

Local Disaster Management Plan

CAIRNS REGION

2022 / 2023

Forward from the Chair of the LDMG-CR

This document has been developed by the LDMG-CR on behalf of CRC and endorsed through CRC 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 specifically 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.



Deputy Mayor Terry James

Chairperson

Local Disaster Management Group – Cairns Region

1.1 Approval of the Cairns Local Disaster Management Plan

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

CRC 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 LDMG – 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 LDMP has been undertaken in accordance with the *Disaster Management Act 2003* (the Act), to provide for effective disaster management in the local government area.

CRC 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)*.

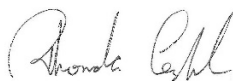
Endorsements

This plan is recommended for distribution by the LDMG – Cairns Region.



Councillor Rhonda Coghlan - Deputy Chair
Local Disaster Management Group – Cairns
Region

LDMG – Cairns Region



Plan endorsed for distribution by the LDMG – Cairns Region.



Justin Smith
Local Disaster Coordinator

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1.2 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 LDMG – 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: cairnsdisastermanagement@cairns.qld.gov.au
- With the exception of minor changes, typographical changes and change to position titles, all suggestions for amendments to the plan will be submitted to the LDMG-CR for discussion.
- When necessary, amendments to the plan will be ratified by CRC.

1.3 Amendment Register

Version	Date	Prepared by	Comments
1	March 2007	DMU	Cairns Local Disaster Management Plan (LDMP) – first version under the DM Act 2003
1	2007	Douglas Shire Council	Douglas Local Disaster Management – first version under the DM Act 2003
2	December 2008	CT Management Group (Qld)	Revised Plan to reflect CRC area
3	August 2011	C Fitzgerald – DMU	Revised Plan incorporating revised Interim Local Disaster Management Planning Guidelines 2011 <i>and Disaster Management Act Amendments 2020</i>
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
10	September 2018	C Ingle - DMU	Annual Review LDMG-CR 2018 Endorsed Version
11	September 2019	C Ingle - DMU	Annual Review LDMG-CR 2019 Endorsed Version
12	October 2020	C Ingle - DMU	Annual Review LDMG-CR 2020 Endorsed Version
13	September 2022	J Smith - DMU	Extensive Review LDMG-CR 2022 Endorsed Version

1.4 Distribution and Availability

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 LDMG – 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. The Cairns LDMP is available free of charge to the members of the public on the CRC website.

This plan has been distributed via email to LDMG Core and Advisory members and the District Disaster Coordinator(DDC).

Abbreviations

A Disaster Management [glossary of terms](#) and acronyms is published as part of the [PPRR Disaster Management Guideline](#).

A Disaster Management Lexicon is also provided by the Office of the Inspector General [Emergency Management \(IGEM\)](#).

The following abbreviations are not contained in the above links and are used throughout the LDMP.

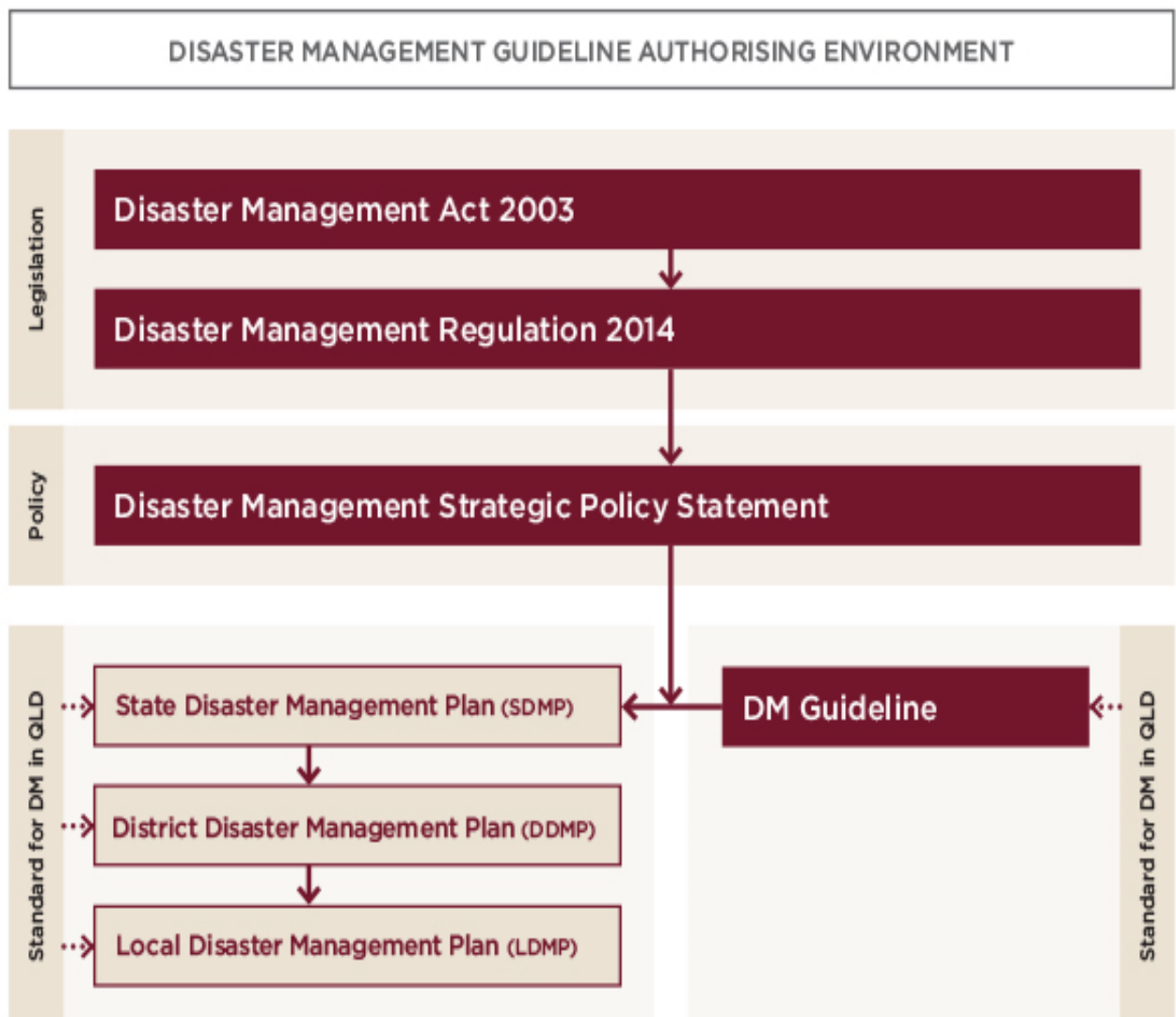
Acronym	Meaning
AIIMS	Australasian Inter-service Incident Management System
AFMG	Area Fire Management Group
CDO	Counter Disaster Operations
CHHS	Cairns & Hinterland Hospital and Health Service
CLDRC	Cairns Local Disaster Recovery Committee
CLDRP	Cairns Local Disaster Recovery Plan
CRC	Cairns Regional Council
DRFA	Disaster Recovery Funding Arrangements (formerly known as NDRRA)
EAP	Emergency Action Plan
GIS	Geographic Information System
IGEM	Inspector General Emergency Management
IMT	Incident Management Team
LGA	Local Government Area
QDMA	Queensland Disaster Management Arrangements
RFB	Rural Fire Brigade — QFES
RFS	Rural Fire Service — QFES
SBC	State Bushfire Committee
SMEACS	Situation, Mission, Execution, Administration, Coordination, Safety
WHO	World Health Organisation

2.1 Authority to Plan

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

The Cairns Local Disaster Management Plan and associated sub plans have been prepared by the LDMG – Cairns Region in accordance with the *Disaster Management Act 2003* (“The Act”) to confirm the effective coordination of resources and counter disaster operations in the CRC area. This LDMP is consistent with the [Queensland Disaster Management Standard](#) and [Queensland PPRR Disaster Management Guideline](#).

Figure 1: Disaster Management Authorising Environment



2.2 Requirements of Plan

This plan is developed using the National Emergency Risk Assessment Guidelines (NERAG) , supported by the transition towards the adopted Queensland Emergency Risk Management Framework (QERMF) methodologies and the Emergency Management Assurance Framework and 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.

2.3 Aim of Plan

The aim of this Plan is to minimise the effects of, coordinate 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 to 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; and
- Reduce the impact of a disaster and consequences to the community following an event.

2.4 Objective

The objective of the Cairns LDMP is to facilitate the implementation of effective and efficient disaster management strategies and arrangements including:

- The development, review and assessment of effective disaster management strategies 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;
- Describe the disaster management structure for the LDMP, the member organisations and their role and responsibilities for the coordination of multi-agency responses

- The coordination of disaster operations and activities relating to disaster management performed by the entities above;
- Acknowledging the likely effects of natural and non-natural 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;
- 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;
- Providing practical information to build community resilience and better assist the community in preparing for and responding to disaster events;
- The identification, evaluation and mitigation of risk to preserve human life; protect critical infrastructure, property, livelihoods, and economy, and safeguard the environment
- Where it is not plausible or possible to mitigate the risks, the plan offers contingencies for disaster management response and recovery procedures for the CRC area.

2.4.1 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.

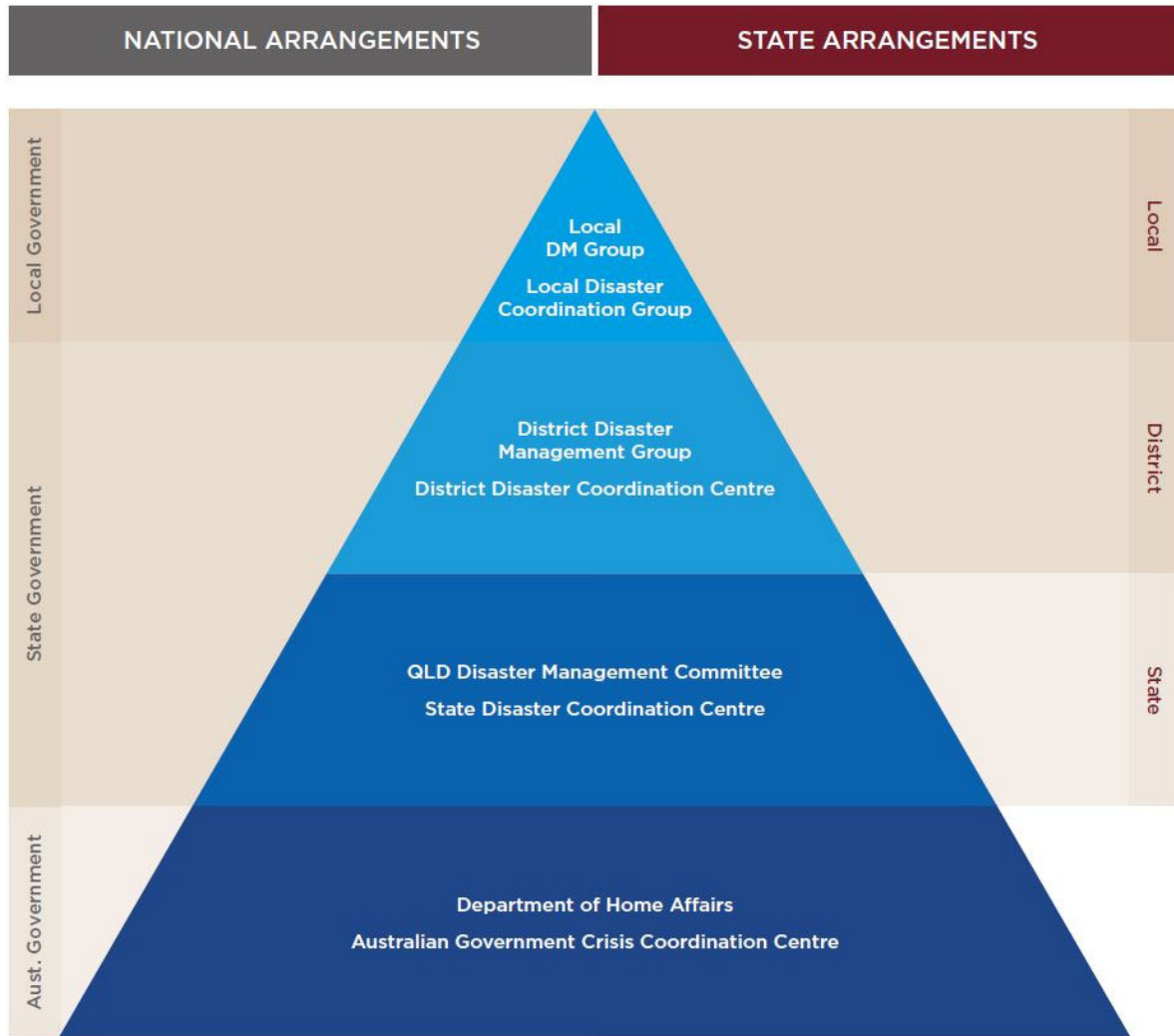
Queensland's whole-of-government disaster management arrangements are based upon partnerships between governments, government owned corporations, non-government organisations, commerce and industry sectors, and the local community.

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.

Local governments – through their respective LDMGs – have primary responsibility to manage a disaster at the community level.

If local governments identify gaps in their capacity or capability to manage a potential disaster and require additional resources to manage an event, they can request support from their DDMG. This allows for the rapid mobilisation of resources at a local, regional or district level.

Figure 2: Queensland's disaster management arrangements



2.5 LDMP

The LDMP is an overarching document that describes the management and governance arrangements that support disaster management in the CRC area.

2.6 Sub Plans

In support of the main LDMP there are number of Operational Sub-Plans and Hazard Specific Plans for the Cairns Region relating to specific arrangements and actions. See Section 9.7 – Operational Plans.

2.7 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.

The LDMP will achieve this by:

- Promoting a transparent, systematic and consistent approach to disaster risk assessment and 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.

2.8 Disaster Management Priorities

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

The 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 plan. Such issues include governance, collaboration, health, the environment, economic and infrastructure development, all of which can impact the resilience of the region's communities.

Not only has each area been identified as a priority for the general business of CRC, but they are also priorities for CRC's broader disaster management efforts, documented as part of this LDMP.

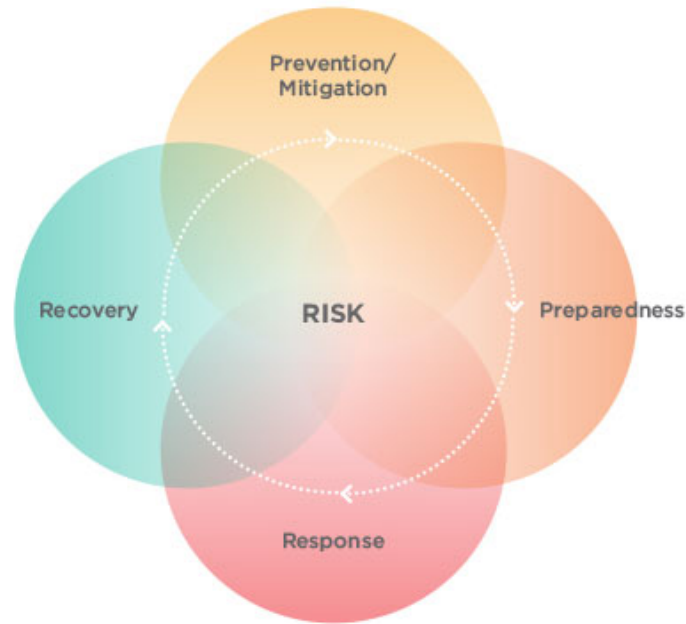
2.8.1 Principles of Disaster Management

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.

Figure 3: The 'comprehensive approach' to disaster management. Source: [PPRR Guidelines](#)



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. It does however affect the need for specific plans and arrangements for identified hazards and risks that require specific technical capacity 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 of 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 for disaster management, primarily due to the benefits of localised knowledge and networks. As per section 4A(c) of the Act, local governments are primarily responsible for managing events in their local government areas (LGAs) and this is provided through their LDMG.

A Prepared, Resilient Community

A high level of community resilience will reduce vulnerability and reliance on response agencies and results in individuals and communities being self-supporting as well as able to assist others.

CRC undertakes the following actions through the LDMG – Cairns Region;

PREVENTION

1. Identify hazards and assess the risks to the Cairns region local government area;
2. Implement measures to eliminate, mitigate or reduce potential loss of life, property, the environment and culture and protect economic development.

