ regional office of Department of Communities, Child Safety and Disability Services (DCCSDS) – as the functional lead agency for Human Social Disaster Recovery – is the primary agency in delivering the region's three District-level Community Recovery Plans.

Community Recovery Centres generally open soon after the impact of a large scale disaster to provide a 'one-stop-shop' for community members to receive immediate assistance, information, advice, services and support from a range of government and non-government agencies.

11.7 State Recovery

Committees at a State level comprise representatives from Commonwealth, State and local government agencies and non-government organizations.

The State Committee oversees:

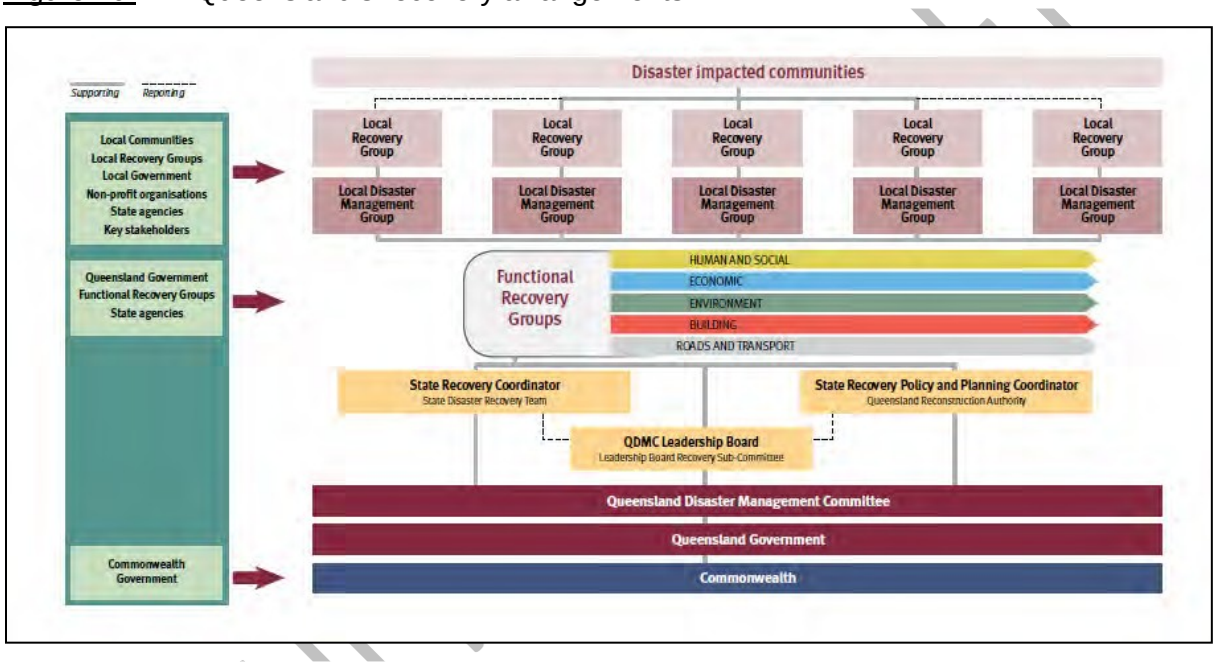
- Management of the recovery process at the State level ensuring that community needs are met, either through State resources or by the acquisition of appropriate resources from the Commonwealth;
- Provision by member agencies of a range of specific recovery services ranging from reconstruction and physical infrastructure issues to personal support services

The Queensland Reconstruction Authority (QRA) is the lead agency responsible for disaster recovery, resilience and mitigation policy as well as the functional lead agency for the Commonwealth/state funded Natural Disaster Relief and Recovery Arrangements (NDRRA) and the Queensland funded State Disaster Relief Arrangement (SDRA) coordination. When directed by the QDMC, the QRA develops state strategic disaster recovery plans and ensures the efficient and effective coordination of recovery and reconstruction efforts following a disaster.

Functional Recovery Groups leverage existing and strong partnerships between local and state government to ensure close collaboration and coordination during the management of recovery activities. This is in accordance with the needs and priorities identified by communities and the state and includes those outlined in Local Recovery Group Plans. FRGs may be activated during the response phase of the disaster in preparation for the recovery.

The Queensland State Recovery Plan can be found at:
http://qldreconstruction.org.au/resilience-and-recovery

Figure 20: Queensland's recovery arrangements



PART 12 APPENDICES

Appendix A – Operational Sub-Plans

In support of the main Local Disaster Management Plan there are a number of Operational Sub-Plans for Cairns Region relating to specific arrangements and actions.

A. 1 Activation of Local Disaster Management Group - Cairns Region
A. 2 Local Disaster Coordination Centre - Cairns Region
A. 3 Financial Management
A. 4 Community Support
A. 5 Evacuation
A. 6 Disaster Centre Management
A. 7 Impact Assessment
A. 8 Medical Services
A. 9 Public Health
A.10 Public Information and Warnings
A.11 Public Works and Engineering
A.12 Transport
A.13 Logistics
A.14 Resupply
A.15 Recovery
A.16 Asbestos Containing Material Management
A.17 Edmonton Storm Tide Cyclone Shelter
A.18 Redlynch Storm Tide Cyclone Shelter

Appendix B – Roles and Responsibilities of LDMG-CR Members

Appendix C – Cairns Region LDMG Contact Directory

Appendix D – Resources List

Appendix E – Activation Levels and Actions

Appendix F – Hazard & Risk Analysis

Appendix G – Risk Evaluation

Appendix H – Risk Treatment Summaries

Appendix I – Risk Treatment Strategies Register

Appendix J – Residual Risk Register

Appendix B – Roles and Responsibilities of LDMG-CR Members

CORE MEMBERS

Position	Organisation	Responsibilities	Contact Person
Chairperson LDMG-CR	Cairns Regional Council Elected Representative	To manage and coordinate the business of the group; • to ensure, as far as practicable, that the group performs its legislated functions; • to report regularly to the relevant district group, and the chief executive of the department, about the performance by the local group of its functions; • Preside at meetings of Local Disaster Management Group; • Determine time and place for Local Disaster Management Group meetings; • Appoint Local Disaster Coordinator (in writing); • Activate Local Disaster Management Group as appropriate; • Release of community information regarding the event through media liaison officer or delegate • Conduct debriefs as soon as possible at conclusion of operations • Approve appointments of LDMG deputies	Cr Terry James
Deputy Chairperson Nominated Councillor	• Cairns • Regional Council • Elected Representative	• Perform functions of Chairperson when delegated • As per Chairperson	Cr John Schilling
Chief Executive Officer	Cairns Regional Council	• To provide expert advice and support to the Chair and LDMG-CR	John Andrejic
Local Disaster Coordinator	Cairns Regional Council	• Coordinate disaster operations for the local group;	Ian Fell

		• Responsible for maintaining operational readiness of the LDCC • Report regularly to LDMG about disaster operations; • Ensure as far as practicable that any strategic decisions of the local group about disaster operations, are implemented; • Notify District Disaster Coordinator and the Executive Officer to the DDMG of activation of LDMG. • Maintain close liaison with District Disaster Coordinator and Executive Officer to the DDMG, SES and other combat authorities in the event of a disaster/emergency. • At conclusion of operations and on advice from control authority, recall participating organisations and close down Disaster Coordination Centre. • Liaison with District Group • Liaise with the Executive Officer District Disaster Management Group in relation to advice and support services available to the local group. • Coordination of Disaster Management Training • Conduct annual exercise to test/review Local Disaster Management Plan and ensure staff are trained in disaster management • Conduct skill audit of disaster coordination centre staff; • Identify training requirements of disaster coordination centre staff; Implement/resource	

		training courses for disaster coordination centre staff; • Identify training requirements of other staff involved in disaster Management • Responsible for public education on disaster preparedness.	
Deputy LDC	Cairns Regional Council	• Functions of Local Disaster Coordinator when delegated	Amanda Walker
Manager Buildings & Facilities Management		• To provide expert advice and support on all technical matters, including building rapid damage assessment & maintenance of Edmonton STCS	Antón Mac Suibhne
Manager Infrastructure Services - Works	Cairns Regional Council	• To provide expert advice and support on all technical matters, including the provision of plant, materials and man-power during response and recovery.	Gary Everson
Manager, Water & Waste	Cairns Regional Council	• To provide expert advice and support on all technical matters on water treatment and sewage during disaster response and recovery operations	Simon Page
Senior Environmental Health Officer	Cairns Regional Council	• Responsible for Public Health Operational Sub-Plan	Nathan Mills
General Manager Community, Sport & Cultural Services	Cairns Regional Council	• Chairing of the Community Support Sub-committee, and responsible for Community Support Sub-Plan	Linda Kirchner
Manager Corporate Communications	Cairns Regional Council	• Provide expert advice to LDMG-CR • Contribute to legislated functions of LDMG-CR • Preparation and dissemination of all press releases during an event	Robyn Holmes
Cairns Metro Inspector	Queensland Police Service	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG	Inspector Peter Mansfield

		• Liaison between the agency and the LDMG-CR	
Manager Community Safety Operations	Queensland Fire and Rescue Service	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the agency and the LDMG-CR	Inspector Stephen Tognolini
Operations Supervisor Cairns & Coastal	Queensland Ambulance Service	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the agency and the LDMG-CR	James Andrews
Executive Director, Corporate Services	Cairns Base Hospital	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the hospital and the LDMG-CR	Ben Ryan
Local Controller	Cairns SES	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the SES and the LDMG-CR	Terry Ball
Senior Service Officer (Disaster Recovery)	Department of Communities	• Liaison between the Cairns District Human Social Recovery Committee and the LDMG-CR	Kezia Vonarx
Area Operations Manager	Ergon Energy	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the agency and the LDMG-CR	Geoff McGraw
Emergency Management Coordinator	Queensland Fire & Emergency Services (Emergency Planning)	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • To provide advice and assistance to all agencies and committees within the Queensland disaster	Murray Hayton

		management system	
Security & Emergency Services Coordinator	Cairns Airport	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the agency and the LDMG-CR	Alicia Prince
Security & Emergency Manager	Cairns Ports	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the agency and the LDMG-CR	Richard Stephenson
Business Manager	Telstra	• Attend meetings of LDMG; • Provide expert advice to LDMG • Contribute to legislated functions of LDMG • Liaison between the agency and the LDMG-CR	Leigh Wickerson

ADVISORS

Position	Organisation	Responsibilities	Contact Person
Fire Station Manager	Air Services Australia	Liaison between the agency and the LDMG-CR	Andrew Firman
Manager Joint Operations Support Staff	Australian Defence Force	Liaison between the agency and the LDMG-CR	Major Glen Fisher Maj. Simon Sullivan (51st FNQR) LCDR Matthew Richardson (HMAS Cairns)
Emergency Services Manager	Australian Red Cross	Liaison between the agency and the LDMG-CR	Daryl Hanger
OIC Cairns Meteorology Office	Bureau of Meteorology	Liaison between the agency and the LDMG-CR	Bill O'Connell
CEO	Private Health Network	To provide expert advice on medical and health matters	Robin Moore
CEO	Cairns Private Hospital	Liaison between the agency and the LDMG-CR	Lisa Ansell
Chamber President	Cairns Chamber of Commerce	Liaison between the agency and the LDMG-CR	Deborah Hancock
Manager Infrastructure Planning	Cairns Regional Council	To provide expert advice on matters relating to Council infrastructure planning	Helius Visser
Manager Waste & Environment	Cairns Regional Council	To provide expert advice on matters relating to waste management and disposal	Nigel Crumpton
Manager Vessel Traffic Management	Maritime Safety Qld	Liaison between the agency and the LDMG-CR	Nathan Best
Coordinator Centre for Disaster Studies	James Cook University	Support and assistance to the LDMG-CR and the LDC	Caryn West
Director Environmental Health Tropical Population Health Unit	Queensland Health	Liaison between the agency and the LDMG-CR	Andrew D'Adonna
Yards Supervisor, Regional Coordinators Office Cairns QR	Queensland Rail	Liaison between the agency and the LDMG-CR	Steven Van Ballegooyen
Principal Engineer	Queensland Transport& Main Roads	Liaison between the agency and the LDMG-CR	Richard Evans
Education, Training & Employment	Senior Facilities Officer	Liaison between the agency and the LDMG-CR	Tony Fuller
Manager Marketing Operations	Tourism Tropical North Queensland	To provide expert advice on matters relating to the tourist population	Andrea Fogarty
Emergency Services Coordinator	Salvation Army	Liaison between the agency and the LDMG-CR	Wendy Tiggerson
Surf Life Saving Qld	Lifeguard Supervisor	Liaison between the agency and the LDMG-CR	Rob Davidson
St John Ambulance	Divisional Superintendent	Liaison between the agency and the LDMG-CR	David Beckham
RSPCA	Animal Care Centre Manager	Liaison between the agency and the LDMG-CR	Rob Harvey
Sunwater Limited	Emergency Coordinator	Liaison between the agency and the LDMG-CR	James Stuart