PREPAREDNESS

1. Develop and maintain a 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. Education and training for CRC staff
6. Raise resilience in communities through:
 - a) Community information, education and engagement programmes
 - b) Research and ongoing learning.
7. Establish organisational structure 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 LDMG – Cairns Region (LDMG-CR)
2. Activate the Cairns Local Disaster Coordination Centre (CLDCC)
3. Lead and assist with disaster response activities
4. Assist with the provision of immediate relief for persons affected by the disaster
5. Maintain liaison and communication with other agencies
6. Ensure effective communication and engagement with the community

RECOVERY (in accordance with the Queensland 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 affected communities
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.

2.8.2 Inspector General Emergency Management (IGEM)

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*.

IGEM is a catalyst for excellence in emergency management and enables 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.

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.

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.

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.


2.8.3 Agency – Roles and Responsibilities

Table 1 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 1 : Roles and Responsibilities or Core LDMG Agencies




AGENCY	POSITION	MEMBERSHIP	RESPONSIBILITIES
<p>LDMG-CR</p> 	<p>Shared Responsibilities</p>	<p>Core and Advisory Membership</p>	<p>Members of the LDMG, in undertaking their normal responsibilities should ensure they:</p> <ul style="list-style-type: none"> • Attend LDMG activities with a full knowledge of their organisations’ resources and services and the expectations of their organisation • Are available and have the necessary expertise or experience to actively participate in LDMG activities to ensure that plans, projects and operations use the full potential of their organisation, while recognising any limitations • Are appropriately positioned within their agency to be able to commit agency resources to LDMG normal business activities • Have a deputy who is appropriately trained to take on their responsibilities should they be unavailable or to provide additional support during extended operations • Provision of assistance to the Local Disaster Coordinator during Disaster Management operations. • Contribute to Disaster Management planning for the region. • Contribute to a collaborative approach to identify disaster mitigation opportunities • Attend and complete appropriate disaster management training to ensure an adequate level of understanding of the QDMA and EMAF. • Preparation and revision of the Local Disaster Management Plan and sub plans. • Design, maintenance and promotion of public education / awareness programs • Post disaster reconnaissance and coordination of impact assessment • Provision of public information prior to, during and following disaster impact events • Public advice regarding voluntary evacuation • Recommendations re areas to be considered for voluntary evacuation • Provision of locally based Human and Social services • Identification, resourcing, staffing and operation of Evacuation Facilities (Public Storm Tide Cyclone Shelter, Places of Refuge, Evacuation Centres and Recovery Hubs). • Escalation of Requests for Assistance in collaboration for the LDC
	<p>LDMG -CR Chair – Deputy Mayor</p>	<p>Executive Core</p>	<ul style="list-style-type: none"> • Manage and coordinate the business of the group. • Ensure, as far as practicable, that the group performs its functions. • Report regularly to the relevant district group and the Commissioner, QFES about the performance of the group and its functions. • In accordance with s 16 of the Regulation, the Chairperson is to preside at LDMG meetings.











		<ul style="list-style-type: none"> Attend meetings of the CAIRNS DDMG.
LDMG-CR Deputy Chair-	Executive Core	<ul style="list-style-type: none"> Provide advice and support to the Chair and -LDMG. To Chair LDMG meetings in the absence of the Chair. To Chair the LDMG Recovery Group when activated. To Chair the Public Warnings and Alert Sub Committee
Chief Executive Officer	Executive Core	<ul style="list-style-type: none"> Approve the Commitment Council’s resources, as required, in support of efforts to combat the disaster event. Maintain situational awareness for any impacts requiring the activation of CRC Business Continuity Plans and Business Continuity Team
Local Disaster Coordinator	Executive Core	<p>The functions of the LDC in accordance with section 36 of the Act are to:</p> <ul style="list-style-type: none"> Coordinate disaster operations for the local group; and report regularly to the local group about disaster operations. Ensure, as far as practicable, that any decisions of the local group about disaster operations are implemented. Activate the LDMP and associated Sub Plans as required Assist in the escalation of Request for Assistance to the DDMG Provide technical advice to LDMG-CR Represent the LDMG-CR on external committees such as the Area Fire Management Group, Airport Emergency Committee and other required committees. Attend meetings of the CAIRNS DDMG. Assist the chairperson to coordinate the prevention, preparation, response and recovery activities associated with the disaster event
Deputy Local Disaster Coordinator – Disaster Management Officer	Executive Core	<ul style="list-style-type: none"> To undertake the functions of the LDC in the LDC’s absence. Provide advice and support to the Chair, LDC and LDMG. Chair of the Evacuation Sub Committee
Disaster Management Resilience Officer – Coordinator of Evacuation and Community Participation	Advisor	<ul style="list-style-type: none"> Providing education and engagement activities outlined as priorities by the LDMG-CR and internal CRC Strategic Plans Undertake actions required and directed by the LDC Undertake the role of Coordinator of Evacuation and Community Participation as required Human and Social Communications – media team liaison; specialised messaging to vulnerable residents and cohorts e.g. CALD (including via Multicultural Reference Group); Vulnerable persons register; Hearing Impaired





			<p>register; Specialised Facilities - Aged-care facilities, other residential care facilities, schools; Evacuation facilities; Status of Council Facilities etc.</p> <ul style="list-style-type: none"> • Sheltering and Evacuation processes and facilities – Administer the evacuation/recovery register and arrangements related to residents; aged care/seniors; other vulnerable groups (as listed above); CALD. (Liaison with H&S Coord re arrangements for homeless groups.) • Volunteer Programs and Donations – public offers of assistance. • Companion Animal Care – RSPCA; Animal Care for Seniors at Home (<i>this could be transferable between either dependent on capacity</i>). • Coordinate reviews or input into relevant MOUs and Evacuation Sub-Plans (to be listed). • Support community-based resilience groups such as Babinda All Hazards Group to achieve prevention, preparedness, response and recovery actions. • Feed relevant intelligence material and relevant situation report data into overall situation reports and briefings via Human & Social Coordinator.
	Local Recovery Coordinator	Core	<ul style="list-style-type: none"> • The LRC is appointed by the LDMG Chairperson, after consultation with the State Recovery Policy and Planning Coordinator (SRPPC) and the State Recovery Coordinator (SRC), if appointed. The appointment of the LRC may be pre-emptive in anticipation of expected disaster impacts. • It is recommended the person appointed as the LRC, where possible, is not the same person appointed as the LDC. If appointed, the LRC and LDC should liaise regularly during disaster operations. • Coordination of immediate and short-term welfare and recovery needs in conjunction with Department of Communities, Housing and Digital Economy
	Disaster Management Unit	Individual Core Memberships for nominal position	<ul style="list-style-type: none"> • 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 in consultation with internal and external stakeholders • Coordinate disaster operations and support response and recovery agencies in collaboration with internal and external stakeholders • Design, maintenance and operation of Local Disaster Coordination Centre, including the training of sufficient personnel to operate the Centre • Collection and interpretation of information from telemetry systems, conjointly with the Bureau of Meteorology • Support for the Cairns region SES Units
	Cairns Infrastructure and Assets Directorate	Core	<ul style="list-style-type: none"> • Provide technical advice and coordination assistance for assets and resources under the responsibility of the CIA directorate as indicated by the LDMG-CR • Maintenance of normal Local Government services to the community <ul style="list-style-type: none"> - Water - Sewerage - Refuse disposal





			<ul style="list-style-type: none"> - Public health - Animal control - Environment protection - Roads - Drainage • 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 • Implement and review actions required of the Cairns Water Supply Scheme Drought Plan
	People and Organisational Performance Directorate-Marketing and Communications	Core	<ul style="list-style-type: none"> • Coordinate communications as required by the LDMG-CR • Undertake the requirements outlined in associated LDMG Sub Plans with particular reference to A.10 Public Information and Warning Subplan
	Lifestyle and Community Directorate	Core	<ul style="list-style-type: none"> • Provide technical advice and coordination assistance for assets and resources under the responsibility of the Lifestyle and Community Directorate as indicated by the LDMG-CR <li style="padding-left: 40px;">2.8.4 Implement and review actions required by the Greenpatch Flood Emergency Evacuation Action Plan <li style="padding-left: 40px;">2.8.5 Human and Social Response and Recovery Sub-Committee
	Planning, Growth and Sustainability Directorate	Advisor	<ul style="list-style-type: none"> • Provide technical advice to the LDMG-CR in relation to planning schemes and actions, Environmental Health requirements • Provide technical advice to the LDMG-CR in relation to Sustainability and Climate Change initiatives • Provide technical advice in relation to compliance and enforcement as required







<p>Queensland Police Service</p> 	<p>Metro Inspector</p>	<p>Core</p>	<p>Refer to the State Disaster Management Plan</p>
<p>Queensland Fire and Emergency Services</p>  	<p>QFES Emergency Management Coordinator</p>	<p>Core</p>	<p>- Refer to the State Disaster Management Plan.</p> <p>- Liaison between the agency and the LDMG</p> <p>State Emergency Services:</p> <ul style="list-style-type: none"> • Assisting the community to prepare for, respond to and recovery 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
	<p>QFES – Fire and Rescue Service</p>	<p>Core</p>	



	QFES – State Emergency Service	Core	<ul style="list-style-type: none"> • 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
Queensland Ambulance Service 	Officer in Charge – position delegated to Operations Supervisor – Cairns & Coastal, Intensive Care Paramedic	Core	Refer to the State Disaster Management Plan . Liaison between the agency and the LDMG
Queensland Health  <small>Queensland Government</small>	Disaster Coordinator Cairns and Hinterland Hospital and Health Service	Core	Refer to the State Disaster Management Plan .
Department of Communities, Housing and Digital Economy  <small>Queensland Government</small>	Senior Service Officer (Recovery)	Core	Refer to the State Disaster Management Plan .

Ergon Energy 	Authorised LDMG Representative	Core	<ul style="list-style-type: none"> • 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
Ports North 	Manager Operations Seaport – position delegated to Security and Emergency Manager	Core	<ul style="list-style-type: none"> • 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 	Chief Operations Officer – position delegated to Aerodrome Operations and Emergency Manager	Core	<ul style="list-style-type: none"> • 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 operation
Queensland Government Advisory Members 	Department of Housing and Public Works	Advisor	Refer to the State Disaster Management Plan .
	Department of Natural Resources, Mines and Energy	Advisor	Refer to the State Disaster Management Plan .
	Department of Transport and Main Roads	Advisor	Refer to the State Disaster Management Plan .
	Maritime Safety Queensland	Advisor	Refer to the State Disaster Management Plan .
	Queensland Reconstruction Authority	Advisor	Refer to the State Disaster Management Plan .
	Department of Environment and Science	Advisor	Refer to the State Disaster Management Plan .
	Department of State Development Infrastructure and Planning	Advisor	Refer to the State Disaster Management Plan .

	Department of Education	Advisor	Refer to the State Disaster Management Plan .
	Department of Agriculture and Fisheries	Advisor	Refer to the State Disaster Management Plan .
 Australian Government Bureau of Meteorology	QFES Meteorologist	Advisor	Refer to the State Disaster Management Plan .
 AUSTRALIAN DEFENCE FORCE	Manager JOSS/51st FNQR/HMAS Cairns	Advisor	<ul style="list-style-type: none"> • 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
	Emergency Coordinator	Advisor	<ul style="list-style-type: none"> • 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
	Emergency Services Liaison Officer	Advisor	<ul style="list-style-type: none"> • Provide representation at LDMG-CR meetings during activation • Provide technical advice, information and updates to the LDMG-CR as required • At request from LDMG-CR, activate personnel staff to support the daily operations and management of Evacuation Centres • Undertake registration of evacuees in support of QPS utilising Register.Find.Reunite • Provide Psychological First Aid and recovery supports and referrals to disaster affected people • Assist the community to prepare for, respond to and recover from an event or disaster e.g. Public awareness, education campaigns and the provision of resources • Request and provide assistance through the LDCC as required during disaster operations

	Operations Manager	Advisor	<ul style="list-style-type: none"> • Development and maintenance of a capacity to respond or assist other agencies respond to disaster and emergency situations • Management, coordination and support of 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
	Aviation Rescue Fire Fighting Operations Manager	Advisor	<ul style="list-style-type: none"> • Aviation specialists for large flammable fuel fire control, rescue of trapped persons, first aid, water rescue service and structural firefighting. 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
	Flotilla Commander QF9	Advisor	<ul style="list-style-type: none"> • Carry out primary and functional roles as required: • Search and Rescue operations in coordination with QPS. • Medical evacuation services in coordination with QAS. • Provide situational monitoring of events and incidents in coordination with LDCC and relevant emergency services. • Monitor and advise on on-water operations relevant to the disaster event. • On request, provide a liaison officer to the LDCC to advise and action reasonable requests during disaster operations
	Club President	Advisor	<ul style="list-style-type: none"> • On request, provide a liaison officer to the LDCC to advise and action reasonable requests during disaster operations • Provide expert advice on radio communications and alternate communication options if the established network fails. • Provide a brief to the LDMG-CR on radio communication infrastructure available in times of need

	Manager - North QLD, nbn™ local - Regional & Remote	Advisor	<ul style="list-style-type: none"> • Provide technical advice • https://www.nbnco.com.au/
	Field Services Lead Cairns	Advisor	<ul style="list-style-type: none"> • Restoration of telecommunications • Provision of communications facilities • Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations
	Divisional Superintendent	Advisor	Refer to the State Disaster Management Plan .
	Representative FNQ Volunteers	Advisor	<ul style="list-style-type: none"> • Provide representation at LDMG-CR meetings during activation or on a need's basis • Provide technical advice to the LDMG-CR when required
	Business Systems Manager	Advisor	<ul style="list-style-type: none"> • 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 and 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
	Yard Supervisor	Advisor	<ul style="list-style-type: none"> • Advisor on Qld Railway resources • Advice to the LDMG-CR and request and provide assistance through the local group as required during disaster operations

Babinda All Hazards Group	President	Advisor	<ul style="list-style-type: none"> • Enhance linkages and communication between Babinda and surrounding communities and Cairns Local Disaster Coordination Centre (LDCC). • Determine and communicate local priorities in the event of a disaster. • Identify resources in communities that could be utilised in the event of a disaster. • Identify vulnerable people in communities that may require special assistance.
Goldsborough Community Group	Chair	Advisor	<ul style="list-style-type: none"> • Enhance linkages and communication between Goldsborough and surrounding communities and Cairns Local Disaster Coordination Centre (LDCC). • Determine and communicate local priorities in the event of a disaster. • Identify resources in communities that could be utilised in the event of a disaster. • Identify vulnerable people in communities that may require special assistance.
Office of the Inspector General of Emergency Management 	IGEM Representatives	Support	https://www.igem.qld.gov.au/about-us
	Recovery Support Officer Engagement Branch	Support	https://nema.gov.au/#/

2.9 Key Objectives

The board objectives of the LDMG – 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;
- Ensure currency of available hydrological studies and utilise key learnings from post event reviews to guide risk informed decision making
- 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, education and engagement;
- 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 maximise response;
- Establish relationships to increase disaster management capability; and
- To ensure communities are 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 coordination of disaster management;
- Try to minimise the impact on communities of a disaster event through good response;
- Assist with the re-establishment of affected communities 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 Cairns Region communities.

Recovery

- Adequately provide immediate post event assistance and advice to affected communities;
- Ensure the recovery priorities of affected communities are met;
- Ensure communities are aware of actions that can be taken after the impact to assist with effective recovery;
- To reduce adverse community consequences following an event;

- Provide advice and/or support to the District Disaster Recovery Committee and State disaster management and recovery agencies; and
- Ensure a consistent approach to disaster management.

2.10 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 CRC and the LDMG – Cairns Region are committed to ensuring that the region’s responsibilities under the *Disaster Management Act 2003* are executed in full by:

- Working within the State Disaster Management Strategic Policy Framework.
- 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.

2.11 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 LDMG (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 the District Disaster Management Groups (CAIRNS 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.

2.12 Integration with CRC’s Corporate, Strategic and Operational Planning Processes

Disaster Management is an integral part of CRC’s core business and is an activity identified within CRC’s Corporate and Operational Plans.

The Corporate Plan is the strategic business plan of CRC. The plan sets out the strategic direction for CRC over the next five years. It defines the strategies and programs that CRC aims to deliver and allows CRC to respond effectively to key regional and local issues.

The Corporate Plan also provides direction for CRC to achieve a sustainable future for the region. Contained in the Corporate Plan are Strategic Goals and Key Performance Indicators forming the basis from which other CRC plans, policies and strategies are developed. The Corporate Plan objectives will be delivered through its annual Operational Plans which demonstrate CRC's progress in implementation of the Corporate Plan.

The Corporate Plan 2021-2026 identifies the follow key strategic action
Enhance community wellbeing, safety and natural disaster resilience

CRC incorporates Disaster Management into its core business functions through:

- a. Assigning CRC resources to maintain capability to coordinate the response and resources to effectively manage an event or disaster within the CRC 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 and Emergency Services (QFES) on disaster management planning.
- g. Assisting local SES groups to maintain operational standards.
- h. Assisting SES groups with recruitment programs.
- i. Actively providing disaster management training to staff and the LDMG.
- j. Actively working with communities to strengthening disaster resilience .
- k. Assisting State and Federal agencies in the recovery of affected communities after an event or disaster.

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

2.12.1 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.

2.13 Review and Assessment

2.13.1 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.

The timeline for the annual review will be as follows:

Table 2: LDMP review schedule

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

The master contact list for all organisations / persons involved in CRC’s disaster management arrangements shall be reviewed / updated at each meeting of the LDMG (and any subordinate Groups) and will be held by the LDC.

2.13.2 External Assessment

On completion of each review, the LDMP will be provided to the XO of the CAIRNS 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 CAIRNS 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.

2.13.3 Other Triggers Requiring Review

In addition to the requirements for the annual review of the LDMP, 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.

3.1 Establishment

The LDMG – Cairns Region has been established in accordance with *Section 29 Disaster Management Act 2003* which states

“S29 Establishment

A local government must establish a Local Disaster Management Group (local group) for the local government’s area.

Terms of reference for the Cairns LDMG can be found DM #6972658 and Appendix J

LDMG responsibilities are outlined in [Manual M.1.030](#)

3.2 Functions

The functions of the Group are set out in *Section 30 Disaster Management Act 2003* and below in Table 3.

Table 3: 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 six strategies of the SPS, the principles, standards and assurance activities of the framework and the Disaster Management Guidelines.
(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 SPS, the framework, the SDMP and relevant 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 community’s 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 CAIRNS DDMG to inform district level planning.
(e) to ensure communities are aware of ways of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster;	Ensure community education, awareness and engagement programs include local hazards and their potential impact, local arrangements, mitigation strategies, and promote self-reliance and build resilience.

Function	Description
(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 SPS, the SDMP and the relevant guidelines.
(g) to provide reports and make recommendations to the relevant district group about matters relating to disaster operations;	LDMG representation on the CAIRNS 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 communication 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 CAIRNS DDMG for use during a disaster operation.
(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.

3.3 Membership & Responsibilities of LDMG

3.3.1 Appointment of Members

The LDMG membership is outlined in the Disaster Management Regulation 2014 and the Queensland Prevention, Preparedness, Response and Recovery Guideline 2018.

3.3.2 Accountability and Authority of Members

The principal LDMG Members and Sub Group Members and liaison officers from each organisation must have:

- The authority to commit their respective organisation and its resources to the LDMG's agreed decisions without having to confer with superiors.
- A sound understanding of the Local Disaster Management Plan.

The principle LDMG Members and Sub Group Members and liaison officers from each organisation shall:

- Regularly submit appropriate disaster control and mitigation information to the Local Disaster Coordinator through agency update reports.
- Ensure adequate planning and control measures for disaster events are implemented within their own organisation.

- Upon activation of the LDMG-CR in a disaster, forward situation reports to the Local Disaster Coordinator at intervals as may be required 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.

3.4 LDMG-CR Sub-Committees

LDMGs may have cause to create sub-committees, whether permanent or temporary, to assist the group with its business. Examples of this may be a Local Recovery sub-committee, 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-committee 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-committee. All sub-committees 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-committees 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 LDMG – Cairns Region has the following sub-committees and working groups;

- The Human and Social Response and Recovery Sub-Committee
- Local Recovery Sub-Committee
- Evacuation Sub-Committee
- Babinda and Southern Communities All Hazards Planning Committee
- Public Warnings and Information Sub Committee
- Public Safety Communications Working Group
- Shelter Working Group

3.5 District Disaster Management Group Representative

Section 24 of the Act requires CRC to nominate a representative to the Cairns District Disaster Management Group (CAIRNS DDMG) and advise the Executive Officer of the State and District Groups of the appointment. The LDC and the LDMG Chair have been appointed to this position.

3.6 Reporting Requirements

The LDMG-CR shall report its activities to:

- CRC in an annual report prepared by the Local Disaster Coordinator. The annual report shall be in accordance with requirements of the Disaster Manager Act 2003.
- CRC in the form of meeting minutes; and

- CAIRNS DDMG – An annual and quarterly status report is supplied to the CAIRNS DDMG XO as required prior to scheduled meetings of the CAIRNS DDMG.
- Operational Reporting shall be as required during an event and be in accordance with, A2 Local Disaster Coordination Centre Operational Plan – Cairns Region.

3.6.1 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.

4.1 Community Context

The following is relevant information regarding CRC and associated Disaster Management considerations.

4.1.1 Geography

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

The CRC 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, The Frankland 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 in 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.

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.

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 Tablelands 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.

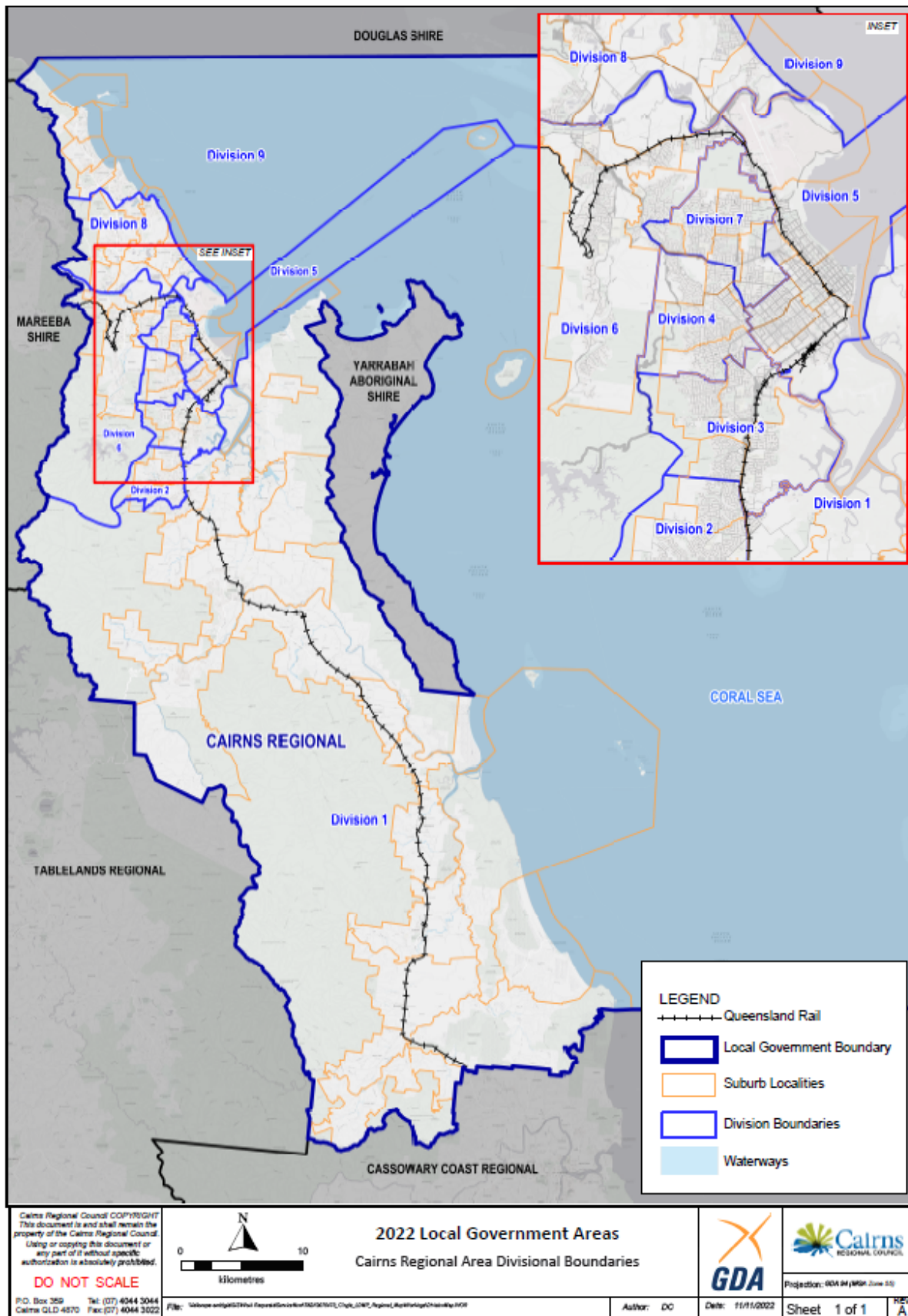
4.1.2 Geology

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 the region 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 4: Map of CRC and Environs



4.1.3 Human Settlement

The Cairns region comprises the northern beaches and Barron River delta communities with areas of ongoing significant development, residential clusters in and around the city itself and townships to the south such as Gordonvale and Babinda and situated along the main arterial road with several small settlements in between.

The *Northern Beaches* consist of several 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 (Barron River delta area), Trinity Park, Trinity Beach, Kewarra Beach, Clifton Beach, Palm Cove and Ellis Beach.

The growing suburb of Smithfield is located between the Cairns end of the Kuranda Range extending towards the coast at Trinity Park and Cattana wetlands. It serves as the main hub for the northern beaches, with a large mall and developing industrial area.

Located south of Smithfield and inland of 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, through it is actually the lower part of Redlynch Valley. Further up the valley are the suburbs of Redlynch, on the western side of the valley, and Brinsmead on the eastern side. Stratford, Freshwater and Brinsmead are separated from Cairns city by Mount Whitfield (elevation 356 m (1,198 ft)) and Whitfield Range

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

Southside Cairns, situated in a narrow area between Trinity Inlet to the east and Lamb Ridge to the west, includes the suburbs of White Rock, Mount Sheridan, Bentley Park and Edmonton. The townships of Goldsborough 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 south being Mirriwinni, 66 kilometres south of Cairns city and Bramston Beach. 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 5 depicts City (central) and Figure 6 depicts southern suburbs.

Offshore Island Populations

Green Island, Fitzroy Island and Double Island have some resident 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 covers an area of 0.14 square kms 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 were 25 permanent residents recorded on the island in the 2016 census.

Fitzroy Island

Fitzroy Island is a continental island offshore from 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, National Park Area 324 hectares and a Summit Height of 269 metres.

The island is covered in tropical rainforest and freely accessible to the public via an established network of walking tracks.

The island has several 'Fast Cat' services travelling back and forth daily from Cairns. There is one resort offering different types of accommodation ranging from deluxe rooms to campground and Day Visitor facilities. There were 44 permanent residents on the island in the 2016 census.

Double Island

Double Island is approximately 1.5 km, north east of Palm Cove and about 30 km north of Cairns. Double Island is approximately 19 hectares and has an exclusive resort, currently in disrepair. The privately held property is currently inhabited by one caretaker. Visitors may arrive independently at the beaches on kayaks and boats.

Climate and Weather

CRC has a tropical climate, with generally hot and humid summers and milder dryer winters. The average annual rainfall is 1992mm (Bureau of Meteorology 2022). The majority of Cairn's rainfall occurs during summer between January and March.

Typical daytime min/max temperature ranges in Cairns are 23°C /31°C in mid-Summer and 18°C /26°C in mid-Winter

Temperatures rarely exceed 36°C or go below 15°C for extended periods. The cyclone season is normally confined to between December and April but exceptions do occur.

4.1.4 Population

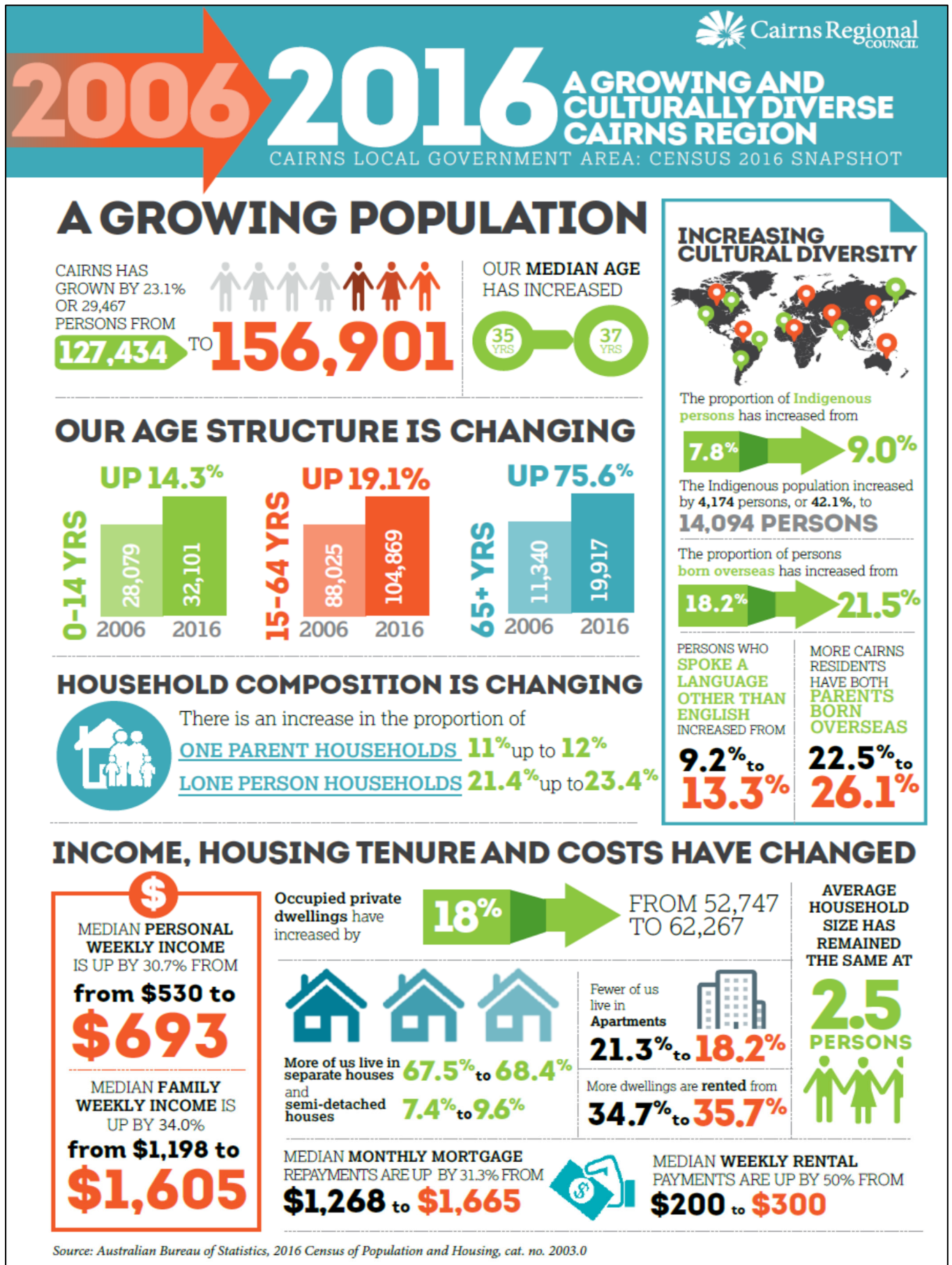
The population estimate for Cairns as of the 30th June 2021 is 169,312. Since the previous year, the population has grown by 0.17%. Population growth in Regional QLD was 0.91%

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 50,000 visitors per night (pre-covid).

Australian Bureau of Statistics (ABS 2021) data showed that 49.3% of the areas population identified as male and 50.7% as female. The median age in the region was 47 years old, 10 years more than the median age for Queensland (ABS 2021). Children aged 0–17 years made up 23% of the population, people aged 65 years and over made up 21.5% of the population and the remaining 55.5% of the population were aged between 18 and 64 years old (ABS 2021). The largest represented age group was those between 35 and 49 years old (ABS 2021).