APPENDIX C – LDMG-CR Contact Directory

CORE MEMBERS & ADVISORS

Complete list – refer #4228275

Restricted Distribution

APPENDIX D – RESOURCES LISTS (Inc. Capability Statements)

Not for public release – # 1823365 – Council Fleet list
 # 4810880 – SES fleet by Unit

APPENDIX E – ACTIVATION LEVELS & ACTIONS

Extract from Local Government Interim Planning Guidelines

Table 5: Disaster Management Group Activation Levels

	Triggers	Actions	Communications
Alert	▪ Awareness of a hazard that has the potential to affect the local government area	▪ Hazard & risks identified ▪ Information sharing with warning agency ▪ LDC contacts EMQ ▪ Initial advice to all stakeholders	▪ Chair and LDC on mobile remotely
Lean Forward	▪ There is a likelihood that threat may affect local government area ▪ Threat is quantified but may not yet be imminent ▪ Need for public awareness ▪ LDMG is now to manage the event	▪ EMQ and LDC conduct analysis of predictions ▪ Chair and LDC on watching brief ▪ Confirm level & potential of threat ▪ Check all contact details ▪ Commence cost capturing ▪ Conduct meeting with available LDMG ▪ Council staff prepare for operations ▪ Determine trigger point to Stand Up ▪ Prepare LDCC for operations ▪ Establish regular communications with warning agency ▪ First briefing Core Members of LDMG ▪ LDC advises DDC of lean forward & establishes regular contact ▪ Warning orders to response agencies ▪ Public information & warning initiated	▪ Chair, LDC and LDMG members on mobile and monitoring email remotely ▪ Ad hoc reporting
Stand Up	▪ Threat is imminent ▪ Community will be or has been impacted ▪ Need for coordination in LDCC ▪ Requests for support received by LDMG agencies or to the LDCC ▪ The response requires coordination	▪ Meeting of LDMG Core Group ▪ LDCC activated ▪ Rosters for LDCC planned & implemented ▪ Commence operational plans ▪ Local Government shifts to disaster operations ▪ LDMG takes full control ▪ SOPs activated ▪ Core group of LDMG located in LDCC ▪ Commence SITREPs to DDMG ▪ Distribute contact details ▪ DDMG advised of potential requests for support	▪ LDCC contact through established land lines and generic email addresses ▪ Chair, LDC and LDMG members present at LDCC, on established land lines and/or mobiles, monitoring emails
Stand Down	▪ No requirement for coordinated response ▪ Community has returned to normal function ▪ Recovery taking place	▪ Final checks for outstanding requests ▪ Implement plan to transition to recovery ▪ Debrief of staff in LDCC ▪ Debrief with LDMG members ▪ Consolidate financial records ▪ Hand over to Recovery Coordinator for reporting ▪ Return to local government core business ▪ Final situation report sent to DDMG	▪ LDMG members not involved in recovery operations resume standard business and after hours contact arrangements

APPENDIX F – HAZARD & RISK ANALYSIS

A summary of the risk ratings is provided below after various risk statements were developed and analysed. Each risk statement was made as specific as possible to limit the potential for it to overlap multiple impact categories. The risk statements developed are listed in the following table and are presented with a risk rating for each of the natural hazard sources discussed in Section 3 of the LDMP.

Summary of Risk Ratings

Risk Statement (Potential for)	Impact Category	Risk Rating						
		Flooding	Wind Damage	Earthquak	Landslide	Wildfire	Tsunami	Storm Su
There is potential that a natural hazard will impact on the LGA causing failure of Council owned essential services (water and sewerage) infrastructure	Infrastructure	H	M	M	M	L	M	H
There is potential that a natural hazard will impact on the LGA causing failure of power infrastructure	Infrastructure	M	M	M	L	L	M	M
There is potential that a natural hazard will impact on the LGA causing failure of communication services infrastructure, including phone, internet, radio and television	Infrastructure	H	H	M	M	M	M	H
There is potential that a natural hazard will impact on the LGA causing failure of road transport networks	Infrastructure	M	M	M	H	L	M	M
There is potential that a natural hazard will impact on the LGA causing failure of rail transport networks	Infrastructure	M	L	M	L	L	M	M
There is potential that a natural hazard will impact on the LGA causing failure of sea transport networks	Infrastructure	M	L	M			M	M
There is potential that a natural hazard will impact on the LGA causing failure of air transport networks	Infrastructure	H	M	M			M	H
There is potential that a natural hazard will impact on the LGA causing significant damage to the commercial facilities throughout the area	Infrastructure	M	M	M		M	M	H
There is potential that a natural hazard will impact on the LGA causing significant damage to medical facilities throughout the area	Infrastructure	H	H	M			M	H
There is potential that a natural hazard will impact on the LGA causing failure of emergency services facilities	Infrastructure	L	L	L		L	L	M
There is potential that a natural hazard will impact on the LGA causing a sunny day failure of Copperlode Dam	Infrastructure			M				
There is potential that a natural hazard will impact on the LGA causing failure on the solid waste collection and disposal facilities for the CRC area	Infrastructure	M	M	L		M	H	H

Risk Statement (Potential for)	Impact Category	Risk Rating						
		Flooding	Wind Damage	Earthquake	Landslide	Wildfire	Tsunami	Storm Surge
There is potential that a natural hazard will impact on the LGA causing damage to the identified evacuation centres / places of refuge	Infrastructure	L	M	M	L	M	M	M
There is potential that a natural hazard will impact on the LGA causing damage to the CRC drainage networks	Infrastructure	H	M	M	M	L	H	H
There is potential that a natural hazard will impact on the LGA causing damage to housing infrastructure	People	H	H	M	M	H	H	H
There is potential that a natural hazard will impact on the LGA causing damage to the identified evacuation centres / places of refuge	People	M	M	M	L	M	H	M
There is potential that a natural hazard will impact on the LGA causing failure of Council owned essential services (water and sewerage) infrastructure	People	M	H	L	L	L	M	M
There is potential that a natural hazard will impact on the LGA causing failure of power infrastructure	People	M	M	L	L	L	L	M
There is potential that a natural hazard will impact on the LGA causing failure of communication services infrastructure, including phone, internet, radio and television	People	H	H	M	M	M	M	M
There is potential that a natural hazard will impact on the LGA causing significant damage to medical facilities throughout the area	People	H	H	M	M	M	H	H
There is potential that a natural hazard will impact on the LGA causing failure of emergency services facilities	People	M	H	M	L	L	H	H
There is potential that a natural hazard will impact on the LGA resulting in loss of food supply to the LGA.	People	M	M	L	L	L	H	H
There is potential that a natural hazard will impact on the LGA resulting in pollution or contamination of the region's waterways and discharging to the Great Barrier Reef	Environment	H	M	L		M	M	M
There is potential that a natural hazard will impact on the LGA having a significant impact on the ecosystem, including flora and fauna	Environment	M	M	L	L	L	M	M
There is potential that a natural hazard will impact on the LGA resulting in air pollution	Environment					M		
There is potential that a natural hazard will impact on the LGA causing significant damage to commercial facilities throughout the area	Economy	M	H	M			M	M
There is potential that a natural hazard will impact on the LGA causing significant damage to the rural industries	Economy	M	M	L	L	L	M	M

Risk Statement (Potential for)	Impact Category	Risk Rating						
		Flooding	Wind Damage	Earthquake	Landslide	Wildfire	Tsunami	Storm Surge
There is potential that a natural hazard will impact on the LGA causing significant damage to the crops (cane, bananas, tropical fruits)	Economy	H	H	L	L	L	L	H
There is potential that a natural hazard will impact on the LGA causing significant damage to retail facilities throughout the region	Economy	M	H	M			H	H
There is potential that a natural hazard will impact on the LGA causing significant damage to tourism infrastructure throughout the region.	Economy	H	H	M	M	L	H	H
There is potential that a natural hazard will impact on the LGA causing significant damage to industrial business infrastructure	Economy	M	M	L			M	H
There is potential that a natural hazard will impact on the LGA causing failure of emergency services facilities	Public Administration	L	L	L			L	M
There is potential that a natural hazard will impact on the LGA causing disruption to the local authority's capacity to deliver services	Public Administration	M	M	L	L		M	H
There is potential that a natural hazard will impact on the LGA causing disruption to the state and federal support services	Public Administration	L	M	M			M	H
There is potential that a natural hazard will have an impact on socially vulnerable persons in the community	Social setting	H	H	H		H	M	H
There is potential that a natural hazard will impact on the LGA causing significant damage to sites of cultural and heritage significance	Social setting	M	H	M	L	M	M	H
There is potential that a natural hazard will impact on the LGA causing stress on mental health first aid services	Social setting	M	H	M	L	L	M	M
There is potential that a natural hazard will impact on the LGA causing significant damage to community centres	Social setting	M	H	M			L	H
There is potential that a natural hazard will impact on the LGA requiring evacuation of tourists/back packers from at risk areas	Social setting	M	M	L	L	M	L	M

Notes:

1) Risks have been rated as follows:

- L – Low Risk
- M – Medium Risk
- H – High Risk
- E – Extreme Risk

Highlights have been used in the table above to identify the high and extreme risk items. The high and extreme level risks appear highlighted.

APPENDIX G – RISK EVALUATION

After analysis, the risk statements were evaluated to determine whether they were intolerable, tolerable subject to ALARP or broadly acceptable as referenced in section 5.2. A summary of the results is provided in the table below.

Summary of Risk Evaluation

Risk Statement (Potential for)	Impact Category	Risk Rating						
		Flooding	Wind Damage	Earthquak	Landslide	Bushfire	Tsunami	Storm Su
There is potential that a natural hazard will impact on the LGA causing failure of Council owned essential services (water and sewerage) infrastructure	Infrastructure	T	T	T	T	B	T	T
There is potential that a natural hazard will impact on the LGA causing failure of power infrastructure	Infrastructure	T	T	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA causing failure of communication services infrastructure, including phone, internet, radio and television	Infrastructure	T	T	T	T	T	T	T
There is potential that a natural hazard will impact on the LGA causing failure of road transport networks	Infrastructure	T	T	T	T	B	T	T
There is potential that a natural hazard will impact on the LGA causing failure of rail transport networks	Infrastructure	T	B	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA causing failure of sea transport networks	Infrastructure	T	B	T			T	T
There is potential that a natural hazard will impact on the LGA causing failure of air transport networks	Infrastructure	T	T	T			T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to the commercial facilities throughout the area	Infrastructure	T	T	T		T	T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to medical facilities throughout the area	Infrastructure	T	T	T			T	T
There is potential that a natural hazard will impact on the LGA causing failure of emergency services facilities	Infrastructure	B	B	T		B	T	T
There is potential that a natural hazard will impact on the LGA causing a sunny day failure of Copperlode Dam	Infrastructure			T				
There is potential that a natural hazard will impact on the LGA causing failure on the solid waste collection and disposal facilities for the CRC area	Infrastructure	T	T	T		T	T	T
There is potential that a natural hazard will impact on the LGA causing damage to the identified evacuation centres / places of refuge	Infrastructure	B	T	T	B	T	T	T