CRC 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: CRC 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 5: Selected Medians and averages taken from the last 3 census years available

SELECTED MEDIAN / AVERAGE	2006	2011	2016
Median age	36	37	37
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	1,324
Median monthly mortgage repayments	1,170	1,664	1,655
Median weekly rent	180	240	307

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

4.1.5 Cultural Diversity

The original inhabitants of the region are the Gimuy Walubara Yidinji, Mandingalbay Yidinji, Dulabed, Malanbarra Yidinji, Bundabarra, Wadjanbarra Yidinji, Wanyurr Majay, Djabugay, Yirriganydji, Bulawai, Gunggandji, Ngadjon-Jii and Mamu peoples.

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.

Of the people in the CRC area at the 2021 ABS Census, 77.7% indicated they were born in Australia and 76.8% indicated they spoke only English at home.

The region has 22.3% of the population born overseas (ABS 2021). In addition, the region has significant proportion of people born in Australia, but with non-English speaking backgrounds, the most common from Papua New Guinea, India, Philippines, China, Italy, Japan, Nepal, Germany, Korea and Spain. More recent migration has predominantly been from southern Australia. International tourists and strong links with Papua New Guinea and the Pacific Islands add to the mix. The region receives a number of refugee groups annually through the Humanitarian Refugee programme, primarily from Nepal, the Congo, west Africa, Myanmar (Burmese) and parts of China (Hmong).

4.1.6 Tourism & Events

The Cairns Region is known for its vibrant lifestyle and tourism industry, accommodating approximately 3 million visitors per annum (pre-COVID) staying on average 6 nights - equating to an extra 50,000 per day in our region from Australia and across the globe. In addition, the Council delivers and supports a wide range of diverse events including sports, conferences and public festivals across the region each calendar year. Council supports TTNQ to deliver the region’s marketing and promotion domestically and internationally.

4.1.7 Households and Dwellings

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, 24.8% of households were made up of couples with children in 2021, compared with 25.2% in Regional Qld.

In Cairns, 28.9% of the dwellings were medium or high density, compared to 24% in regional Qld.

Analysis of car ownership in 2021, indicates 51% of households in Cairns had access to two or more motor vehicles, compared with 54% in regional Qld. Only 6% of households did not own a vehicle.

The ability of the population to access services (shops, medical services, social supports etc) and employment is strongly influenced by access to transport whether public or private vehicle ownership.

4.1.8 Community Capacity, Capability and Resilience

The population of the region continues to increase with people moving to Far North Queensland for either employment or lifestyle. This creates a population where a significant percentage of residents is new to the environment and weather.

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

Newer and younger residents with no memory or experience of a disaster event are likely to be less prepared and more dependent on government services.

As Cairns is the major regional centre in the 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.

4.1.9 Socio-Economic Index for Areas (SEIFA)

Cairns SEIFA Index of Disadvantage measures the relative level of socio-economic disadvantage based on a range of Census characteristics. A higher score on the index means a lower level of disadvantage. A lower score on the index means a high level of disadvantage.

SEIFA Index of Disadvantage for Cairns in 2016 was 980. This score placed the region the 25th highest of 79 local government areas in Queensland.

4.1.10 Indicators of vulnerability

The region is home to many people who may be highly vulnerable to the impacts of disasters for a variety of reasons. In 2016, 6940 people reported a need for assistance with living.

Of the population reported needing assistance with core activities due to disability, 5.1% were aged over 80, and an estimated 133 people were homeless.

There are multiple residential care facilities across the CRC region.

Members of the community may be or become vulnerable in the short or long term. Causes include a reliance on mechanical life support systems (eg dialysis, ventilators), coming from a non western culture or primarily speaking a different language, a disability which requires specific support or high levels of socio-economic disadvantage. Visitors to the region who do not speak English or may struggle to understand what to do in an emergency situation.

Cairns employment statistics are an important indicator of socio-economic status, which has particular relevance in recovery situations. 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. 72,404 people living in Cairns in 2016 were employed, of which 62% worked full-time and 36% part-time.

The region has the largest workforce in Far North Queensland. The key employment sectors are tourism, retail, education, health and manufacturing.

Cairns has a lower proportion of households in the medium to high income category compared to the Queensland average.

4.1.11 Cairns Regional Council

CRC is one of the region's major employers with sufficient resources and personnel to contribute considerably to the physical response demands of any disaster event.

CRC's administration building is located at 119-145 Spence Street, Cairns.

The main operational works depots are at Babinda, Gordonvale, Martyn Street (city), Arnold Street (Stratford) and Buchan's Point. The main water and resource recovery depots are situated at Magazine Street, McNamara Street and Gordonvale. The local disaster coordination centre is located in Woree.

4.1.12 Cairns Area Commercial and Recreational Facilities

There is a large retail industry in Cairns. Major retail centres include the Cairns CBD, Cairns Central and Earlville Shopping Town, with a number of significant centres (Mt Sheridan Plaza, Raintrees, Redlynch Central, Smithfield and Westcourt (DFO)).

There are many bowls, golf, tennis and football clubs, Surf Life Saving clubs, 2 yacht clubs, 13 boat ramps, 3 marinas, over 450 km of bikeways/footpaths, 2100 ha of recreational parks and reserves, Cannon Park Racecourse, and numerous other sporting clubs.

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

4.1.13 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 island situated off the eastern coastline, world heritage listed rainforests and National Parks.

CRC 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. CRC strongly supports the growth of nature-based development in the region with key goals including environmentally sustainable buildings.

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

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 service 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 International 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 to PNG and the Pacific.

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

CRC area's Gross Regional Product is estimated at \$8.41 billion, which represents 2.7% 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

4.1.14 Emergency Services

There is a solid base of emergency service response capacity spread across the region:

Emergency Service	Location
Queensland Police Service	Police Stations: Babinda, Gordonvale, Edmonton, Cairns and Smithfield
	Police Beats: Cairns Central Shopping Centre, Cairns Esplanade, Earlville Shopping Centre and Cairns West Police Facility.
Queensland Ambulance Service	Babinda, Gordonvale, Edmonton, Cairns, Smithfield
Queensland Fire & Emergency Services (Fire & Rescue)	Babinda, Gordonvale, Cairns South, Cairns , Smithfield
Queensland Fire & Emergency Services (Rural Fire)	Little Mulgrave
Queensland Fire & Emergency Services (SES)	Buchan Point, Trinity Beach, Yorkey's Knob, Holloways Beach, Machans Beach, Cairns, Edmonton, Gordonvale and Babinda

4.1.15 Transportation - roads

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

Although transportation services are available, hazardous driving conditions and road closure may cause problems in the response to a major event. It is not uncommon in the wet season for one or more of the major roads in the 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. Landslides and fallen rocks have often occurred between Palm Cove and Port Douglas.

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 prior 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 Kennedy Highway continues to Mareeba.

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 CRC area.

4.1.16 Transportation – Railway Cairns

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 Cairns 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. Cairns Kuranda Steam operates a weekly service on Wednesday from Cairns to Forsayth and return: 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 a 40 metre long and seven metre high, mesh barrier.

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

4.1.17 Airports

Throughout the region there are numerous locations where rotary wing aircraft can land in emergency situations and comprise 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, SilkAir and Air Nuigini are some of the international airlines that are serviced by Cairns International Terminal.

Domestic servicing airlines include Qantas, Jetstar, Regional Express Airlines, Skytrans, Air North, Alliance Airlines 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 and Hinterland Hospital and Health Service and a commercial heliport (Cairns City Heliport) at the Pier Marketplace.

4.1.18 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 features 261 berths 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 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 side of Trinity Inlet. The base has a responsibility extending from Rockhampton to Thursday Island has 900 Navy and civilian personnel and is the homeport for 14 Naval Vessels.

4.1.19 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 Bramston Beach locality and in the Goldsborough Valley is generally less reliable, 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.

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.

CRC also has a dedicated UHF radio frequency network, which is the first line of communication for outside CRC staff and can be utilised as an alternative communication means during an event.

High-speed internet connection (NBN) is available in the larger centres, satellite-based access is still required in the more remote areas. The internet is a mainstream communication medium but it is not 100% reliable.

Many of the private UHF and VHF networks such as taxis, policy emergency services, CRC, 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.

Telstra has 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. An increase in site generation back-up and fuel storage followed 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 region 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. Lightning 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 lightning 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 be a Category 1 (these put between two and 100 people at risk) or Category 2 (which will put more than 100 people at risk) failure impact rating. Cairns has three such dams listed below:

- Copperlode Falls Dam, Lake Morris Road
- McKinnon Creek Detention Basin, Edmonton

- Moody Creek Detention Basin, Kanimbla

Also, Tinaroo Falls Dam located in the Tablelands can have impact on the Barron River.

Water Supply

The Cairns region is supplied with water from Copperlode Falls Dam and Behana Creek. Water from Copperlode Falls Dam supplies areas to the north of Cairns and the Cairns city. The Behana Creek source supplies areas south of Cairns as well as 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 region. 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 on the [council website](#).

Sewerage

Table 6: CRC wastewater treatment plants

Plant Name	Location	Service Area	Capacity	Treatment Standard	Treatment Process
Marlin Coast WWTP	McGregor Road, Smithfield	Yorkeys Knob, Kewarra Beach, Palm Cove, Trinity Beach, Clifton Beach and suburbs in between including Caravonica	30740 people or 8.3 ML/day	Tertiary	The liquid stream is a 5 stage EBPR (Enhanced Biological Phosphorus Removal) configuration with 3 Clarifiers. Effluent is treated with UV and discharged into a feeder drain that enters Half-moon Creek.
Northern WWTP	Greenbank Road, Aeroglen	Brinsmead, Edge Hill, Cairns North, Parramatta Park, Cairns City, Portsmith (from Fearnley Street), Holloways, Machans and suburbs in between including Redlynch and Kamerunga.	71851 people of 19.4 ML/day	Tertiary	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.

Southern WWTP	Machonachie Street, Woree	Mt Sheridan, White Rock, Westcourt, Bungalow, Portsmith to Fearnley Street, Manunda, Manoora and suburbs in between.	71851 people or 19.4 ML/day	Tertiary	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.
Edmonton WWTP	Swallow Road, Edmonton	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 White Rock.	24814 people or 6.7 ML/day	Tertiary	The Liquid stream treatment is an Oxidation ditch with Clarifier. Effluent is treated with UV and discharged to Trinity Inlet. .
Gordonvale WWTP	Rushworth Road, Gordonvale	Gordonvale	7037 people of 1.9 ML/day	Secondary	The Liquid stream treatment is an Oxidation ditch with Clarifier. Clarifier Effluent is chlorinated and discharged to the Mulgrave River.
Babinda WWTP	Clyde Road, Babinda	Babinda	just over 1000 People	Secondary	Biological Trickle Filter system. Effluent is chlorinated and discharged to Babinda Creek.

There are in excess of 100 wastewater pumping stations throughout the Cairns Area, most being in the low-lying areas. CRC 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 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

CRC's waste and recycling services aim to minimise waste disposal to landfill. CRC operates a materials recovery facility (MRF), four waste transfer stations and a buy back shop.

Historically in the wake of significant events green waste dump areas have been established for affected 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.

Free Green Waste Disposal is offered 4 times during each year, with free sandbags offered in association in preparation for the cyclone season.

Reticulated Gas Supplies

There are limited reticulated gas supplies for Cairns and outlying areas with the main method of supply for the region being in bottles.

Stormwater

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

Control of stormwater is essential to:

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

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

Given the low-lying nature of the majority of the CRC area along the coastal fringe, the development of effective drainage strategies is essential for maintaining access to many of the suburbs in the area. CRC has invested in 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 business 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 help protect more than 600 homes, businesses and infrastructure in suburbs along the Barron River.

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 wide to allow stormwater to flow into the ocean.

Backflow Prevention Devices

Backflow prevention devices have been installed in various locations around the City locality as another form of tide control to prevent the re-entry of tidal waters into the stormwater network. CRC has various types in services 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

Education services in Cairns feature four tertiary institutions (James Cook University, Central Queensland University, Great Barrier Reef International Marine College and the Tropical North Queensland Institute of TAFE).

The area is serviced by 56 state schools at primary and secondary levels, several catholic and special needs schools, three independent high schools and many early learning centres/kindergartens.

Medical Facilities

Queensland Health provides public hospitals in Cairns, Babinda and Gordonvale (palliative care). 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 and Hinterland Hospital and Health Service (CHHS)

Cairns and Hinterland Hospital and Health Service 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 specialities and more than 30 sub-specialities. The hospital also is a major provider of outreach specialist services to remote and rural areas, including:

- Division of surgery
- Obstetrics and Gynaecology
- Speech pathology
- Anaesthetics
- Orthopaedics
- General Medicine
- Renal Medicine
- Diabetics
- Thoracic Medicine

The hospital has around 450 overnight beds.

Cairns Hospital is located in a storm surge zone. On 2nd 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. Only emergency services are provided.

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. eHealth Queensland 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 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 Hospital power demand independently for 3 to 4 days. Cairns Hospital has standby power generator (trailer mounted) to supply power to alternative site if necessary. Generator rating is 100kVA 3 phase 415V 50Hz – 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 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.

Cairns South Health Facility in Edmonton (16.7 km from Cairns Hospital) was built in 2020 as the alternative care site if Cairns Hospital is required to evacuate due to a disaster incident.

Cairns South Health Facility is a dual-purpose building. The building was designed to withstand and function in a category five cyclone to provide interim emergency care if the Cairns Hospital Emergency Department is unable to function, as was the case when the hospital was evacuated in 2011. It also has an on-site helipad to enable the evacuation of any casualties.

Outside these times, the day to day use of the facility includes renal dialysis six days a week and community health services to southern Cairns in conjunction with the Edmonton Community Health Centre.

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 Palliative Care

The Gordonvale facility comprises 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.

Cairns Private Hospital

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

- Cardiology
- Endocrinology
- Gastroenterology
- Respiratory Medicine
- Dermatology

Private Medical Practitioners

Private medical practitioners are located throughout the Cairns region.

Mortuary Capacity (formal)

The following facilities have mortuary capabilities 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.

Facility	Capacity
Cairns Hospital	42
Cairns Private Hospital	
Gordonvale Hospital	N/A
Babinda	2

Public and Other Major Buildings, Spaces and Events

Cairns has a number of major shopping malls, a CBD that attracts a significant number of shoppers and tourists on a daily basis and many suburb-based shopping centres. There are large public administration buildings, many smaller business locations and cultural attractions including art galleries, theatres, a museum and an aquarium. There are also many public open spaces located around the region including the Cairns lagoon, Munro Martin Park and local parks and playgrounds of varying sizes .

Detailed information is available on the CRC website under the [Experience Cairns](#) tab.

4.1.20 Hazardous Sites

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

- 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 as 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: Bunning's in Cairns CBD and Smithfield and Cairns Hardware in Bungalow, Smithfield and Edmonton.
- 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

CRC 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, these maps will enable the LDMG-CR and CRC 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 less than 250kg to be accepted at the Portsmith Transfer Station.

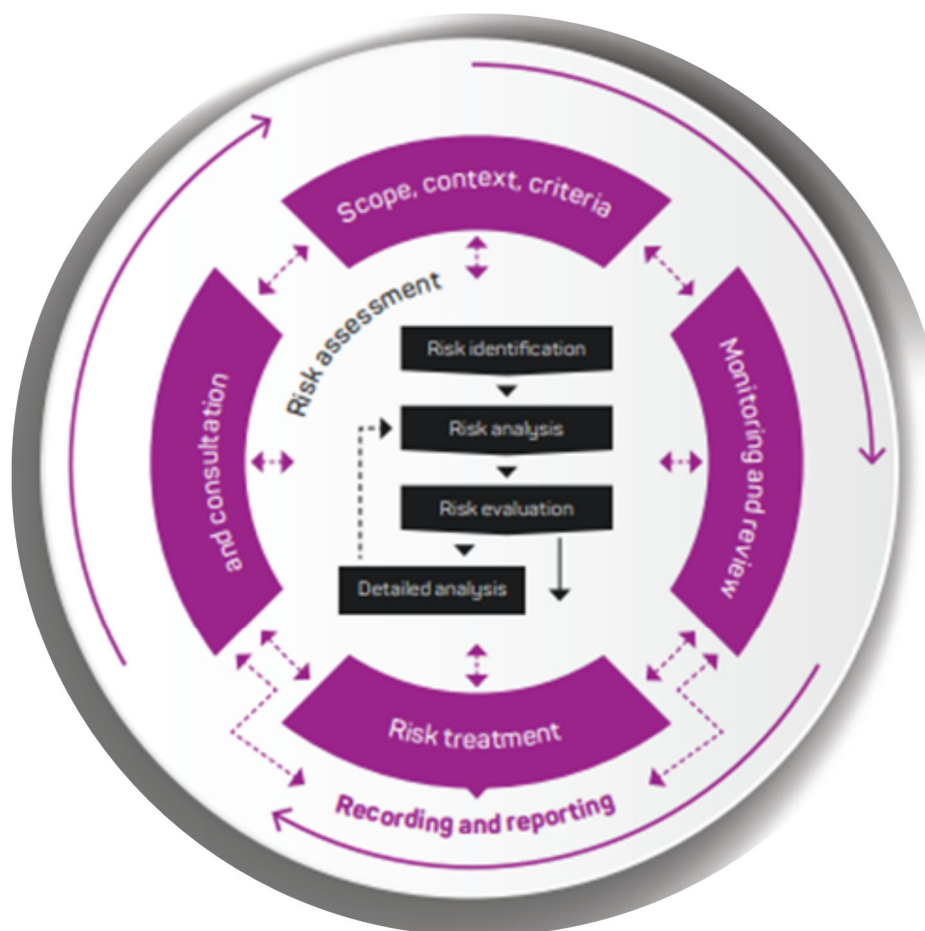
The Springmount Waste Transfer Station on the Tablelands is the nearest facility to accept large volumes of Asbestos for disposal.

5.1 Risk Assessment Methodology

The methodology adopted by the LDMG-CR is based on the National Emergency Risk Assessment Guidelines (2010) which is consistent with AS/NZS ISO 31000:2018. The process provides a systematic method comprising of five main assessment elements. The elements of the Natural Disaster Risk Management Process Include:

Figure 8: The iterative emergency risk management process (adapted from ISO 31000:2018)

Source: [National Emergency Risk Assessment Guidelines](#)



The overarching principles that have guided the LDMG-CR Risk process can be referenced at <https://knowledge.aidr.org.au/resources/handbook-national-emergency-risk-assessment-guidelines/>

5.2 Risk Treatment Strategies

Risk Treatment Options summaries are provided at Appendix G.

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

6 NATURAL HAZARD ASSESSMENT

The Natural Hazard Risk Assessment (NERAG) report developed by AECOM in 2013 and adopted by the LDMG-CR in 2014 bases its assessment on seven potential natural hazards with an addition of heatwave as outlined in the [State Natural Hazard Risk Assessment 2017](#):

Figure 9: Natural Hazards that have the most significant impact to Queensland



According to the Queensland State Natural Hazard Risk Assessment (2017) Tropical Cyclones, along with riverine flooding, remain the hazards whose impacts pose the greatest risk to Queensland with close relevance to the Cairns LGA.

The NERAG refers to consequences to identified categories in the event of an impact by a particular Hazard. To support a simple framework that the community members can easily interoperate the following categories will be utilised:

- Infrastructure
- People
- Environment
- Economy
- Public Administration
- Social Setting

To ensure alignment with best practice the LDMG-CR endorsed the adoption of the Queensland Emergency Risk Management Framework process and methodologies in 2019. As like the NERAG the QERMF utilises identified categories to aid in assessment of exposure elements.

Table 7: Element categories, elements, and data used in determining exposure.

Element category	Element	Data source and custodian
Essential infrastructure	Electricity network – transmission lines < 66kV	Ergon and Energex
	Telephone exchanges	Geoscience Australia
	Wastewater treatment plants	Geoscience Australia
Access and resupply	Major roads – freeways, highways, local connecting roads	Queensland Government – Baseline roads and tracks dataset (categories 1 – 4)
	Airports	Queensland Government – Built environment series: landmark areas
	Rail network – operational only	Queensland Government – Rail network
Community and social	Public administration buildings – public halls, community centres, and local government chambers	Queensland Government – Built environment series: landmark areas
	Tourist areas	Queensland Government – Built environment series: landmark areas, tourist areas
	Schools	Queensland Government – Built environment series: schools
Emergency management	Emergency services facilities – Fire services, police, ambulance, and SES	Queensland Government – Built environment series: emergency management
Public health	Hospitals – Public and private, excluding clinics etc.	Queensland Government – Built environment series: Hospitals
	Aged care centres	Queensland Health

The Queensland Fire and Emergency Services State Disaster Risk Report outlines the top priority risks posed to the Cairns LGA. The outcomes of the State Disaster Risk report ensures currency, rigor, and validity to the original Assessment (NERAG) report developed by AECOM in 2013.

Table 8: Identified Risk Table - Source: State Disaster Risk Report 2022

LGA name	Hazard									
	Tropical cyclone	Riverine Flooding	Severe thunderstorm	Bushfire	Heatwave	Earthquake	Tsunami	Pandemic	Biosecurity	Chemical, biological, radiological
Aurukun	1	3	6	2	4	8	7	9	5	10
Balonne	9	1	3	2	4	8	10	5	7	6
Banana	4	1	3	2	5	7	10	9	6	8
Barcaldine	8	1	5	2	3	7	10	9	6	4
Barcoo	8	1	5	2	3	7	10	9	6	4
Blackall Tambo	8	1	5	2	3	7	10	9	6	4
Boulia	8	2	5	1	3	7	10	9	6	4
Brisbane	6	1	2	3	4	8	10	5	9	7
Bundaberg	4	1	2	3	5	8	10	6	9	7
Burdekin	1	3	4	2	5	10	8	9	6	7
Burke	1	3	4	2	6	7	9	10	8	5
Cairns	1	2	3	4	6	10	9	5	7	8
Carpentaria	1	3	4	2	6	7	9	10	8	5
Cassowary Coast	1	2	3	4	6	10	9	5	7	8

For information relating to the overarching QERMF risk process and methodologies utilised to inform the [Queensland Fire and Emergency Services State Disaster Risk Report](#).

6.1 Tropical Cyclones

Tropical cyclones are low pressure systems that form over warm tropical waters and have gale force winds (sustained winds of 63 km/h or greater and gusts in excess of 90 km/h) near the centre. Technically they are defined as a non-frontal low-pressure system of synoptic scale developing over warm waters having organised convection and a maximum mean wind speed of 34 knots or greater extending more than half-way around near the centre and persisting for at least six hours.

The gale force winds can extend hundreds of kilometres from the cyclone centre. If the sustained winds around the centre reach 118 km/h (gusts in excess 165 km/h), the system is called a Severe Tropical Cyclone.

The circular eye or centre of a tropical cyclone is an area characterised by light winds and often clear skies. Eye diameters are typically 40 km but can range from under 10 km to over 100 km. The eye is surrounded by a dense ring of cloud about 16 km high known as the eye wall which marks the belt of strongest winds and heaviest rainfall. Tropical cyclones derive their energy from the warm tropical oceans and do not form unless the sea-surface temperature is above 26.5°C, although once formed, they can persist over lower sea-surface temperatures. Tropical cyclones can persist for many days and may follow quite erratic paths. They usually dissipate over land or colder oceans. Every cyclone is unique, varying according to a number of factors including life cycle, intensity, movement, size and impact (wind, storm surge and flooding).

Table 9: Cyclone Categories

Category	Strongest gust (km/h)	Typical effects
1 Tropical Cyclone	Less than 125 km/h Gales	Minimal house damage. Damage to some crops, trees and caravans. Boats may drag moorings.
2 Tropical Cyclone	125 - 164 km/h Destructive winds	Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small boats may break moorings.
3 Severe Tropical Cyclone	165 - 224 km/h Very destructive winds	Some roof and structural damage. Some caravans destroyed. Power failure likely.
4 Severe Tropical Cyclone	225 - 279 km/h Very destructive winds	Significant roofing and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.
5 Severe Tropical Cyclone	More than 280 km/h Extremely destructive winds	Extremely dangerous with widespread destruction.

Tropical cyclones pose a considerable threat to Cairns. Since the settlement was established in 1876 there have been in excess of 60 cyclones that have had some effect on the Local Government Area—that is, an average of a cyclone every two years. Most likely to occur between October and April they bring with them the multiple threats of lightning, destructive winds, heavy rain, flooding 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 of 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 levels of inundation exceed 1m 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 probability 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 road leading out of the danger area.

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 Tracey in 1974).

The Queensland Fire and Emergency Services Risk Team commissioned a [Severe Wind Hazard Assessment for Queensland](#) as an identified recommendation handed down by IGEM post Cyclone Debbie.

For Cairns Two scenarios were selected:

- Category 3 system based on TC Ita 2014
- Category 5 system based on TC Yasi 2011
-

Table 10: Count of residential buildings in each damage state, classified by construction era for scenario 013-03564, a category 5 cyclone impacting Cairns

Construction era	Damage state				
	Negligible	Slight	Moderate	Extensive	Complete
1840 – 1890	2,089	287	188	211	187
1891 - 1913	893	313	178	176	300
1914 - 1946	4,785	1,174	292	390	334
1947 - 1961	4,019	1,548	221	283	350
1962 - 1981	7,830	5,943	829	1,096	1,145
1982 - 1996	17,769	16,061	3,730	3,786	1,109
1997 - present	12,572	8,484	2,666	2,484	660
Total	49,957	33,810	8,104	8,426	4,085

[Information for residents](#)

6.2 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 10 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 coastline are at most risk from storm surge.

Figure 10: Storm Surge



(<http://www.bom.gov.au/cyclone/tropical-cyclone-knowledge-centre/understanding/storm-surge/>)

Storm surge is of significant concern to the lower lying areas of the Cairns Local Government Area especially coastline areas. Significant damage to coastal communities to the south of Cairns during cyclone Yasi in 2011 provides a clear example of the risk 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 the above cyclone section.

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 11: 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
2011	Mission Beach	Yasi	929	5	Bureau of Meteorology

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

[Information for residents.](#)

6.3 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 quantities of water, the breaching of creek and riverbanks 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 road 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 causeway 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 road 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 or 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.

While 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.

Road and rail access to Cairns can also be blocked from the south by flooding in the Mulgrave and Russell Rivers.

Many flood mitigation works have been established (see 3.3.10) including 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.

Flash flooding in other catchments, especially Freshwater Creek and the streams that flow into Trinity Inlet, pose a potentially significant problem. Not only are there significantly more properties exposed to urban drainage surcharge, 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 dwellings, 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.

The [predictive flood inundation maps](#) in the CRC Planning Scheme indicates the flood risk for the region.

[Information for residents](#)

6.4 Landslides

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 Western Arterial Road and Lake Morris Road.

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 site. 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 potential landslip hazard overlay maps for Cairns Local Government Area can be accessed [here](#).

[Information for residents.](#)

6.5 Wildfires

There is a broad variance in wildfire risk across the Cairns Local Government Area (LGA).

In the more urban developed areas of the Cairns LGA the risk of significant bushfire activity is reduced due to the type and amount of available fuel. Moving out of the built-up areas and into the more heavily vegetated urban interface zones the risk increases from low to medium and high. The

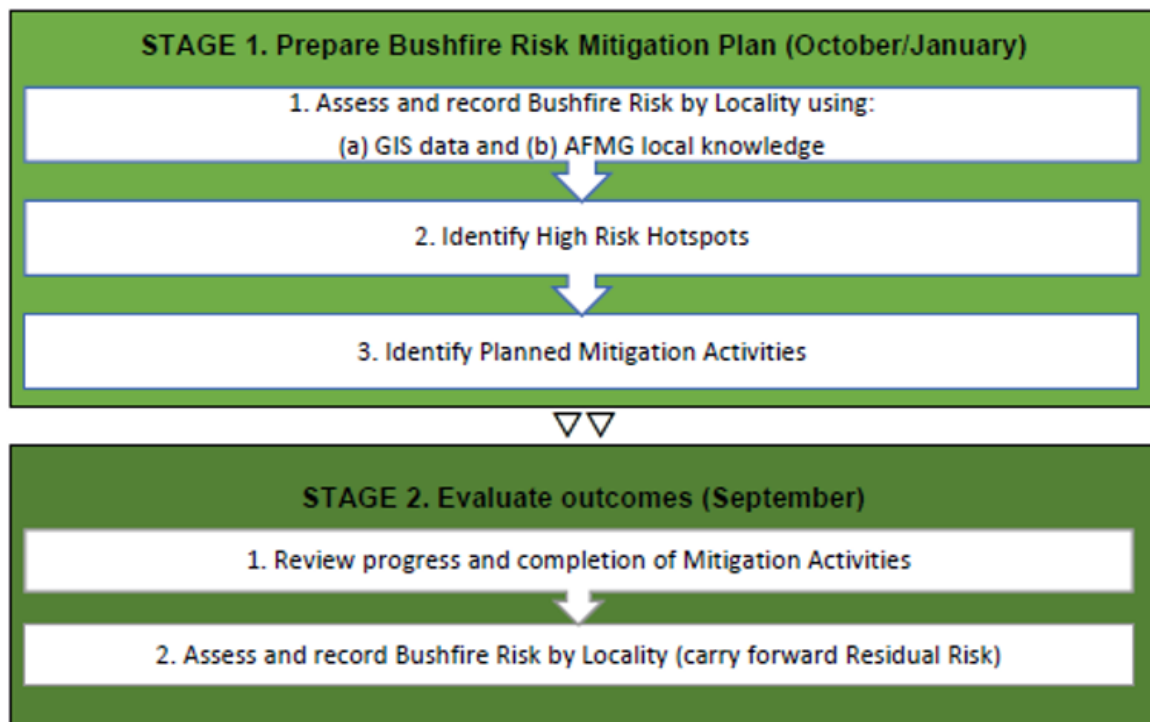
increase in bushfire risk is influenced by fuel loads, vegetation type and overall topography. When climatic conditions indicate the curing of vegetation, fire can be supported in the landscape.

The risk from bushfires in the Cairns LGA is managed through the Area Fire Management Group (AFMG):

The main purpose of the AFMG is to foster a proactive approach in protecting Queensland communities, infrastructure and their surrounding environments from the impact of bushfires in accordance with the Queensland Disaster Management Arrangements, through:

1. Bushfire risk identification, hazard reduction and other mitigation actions (PREVENTION).
2. Preparation of communities and agencies to cooperatively reduce the impacts of bushfires which do occur (PREPARATION).
3. Coordinated and directed response (RESPONSE).
4. Review of strategies and post fire assistance (RECOVERY).

Figure 11: Staged approach for Assessing Bushfire Risk, identifying priority area, planning mitigation activities, reviewing progress and assessing residual risk for Regional Response Plans and preparation for the Yearly Mitigation report to SBC.



Through a collaborative approach across all stakeholders and landowners a Bushfire Risk Mitigation Plan is produced prior to each predicted fire season.

[Bushfire Hazard Overlay map](#)

[Information for residents.](#)

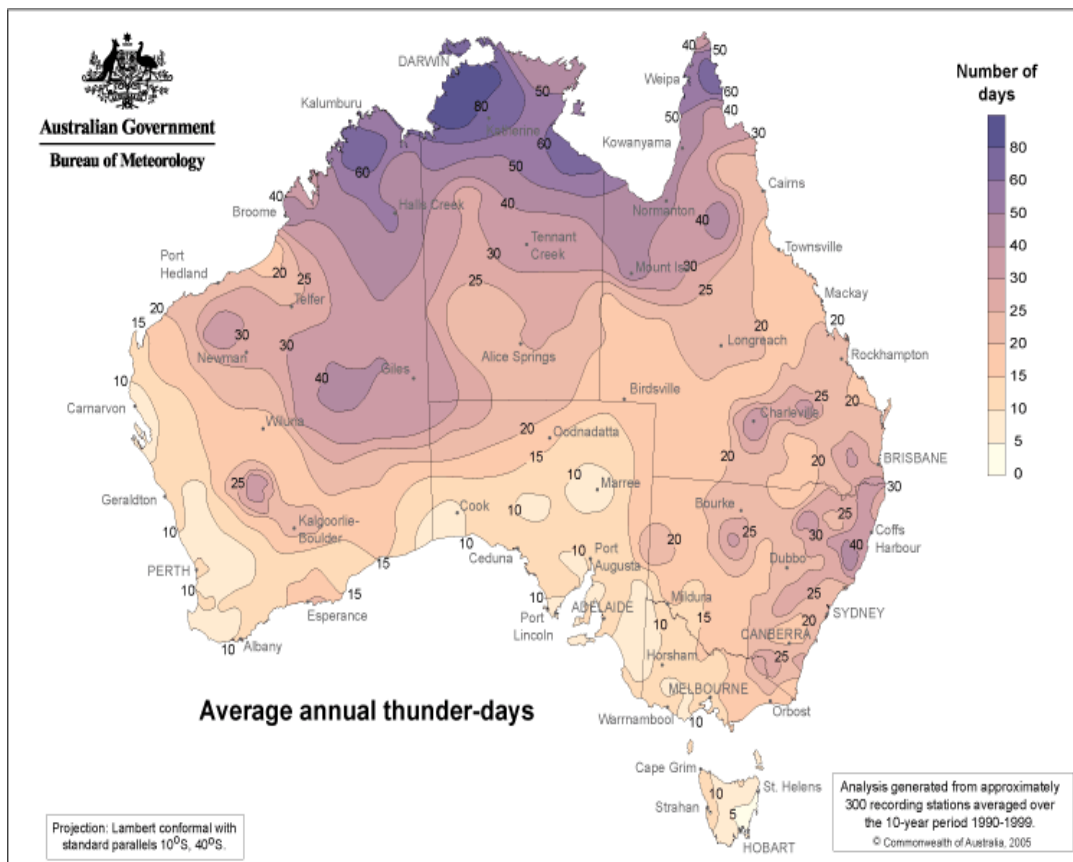
6.6 Severe Thunderstorms

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 vortices.