Risk Statement (Potential for)	Impact Category	Risk Rating						
		Flooding	Wind Damage	Earthquake	Landslide	Bushfire	Tsunami	Storm Surge
There is potential that a natural hazard will impact on the LGA causing damage to the CRC drainage networks	Infrastructure	T	T	T	T	B	I	T
There is potential that a natural hazard will impact on the LGA causing damage to housing infrastructure	People	T	T	T	T	T	T	T
There is potential that a natural hazard will impact on the LGA causing damage to the identified evacuation centres / places of refuge	People	T	T	T	B	T	T	T
There is potential that a natural hazard will impact on the LGA causing failure of Council owned essential services (water and sewerage) infrastructure	People	T	T	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA causing failure of power infrastructure	People	T	T	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA causing failure of communication services infrastructure, including phone, internet, radio and television	People	T	T	T	T	T	T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to medical facilities throughout the area	People	T	T	T	T	T	T	T
There is potential that a natural hazard will impact on the LGA causing failure of emergency services facilities	People	T	T	T	T	B	T	T
There is potential that a natural hazard will impact on the LGA resulting in loss of food supply to the community.	People	T	T	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA resulting in pollution or contamination of the region's waterways and discharging to the Great Barrier Reef	Environment	T	T	T		T	T	T
There is potential that a natural hazard will impact on the LGA having a significant impact on the ecosystem, including flora and fauna	Environment	T	T	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA resulting in air pollution	Environment					T		
There is potential that a natural hazard will impact on the LGA causing significant damage to commercial facilities throughout the area	Economy	T	T	T			T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to the rural industries	Economy	T	T	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to the crops (cane, bananas, tropical fruits)	Economy	T	T	B	B	B	T	T

Risk Statement (Potential for)	Impact Category	Risk Rating						
		Flooding	Wind Damage	Earthquake	Landslide	Bushfire	Tsunami	Storm Surge
There is potential that a natural hazard will impact on the LGA causing significant damage to retail facilities throughout the region	Economy	T	T	T			T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to tourism infrastructure throughout the region.	Economy	T	T	T	T	B	T	I
There is potential that a natural hazard will impact on the LGA causing significant damage to industrial business infrastructure	Economy	T	T	T			T	T
There is potential that a natural hazard will impact on the LGA causing failure of emergency services facilities	Public Administration	B	B	B			T	T
There is potential that a natural hazard will impact on the LGA causing disruption to the local authority's capacity to deliver services	Public Administration	T	T	T	B		T	T
There is potential that a natural hazard will impact on the LGA causing disruption to the state and federal support services	Public Administration	T	T	T			T	I
There is potential that a natural hazard will have an impact on socially vulnerable persons in the community	Social Setting	T	T	T		T	T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to sites of cultural and heritage significance	Social Setting	T	T	T	B	T	T	T
There is potential that a natural hazard will impact on the LGA causing stress on mental health first aid services	Social Setting	T	T	T	B	B	T	T
There is potential that a natural hazard will impact on the LGA causing significant damage to community centres	Social Setting	T	T	T			T	T
There is potential that a natural hazard will impact on the LGA requiring evacuation of tourists/back packers from at risk areas	Social Setting	T	T	T	B	T	T	T

Notes

- Legend:
  - B – Broadly acceptable
  - T – Tolerable subject to ALARP
  - I - Intolerable

The risk statements considered to be intolerable or tolerable subject to ALARP appear in the table above highlighted in red and yellow respectively. The risks statements considered to be broadly acceptable do not require any additional risk treatment measures and can be managed by the existing system.

APPENDIX H – RISK TREATMENT SUMMARIES

1 Water and Sewerage Infrastructure (infrastructure)

There is potential that a natural hazard will impact on the LGA causing failure of Council owned essential services (water and sewerage) infrastructure

Table 1: Treatment

Option Area	Strategy
Prevent	Avoid construction of critical infrastructure in areas susceptible to flooding. Civil works engineering to protect critical infrastructure. Construction and maintenance of fire breaks around critical infrastructure. Critical infrastructure meets or exceeds current design standards.
Prepare	Discuss with BOM, QFES and Police regarding more specific weather warnings for CRC. Recalibration of flood gauges to provide better data to predict flood events. Undertake investigation to identify deficiencies in flood gauge locations and develop program to install as necessary Ensuring adequate generator capacity is planned for critical infrastructure. Council to develop a business continuity plan to sustain operations during a disaster and restore services as soon as possible after the event. Develop comprehensive emergency risk communications strategy, in association with response agencies (Public Information & Warnings Plan, Resilient Communications Plan). Provision of a community awareness and preparedness campaign to highlight the risks of natural hazards and to encourage individual members of the community and business owners to have their own disaster/emergency plans in place.
Respond	Council resources to respond as required in line with agreed plans and priorities as set by the LDMG. Issue general safety notices and warnings as required. Consider alternative strategies to maintain service levels as far as practicable e.g. bottled water provision, self-contained ablution blocks, etc.
Recover	Structural assessments of critical infrastructure and undertake remedial works as required to meet or exceed current standards. Coordinate recovery in accordance with documented plans and procedures (across all risks).

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Wildfire	Tsunami	Storm Surge
Original Risk Rating	High	Medium	Medium	Medium	Broadly Acceptable	Medium	High
New Likelihood	Possible	Possible	Unlikely	Unlikely		Unlikely	Likely
New Consequence	Moderate	Minor	Moderate	Moderate		Moderate	Moderate
RESIDUAL RISK	Medium	Low	Medium	Medium		Medium	High

2 Power Infrastructure (infrastructure)

There is potential that a natural hazard will impact on the LGA causing failure of power infrastructure

Table 1: Treatment

Option Area	Strategy
Prevent	• Maintenance of electricity transmission system by Ergon and other related parties. • Continuity of tree trimming program to protect power infrastructure by Ergon and other related parties. • Council review its vegetation management strategies to manage remnant native trees & street tree planting to minimise their potential to do damage if brought down during storms or to provide wildfire fuel close to residents. • Construction of critical infrastructure out of known flood zones. • Provision and maintenance of adequate firebreaks and fire protection strategies around physical infrastructure. • Installation of underground supply to Cairns SES facility in McNamara Street
Prepare	• LDMG and asset owners to develop business continuity plans to sustain operations during a disaster and restore services as soon as possible after the event. • Discuss with BOM, QFES and Police regarding more specific weather warnings for CRC. • Provision of emergency generators and changeover switches for critical infrastructure. • Liaise with Ergon regarding options for a more resilient power supply. • Plan with ERGON where large capacity generators may be used to re-energise parts of the network. • LDMG agencies to undertake investigations for emergency power supplies to maintain operations of essential services and provide ERGON with list of critical sites. • LDMG to investigate the options available to ensure bulk fuel supply is available.

Option Area	Strategy
Respond	• Coordinate response in accordance with documented plans and procedures. • Respond to power failure in accordance with LDMG priorities.
Recover	• Review failure of power supply to determine root cause and address issues as far as practicable. • Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Medium	Broadly Acceptable	Medium	Medium	Broadly Acceptable
New Likelihood	Possible	Likely	Unlikely		Possible	Likely	
New Consequence	Minor	Minor	Moderate		Moderate	Minor	
RESIDUAL RISK							

3 Communication Infrastructure including phone, internet, radio and television (infrastructure)

There is potential that a natural hazard will impact on the LGA causing failure of communication infrastructure including phone, internet, radio and television.

Table 1: Treatment

Option Area	Strategy
Prevent	• Liaise with communication providers to ensure they have resilient infrastructure. • Provision and maintenance of adequate firebreaks and fire protection strategies around physical infrastructure. • Review locations of existing communications infrastructure to assess risks presented by natural hazards.
Prepare	• LDMG agencies to establish procedures to manage communications with the community and each other in the absence of standard communications. • Provision of a community awareness and preparedness campaign to highlight the risks of natural hazards and to encourage individual members of the community and business owners to have their own disaster/emergency plans in place. • Liaise with radio stations to ensure continuity of broadcast. • LDMG, Agencies and asset owners to develop business continuity plans to sustain operations during a disaster and restore services as soon as possible after the event.
Respond	• Coordinate response in accordance with documented plans and procedures.

Option Area	Strategy
	• Respond to communications failure in accordance with LDMG priorities.
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Review failure of communications systems to determine root cause and address issues as far as practicable.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	Medium	Medium	Medium	High	Medium
New Likelihood	Likely	Likely	Unlikely	Possible	Unlikely	Likely	Possible
New Consequence	Minor	Minor	Minor	Minor	Moderate	Minor	Minor
RESIDUAL RISK	Medium	Medium	Low	Low	Medium	Medium	Low

4 Road Transport Networks (infrastructure)

There is potential that a natural hazard will impact on the LGA causing failure of road transport networks.

Table 1: Treatment

Option Area	Strategy
Prevent	• Construct and maintain transport networks to meet or exceed current engineering standards. • Upgrade transport networks in accordance with risk profile e.g. raising bridges and roads to improve flood immunity.
Prepare	• Discuss with BOM, QFES and Police regarding more specific weather warnings for CRC. • Document hierarchy of road network priorities. • Installation of more accurate flood gauges to provide earlier warning for road closures. • Education of residents and travellers not to use transport networks that are closed, flooded or damaged. • LGA ensure that local SES and QPS staff are made familiar with management arrangements for local flood issues, conduct on-site briefings on the management of the flood threat at identified flash flooding hotspots, especially where road closures are required. • Council and asset owners to develop business continuity plans to sustain operations during a disaster and restore services as soon as possible after the event.
Respond	• Respond to transport network failures in accordance with the documented road hierarchy and / or LDMG priorities.

Option Area	Strategy
	• Coordinate response in accordance with documented plans and procedures. • Installation of temporary signage as required. • Emergent works as required in accordance with documented procedures..
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Progressively upgrade problem areas on Council controlled roads and encourage TMR to undertake similar work on State controlled roads as per identified risks.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Medium	High	Medium	Medium	Not Acceptable
New Likelihood	Likely	Likely	Possible	Likely	Possible	Likely	
New Consequence	Minor	Minor	Moderate	Minor	Moderate	Minor	
RESIDUAL RISK	Medium	Medium	Medium	Medium	Medium	Medium	

5 Rail Transport Networks (infrastructure)

There is potential that a natural hazard will impact on the LGA causing failure of rail transport networks.

Table 1: Treatment

Option Area	Strategy
Prevent	• Construct and maintain transport networks to meet or exceed current engineering standards. • Upgrade transport networks in accordance with risk profile e.g. raising bridges and rail lines to improve flood immunity.
Prepare	• Encourage asset owner to progressively upgrade problem areas as per identified risks.
Respond	• Coordinate response in accordance with documented plans and procedures. • Emergent works as required in accordance with documented procedures..
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Encourage asset owner to progressively upgrade problem areas on rail lines as per identified risks.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Broadly Acceptable	Medium	Not Acceptable	Medium	Medium	Not Acceptable
New Likelihood	Possible		Possible		Possible	Possible	
New Consequence	Minor		Moderate		Moderate	Minor	
RESIDUAL RISK	Low		Medium		Medium	Low	

6 Sea Transport Networks (infrastructure)

There is potential that a natural hazard will impact on the LGA causing closure of sea transport networks.

Table 1: Treatment Options

Option Area	Strategy
Prepare	- Upgrade infrastructure in accordance with risk profile
Prevent	- Encourage asset owner to progressively upgrade problem areas as per identified risks. - LDMG and asset owners to develop business continuity plans to sustain operations during a disaster and restore services as soon as possible after the event
Respond	• Coordinate response in accordance with documented plans and procedures. • Emergent works as required in accordance with documented procedures..
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Encourage asset owner to progressively upgrade problem areas on rail lines as per identified risks

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Severe Storm	Wildfire
Original Risk Rating	Medium	Broadly Acceptable	Medium	N/A	Medium	Medium	N/A
New Likelihood	Likely		Possible		Possible	Likely	
New Consequence	Minor		Moderate		Moderate	Minor	
RESIDUAL RISK	Medium		Medium		Medium	Medium	

7 Air Transport Assets (infrastructure)

There is potential that a natural hazard will impact on the LGA causing failure of air transport networks.

Table 1: Treatment

Option Area	Strategy
Prepare	- Nil.
Prevent	- Encourage asset owner to progressively upgrade problem areas as per identified risks. - LDMG and asset owners to develop business continuity plans to sustain operations during a disaster and restore services as soon as possible after the event
Respond	• Coordinate response in accordance with documented plans and procedures. • Emergent works as required in accordance with documented procedures.
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	Medium	Medium	N/A	Medium	High	N/A
New Likelihood	Possible	Likely	Possible		Possible	Possible	
New Consequence	Moderate	Minor	Moderate		Moderate	Moderate	
RESIDUAL RISK	Medium	Medium	Medium		Medium	Medium	

8 Commercial Facilities (infrastructure)

There is potential that a natural hazard will impact on the LGA causing significant damage to commercial facilities throughout the area.