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

6.7 Earthquakes

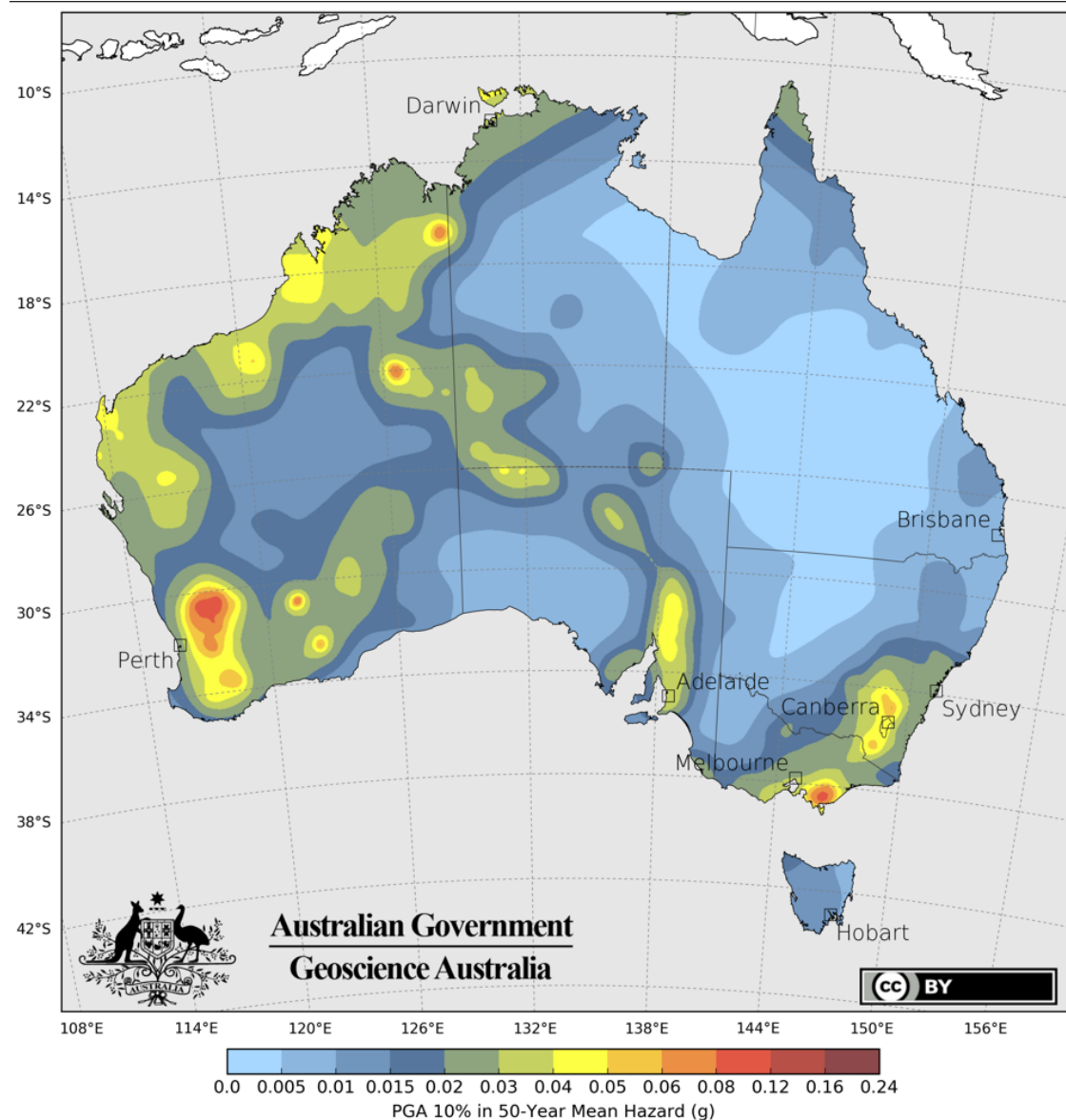
Earthquakes have not in the immediate past been a major threat in the Cairns area. *Recent* historical data exists in relation to tremors which have caused minor damage, but none are of concern.

Figure 13: Australian Earthquake Hazard Map

The graph below shows Response Spectral Acceleration (g) for the return period of 500 years.

Those areas assessed to have the highest earthquake hazard in Australia are highlighted in red on the map.

However, even in areas of low to moderate hazard (shaded blue to yellow on the map) the pre-historic data indicates that large earthquakes between magnitude 7.3 and 7.7 can still occur anywhere on the continent. Source: Geoscience Australia 2012



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 '70s and '80s 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 building 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.

Table 12: The eight strongest recorded earthquakes in the environs of CRC

Date	Magnitude (Richter Scale)	Location
4 Sep 1994	4	18km NNW of Chillagoe
6 Feb 2022	3.9	50km E of Cairns
27 Feb 1961	3.7	15km N of Wrotham Park
15 Mar 2011	3.6	11km E of Russell Heads
6 Nov 1992	3.5	3km 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

State Earthquake Assessment: <https://www.disaster.qld.gov.au/qermf/Documents/QFES-State-Earthquake-Risk-Assessment.pdf>

6.8 More information about Earthquakes can be found at [Geoscience Australia](#).

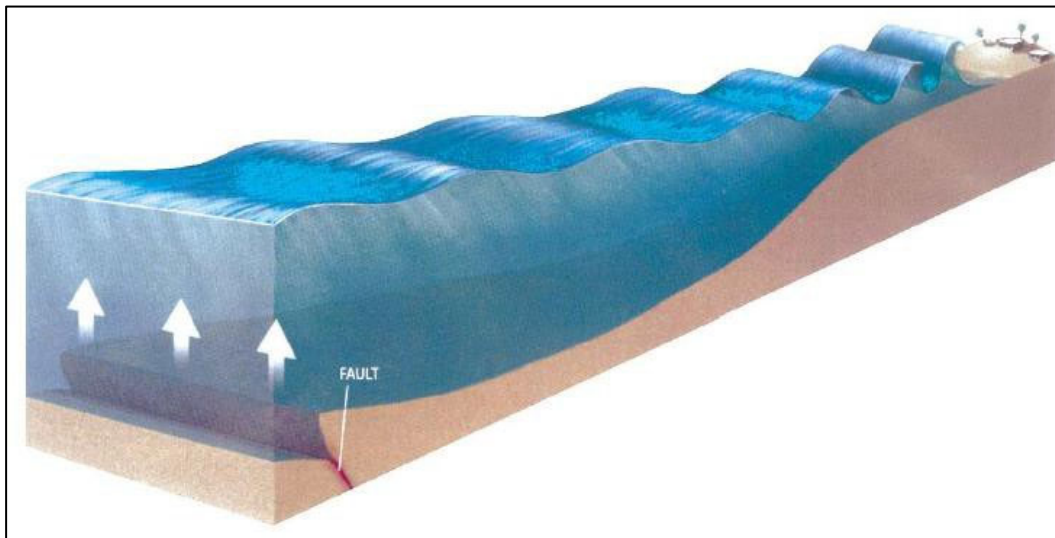
6.9 [Information for residents](#)

6.10 Tsunamis

A tsunami is a series of ocean waves that are generated by underwater disturbances, most commonly caused by earthquakes or landslides. 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 14 below shows how a rupture with one tectonic plate slipping under another causes a tsunami wave.

Figure 14: 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.

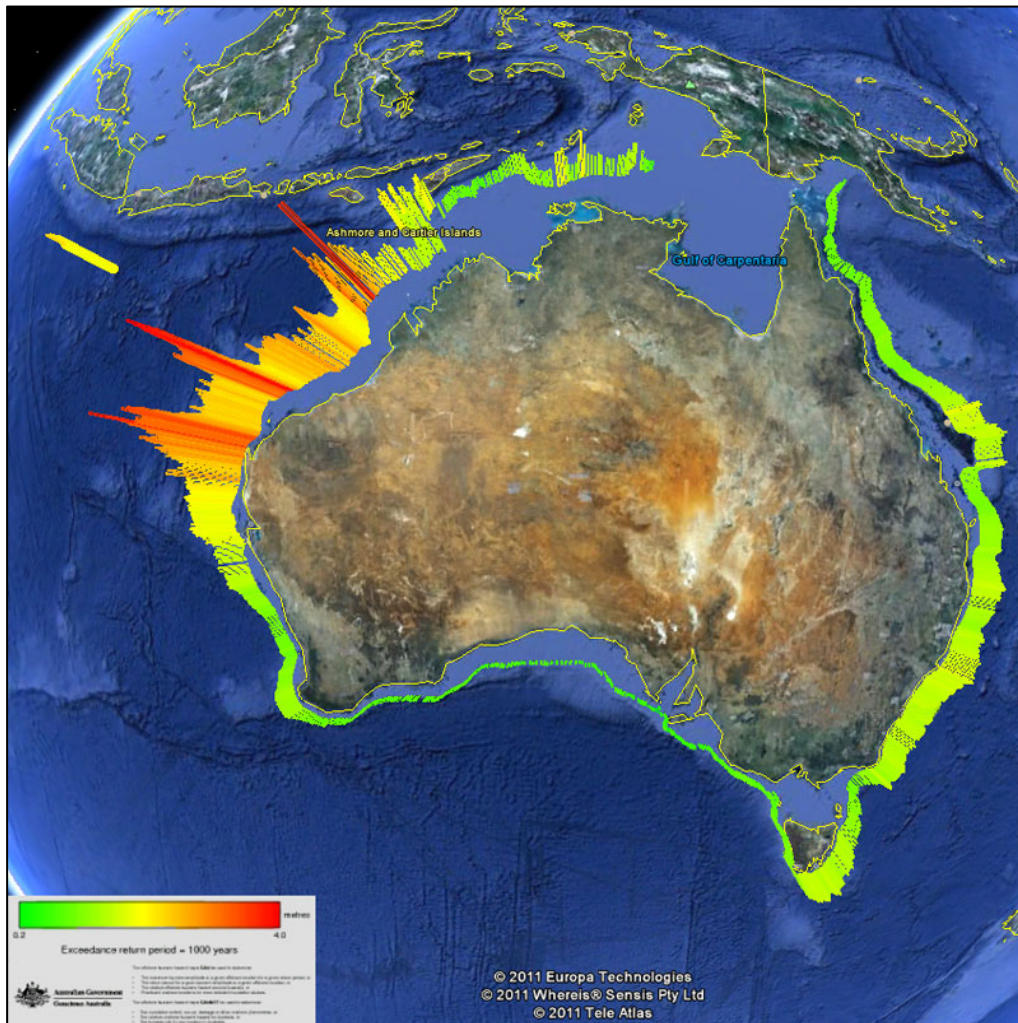
The impact of a tsunami can vary widely. A small tsunami may result in unusual tides or currents that can be dangerous to swimmers or cause damage to berthed boats. A large tsunami can cause widespread flooding and destruction such as that seen off the west coast of Northern Sumatra on 26 December 2004.

The 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 of Chile. The event created waves approximately 1 metre high.

Figure 15 shows a map of the location of tsunami which have impacted on the Australian coastline.

Figure 15: 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 for public information.

[Information for residents.](#)

6.11 Heatwave

Heatwaves are often not considered in the same way as other natural hazards but they can have significant impacts across the spectrum of physiological or infrastructure through to community support facilities.

Heatwaves are termed as : 'three days or more of high maximum and minimum temperatures that are unusual for that location' Heatwaves are relative to the normal temperature of the specific location for that time in the season. In many cases heatwaves are generated by a high pressure system that sits next to the area experiencing the heatwave. Hot air is funnelled into the area with the high pressure in the upper regions of the atmosphere enhancing it and preventing it from rising. For the Cairns LGA significant variations in temperature should be expected between urban and natural environments. Large volumes of heat-absorbing (such as pavement, masonry and heat reflecting

materials (such as glazing) within urban centres, waste heat emissions from vehicles, air conditioning and industry, couple with the lack of vegetation can result in significant ambient temperature variations between urban and natural environments.

Potential Community Impact Ratings:

Table 13: Recognised level of heatwave intensity as defined by the Queensland Heatwave Response Plan. Source: Queensland Health

HEATWAVE INTENSITY	COLOUR CODE	POTENTIAL COMMUNITY IMPACT
Low intensity heatwave	Yellow	Most people expected to have adequate capacity to cope with this level of heat but begin to see health effects. Increased risk to vulnerable groups.
Severe heatwave	Orange	Increased morbidity and mortality for vulnerable groups, such as those over 65, pregnant women, babies and young children, and those with chronic illness (e.g. renal disease, ischaemic heart disease).
Extreme heatwave	Red	May impact normally reliable infrastructure, such as power and transport. Health risk for anyone who does not take precautions to keep cool, even those who are healthy.

Cairns Context:

In-depth information including a Cairns based case study can be found in the [State Heatwave Risk Assessment 2019](#).

Table 14: Future predictions outlined for the Wet Tropics Coast

WET TROPICS COAST						
Index	Heatwave Index	Reference	2030	2050	2070	2090
HWF	Heatwave frequency (%)	1.4%	3.1%	12.5%	29.5%	41.6%
HWD	Heatwave duration (days)	3	4	15	44	80
HWMt	Temperature of heatwave magnitude (°C)	29.2	29.4	29.7	30.3	30.9
HWAt	Temperature of heatwave amplitude (°C)	29.6	29.9	30.6	31.6	32.8
Hot Days	Days >35°C	3	4	17	35	72
Hot Nights	Nights >20°C	179	217	253	289	321

Table 15: Definitions of Heatwave Index

UNDERSTANDING THE DATA		
Index	Heatwave Index	Definition
HWF	Heatwave frequency	Number of heatwave days relative to number of days in a year - i.e. $[\text{number of heatwave days} / 365] \times 100 (\%)$
HWD	Heatwave duration	Number of days of the longest heatwave of the year (days)
HWMt	Temperature of heatwave magnitude	Average mean temperature (in °C) of all heatwave days across the year
HWAf	Temperature of heatwave amplitude	Average mean temperature (in °C) of the hottest heatwave days of the year
Hot Days	Days $\geq 35^{\circ}\text{C}$	Annual count of days with maximum temperature $\geq 35^{\circ}\text{C}$
Hot Nights	Nights $\geq 20^{\circ}\text{C}$	Annual count of nights with minimum temperature $\geq 20^{\circ}\text{C}$

Note: All figures represent an absolute change from the reference period (1986 to 2005) unless expressed in negative terms, based on RCP 8.5. Further information and guidance on the data represented within this infographic can be found at Appendix F.

[Information for residents.](#)

A Hazard is defined as a source of potential harm, or a situation with a potential to cause loss. 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 tropical race 4 in North Queensland (Tully and Mareeba) investigated and confirmed by Biosecurity Queensland. 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 (Department of Agriculture and Fisheries 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 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.

QFES would control the incident with assistance from other agencies including the QFES Research and Scientific Branch, 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 QFES with assistance from CRC in terms of clean up etc. DES may also be involved.

The potential for oil/fuel spills in Trinity Inlet is another possibility and has occurred before. MSQ and TMR are the lead agencies 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 LGAQ have signed a protocol agreement to facilitate ongoing cooperation. MSQ, as the combat agency, may seek CRC'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 QCCAP. Local resources may be called upon to assist.

7.4 Influenza Pandemic

An influenza pandemic is a disease outbreak that occurs when:

- A new strain of influenza virus emerges to which nobody is immune;
- The virus causes disease in humans;
- The virus is easily spread between humans.

In the absence of immunity, a new influenza strain can rapidly spread infecting large numbers of people. An outbreak of disease throughout the population could cause the health system to be taxed to its limit and may involve the isolation and quarantine of large numbers of people for a protracted period.

The coronavirus (COVID-19) pandemic is currently impacting the world. The Cairns region has been dealing with the economic and human and social effects. With the loss of tourism, jobs and travel restrictions, the effects of the pandemic have also had an impact on mental health and wellbeing.

An epidemic or pandemic could overwhelm the medical resources of the region, and given that the impacted area may be likely to be state-wide, there would be minimal likelihood of external assistance.

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

The Queensland Health Pandemic Influenza Plan was released in April 2018.

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 introduction of an infectious disease is possible. A notable disease of concern is dengue fever which is a viral infection transmitted by the Aedes mosquito. Dengue is not endemic (i.e. naturally occurring in north Queensland).

The dengue mosquito (*Aedes.aegypti*) is common in north Queensland and outbreaks have occurred the virus has been introduced by infected international travellers or residents returning home from overseas.

The introduction of Wolbachia into the local Aedes population in Far North Queensland has prevented outbreaks of Dengue. There have been no outbreaks since 2016.

The Public Health unit receives reports of communicable diseases which it responds to routinely.

Biosecurity Queensland inform the public health unit immediately of any diseases of concern detected by its officers in person entering Australia via the airport or sea port.

7.6 Major Road / Rail Accidents (Including Bus)

The need for the LDMP 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.

Many tourist coaches traverse the roads from Cairns to 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 businesses 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 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. It is important that facilities are assessed and measures taken in relation to security. Casualties could be anticipated in the event of 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.

QPS is the responsible agency and may require support from various Local, State and Federal agencies depending on the severity of the incident.

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*.

7.8 Cyber Security

It has been recognised by numerous National and State based agencies that malicious cyber activity against Australia based systems and infrastructure is increasing in frequency, complexity and scale. The escalation of cyber-attacks combined with the continued surge in technology reliance warrants the identification of this threat within the spectrum of disaster management. The Australian Cyber Security Centre in its Annual Cyber Threat Report have identified cybercrime as the single most pervading threat within Australia⁶ Importantly, new technology platforms and interconnected devices and systems whilst bringing benefits to society also provide a risk enabling cyber-attacks if not properly protected.

Commonly known threats include the following:

- Ransomware
- Scams
- Web shell malware
- Phishing – scam emails
- Malware
- Malicious Insiders
- Identity theft
- Hacking
- Denial of Service Data spill
- Crypto mining

7.9 Climate Change

Endorsed by Council in March 2022, the Cairns Climate Change Strategy 2030 builds on the achievements and actions of the previous strategy (Climate Change Strategy 2010-2015) and will guide Council's climate actions for the next decade.

The strategy incorporates commitments to achieve net zero emissions by 2030 for council operations, including purchasing electricity from 100% renewable energy sources and a commitment to prepare the community to adapt and prosper in a changing climate and reduce their emissions.

Council will take action to mitigate and adapt to the impacts of climate change through the focus areas of community, industry, energy, transport, built environment, and the natural environment. We will prioritise a healthy environment, build resilient, informed, low emissions communities and support a smart green economy.

[Cairns Climate Change Strategy 2030 | Cairns Regional Council](#)

7.9.1 Climate Change Response Implications for Cairns Region

Our unique coastal environment is an important community and economic asset and is highly valued by our 164,000 residents and 2.9 million annual visitors alike. But our coastline is dynamic and always changing.

Council has been working with the Queensland Government through the [QCoast2100](#) program to plan for and respond to current and future coastal changes from erosion, storm tide inundation and sea level rise from now until the year 2100.

The development of "Our Cairns Coast: Adapting for the Future has helped us understand what long-term coastal changes mean for our community, our businesses and our infrastructure, and to plan for resilience.

Our Cairns Coast is a strategy that will guide our mitigation and adaptation actions to the year 2100.

[Our Cairns Coast | Cairns Regional Council](#)

7.10 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 16: 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 Chemical Biological Radiological Annex to the QLD Health Disaster Plan
Wildfire	Queensland Fire and Emergency Services	Wildfire Mitigation and Readiness Plans (Regional)
Chemical	Queensland Fire and Emergency Services	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents Chemical Biological Radiological Annex to the QLD Health Disaster Plan
Influenza Pandemic	Queensland Health	Queensland Health 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/heatwave-response-plan.pdf https://www.health.qld.gov.au/__data/assets/pdf_file/0032/628268/heatwave-response-plan.pdf
Radiological	Queensland Health	State of Emergency Multi-agency Response to Chemical, Biological, Radiological Incidents Chemical Biological Radiological Annex to the QLD Health Disaster Plan
Terrorism	Queensland Police Service	<ul style="list-style-type: none"> • Queensland Counter-Terrorism Plan • National Counter-Terrorism Plan • Queensland Counter-Terrorism Strategy 2013 – 2018
Oil Spill at Sea	Queensland Transport (Maritime Safety Qld)	Queensland Coastal Contingency Action Plan
Exotic Disease Avian influenza Swine fever Foot & mouth disease Screw-worm fly Transmissible spongiform encephalopathies (TSEs)	Biosecurity Queensland	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents Chemical Biological Radiological Annex to the QLD Health Disaster Plan

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 Memorandum of Understanding between each of the Functional Agencies and Queensland Fire and 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, and
- 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.

7.10.1 Hazard Assessments

Table 17: Hazard Assessments for Cairns Region

Hazard	Suggested Actions
Terrorism	<p>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 CRC controlled / owned critical infrastructure.</p> <p>The LDMG and other selected / relevant participants should conduct a security review of critical infrastructure owned / operated by CRC or critical infrastructure that may impact on CRC operations or the community. Mass gathering locations, events, and hazardous sites should also be considered in the review.</p> <p>The Local Government Counter Terrorism Risk Management Kit advises that the kit should be used by LDMGs with input from key stakeholders including, QFES, Police, major industries & peak bodies, owners and operators of critical infrastructure and mass gathering venues and major event organisations.</p>
Heatwave	<p>This risk is relevant due to not only our tropical climate but also projections of ‘Climate Change’.</p>
Pandemic Influenza	<p>Queensland Health has developed relevant plans as the lead agency in this area.</p> <p>Local Governments have been requested to nominate relevant facilities that may be utilised for purposes such as mass vaccination or assessment facilities.</p> <p>The LDMG should consider what other planning is required in this area to identify and address social consequences of a flu pandemic.</p> <p>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:</p> <ul style="list-style-type: none"> • Ensure CRC’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 and 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.

Hazard	Suggested Actions
Exotic Animal or Plant Disease	<p>The Department of Agriculture and Fisheries is the lead agency in this event with the following plans and manuals relating to pest and disease emergencies;</p> <ul style="list-style-type: none"> • 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 or Plants; • Specific plant pest contingency plans; and • AQUAVETPLAN the national aquatic animal disease response plan; • Emergency Animal Disease Response Agreement; • Australian Emergency Plant Pest Response Plan; • PLANTPLAN – technical response plan for emergency plant pest incidents. <p>The LMDG needs to give consideration to the level of assistance and required resources that may be needed in the event of such an outbreak.</p>
Oil Spill at Sea	Queensland Transport (Maritime Safety Queensland) is the lead agency.
Dam Failure	<p>An emergency action plan (EAP) exists for the Copperlode Falls Dam (hazard specific sub-plan of the LDMG). CRC Water and 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 45m and is 121m 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 to dam failure and extreme flood trigger points. The maps define the extent of flooding and categorise the maximum depths of inundation and the time to maximum depth.</p> <p>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).</p> <p>Tinaroo Falls Dam located in the Tablelands region flows into the Barron River. Tinaroo Falls Dam EAP details trigger points and inundation maps should a dam failure or probable maximum flood occur.</p>

7.11 Residual Risk Identification and Escalation (The risk that remains in unmanaged form, even if controls are in place)

The Cairns Regional Council recognises that as a result of the NERAG assessment process in collaboration with the QERMF, there will be instances when the Local Disaster Management Group identifies areas of residual risk, which will in turn require the application of suitable treatment options

The Residual Risk Register is attached at Appendix I.

The following methodology will be used to manage residual risk:

- Recognition that the Queensland Disaster Management System provides for District and State assistance in the sharing of residual risk if required.
- All disaster activations will be analysed to determine residual risk issues and to determine relevant actions.
- All disaster training exercises will be analysed to determine residual risk issues and to determine relevant actions.
- The Cairns Regional Council will have in place Council to Council Assistance arrangements with neighbouring Council areas, to assist with potential resourcing issues faced in the response and recovery phases of a disaster.
- The Local Disaster Management Group will identify if there is a need for Community Sub-groups to be established.
- Residual risk issues identified by any Local Disaster Management Group member will be discussed at the Local Disaster Management Group meeting to determine the possible risk and consequence and to determine suitable strategies to address the identified issues

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

The application of building codes and building use regulations ensures buildings and infrastructure are designed and constructed to standards that reduce the likelihood of damage and injury in an event. Standards and codes should be referred to and enforced, particularly for the design and construction of major infrastructure and components of essential services.

8.2 Land Use Planning

Land use planning in areas exposed to natural hazards can significantly reduce disaster risk, the impact of hazards should they arise and enhance the resilience of existing and future communities. Regulating the use and development of land relevant to hazard exposure is a key strategy to avoid risk to life, property and environment, and reduce damage and disruption to the community.

The CairnsPlan provides a framework under the Sustainable Planning Act 2009 for managing development within the region over the next 20 years. The Planning Scheme uses a series of overlays as a means of influencing development to mitigate or reduce the effects of hazards.

[Bushfire Hazard Overlay](#)

[Flood Hazard Overlay](#)

[Slope Hazard Overlay](#)

8.2.1 [State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire & Landslide](#)

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. [Integrating state interests in a planning scheme](#) Section 13 provides information on Natural Hazards, Risk & Resilience and provides guidance for local governments to be read in conjunction with the state planning policy.

8.3 Community Awareness

Section 30e *Disaster Management Act 2003* requires Local Government *“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”*,

CRC undertakes an ongoing community education and engagement programme covering the region and its many sectors and interest groups.

The LDMG – Cairns Region takes a coordinated approach to community awareness programs, recognising that disaster resilience is everyone’s responsibility and communities need to not only “Be Ready” but able to be as self sufficient as possible during an event and strongly prepared for recovery post an event.

These principles are embodied in the National Strategy for Disaster Resilience, the Queensland Strategy for Disaster Resilience and translated to action in a five year disaster resilience strategy for the Cairns Region, *Be Ready, Cairns!* Activities include working in and with communities, building sector resilience, supporting specific interest groups, research, professional development opportunities and promotional campaigns. CRC web pages and the Cairns Disaster Dashboard provide ongoing access to general disaster preparedness and response resources and information.

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 communication procedures; and
- Developing and testing plans.

9.1 Event Coordination

Overall management of the coordinated response is the responsibility of the LDC of the LDMG-CR. The LDC is also responsible for the coordination of the LDCC.

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 LDMG-CR is vested in the Chair of the LDMG-CR. It is the duty of the Chair to inform the 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 LDCC is a facility provided within the Cairns local government area to facilitate the response of the LDMG-CR to a disaster event. The LDCC is required to provide prompt and relevant information to the DDCC concerning any disaster event or potential disaster event occurring within the area.

The primary Cairns LDCC is located at the Woree Disaster Coordination Centre, 61-79 Windarra Street, Woree.

Should this facility become unusable for any reason, an alternative disaster 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 LDCC are:

- To co-ordinate CRC 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 CRC through the DDCC;
- To co-ordinate the collection, collation and dissemination of information to the Cairns DDCC and the community;
- Implementation of operational decisions of the LDMG-CR.

Operational staff for the LDCC is provided from a list of specialised and trained CRC 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 CRC's Incident Management Team (IMT) and supporting CRC officers. The IMT contains specialised role-specific qualified CRC staff that maintains a state of readiness for the "cyclone season". The IMT is supported by trained CRC 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 LDCC 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

CRC'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 CRC's responsibility as outlined in the *Disaster Management Act 2003*.

In 2015, 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 CRC offers two platforms for public notification. Cairns Alert 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 CRC 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:

- Well-developed stakeholder relations and risk based planning;
- The capability to source relevant data;
- The personnel with the expertise in interpreting sources to issue clear, timely and contextualised warnings/alerts.

9.2.1 Cairns Disaster Dashboard

The CRC Disaster Dashboard is a one-stop-shop for weather warnings, road closures, flood cameras, power outages, evacuation centres, helpful contacts and links to useful disaster-related information and social media.

9.2.2 Cairns Alert

Cairns Alert is an opt-in service which the community can [subscribe](#) to. This system can send SMS and email providing contextualised disaster information to the local community.

9.2.3 Standard Emergency Warning Signal (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.

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 listeners' attention to the fact that they should take notice of the emergency message.

9.2.4 National and 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.

CRC 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 18: Weather Events and Respective Sources of Information

Event	Source of Information
Severe Weather Event	Bureau of Meteorology
Hazardous Materials Incident	Queensland Police Service or Queensland Fire and Emergency Services
Public Health	Queensland Health, CRC Water and Waste or CRC Environmental Health Officers
Major Infrastructure Failure	The owner of the facility – e.g. Ergon etc.
Wildfires	Queensland Fire and 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 LDC.

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

CRC has human, plant and equipment resources available to respond to a disaster event, a full list is included in **Appendix C – Resource List**.

If additional resources are required, the resources will initially be sourced through local suppliers that are contracted to CRC to provide a service or resource, are capable of providing or can support CRC in responding to a disaster through the provision of resources.

CRC facilitates and financially supports the following SES groups within the Region. These groups are based in Babinda, Gordonvale, Edmonton, Cairns, Machans Beach, Holloways Beach, Yorkeys Knob, Trinity Beach, Buchan Point.

Support for communities 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 LDMP.

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 DDC. Commonwealth support can also be requested should State resources be exhausted or not available.

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 Cairns 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 LDC 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.

9.4 Training

9.4.1 LDMG-CR Training

The focus for disaster management training is to ensure LDMG and LDCC staff meet the minimum required standard for training required under the [Queensland Disaster Management Training Framework](#).

The following members of the LDMG are required to undertake disaster management training:

Chair and Deputy Chair of the LDMG

Local Disaster Coordinator

LDMG Members

Local Disaster Coordination Centre Staff & Liaison Officers

Local Recovery Coordinator

9.4.2 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 LDC 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.

9.4.3 LDCC CRC Staff Training

The DMU is responsible for the role specific training of CRC staff in the 'Guardian Incident Management System (IMS)' computer operating system utilised by CRC in the LDCC.

Table 19: LDMG-CR Training Matrix

Training	Who	Facilitator	When
Introduction to CRC's Disaster Management Process	CRC staff and members of LDCC Group	Disaster Management Unit (DMU)	Annually (September / November)
Queensland Disaster Management Arrangements	Councillors CRC staff Members DCC Group	QFES	Course held at least three times per year
Disaster Coordination Centre Course	LDMG-CR Members, CRC Staff and DCC Group	QFES	Annually
Guardian IMS: role specific	LDMG-CR Members and Members of DC Group	DMU Trainers	Annually (September – November)
Guardian Phone Operators Course	Members of DCC Group	DMU Trainers	Annually (September – November)
Guardian IMS Operations	LDMG-CR Members and IMT	QIT Plus DMU Trainers	Annually

9.5 Exercise

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 LDMP.

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, CRC will hold one or more of the following exercises, to improve the LDMG-CR capacity across preparedness, prevention, response and recovery.

Table 20: 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.
Function 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 LDC, and with the assistance of personnel from QFES. Exercises may also be conducted on a district-wide basis, involving a number of different LDMGs, and managed externally, either by the CAIRNS DDMG or by the SDCC in Brisbane.

9.5.1 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 which should then be captured in a wider Post-Exercise Report.

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 (DM#4387192)*, shall be updated after each exercise.