Table 1: Treatment

Option Area	Strategy
Prevent	• Ensure the Planning Scheme takes into account that new commercial facilities are mitigated against potential natural disasters • Ensure commercial facilities are built in an area suitable to their risk, e.g. no hazardous material facility in flood prone areas. • Consider construction of mitigation measures to assist with removal of water away from existing buildings.
Prepare	• Continue to educate business owners for actions to prepare for events and post event actions particularly to prepare against wind damage

Option Area	Strategy
	and/or surface flooding as part of their business continuity planning. • Provision of a community awareness and preparedness campaign to highlight the risks of natural hazards and to encourage individual members of the community and business owners to have their own disaster/emergency/business continuity plans in place.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Consider relocation of facility if it is damaged/destroyed by an event, and then locate outside of hazard area and built to meet or exceed current building requirements.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Medium	N/A	Medium	High	Medium
New Likelihood	Likely	Likely	Possible		Possible	Possible	Unlikely
New Consequence	Minor	Minor	Moderate		Moderate	Moderate	Minor
RESIDUAL RISK	Medium	Medium	Medium		Medium	Medium	Low

9 Medical Facilities (infrastructure)

There is potential that a natural hazard will impact on the LGA causing significant damage to medical facilities throughout the area.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- The hospital has its own set of operating procedures including disaster management guidelines. LDMG will continue to liaise with the hospital to ensure it knows its obligations under the Hospital's disaster management guidelines. - Identify location for emergency triage facility in "white" zone and source funding to establish the facility.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	Medium	N/A	Medium	High	N/A
New Likelihood	Possible	Possible	Possible		Unlikely	Likely	
New Consequence	Moderate	Moderate	Moderate		Moderate	Moderate	
RESIDUAL RISK	Medium	Medium	Medium		Medium	High	

10 Emergency Services Facilities (fire, police, ambulance, SES) (infrastructure)

There is potential that a natural hazard will impact on the LGA causing significant damage to emergency services (fire, police, ambulance, SES) facilities throughout the area.

Table 1: Treatment

Option Area	Strategy
Prevent	• Pre-position response vehicles and crews.
Prepare	• Ensure a process is available to access back-up resources (including human resources) from outside of the affected region. • Identify facilities in flood prone areas, undertake individual risk assessment of facility and action as determined through risk assessment
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate response in accordance with documented plans and procedures • Identify critical routes to high risk population nodes and lobby relevant agencies for infrastructure upgrades.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Broadly Acceptable	Broadly Acceptable	Low	N/A	Low	Medium	Broadly Acceptable
New Likelihood			Possible		Possible	Possible	
New Consequence			Minor		Minor	Moderate	
RESIDUAL RISK			Low		Low	Medium	

11 Dam Failure (Copperlode Dam - infrastructure)

There is potential that a natural hazard will result in a sunny day failure of Copperlode Dam.

Table 1: Treatment

Option Area	Strategy
Prevent	• Conduct dam safety assessments in accordance with current guidelines. • Upgrade dam infrastructure to meet or exceed current engineering standards.
Prepare	• LDMG to work with dam operators to ensure adequate warning systems are in place in relation to dams. • Emergency Action Plans to be available for each referable dam. • Dam operators to conduct public education for all residents potentially impacted by dam emergency events annually. • Conduct dam break study for Cooperlode Dam to identify at risk areas.
Respond	• Coordinate response in accordance with documented plans and procedures • Issue timely warnings to residents affected by dams as required.
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Lobby government to rebuild critical infrastructure in a timely manner

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	N/A	N/A	Medium	N/A	N/A	N/A	N/A
New Likelihood			Unlikely				
New Consequence			Major				
RESIDUAL RISK			Medium				

12 Solid Waste and Disposal Facilities (infrastructure)

There is potential that a natural hazard will cause failure of the solid waste and disposal facilities for the CRC area.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Identify areas for storage of asbestos and other hazardous wastes if existing facilities are not accessible post event. - Maintain register of licensed contractors for handling asbestos and hazardous wastes
Respond	- Coordinate response in accordance with documented plans and procedures
Recover	- Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	N/A	Medium	High	High
New Likelihood							
New Consequence	Minor	Minor	Insignificant		Moderate	Moderate	Minor
RESIDUAL RISK	Medium	Medium	Low		High	High	Low

13 Identified Cyclone Shelters / Places of Refuge (infrastructure)

There is potential that a natural hazard will cause damage to the identified cyclone shelters / places of refuge.

Table 1: Treatment

Option Area	Strategy
Prevent	- Undertake necessary improvements to Babinda cyclone centre to upgrade to cyclone shelter standard. - Review and upgrade all shelters / places of refuge as necessary
Prepare	-
Respond	- Coordinate response in accordance with documented plans and procedures

Option Area	Strategy
Recover	- Nominated secondary shelters should be structurally assessed following an event. - Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Broadly Acceptable	Medium	Medium	Broadly Acceptable	Medium	Medium	Medium
New Likelihood		Possible	Possible		Unlikely	Unlikely	Unlikely
New Consequence		Minor	Minor		Moderate	Moderate	Moderate
RESIDUAL RISK		Low	Low		Medium	Medium	Medium

14 CRC Drainage Networks (infrastructure)

There is potential that a natural hazard will cause damage to the CCRC drainage networks.

Table 1: Treatment

Option Area	Strategy
Prepare	- Review existing Drainage Management Plans for currency. Update or amend as necessary - Identify catchments not covered by existing Drainage Management Plans and prepare plans as necessary
Prevent	- Continue a program of clearing drains prior to wet season. - Identify works to be undertaken to improve flood immunity in accordance with the Drainage Management Plans
Respond	- Clearing of drainage networks following event. - Coordinate response in accordance with documented plans and procedures
Recover	- Investigate and propose solutions to problem areas. - Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	Medium	Medium	Medium	High	High	Broadly Acceptable
New Likelihood	Likely	Possible	Possible	Possible	Likely	Likely	
New Consequence	Minor	Minor	Moderate	Minor	Major	Moderate	
RESIDUAL RISK	Medium	Low	Medium	Low	High	High	

15 Damage to housing infrastructure resulting in displacement of residents (people)

There is potential that a natural hazard will impact on the LGA causing damage to housing infrastructure resulting in displacement of residents.

Table 1: Treatment

Option Area	Strategy
Prevent	• Ensure all new buildings comply with the BCA requirements for the locality and the Cairns Regional Council Planning Scheme. • Encourage owners of existing buildings to upgrade their properties to current standards when undertaking structural renovations or extensions. • Council ensures that all future building comply with current Planning Arrangements for buildings in relation to the State Planning Policies regarding floods, bushfires, landslide.
Prepare	• LDMG to encourage all agencies to undertake planned maintenance on all their infrastructure • Discuss with BOM, QFES and Police regarding more specific weather warnings for CRC. • Ensure cyclone shelters, refuges/evacuation centres are identified and available in the Plan. • Council review its vegetation management strategies to manage remnant native trees & street tree planting to minimise their potential to do damage if brought down during storms or to provide wildfire fuel close to residents. • LDMG to list emergency shelter options and ensure their structural integrity. • Provision and maintenance of adequate firebreaks and fire protection strategies around physical infrastructure. • Provision of a community awareness and preparedness campaign to highlight the risks of natural hazards and to encourage individual members of the community and business owners to have their own disaster/emergency plans in place
Respond	• Coordinate response in accordance with documented plans and procedures. • Ensure available cyclone shelters/refuges/evacuation centres at the

Option Area	Strategy
	time of an event are communicated to residents. • Coordinate Rapid Damage Assessments of residential housing and commercial buildings. • Conduct structural assessment of all critical infrastructure and coordinate structural assessment of damaged residential houses as required. • Through the LDMG ensure coordination of licensing and regulation of all tradespersons in conjunction with BSA.
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Encourage house owners to organise a correctly licensed person to conduct structural assessments of houses.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	Medium	Medium	High	High	High
New Likelihood	Likely	Likely	Unlikely	Possible	Possible	Possible	Possible
New Consequence	Major	Major	Major	Moderate	Major	Major	Moderate
RESIDUAL RISK	High	High	Medium	Medium	High	High	Medium

16 Damage to evacuation centres and places of refuge (people)

There is potential that a natural hazard will result in damage to the identified evacuation centres and places of refuge.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Undertake physical inspections and repair as necessary
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Undertake physical inspections and repair as necessary

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk	Medium	Medium	Medium	Broadly	High	Medium	Medium

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Rating				acceptable			
New Likelihood	Possible	Possible	Possible		Likely	Possible	Possible
New Consequence	Moderate	Minor	Minor		Moderate	Moderate	Minor
RESIDUAL RISK	Medium	Low	Low		High	Medium	Low

17 Manning for the Operation of CRC Essential Services (people)

There is potential that a natural hazard will result in damage and disruption to the community such that key personnel for the operation of CRC essential services are not available.

Table 1: Treatment

Option Area	Strategy
Prevent	- CRC to review plans for currency
Prepare	- CRC to review plans for currency
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Low	Broadly acceptable	Medium	Medium	Broadly acceptable
New Likelihood	Unlikely	Unlikely	Unlikely		Possible	Likely	Unlikely
New Consequence	Moderate	Moderate	Minor		Moderate	Moderate	Minor
RESIDUAL RISK	Medium	Medium	Low		Medium	High	

18 Manning for the Operation of Power Supply (people)

There is potential that a natural hazard will result in damage and disruption to the community such that key personnel for the operation of power supply are not available.

Table 1: Treatment

Option Area	Strategy
Prevent	- Ergon to review plans for currency
Prepare	- Ergon to review plans for currency
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	Broadly acceptable	Low	Medium	Broadly acceptable
New Likelihood	Unlikely	Likely	Almost incredible		Possible	Likely	
New Consequence	Minor	Minor	Minor		Minor	Minor	
RESIDUAL RISK	Low	Medium	Low		Low	Medium	

19 Damage to Communication Infrastructure (people)

There is potential that a natural hazard will result in damage and disruption to the community such that key personnel for the operation of communication infrastructure are not available.

Table 1: Treatment

Option Area	Strategy
Prevent	- Communication providers to review plans for currency
Prepare	- Communication providers to review plans for currency
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	Medium	Medium	Medium	Medium	Medium
New Likelihood	Unlikely	Unlikely	Possible	Possible	Possible	Possible	Possible
New Consequence	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
RESIDUAL RISK	Medium	Medium	Medium	Medium	Medium	Medium	Medium

20 Damage to medical facilities (people)

There is potential that a natural hazard will impact on the LGA causing significant damage to medical facilities throughout the area.

Table 1: Treatment

Option Area	Strategy
Prevent	- QH to review plans for currency
Prepare	- QH to review plans for currency
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	Medium	Medium	High	High	Medium
New Likelihood	Likely	Likely	Possible	Possible	Likely	Likely	Possible
New Consequence	Moderate	Moderate	Minor	Moderate	Moderate	Moderate	Moderate
RESIDUAL RISK	High	High	Low	Medium	High	High	Medium

21 Failure of Emergency Services facilities (people)

There is potential that a natural hazard will impact on the LGA causing failure of the emergency services facilities.

Table 1: Treatment

Option Area	Strategy
Prevent	- Emergency services agencies to review plans for currency
Prepare	- Emergency services agencies to review plans for currency
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Medium	Broadly acceptable	High	High	Broadly acceptable
New Likelihood	Possible	Possible	Possible		Possible	Possible	
New Consequence	Moderate	Moderate	Moderate		Moderate	Minor	
RESIDUAL RISK	Medium	Medium	Medium		Medium	Low	

22 Loss of food supply to the community (people)

There is potential that a natural hazard will impact on the LGA resulting in loss of food supply to the community.

Table 1: Treatment

Option Area	Strategy
Prevent	- Continue to educate residents on preparations during the wet season including own supplies.
Prepare	- Supermarkets to continue to stock supplies during the wet season.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	Broadly acceptable	High	High	Broadly acceptable
New Likelihood	Likely	Possible	Possible		Likely	Likely	
New Consequence	Minor	Minor	Minor		Moderate	Moderate	

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
RESIDUAL RISK	Medium	Low	Low		High	High	

23 Contamination of waterways and Great Barrier Reef (environment)

There is potential that a natural hazard will impact on the LGA resulting in pollution or contamination of the regions waterways and discharging to the Great Barrier Reef.