9.6 Post Disaster Assessment

A hot debrief is to be conducted immediately following the conclusion of the exercise and a cold brief conducted not longer than four 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.

9.6.1 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

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 LDC.

2. The (Post-Event) Operational Debrief

Post event debrief is a more formalised debrief of the event by the LDMG, 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; and
- 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; and
- 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 LDMP.

9.6.2 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.

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” ([Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guidelines](#)).

10.1 Authority to Activate

The authority to activate the LDMG-CR is vested in the Chair of the LDMG – Cairns Region. It is duty of the LDC to inform the DDC regarding the Plan’s activation.

10.2 Activation

The authority to activate the LDMG-CR is vested in the Chair (or delegate) of the LDMG-CR. It is the duty of the Chair to inform the DDC regarding the Plan’s activation.

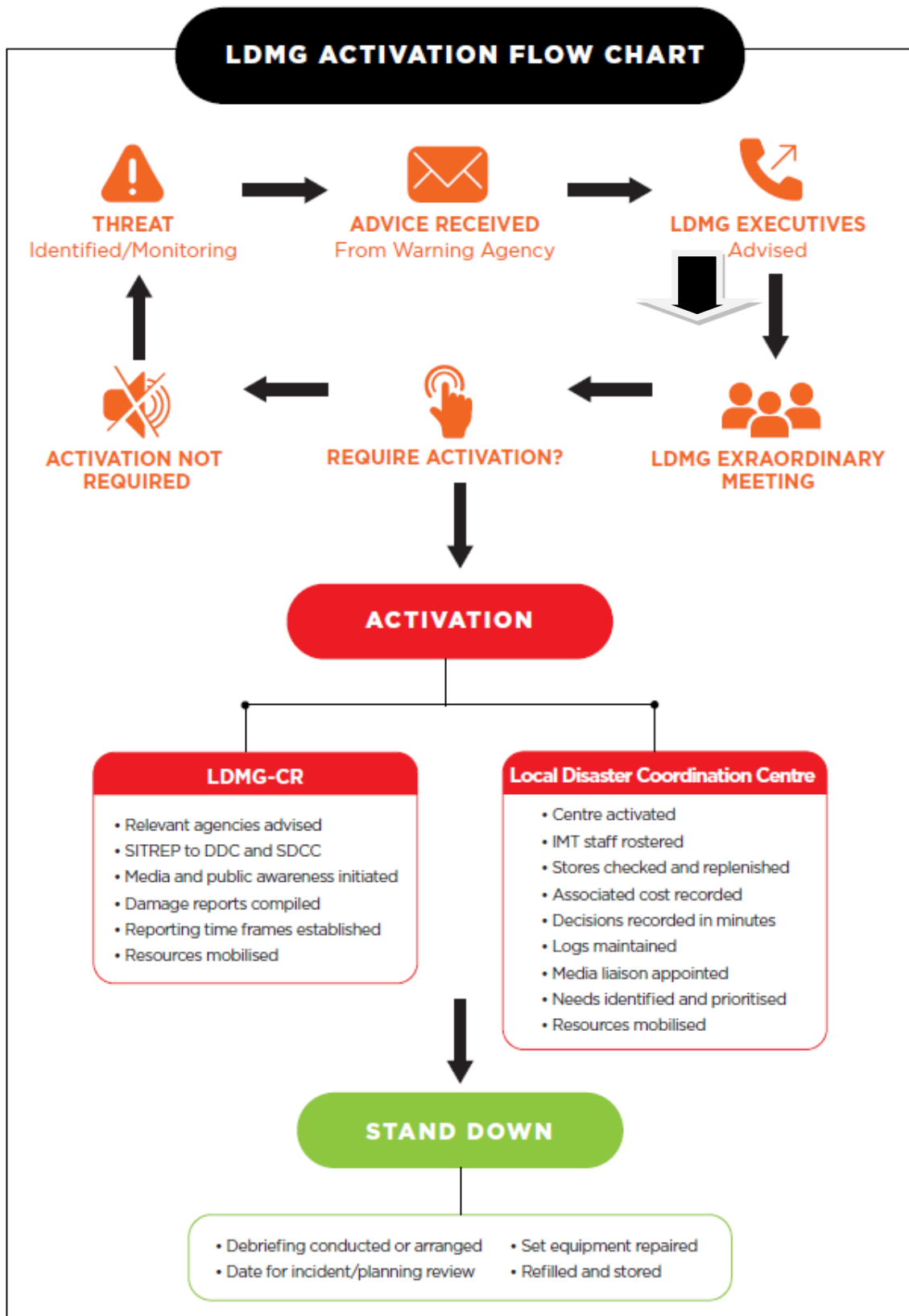
Activation may occur as:

- A response to a worsening situation; or
- At the request of the responsible Lead Agency (in situations where no prior warning is possible).
- A request/direction from the DDC to activate the LDMG.

The four levels of activation are:

Alert	A heightened level of vigilance and preparedness due to the possibility of an event in the area of responsibility. Some action may be required and the situation should be monitored by staff capable of assessing and preparing for the potential hazard.
Lean Forward	An operational state prior to ‘Stand Up’, characterised by the 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	The operational state following ‘Lean Forward’ where resources are mobilised, personnel are activated and operational activities commenced. Disaster coordination centres are activated.
Stand Down	Transition from responding to an event back to normal core business and/or recovery operations. The event no longer requires a coordinated operational response.

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



Refer to ***A.1 Activation of LDMG-CR Operational Plan.***

Local Disaster Coordination Centre (LDCC)

The LDCC is activated by the LDC. 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 Operation Procedures refer to ***A.2 Local Disaster Coordination Centre – Cairns Region Operational Plan.***

The main aim of the Cairns LDCC 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 LDC;
- Advice of additional resource required to the CAIRNS DDMG;
- Provision of prompt and relevant information to the CAIRNS DDMG concerning any disaster event occurring within their district.

Concept of Operations

The LDCC operates under the Australasian Inter-agency Incident Management System (AIIMS) to ensure effective coordination of disaster response operations.

Document Management

Document Management throughout the disaster operations will be achieved through the Guardian IMS 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 records related to the disaster event will be recorded into CRC's records management system.

10.3 Notification Process

The LDMG Chair and LDC will maintain situational awareness in relation to events that have the potential to require the activation of the disaster management system. When a decision is made to activate the LDMG, the appropriate activation level will be determined and communicated to LDMG members.

The initial LDMG meeting will be scheduled, and additional meetings where necessary.

The DDC will be advised verbally and in writing that the LDMG has activated.

This LDMP will be automatically invoked and the LDC will invoke associated sub-plans required by the nature and scale of the event.

10.4 Warning Notification and Dissemination

LDMG members will receive warning products via several means including text messaging, email and/or direct phone calls in the lead up to an event.

The LDC and several agencies will also receive warnings directly from the BOM. The LDMG-CR will be notified by the LDC and may also receive notification from internal agency offices.

The DDC will receive notification directly from the SDCC and internally through QPS Communication Centres and will ensure the dissemination of warnings to vulnerable LDMGs within the district.

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 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 CRC's 'Cairns Alert' and Cairns Disaster Dashboard.

10.5 Operational Reporting

The LDC will ensure operational reporting from LDMG-CR to CAIRNS DDMG commences once the LDMG-CR is activated.

Situation Report (SITREP)

SITREPS 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 CAIRNS DDMG.

Tasking and Incident Logs (Guardian)

Cairns LDCC using the Guardian IMS software during activations to record actions taken and the responsible agency or officer. The Guardian System functionality as a tasking, incident 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 / incidents and /or location.

10.6 Accessing Support

In the LDCC-CR CRC shall provide land line telephones, wifi, two way radios, desk space and administrative resources to agency Liaison Officers. Liaison officers should bring their own laptop or mobile device to access Guardian IMS.

10.6.1 Requests to CAIRNS DDMG

Where the LDMG-CR has exhausted its 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.

- All requests to the DCC will go through either the LDC or Chair of the LDMG-CR.

10.6.2 Support from External Agencies (Public or Private)

- All of CRC'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 CRC procedures. Should support be withdrawn for whatever reason all agencies affected will be advised.

10.7 Operational Plans

Operational Sub-Plans have been written for specific functions refer to **Part 12 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 Human and Social* – includes the Human and Social 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 Evacuation Facilities Management* – establishes the roles and responsibilities for the opening up, staffing, registering and in general caring for evacuees.
- *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* – CRC 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 program undertaken by members of the LDMG-CR and also the procedure for issuing warnings or advice pre, during and post event.
- *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.
- *A.14 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.
- *A.16 Asbestos Management* – provide a framework for the management of asbestos containing material (ACM) in the response to a civil or natural disaster between CRC, LDMG and other government stakeholders.
- *A.17 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.
- *A.18 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.
- *A.19 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.
- *A.21 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
- Wildfire Management Plan
- Bushfire Risk Mitigation Plan
- Drought Response Plan

10.8 Risk Treatment Arrangements

As this LDMP 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 LDMP 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 I – Risk Treatment Register*.

10.9 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; and
- Priority infrastructure.

10.10 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 CRC's 'Emergency Response Plans', the Martyn Street Depot for Works and Maintenance will be utilised to coordinate and task CRC and other agencies / organisations crews with works to be undertaken in the field. This will be reviewed for each event.

10.11 Disaster Declaration

Where there is a requirement for a person or a class of persons to exercise the additional powers available under the provision of s.77 of the Act, the DDC may with the approval of the Minister, declare a disaster situation for the Disaster District or a part of the Disaster District.

The DDC should take reasonable steps to consult with CRC 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 or a part of the State.

The Chairperson of the SDMG or the DDC only may authorise the exercise of additional powers.

The declaration of a disaster situation does not affect CRC's responsibilities in relation to the coordination of the response to and recovery from the disaster event.

10.12 Financial Management

There is a need for CRC 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.

CRC addresses this responsibility through QRA's Managing and Reporting System(MARS) 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.

10.12.1 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 circumstance where personal hardship exists.

10.12.2 Disaster Recovery Funding Arrangements (DRFA)

The intent of the DRFA 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 DRFA 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 DRFA. Refer to A.3 Financial Management Sub Plan for further information.

10.13 Media Management

Refer to Operational Plan A.10 *Public Information and Warnings* – strategically providing information to the media that is consistent, appropriate, and reliable with consideration to factors like target audience, frequency of messaging, demographics and geographical situation.

10.14 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 QFES.

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.

10.15 Management of Volunteers

The LDMG-CR works with FNQ Volunteers to manage volunteers for disaster events. Volunteers, who contact CRC, are directed to FNQ Volunteers. FNQ Volunteers is an advisory member of the LDMG-CR and a member of the Human and Social Sub-committee.

10.16 Management of Donations

Donations to CRC 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 Human and Social Sub-committee through members such as a local service club.
- Offer to volunteer to assist – FNQ Volunteers (refer 10.14 above).
- Donations of money, services, plant and equipment – managed through the LDCC utilising [GIVIT](#).

11.1 Recovery Definition

Recovery is the coordinated process of supporting disaster-affected communities' psychosocial (emotional and social), and physical well-being; reconstruction of physical infrastructure; and economic and environmental restoration (including regeneration of the natural environment, associated infrastructure and heritage sites and structures, and the management of pollution and contamination). (Queensland Recovery Plan)

The [Queensland Recovery Plan](#) outlines the recovery governance arrangements in Queensland.

11.2 Recovery context

Understanding our communities have their own history, values and dynamics is vital to achieve a successful recovery.

Recovery should:

- Acknowledge existing strengths and capacity, including past experiences;
- Appreciate the risks and stressors faced by the community;
- Be respectful of and sensitive to the culture and diversity of the community;
- Support those who may be facing vulnerability;
- Recognise the importance of the environment to people and to their recovery;
- Be acknowledged as requiring a long term sustained effort as needed by the community; and
- Acknowledge that the impact upon the community may extend beyond the geographical boundaries where the disaster occurred ([AIDR](#)).

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.

Human & Social Recovery – families and individuals

Infrastructure Recovery - roads and transport

Infrastructure Recovery - built environment

Economic Recovery – business continuity, industry restoration

Environmental Recovery – our national surroundings

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 to specific services, the service provided and the duration of the operation will be dictated by the type, size and effect of the particular disaster.

11.5 Recovery Sub Plan

The Cairns Local Disaster Recovery Sub Plan (CLDRP) provides a framework for the coordination of recovery operations within the Cairns local government area and is supported by the procedures outlined in the Disaster Management Recovery Guidelines and the Queensland Recovery Plan.

The Cairns Local Disaster Recovery Committee (CLDRC) is set up by the LDMG-CR as a sub-group to oversee the implementation of the Recovery Sub-Plan and coordination of CRC's medium to long term recovery activities.

Activation of Recovery Arrangements

The CLDRC 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 CLDRC may establish separate recovery functional groups for each of the five functions as required. The CLDRC will activate the CLDRP to provide a coordinated approach to the provision of recovery services to the community.

The diagram below depicts the structure of the CLDRC.

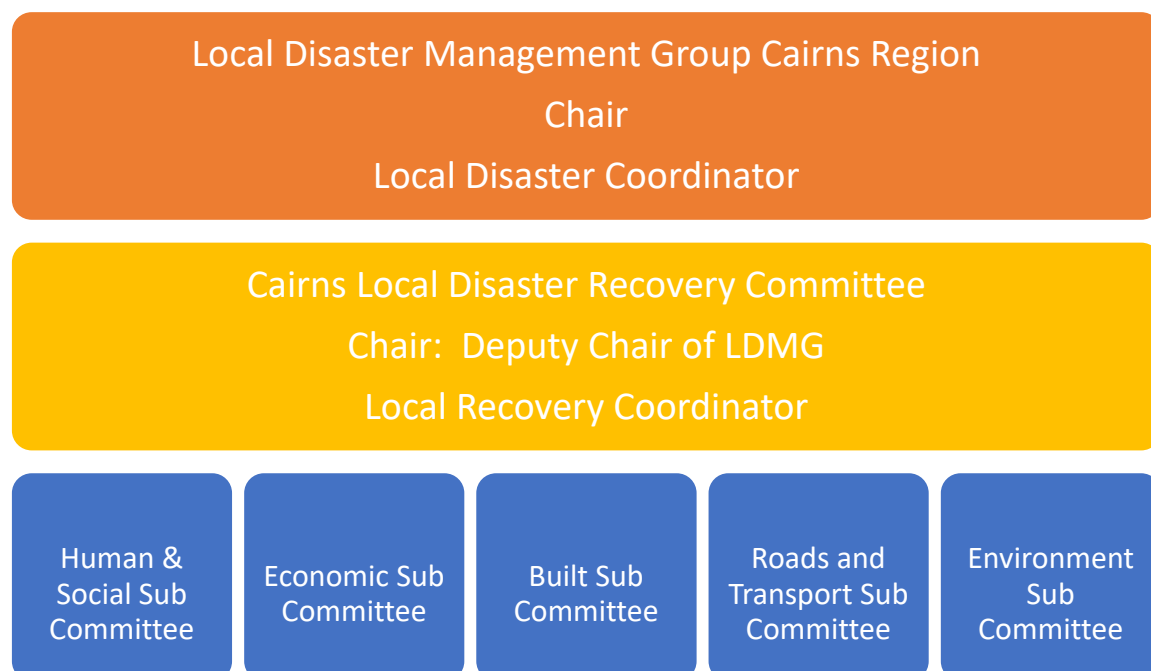


Table 21: Local Levels of Activation for Recovery Arrangements

Response ALERT		Triggers	Actions	Communications
Response LEAN FORWARD	Recovery ALERT	Response phase at 'lean forward' level of activation	Appointment of LRC as appropriate: <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Recovery plan activated Deployments for immediate relief response Action plans for five 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 / 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: <ul style="list-style-type: none"> Transition arrangements from 'response and recovery' to 'recovery' activated including Handover from LDC to LRC Action plans for five 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

Response ALERT		Triggers	Actions	Communications
	Recovery STAND DOWN	LRG arrangements are finalised. Community returns to normal activities with ongoing support as required.	<ul style="list-style-type: none"> • 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 	<p>LRC and LRG members resume standard business and after-hours contact arrangements.</p> <p>Functional lead agencies report to LRC / LRG as required.</p>

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, Housing and Digital Economy – 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 organisations.

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 Disaster Recovery Funding Arrangements (DRFA) and the Queensland funded State Disaster Relief Arrangements (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.

Figure 16: Queensland’s Recovery Arrangements