Table 1: Treatment

Option Area	Strategy
Prevent	- Continue to educate residents for actions to prepare for events including staying out of flood and contaminated waters for health reasons. - Continue to educate residents for actions to prepare for events including securing chemicals.
Prepare	- Ensure all Council owned chemicals are stored and secured.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	Medium	Low	Broadly acceptable	Medium	Medium	Medium
New Likelihood	Likely	Possible	Possible		Possible	Possible	Likely
New Consequence	Moderate	Minor	Minor		Moderate	Moderate	Minor
RESIDUAL RISK	High	Low	Low		Medium	Medium	Medium

24 Impact on the ecosystem, including flora and fauna (environment)

There is potential that a natural hazard will impact on the LGA having a significant impact on the ecosystem, including flora and fauna.

Table 1: Treatment

Option Area	Strategy
Prevent	• Provision and maintenance of adequate firebreaks and fire protection strategies around physical infrastructure.
Prepare	• CRC to clear and maintain drains in lead up to wet season • Cool burns as required to reduce fire load • Council adopt a policy for managing fuel on Council-controlled land • Those relying on the environment for their businesses should make allowances in their business continuity plans as per commercial and rural. • CRC to improve support structures for the LGA Rural Fire Brigade including increased management of the fire trails database and the ongoing maintenance of strategically important fire trails.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	Broadly acceptable	Medium	Medium	Broadly acceptable
New Likelihood	Possible		Possible		Possible	Possible	
New Consequence	Minor	Minor	Minor		Moderate	Moderate	
RESIDUAL RISK	Low	Medium	Low		Medium	Medium	

25 Air pollution (environment)

There is potential that a natural hazard will impact on the LGA resulting in air pollution.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Nil
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	N/A	N/A	N/A	N/A	N/A	N/A	Medium
New Likelihood							Likely
New Consequence							Minor
RESIDUAL RISK							Medium

26 Damage to commercial facilities (economy)

There is potential that a natural hazard will impact on the LGA causing significant damage to commercial facilities throughout the area.

Table 1: Treatment

Option Area	Strategy
Prevent	- Businesses should undertake structural checks of facilities to make suitable modifications if necessary.
Prepare	- Continue to educate owners of commercial facilities for actions to prepare for events and post event actions. - Direct business owners towards web-links that assist with information on preparedness actions and post-event assistance such as checklists. - Encourage businesses to ensure business continuity plans are in place and current
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Medium	Broadly Acceptable	Medium	Medium	Broadly Acceptable
New Likelihood	Possible	Possible	Possible		Possible	Possible	
New Consequence	Moderate	Moderate	Moderate		Moderate	Moderate	
RESIDUAL RISK	Medium	Medium	Medium		Medium	Medium	

27 Damage to rural industries (economy)

There is potential that a natural hazard will impact on the LGA causing significant damage to the rural industries

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Continue to educate business owners in the rural industry for actions to prepare for events and post event actions. - Direct business owners towards web-links that assist with information on preparedness actions and post-event assistance such as checklists. - Encourage businesses to ensure business continuity plans are in place and current
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	Broadly Acceptable	Medium	Medium	Broadly Acceptable
New Likelihood	Likely	Likely	Possible		Possible	Possible	
New Consequence	Minor	Minor	Minor		Moderate	Moderate	
RESIDUAL RISK	Medium	Medium	Low		Medium	Medium	

28 Damage to Crops (bananas, cane, tropical fruits - economy)

There is potential that a natural hazard will impact on the LGA causing significant damage to crops (bananas, cane, tropical fruits).

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Continue to educate business owners in the rural industry for actions to prepare for events and post event actions. - Direct business owners towards web-links that assist with information on preparedness actions and post-event assistance such as checklists. - Encourage businesses to ensure business continuity plans are in place and current
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	Broadly Acceptable	Broadly Acceptable	Low	High	Broadly Acceptable
New Likelihood	Likely	Likely			Rare	Likely	
New Consequence	Minor	Minor			Moderate	Moderate	
RESIDUAL RISK	Medium	Medium			Medium	High	

29 Retail Facilities (economy)

There is potential that a natural hazard will impact on the LGA causing significant damage to the retail facilities throughout the region.

Table 1: Treatment

Option Area	Strategy
Prevent	- Businesses should undertake structural checks of facilities to make suitable modifications if necessary.
Prepare	- Continue to educate owners of commercial facilities for actions to prepare for events and post event actions. - Direct business owners towards web-links that assist with information on preparedness actions and post-event assistance such as checklists. - Encourage businesses to ensure business continuity plans are in

Option Area	Strategy
	place and current
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Medium	N/A	High	High	N/A
New Likelihood	Likely	Almost Certain	Possible		Possible	Possible	
New Consequence	Minor	Minor	Moderate		Moderate	Moderate	
RESIDUAL RISK	Medium	Medium	Medium		Medium	Medium	

30 Tourism Infrastructure (economy)

Identification of Treatment Options

There is potential that a natural hazard will impact on the LGA causing significant damage to the tourism infrastructure throughout the region.

Table 1: Treatment

Option Area	Strategy
Prevent	- Businesses should undertake structural checks of facilities to make suitable modifications if necessary.
Prepare	- Continue to educate owners of tourist facilities for actions to prepare for events and post event actions. - Direct business owners towards web-links that assist with information on preparedness actions and post-event assistance such as checklists. - Encourage businesses to ensure business continuity plans are in place and current
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures. • Undertake repairs to community infrastructure (e.g. jetties) as required

Table 1: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	Medium	Medium	High	High	Broadly acceptable
New Likelihood	Likely	Likely	Possible	Unlikely	Possible	Likely	
New Consequence	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	
RESIDUAL RISK	High	High	Medium	Medium	Medium	High	

31 Industrial Business Infrastructure (economy)

There is potential that a natural hazard will impact on the LGA causing significant damage to the industrial business infrastructure throughout the region.

Table 2: Treatment

Option Area	Strategy
Prevent	- Businesses should undertake structural checks of facilities to make suitable modifications if necessary. .
Prepare	- Continue to educate the owners of industrial business infrastructure to prepare for events and post event actions. - Direct business owners towards web-links that assist with information on preparedness actions and post-event assistance such as checklists. - Encourage businesses to ensure business continuity plans are in place and current
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	Not Acceptable	Medium	High	Broadly Acceptable
New Likelihood	Likely	Almost Certain	Possible		Possible	Likely	
New Consequence	Minor						
RESIDUAL RISK	Medium	Medium	Low		Medium	High	

32 Emergency Services Facilities (public administration)

There is potential that a natural hazard will impact on the LGA causing failure of the emergency services facilities.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Ensure Business Continuity Plan is reviewed each year and up to date.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Broadly Acceptable	Broadly Acceptable	Broadly Acceptable	N/A	Low	Medium	N/A
New Likelihood					Possible	Possible	
New Consequence					Minor	Minor	
RESIDUAL RISK					Low	Low	

33 Local Government Support Services (public administration)

There is potential that a natural hazard will impact on the LGA causing disruption to the local authority's capacity to deliver services.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Ensure Business Continuity Plan is reviewed each year and up to date.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	Broadly Acceptable	Medium	High	N/A
New Likelihood	Likely	Likely	Possible		Possible	Likely	
New Consequence	Minor	Minor	Minor		Moderate	Moderate	
RESIDUAL RISK	Medium	Medium	Low		Medium	High	

34 State and Federal Support Services (public administration)

There is potential that a natural hazard will impact on the LGA causing disruption to State and Federal support services.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Ensure Business Continuity Plan is reviewed each year and up to date.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Medium	Not applicable	Medium	High	Broadly Acceptable
New Likelihood	Likely	Likely	Possible		Possible	Likely	
New Consequence	Minor	Moderate	Moderate		Moderate	Moderate	
RESIDUAL RISK	Medium	High	Medium		Medium	High	

35 Socially Vulnerable Persons (social setting)

There is potential that a natural hazard will have an impact on socially vulnerable persons in the community.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- LDMG to co-ordinate with agencies to ensure registers are reviewed, monitor and updated
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	High	High	High		Medium	High	High
New Likelihood	Almost Certain	Almost Certain	Possible		Possible	Likely	Likely
New Consequence	Moderate	Moderate	Moderate		Moderate	Moderate	Moderate
RESIDUAL RISK	High	High	Medium		Medium	High	High

36 Sites of Cultural and Historical Significance (social setting)

There is potential that a natural hazard will impact on the LGA causing significant damage to sites of cultural and historical significance.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Determine relevant sites with relevant community group. - Assess the need for structural modification of identified sites to ensure survival through the event. - Provide physical protection where required and appropriate.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Medium	Broadly acceptable	Medium	High	Medium
New Likelihood	Likely	Likely	Possible		Possible	Likely	Likely
New Consequence	Minor	Moderate	Moderate		Moderate	Moderate	Minor
RESIDUAL RISK	Medium	High	Low		Medium	High	Medium

37 Mental health first aid services (social setting)

There is potential that a natural hazard will impact on the LGA causing stress on mental health first aid services.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Ensure requirements of FNQ Human and Social Welfare Strategy are being implemented
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Medium	Broadly Acceptable	Medium	Medium	Broadly Acceptable
New Likelihood	Almost Certain	Almost Certain	Possible		Possible	Likely	
New Consequence	Minor	Moderate	Moderate		Moderate	Minor	
RESIDUAL RISK	Medium	High	Medium		Medium	Medium	

38 Damage to community centres (social setting)

There is potential that a natural hazard will impact on the LGA causing significant damage to sites of cultural and historical significance.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Nil
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	High	Medium	Not Applicable	Low	High	Not Applicable
New Likelihood	Almost Certain	Almost Certain	Possible		Possible	Likely	
New Consequence	Minor	Moderate	Moderate		Minor	Moderate	
RESIDUAL RISK	Medium	High	Medium		Low	High	

39 Tourists/Back Packers (social setting)

There is potential that a natural hazard will impact on the LGA requiring evacuation of tourists/back packers from at risk areas.

Table 1: Treatment

Option Area	Strategy
Prevent	- Nil.
Prepare	- Encourage accommodation providers to have Business Continuity Plans in place. Be aware of plans and actions required leading up to an event. - Awareness of potential increase in numbers to evacuation facilities. - Coordination with tourist operators and backpacker lodges as to the numbers of backpackers in town. - Coordination with island resorts as to what happens once they get to the mainland.
Respond	• Coordinate response in accordance with documented plans and procedures
Recover	• Coordinate recovery in accordance with documented plans and procedures.

Table 2: Residual Risk

Value	Flooding	Wind Damage	Earthquake	Landslide	Tsunami	Storm Surge	Wildfire
Original Risk Rating	Medium	Medium	Low	Broadly Acceptable	Low	Medium	Medium
New Likelihood	Almost Certain	Almost Certain	Possible		Possible	Likely	Likely
New Consequence	Minor	Minor	Minor		Minor	Minor	Minor
RESIDUAL RISK	Medium	Medium	Low		Low	Medium	Medium

APPENDIX I – CAIRNS RISK TREATMENT STRATEGY REGISTER

Cairns Treatment Plan Summary

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
Prevent							
Avoid construction of critical infrastructure in areas susceptible to flooding.	7.1 Water and Sewerage 7.2 Power infrastructure	Infrastructure	CRC staff to assess suitability of Locations ERGON staff to assess suitability of locations	CRC CEO ERGON Regional Manager	$30,000 (Investigation only) $15,000 (Investigation only)	QFES LGAQ	Ongoing
Civil works engineering to protect critical infrastructure.	7.1 Water and Sewerage	Infrastructure	CRC staff to identify required works	CRC CEO	TBC	CRC, State & Fed Govt.	Ongoing
Construction and maintenance of fire breaks around critical infrastructure.	7.1 Water and Sewerage	Infrastructure	Relevant agency staff to monitor and co-ordinate works as necessary	Asset Manager/ Owner E.g. CRC CEO, ERGON regional manager	Asset Owner annual budget	Asset Owner	Ongoing
Critical infrastructure meets or exceeds current design standards.	7.1 Water and Sewerage	Infrastructure	CRC staff to assess suitability of infrastructure and prioritise works on utilising ALARP	CRC CEO	$30,000 (Investigation only)	CRC	Ongoing
Maintenance of electricity transmission system by Ergon and other related parties	7.2 Power infrastructure	Infrastructure	ERGON ongoing operations	ERGON	N/A	ERGON	Ongoing
Continuity of tree trimming program to protect power infrastructure by Ergon and other related parties	7.2 Power infrastructure	Infrastructure	ERGON ongoing maintenance activities	ERGON	N/A	ERGON	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
Council to review its vegetation management strategies to manage remnant native trees and street tree planting to minimise their potential to cause damage if brought down during storm or to provide wildfire fuel close to residents	7.2 Power infrastructure	Infrastructure	CRC Works section ongoing O&M activities	CRC	N/A	CRC	Ongoing
Provision and maintenance of adequate fire breaks and fire protection strategies around physical infrastructure	7.2 Power infrastructure 7.3 Communication infrastructure	Infrastructure	Relevant agency staff to monitor and co-ordinate works as necessary	Asset Manager/ Owner E.g. CRC CEO, ERGON regional manager	Asset owner annual budget	Asset Owner	Ongoing
Installation of underground supply to Cairns SES facility in McNamara Street	7.2 Power infrastructure	Infrastructure	ERGON undertake required works to connect	ERGON	TBC	ERGON	Completed
Liaise with communication providers to ensure they have resilient infrastructure	7.3 Communication infrastructure	Infrastructure	LDMG to maintain communication with asset owners	LDMG-CR	N/A	LDMG-CR	Ongoing
Review locations of existing communications infrastructure to assess risks presented by natural hazards	7.3 Communication infrastructure	Infrastructure	LDMG to maintain communication with asset owners to undertake investigations.	LDMG-CR	N/A	LDMG-CR	Ongoing
Construct and maintain transport networks to meet or exceed current engineering standards	7.4 Road transport networks 7.5 Rail transport networks	Infrastructure	CRC staff to assess infrastructure TMR staff to assess infrastructure	CRC CEO TMR RD	TBC TBC	CRC/ QLD GOVT TMR, QRail	Ongoing
Upgrade transport networks in accordance with risk profile e.g. raising of bridges and roads/rail lines to improve flood	7.4 Road transport networks 7.5 Rail transport networks	Infrastructure	CRC staff to assess infrastructure TMR staff to assess infrastructure	CRC CEO TMR RD	TBC TBC	CRC/ QLD GOVT TMR, QRail	

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
immunity	7.6 Sea transport networks						
Ensure the Planning Scheme takes into account that new commercial facilities are mitigated against potential natural disasters	7.8 Commercial facilities	Infrastructure	CRC Planning & Environment Section	CRC CEO	N/A	CRC	Ongoing
Ensure commercial facilities are built in an area suitable to their risk e.g. no hazardous material facility in flood prone areas	7.8 Commercial facilities	Infrastructure	CRC Planning & Environment Section	CRC CEO	N/A	CRC	
Consider construction of mitigation measures to assist with removal of water away from buildings	7.8 Commercial facilities	Infrastructure	CRC Infrastructure Services Section	CRC CEO	N/A	CRC	
Pre-position emergency services vehicles and crews	7.10 Emergency services facilities	Infrastructure	Emergency response agencies	Emergency response agencies	N/A	N/A	As Required
Conduct dam safety assessments in accordance with current guidelines	7.11 Dam failure (Copperlode dam)	Infrastructure	Dam Owner Under-take assessments	CRC CEO	N/A	CRC CEO	Completed and ongoing
Upgrade dam infrastructure to meet or exceed current engineering standards	7.11 Dam failure (Copperlode dam)	Infrastructure	Dam owner undertake assessments and upgrades as required	CRC CEO	N/A	CRC CEO	Pending
Explore necessary improvements to Babinda cyclone centre to upgrade to cyclone shelter standard	7.13 Identified Cyclone Shelters / Places of Refuge	Infrastructure	LDMG and CRC to undertake works as necessary	LDMG / CRC CEO		CRC Qld Govt.	ASAP Include in CRC Asset Management

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
							Plan
Maintain programme to upgrade all shelters / places of refuge as necessary	7.13 Identified Cyclone Shelters / Places of Refuge	Infrastructure	Asset owner & LDMG-CR undertake assessments as required	Asset Owners		Asset Owners	Include in CRC Asset Management Plan
Review existing Drainage Management Plans for currency and amend / update as necessary	7.14 CRC Drainage networks	Infrastructure	CRC Infrastructure Services section to review current DMPs for currency	CRC CEO	TBC	CRC Developers	Ongoing
Identify catchments not covered by existing Drainage Management Plans and repair plans as required	7.14 CRC Drainage networks	Infrastructure	CRC Infrastructure Services section	CRC CEO	TBC	CRC	Ongoing
Council ensures that all future building comply with current Planning Arrangements for buildings in relation to the State Planning Policies regarding floods, bushfires, landslide.	7.15 Damage to housing infrastructure resulting in displacement of residents	People	CRC Planning & Environment Section	CRC CEO	N/A	CRC	Ongoing
Ensure all new buildings comply with the BCA requirements for the locality and the Cairns Regional Council Planning Scheme.	7.15 Damage to housing infrastructure resulting in displacement of residents	People	CRC Planning & Environment Section	CRC CEO	N/A	CRC	Ongoing
Encourage owners of existing buildings to upgrade their properties to current standards when undertaking structural renovations or extensions.	7.15 Damage to housing infrastructure resulting in displacement of residents	People	LDMG to proactively encourage through engagement	LDMG agencies	TBC	LDMG agencies	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
LDMG-CR agency to review emergency plans for currency	7.17 Manning for operation of CRC essential services 7.18 Manning for the operation of power supply 7.19 Damage to communication infrastructure 7.20 Damage to medical facilities 7.21 Emergency services agencies to review plans for currency	People	LDMG agencies to undertake reviews of plans and update as necessary or prepare new plans	LDMG agencies	TBC	LDMG agencies	Annual
Continue to educate residents on preparations during the wet season including own supplies	7.22 Loss of food to community	People	LDMG to proactively encourage through engagement	LDMG-CR	$10,000 p.a.	CRC/Qld Govt.	Ongoing
Continue to educate residents for actions to prepare for events including staying out of flood and contaminated water for health reasons	7.23 Contamination of waterways and Great Barrier Reef	Environment	LDMG to proactively encourage through engagement	LDMG-CR	$10,000 p.a.	CRC/Qld Govt.	Ongoing
Continue to educate residents for actions to prepare for events including securing chemicals	7.23 Contamination of waterways and Great Barrier Reef	Environment	LDMG to proactively encourage through engagement	LDMG-CR	$10,000 p.a.	CRC/Qld Govt.	Ongoing
Provision and maintenance of adequate firebreaks and fire protection strategies around physical infrastructure	7.24 Impact on the ecosystem including, flora and fauna	Environment	Relevant agency staff to monitor and co-ordinate works as necessary	Asset Manager/ Owner E.g. CRC CEO, ERGON regional	Asset Owner annual budget	Asset Owner	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
				manager			
Businesses should undertake structural checks of facilities to make suitable modifications if necessary	7.26 Damage to commercial facilities 7.29 Damage to Retail Facilities 7.30 Damage to tourism Infrastructure 7.31 damage to Industrial Business Infrastructure	Economy	LDMG to proactively encourage through engagement	LDMG-CR	$10,000 p.a.	CRC/ QLD GOVT	Ongoing
Prepare							
Discuss with BOM, QFES and Police regarding more specific weather warnings for CRC.	7.1 Water and Sewerage 7.2 Power infrastructure 7.4 Road transport networks 7.15 Damage to housing infrastructure	Infrastructure	LDMG to coordinate with agencies	LDMG-CR	N/A	N/A	Ongoing
Recalibration of flood gauges to provide better data to predict flood events.	7.1 Water and Sewerage 7.4 Road transport networks	Infrastructure	LDMG, CRC, TMR, to undertake study	LDMG-CR	$20,000 p.a.	TMR, CRC	Annually by December
Undertake investigation to identify deficiencies in flood gauge locations and develop program to install as necessary	7.1 Water and Sewerage 7.4 Road transport networks	Infrastructure	LDMG, CRC, TMR, to undertake study	LDMG-CR	$20,000 p.a.	TMR, CRC	
Ensuring adequate generator	7.1 Water and	Infrastructure	CRC W&W process	CRC CEO	$500,000	CRC	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
capacity is planned for critical infrastructure.	Sewerage 7.2 Power infrastructure		underway				
Council to develop a business continuity plan to sustain operations during a disaster and restore services as soon as possible after the event.	7.1 Water and Sewerage 7.2 Power infrastructure 7.3 Communication infrastructure 7.4 Road transport networks 7.5 Rail transport networks 7.6 Sea transport assets 7.7 Air transport assets	Infrastructure	Asset owners to undertake review of BCP's and update where necessary LDMG to proactively encourage through engagement	Agency managers LDMG	TBC	Agencies	Completed
Develop comprehensive emergency risk communications strategy, in association with response agencies (Public Information & Warnings Plan, Resilient Communications Plan).	7.1 Water and Sewerage	Infrastructure	CRC to develop strategies	CRC CEO	$20,000	CRC	Ongoing process
Provision of a community awareness and preparedness campaign to highlight the risks of natural hazards and to	7.1 Water and Sewerage 7.2 Power	Infrastructure	LDMG to develop campaign with relevant stakeholders	LDMG-CR	$20,000	Stakeholders	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
encourage individual members of the community and business owners to have their own disaster/emergency plans in place.	infrastructure 7.3 Communication infrastructure 7.8 Commercial facilities						
LDMG and asset owners to develop business continuity plans to sustain operations during a disaster and restore services as soon as possible after the event	7.1 Water and Sewerage 7.2 Power infrastructure 7.3 Communication infrastructure	Infrastructure	LDMG agencies to review and / or prepare business continuity plans as necessary	LDMG Agencies	TBC	Agency Budget	Ongoing
Liaise with Ergon regarding options for a more resilient power supply.	7.2 Power infrastructure	Infrastructure	LDMG to engage with Ergon	LDMG-CR	N/A	N/A	Ongoing
Plan with ERGON where large capacity generators may be used to re-energise parts of the network.	7.2 Power infrastructure	Infrastructure	LDMG to engage with Ergon and other stakeholders (eg CRC)	LDMG-CR	TBC	TBC	Ongoing
LDMG agencies to undertake investigations for emergency power supplies to maintain operations of essential services and provide ERGON with list of critical sites.	7.2 Power infrastructure	Infrastructure	LDMG agencies to undertake necessary investigations	LDMG Agencies		Agency Budget	Annually by 1 November
LDMG to investigate the options available to ensure bulk fuel supply is available.	7.2 Power infrastructure	Infrastructure	LDMG to undertake investigations to determine options	LDMG-CR	$5,000	CRC, ERGON	Annually by 1 November
LDMG agencies to establish	7.3 Communication	Infrastructure	LDMG to liaise with	LDMG,	$5,000	Communications	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
procedures to manage communications with the community and each other in the absence of standard communications.	Infrastructure		communications stakeholders to develop alternate procedures	Communications Agencies		Agencies	
Liaise with radio stations to ensure continuity of broadcast	7.3 Communication Infrastructure	Infrastructure	LDMG to coordinate	LDMG-CR	N/A	LDMG-CR	Ongoing
Document hierarchy of road network priorities	7.4 Road transport networks	Infrastructure	CRC, DTMR knowledge to be documented	CRC CEO, TMR RD	N/A	CRC TMR	Ongoing
Education of residents and travellers not to use transport networks that are closed, flooded or damaged.	7.4 Road transport networks	Infrastructure	CRC & TMR to work with LDMG to develop material	CRC CEO TMR RD	$10,000 p.a.	CRC TMR	Ongoing
LGA ensure that local SES and QPS staff are made familiar with management arrangements for local flood issues, conduct on-site briefings on the management of the flood threat at identified flash flooding hotspots, especially where road closures are required.	7.4 Road transport networks	Infrastructure	CRC to promote necessary training to agencies See Captain Cook Highway Closure procedures (TMR Guideline 2014)	CRC CEO	$5,000	CRC	Annually by 1 December
Encourage asset owner to progressively upgrade problem areas as per identified risks.	7.5 Rail Transport Networks 7.6 Sea transport networks 7.7 Air transport	Infrastructure	LDMG to continue to liaise as necessary	LDMG-CR	N/A	LDMG-CR	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
	networks						
Continue to educate business owners for actions to prepare for events and post event actions particularly to prepare against wind damage and/or surface flooding as part of their business continuity planning.	7.8 Commercial facilities	Infrastructure	LDMG-CR to prepare and deliver training / information packages	LDMG-CR	$50,000 p.a.	LDMG, CRC, Agencies	Ongoing
The hospital has its own set of operating procedures including disaster management guidelines. LDMG-CR will continue to liaise with the hospital to ensure it knows its obligations under the Hospital's disaster management guidelines.	7.9 Medical facilities	Infrastructure	LDMG-CR will continue to liaise with the hospital as necessary	LDMG-CR	N/A	LDMG-CR	Ongoing
Identify location for emergency triage facility in "white" zone and source funding to establish the facility.	7.9 Medical facilities	Infrastructure	QH strategy developed for various scenarios to utilise selected sites across the Cairns area	QH	TBC	QH LDMG-CR	Ongoing
Ensure a process is available to access back-up resources (including human resources) from outside of the affected region.	7.10 Emergency services facilities	Infrastructure	LDMG-CR to continue to liaise as necessary with relevant agencies	Emergency services Agencies CRC	N/A	Emergency services Agencies C2C	Ongoing
Identify facilities in flood prone areas, undertake individual risk assessment of facility and	7.10 Emergency services facilities	Infrastructure	LDMG to continue to liaise as necessary with	Emergency services agencies	N/A	Emergency services agencies	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
action as determined through risk assessment			relevant agencies				
LDMG-CR to work with dam operators to ensure adequate warning systems are in place in relation to dams.	7.11 Dam failure	Infrastructure	LDMG to liaise with dam operators	LDMG CRC CEO Dam Safety Committee W&W Operations	TBC	CRC	Ongoing
Emergency Action Plans to be available for each referable dam.	7.11 Dam failure	Infrastructure	LDMG to contact dam operators to obtain plans	LDMG-CR	TBC	LDMG-CR	Ongoing
Dam operators to conduct public education for all residents potentially impacted by dam emergency events annually.	7.11 Dam failure	Infrastructure	LDMG to liaise with dam operators Dam operators to conduct sessions	LDMG-CR CRC CEO	TBC	CRC	Annually – required by regulation (Nov)
Conduct dam break study for Copperlode Dam to identify at risk areas	7.11 Dam failure	Infrastructure	CRC to undertake study – consultant Gilbert & Sutherland	CRC CEO	TBC	CRC	Completed Sept 2014
Identify additional areas for storage of asbestos and other hazardous wastes if existing facilities are not accessible post event.	7.12 Solid waste and disposal activities	Infrastructure	CRC Planning and Environment Section to undertake study	CRC CEO	TBC	CRC	Ongoing
Maintain register of licensed contractors for handling asbestos and hazardous wastes	7.12 Solid waste and disposal activities	Infrastructure	CRC Planning and Environment Section to establish and maintain register	CRC CEO	TBC	CRC	Ongoing
Continue a program of clearing drains prior to wet season	7.14 CRC Drainage networks	Infrastructure	CRC Infrastructure Services Section to maintain as	CRC CEO	TBC	CRC	Ongoing annually

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
			necessary				
Identify works to be undertaken to improve flood immunity in accordance with the Drainage Management Plans	7.14 CRC Drainage networks	Infrastructure	CRC Infrastructure Services Planning section to undertake works identified	CRC CEO	TBC	CRC State Government Grants	Ongoing
LDMG to encourage all agencies to undertake planned maintenance on all their infrastructure	7.15 Damage to housing infrastructure resulting in displacement of residents	People	LDMG to prepare and deliver training / information packages	LDMG-CR	$50,000 per annum	LDMG, CRC, Agencies	Ongoing
Ensure refuges/evacuation centres are identified and available in the Plan	7.15 Damage to housing infrastructure resulting in displacement of residents	People	LDMG to review and update if necessary	LDMG-CR	N/A	LDMG-CR	Ongoing
Council review its vegetation management strategies to manage remnant native trees & street tree planting to minimise their potential to do damage if brought down during storms or to provide wildfire fuel close to residents	7.15 Damage to housing infrastructure resulting in displacement of residents	People	CRC to review strategies and update where necessary	CRC CEO	CRC Operating Budget	CRC	December 2014
LDMG-CR to list emergency shelter options and ensure their structural integrity	7.15 Damage to housing infrastructure resulting in displacement of residents	People	LDMG to prepare shelter listing and liaise with owners for inspections	LDMG-CR	Inspection $5,000 per structure	Qld Govt.	Ongoing
Provision and maintenance of	7.15 Damage to	People	CRC & Asset Owners	CRC & Asset	TBC	CRC & Asset	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
adequate firebreaks and fire protection strategies around physical infrastructure	housing infrastructure resulting in displacement of residents		to develop program for works	Owners		Owners	
Provision of a community awareness and preparedness campaign to highlight the risks of natural hazards and to encourage individual members of the community and business owners to have their own disaster/emergency plans in place	7.15 Damage to housing infrastructure resulting in displacement of residents	People	LDMG to prepare and deliver training / information packages	LDMG-CR	$50,000 per annum	LDMG, CRC, Agencies	Ongoing
Undertake physical inspections and repair as necessary	7.16 Damage to of evacuation centres and places of refuge	People	CRC & Asset Owners to develop program for works DPHW	CRC & Asset Owners	TBC	CRC & Asset Owners	Ongoing
LDMG-CR agency to review plans for currency	7.17 Manning for the Operation of CRC Essential Services 7.18 Manning for the Operation of Power Supply 7.19 Damage to Communication Infrastructure 7.20 Damage to medical facilities 7.21 Failure of Emergency Services facilities	People	LDMG agencies to review and update or prepare new BCP's	LDMG-CR agencies	TBC	LDMG-CR agencies	Annual review by December

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
Supermarkets to continue to stock food during wet season	7.22 Loss of food supply to the community	People	LDMG to liaise with supermarket to ensure continuity plans are in place to ensure ongoing supply	LDMG Supermarket owners	Nil	Supermarkets	Ongoing
LDMG-CR to liaise with supermarkets to ensure Business Continuity Plans in place	7.22 Loss of food supply to the community	People	LDMG to prepare and deliver training / information packages	LDMG-CR	TBC	LDMG-CR Volunteering Qld Business Roundtable EXTEND events	Ongoing
LDMG-CR agencies to ensure all chemicals are stored and secured	7.23 Contamination of waterways and Great Barrier Reef	Environment	LDMG agencies to undertake required action	LDMG-CR Agencies	Operational costs	LDMG-CR Agencies	Ongoing
LDMG-CR to continue to deliver education program to community	7.23 Contamination of waterways and Great Barrier Reef	Environment	LDMG to prepare and deliver training / information packages	LDMG -CR	$50,000 per annum	LDMG, CRC, Agencies	Ongoing
Cool burns as required to reduce fire load	7.24 Impact on the ecosystem, including flora and fauna	Environment	LDMG to co-ordinate with responsible agencies to ensure fuel load is managed	LDMG-CR QFES DPW	TBC	Agency budgets	Annual
Council adopt a policy for managing fuel on Council controlled land	7.24 Impact on the ecosystem, including flora and fauna	Environment	CRC Planning and Environment Section to develop appropriate policy	CRC CEO	CRC Operating budget	CRC	Ongoing
Conduct an annual audit of fuel conditions on council-controlled land.	7.24 Impact on the ecosystem, including flora and fauna	Environment	CRC Planning and Environment Section to develop appropriate policy	CRC CEO	CRC Operating budget	CRC	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
Those relying on the environment for their businesses should make allowances in their business continuity plans as per commercial and rural.	7.24 Impact on the ecosystem, including flora and fauna	Environment	LDMG-CR to liaise with business owners to provide guidance for BCP preparation and currency	LDMG-CR Business owners	$10,000 p.a.	LDMG-CR Volunteering Qld Business Roundtable EXTEND events	Ongoing
CRC to improve support structures for the LGA Rural Fire Brigade including increased management of the fire trails database and the ongoing maintenance of strategically important fire trails.	7.24 Impact on the ecosystem, including flora and fauna	Environment	CRC to develop required mapping and maintain. Coordinate with and support Rural Fire Brigade tom maintain fire trails	CRC	$10,000 p.a.	CRC Qld Govt.	Annual
CRC and asset owners to clear and maintain drains in lead up to wet season	7.24 Impact on the ecosystem, including flora and fauna	Environment	CRC to ensure maintenance program in place for drain maintenance Asset owners (private owners, government agencies) to be encouraged to maintain drains	CRC Asset Owners	$500,000 p.a.	CRC Asset Owners	Annual
Continue to educate owners of relevant facilities for actions to prepare for events and post event actions.	7.26 Damage to commercial facilities 7.27 Damage to rural industries 7.28 Damage to crops 7.29 Retail facilities 7.30 Tourism	Environment	LDMG to continue to liaise as necessary with owners and operators	Business owners and operators LDMG	$10,000 p.a.	Business owners and operators LDMG	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
	infrastructure 7.31 Industrial business infrastructure						
Direct business owners towards web-links that assist with information on preparedness actions and post-event assistance such as checklists	7.26 Damage to commercial facilities 7.27 Damage to rural industries 7.28 Damage to crops 7.29 Retail facilities 7.30 Tourism infrastructure 7.31 Industrial business infrastructure	Environment	LDMG to continue to liaise as necessary with owners and operators	Business owners and operators LDMG	TBC	Owners and operators TTNQ	Ongoing
Encourage businesses to ensure business continuity plans are in place and current	7.26 Damage to commercial facilities 7.27 Damage to rural industries 7.28 Damage to crops 7.29 Retail facilities 7.30 Tourism infrastructure 7.31 Industrial business infrastructure	Environment	LDMG to continue to liaise as necessary with owners and operators	Business owners and operators LDMG	N/A	Owners and operators Volunteering Qld Business Roundtable EXTEND events	Ongoing
Ensure Business Continuity Plan is reviewed each year and up to date.	7.32 Emergency Services Facilities 7.33 Local Government Support Services 7.34 state and	Public administration	LDMG to continue to liaise as necessary with agencies to ensure reviews have taken place	Business owners and operators LDMG	N/A	Owners and operators Volunteering Qld Business Roundtable EXTEND events	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
	Federal Support Services						
LDMG to co-ordinate with agencies to ensure registers are reviewed, monitor and updated	7.35 Socially vulnerable persons	Social setting	LDMG to continue to liaise as necessary with agencies	Agencies LDMG-CR	N/A	Owners and operators	Ongoing
Determine relevant sites with relevant community group.	7.36 Sites of Cultural and Historical Significance	Social setting	LDMG to continue to liaise as necessary with groups to understand group data bases	Community groups LDMG-CR	N/A	Owners and operators	Ongoing
Assess the need for structural modification of identified sites to ensure survival through the event.	7.36 Sites of Cultural and Historical Significance	Social setting	LDMG to continue to liaise as necessary with owners and operators	Asset owners	TBC	Owners and operators	Ongoing
Provide physical protection where required and appropriate.	7.36 Sites of Cultural and Historical Significance	Social setting	LDMG to continue to liaise as necessary with owners and operators	Asset owners	TBC	Owners and operators	As required
Ensure requirements of FNQ Human and Social Welfare Strategy are being implemented	7.38 Mental health first aid services	Social setting	LDMG to continue to liaise as necessary with owners and operators	Health and welfare agencies LDMG	N/A	CRC Health and welfare agencies	Ongoing
Encourage accommodation providers to have Business Continuity Plans in place. Be aware of plans and actions required leading up to an event	7.40 Tourist / back packers	Social setting	LDMG to continue to liaise as necessary with owners and operators	Accommodation providers LDMG-CR	N/A	Owners and operators	Ongoing

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
Awareness of potential increase in numbers to evacuation facilities.	7.40 Tourist / back packers	Social setting	LDMG to continue to liaise as necessary with owners and operators	Accommodation providers LDMG-CR	N/A	Owners and operators	Ongoing
Coordination with tourist operators and backpacker lodges as to the numbers of backpackers in town.	7.40 Tourist / back packers	Social setting	LDMG to continue to liaise as necessary with owners and operators	Accommodation providers LDMG-CR	N/A	Owners and operators	As required
Coordination with island resorts as to what happens once they get to the mainland.	7.40 Tourist / back packers	Social setting	LDMG to continue to liaise as necessary with owners and operators	Business owners LDMG-CR	N/A	Owners and operators	As required
Respond							
Coordinate response in accordance with documented plans and procedures.	All risk statements	All	As required by plans	LDMG Agencies	TBC	CRC LDMG-CR	As required
Consider alternative strategies to maintain service levels as far as practicable e.g. bottled water provision, self-contained ablution blocks, etc.	7.1 Water and Sewerage Infrastructure	Infrastructure	LDMG & CRC to develop strategies	CRC LDMG-CR	TBC	CRC	As required
Council resources to respond as required in line with agreed plans and priorities as set by the LDMG-CR.	7.2 Power Infrastructure	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Respond to communications failure in accordance with LDMG-CR priorities	7.3 Communications Infrastructure	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
Respond to transport network failures in accordance with the documented road hierarchy and / or LDMG priorities	7.4 Road Transport Networks	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Installation of temporary signage as required	7.4 Road Transport Networks	Infrastructure					
Emergent works as required in accordance with documented procedures	7.4 Road Transport Networks 7.5 Rail Transport Networks	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Encourage asset owner to progressively upgrade problem areas as per identified risks.	7.6 Sea Transport networks 7.7 Air Transport assets	Infrastructure	Asset owners to monitor and undertake works as necessary	Asset owners	TBC	Asset owners	As required
Issue timely warnings to residents affected by dams as required.	7.11 Dam failure	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Clearing of drainage networks following event.	7.14 CRC Drainage Paths	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Ensure available refuges/evacuation centres at the time of an event are communicated to residents	7.15 Housing Infrastructure	People	As required by plans	LDMG Agencies	TBC	TBC	As required
Coordinate Rapid Damage Assessments of residential housing and commercial buildings.	7.15 Housing Infrastructure	People	As required by plans	LDMG Agencies	TBC	TBC	As required

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
Conduct structural assessment of all critical infrastructure and coordinate structural assessment of damaged residential houses as required	7.15 Housing Infrastructure	People	As required by plans	LDMG Agencies	TBC	TBC	As required
Through the LDMG ensure coordination of licensing and regulation of all tradespersons in conjunction with BSA.	7.15 Housing Infrastructure	People	As required by plans	LDMG Agencies	TBC	TBC	As required
Recover							
Coordinate recovery in accordance with documented plans and procedures	All risk statements	All	As required by plans	LDMG Agencies	TBC	TBC	As required
Review failure of power supply to determine root cause and address issues as far as practicable	7.2 Power Infrastructure	Infrastructure	As required by plans	ERGON	TBC	TBC	As required
Review failure of communications systems to determine root cause and address issues as far as practicable	7.3 Communications Infrastructure	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Progressively upgrade problem areas on Council controlled roads and encourage TMR to undertake similar work on State controlled roads as per identified risks.	7.4 Road Transport Networks	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Encourage asset owner to progressively upgrade problem areas on rail / sea/ air transport	7.5 Rail Transport Networks	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
as per identified risks.	7.6 Sea transport networks 7.7 Air Transport Networks						
Consider relocation of facility if it is damaged/destroyed by an event, and then locate outside of hazard area and built to meet or exceed current building requirements	7.8 Commercial facilities	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Identify critical routes to high risk population nodes and lobby relevant agencies for infrastructure upgrades.	7.10 Emergency Services facilities	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Lobby government to rebuild critical infrastructure in a timely manner	7.11 Dam Failure	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Nominated secondary shelters should be structurally assessed following an event.	7.13 Evacuation centres / places of refuge	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Investigate and propose solutions to problem areas.	7.14 CRC drainage networks	Infrastructure	As required by plans	LDMG Agencies	TBC	TBC	As required
Encourage house owners to organise a correctly licensed person to conduct structural assessments of houses.	7.15 Housing infrastructure	People	As required by plans	LDMG Agencies	TBC	TBC	As required
Undertake physical inspections and repair as necessary.	7.16 Evacuation centres / places of	People	As required by plans	LDMG Agencies	TBC	TBC	As required

Treatment and expected outcomes	Risks Addressed	Risk Category	Resources Required	Responsibility for actions	Estimated Cost	Possible Funding Source	Implemented By
	refuge						
Undertake repairs to community infrastructure (eg. jetties) as required.	7.30 Tourist Infrastructure	Economy	As required by plans	LDMG Agencies	TBC	TBC	As required

APPENDIX J – RESIDUAL RISK REGISTER

Risk	Likely Potential Impact	Completed Mitigation Action	Treatment Options	Refer/Transfer Risk to DDMG
There is a risk that the LDMG-CR will not be able to provide sufficient staff to open and operate the Edmonton and Redlynch Storm Tide Cyclone Shelters. This risk cascades to include other types of Disaster Centres if the operation of the centres is required over an extended period or required by the magnitude of the event.	The Cairns Region Storm Tide Inundation Evacuation Strategy articulates that there are 82,148 persons in impact zones. Not being able to operate the Storm Tide Cyclone Shelters would have a significant effect on vulnerable elements of the community in exposing them to extreme consequences.	Current local disaster management, operational and threat specific plans that address natural and non-natural disasters in the region. Council recruitment initiatives such as the Incident Management Team secondary employment opportunity for Council staff & specific Cyclone Shelter Training Courses have been offered and conducted with limited numbers. External resources have been recruited and trained but there still exists a significant gap.	The LDMG-CR will explore Council-to-Council assistance in terms of available Storm Tide Cyclone Shelter trained staff. The LDMG-CR will enact the Joint Council Disaster Management MOU between North Qld Councils	The LDMG-CR will request additional resources by way of Request for Assistance through the Cairns DDMG. This request would be for Fly- In-Fly-Out trained SES from non-impacted LGA's. Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan
There is a risk of limited capacity to evacuate all of the	The Cairns Region Storm Tide Inundation Evacuation Strategy	Current local disaster management operational sub-plans (i.e.	The LDMG-CR will explore Council-to-Council assistance in terms of	The LDMG-CR will request additional resources by way of

population at risk from storm tide impact zones.	articulates that there are 82,148 persons in the three (Red, Orange and Yellow) nominated Evacuation zones. Considerations revolve around the timeline and logistics of evacuation process from threatened zones and then the accommodation of the evacuated residents	Evacuation, Transport, Community Support, Logistics and Disaster Centre Management. The Cairns Region Storm Tide Inundation Evacuation Strategy study Publishing (web & print) of evacuation zone maps Evacuation route mapping products distribution – web/public information sites/mail out of brochure to all residents Specific address search data-base on Council website to identify if property is located in an evacuation zone	available Storm Tide Cyclone Shelter trained staff. The LDMG-CR will enact the Joint Council Disaster Management MOU between North Qld Councils Activate Homelessness Plan actions Enact MOU with Cairns Taxis (Vulnerable Resident Register) Enact MOU's with bus companies for transport Enact MOU with Aged Care facilities	Request for Assistance through the Cairns DDMG Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan
There is a risk that all agencies including Council would be unable to manage response to a large-scale event especially	Will request additional resources as per Qld Disaster Management Arrangements. The supply of requested resources will depend on	Current local disaster management, operational and threat specific plans that address natural and non-natural disasters in the	The LDMG-CR will explore Council-to-Council assistance The LDMG-CR will enact the Joint Council Disaster	The LDMG-CR will request additional resources by way of Request for Assistance through the Cairns DDMG.

those with multiple buildings damaged, multi-casualty and large number of displaced residents	the size and severity of the event and subsequent cascading effects (i.e. insufficient trained personnel to conduct impact Assessments and Public health inspections). No link to commonwealth resources	region Joint Council Disaster Management MOU between North Qld Councils reviewed and signed. State Disaster Management Plan and Qld Disaster management Committee	Management MOU between North Qld Councils	Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan
There is a risk of Asbestos Containing Material (ACM) contamination from damaged buildings – clean-up and disposal	The community has limited personnel trained in or equipped for asbestos removal. External expertise will be required. The Cairns region does not have an asbestos disposal site within its boundaries	Current local disaster management ACM operational sub-plan. Asbestos probability maps of the Cairns region Strategic overview asbestos “heat” mapping of Cairns region	The LDMG-CR will enact the operational sub-plan and activate list of external contractors for clean-up The LDMG-CR will explore Council-to-Council assistance particularly with the Tablelands Regional Council (closest registered disposal ACM site) The LDMG-CR will enact the Joint Council Disaster Management MOU between North Qld Councils	The LDMG-CR will request additional resources by way of Request for Assistance through the Cairns DDMG. Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan
Public Health outbreak following disaster event	CRC has a small number of Environmental Health Officers. In a major event,	Current local disaster management Public Health operational sub-	The LDMG-CR will explore Council-to-Council assistance particularly with	The LDMG-CR will request additional resources by way of

	professional EHO assistance will be required for a range of public health and environmental health issues.	plan and Integrated plans.	the Tablelands Regional Council (closest registered disposal ACM site) The LDMG-CR will enact the Joint Council Disaster Management MOU between North Qld Councils	Request for Assistance through the Cairns DDMG. Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan
Supply and availability of liquid fuels following storm tide inundation	Demand for liquid fuels is likely to increase during a large scale electricity disruption. The supply of liquid fuels may be slowed during a power disruption due to interdependencies with the electricity and transport sectors. Simplified domestic supply chains have reduced the amount of Liquid fuel available at short notice.	In Queensland, the Liquid Fuel Supply Act 1984 outlines arrangements for essential or high priority users of liquid fuel and other constraints on liquid fuel use in emergency or related situations Some protection through ensuring the priority allocation of sandbags to the bulk fuel storage facilities	LDMG RFA to DDMG for need to prioritise allocation of liquid fuels to essential users during a liquid fuels shortage which may coincide with, or be caused by, a power Disruption Ongoing Industry collaboration – no statutory requirement for bulk fuel storage companies (BP, Caltex and Shell) to install redundant systems to pump fuel from storage tanks independent of electrical power Business continuity and organisational resilience planning regarding	The LDMG-CR will request additional resources and isolation of supply of liquid fuels by way of Request for Assistance through the Cairns DDMG Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan

			adequate uninterruptible power supply (UPS) or a stand-by generator with adequate fuel to cover the loss of reticulated power supply May even extend to costly structural defences such as the construction of permanent protective bunds, berms or levees	
Threats to food supply chain resilience	Near miss events (i.e. STC Yasi) have exposed challenges and key vulnerabilities to the capacity of resupply operations and the resilience of the local food supply chain; • concurrent loss of a number of distribution centre facilities (including power loss beyond that which can be sustained by generators) • had STC Yasi hit Cairns, the food supply chain, particularly perishables like fruit and vegetables, milk, meat and fish would	One of the LDMG-CR strategies from local risk analysis is negotiating additional storage capacity for future events for stored goods, such as flour, rice, powdered milk, pasta and tinned fruit and vegetables. Another area of risk being investigated is long-life packaging (used for various dairy, juice and other liquids) as Australia is reliant on imports for these. One of the pro-active measures undertaken by	Development of Parallel supply chains Business continuity and organisational resilience planning	The LDMG-CR will request additional resources by way of Request for Assistance through the Cairns DDMG Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan

	have been very severely affected • concurrent loss of a number of transport links to and between major cities—during the Queensland Flood and impact of STC Yasi, the restocking of the food supply chain was made possible largely through supply links to Sydney and Melbourne, and routing stock through the far west of Queensland. • shortage of fuel for food distribution in the case of a storm tide event affecting Cairns bulk fuel storage.	Council in relation to rising river levels to an identified isolated community (Goldsborough Valley) was the installation of a 'Flood Cam' at Peets Bridge on the Mulgrave River with images posted to Council's website to inform and empower residents' preparatory plans and actions as well as guiding disaster management strategic decision making.		

NBN Roll-out and dependency chains	LDMG-CR has documented and escalated risks associated with lessening of resilience within the community due to power dependence of NBN network whether to the premise or to the node the copper exchanges retained the ability for EA to be received by landline phones – now without power, NBN connected telephones will not be able to receive the EA if one node in chain is effected [even if the end-user has battery back-up])	The issue has been referred to the next sitting of the Queensland Disaster Management Committee and the Australia & New Zealand Disaster Management Committee through the QDMA and Queensland Tropical Cyclone Consultative Committee respectively	Cairns provides two platforms for effective warning systems and arrangements that support the continuous flow of critical, up-to-date and relevant information to the community and between key stakeholders.	The LDMG-CR will request additional resources by way of Request for Assistance through the Cairns DDMG Residual Risk identified to Cairns DDMG for inclusion in the Cairns District Disaster Management Plan