Acknowledgements
Moreton Bay Regional Council wishes to thank all personnel, volunteers and stakeholders for continuing to provide ongoing local disaster management assistance to the Moreton Bay community, including the development of this document.

Disclaimer
Moreton Bay Regional Council has produced this document based on accurate information at the time of issue. Some information supplied from information contained in the council’s records, may have been furnished to the council by other organisations. Persons making decisions with financial or legal implications must not rely upon the details shown in this plan for the purpose of determining whether any particular facts or circumstances exist. Moreton Bay Regional Council (and its officers and agents) expressly disclaims responsibility for any loss or damage suffered as a result of placing reliance upon this information.
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Disasters can happen anywhere, anytime and without warning. While the Moreton Bay Region is a beautiful place to live and work, there is always the potential risk of disaster events impacting the region.

Local government has primary responsibility for ensuring effective and coordinated disaster management arrangements within its boundaries. Moreton Bay Regional Council, through the Moreton Bay Region Local Disaster Management Group has developed the Local Disaster Management Plan to address all phases of disaster management: prevention, preparedness, response and recovery.

The plan complies with the Disaster Management Act 2003 and is aligned with the Queensland Emergency Management Assurance Framework to ensure a coordinated approach to mitigating risks and minimising impacts on our communities.

The plan is dynamic and will be maintained to ensure currency with legislation and global best practices. Through our plans and arrangements, Moreton Bay Regional Council and the Moreton Bay Region Local Disaster Management Group are committed to applying all relevant legislation, frameworks, guidelines and principles to continually build resilience across the region.

Disasters are inevitable, but through this risk-based approach to effective planning and a shared responsibility approach at government, private and community level, we can enhance the resilience of our region and minimise the adverse effects of any disaster event.

Disaster management is everyone’s responsibility. Together we can build a resilient community, able to meet the challenges of disaster and emergency situations which may face us in the future.

Councillor Peter Flannery
Chair - Moreton Bay Region Local Disaster Management Group
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Sources:  
AS/NZ ISO 31000:2009 Risk Management - Principles and Guidelines  
Australian Institute of Disaster Resilience  
Queensland Disaster Management Act 2003  
Queensland State Disaster Management Plan
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Sources:  
- Australian Institute of Disaster Resilience  
- Queensland Disaster Management Act 2003  
- Queensland State Disaster Management Plan
DOCUMENT AUTHORISATION AND CONTROL

Authorisation

This Plan has been developed and approved by Moreton Bay Regional Council under the provisions of Sections 57, 58 and 80 of the Act.

This Plan has been approved by the Moreton Bay Region Local Disaster Management Group.

Councillor Peter Flannery
Moreton Bay Regional Council
Chair - Moreton Bay Region Local Disaster Management Group

Date: 29/11/2018

This Plan has been reviewed and accepted by the Moreton District Disaster Coordinator.

Acting Superintendent Paul Ready
Queensland Police Service
District Disaster Coordinator - Moreton District Disaster Management Group

Date: 29/11/2018
### Document Control

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<th>Version</th>
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| 1.0     | 8 April 2009     | First publication  
Approved by MBR LDMG and EMQ                                                                                                           |
| 1.1     | 2 March 2010     | Amendment  
Approved by DDC 10 March 2010  
Approved by council                                                                                                                          |
| 2.0     | July 2011        | Annual review and amendment                                                                                                               |
| 2.1     | August 2011      | Annual review and amendment  
Endorsed by MBR LDMG 31 August 2013  
Endorsed by DDC 13 September 2013  
Approved by council 18 October 2013                                                                                                           |
| 3.0     | 30 September 2013| Full review and amendment, including agency feedback, exercise evaluation and alignment with state guidelines  
Endorsed by MBR LDMG 26 September 2013  
Endorsed by MBR LDMG Chair and DDC 30 September 2013  
Approved by council 15 October 2013                                                                                                           |
| 3.1     | 30 November 2016 | Partial amendment to capture machinery of government and legislative changes  
Noted by council 8 December 2016  
Endorsed by MBR LDMG Chair and DDC 23 January 2017                                                                                          |
| 4.0     | 1 September 2017 | Full review and amendment to align with EMAF  
Endorsed by MBR LDMG Chair and DDC 31 August 2017  
Endorsed by MBR LDMG 5 September 2017  
Approved by council 12 September 2017                                                                                                           |
| 4.1     | 29 November 2018 | Partial amendment to capture machinery of government and legislative changes  
Endorsed by MBR LDMG Chair and DDC 29 November 2018  
Approved by council 13 December 2018                                                                                                           |

Council will review and/or amend the Plan at least once a year or as it considers appropriate. Minor amendments to this plan may be approved by the Coordinator Disaster Management.

Significant changes, requiring a major or full plan amendment will be endorsed by the Moreton Bay Region Local Disaster Management Group Chair and approved by Council.

Council welcomes comments and feedback regarding the Plan. Requests to amend the Plan should be forwarded to:

The Chair  
Local Disaster Management Group  
Moreton Bay Regional Council  
PO Box 159  
CABOOLTURE QLD   4510
Accessing the Plan

This Plan is available:

- Online at: Council's Local Disaster Management Plan;
- For viewing at council’s Strathpine office, located at 220 Gympie Road, Strathpine; or
- Copies can be printed, upon payment of the relevant fee, at Council libraries. For relevant printing costs, visit: Council Printing Fees.

Supporting Documents and Systems

There are several related documents and systems that further support council’s disaster management activities, including:

- Bribie Island Emergency Response Plan
- Caboolture Aerodrome Emergency Plan
- Council and agency-specific operational and response plans
- Council’s suite of corporate and operational policies and procedures
- Flood Check Property Reports and Flood Maps
- Flood operational systems
- Guidelines
- MBRC Natural Disaster Risk Management Assessment - Final Report
- MBRC Risk Register
- MoretonAlert
- Queensland Recovery Plan
- Queensland State Planning Policy
- Redcliffe Aerodrome Emergency Plan
- Moreton District Disaster Management Plan
- Moreton District Human and Social Recovery Plan
- Regional Floodplain Database
- Standard Operating Procedures
- State Disaster Management Plan
- Terms of Reference - MBR LDMG and MRG
- Wildfire Mitigation and Readiness Plan
STRUCTURE AND GOVERNANCE

Purpose

The primary focus of the Local Disaster Management Plan (LDMP), also referred to as the Plan, is to mitigate the effects of disasters on the community by ensuring a coordinated effort by all levels of government and non-government entities with responsibilities in disaster management.

The purpose of the Plan is to:

- Reduce the impact of a disaster on the region, through building community resilience and educational awareness;
- Demonstrate a commitment to the safety of our community;
- Ensure there is a consistent approach to disaster management in the region;
- Ensure there is a central coordination point for the region’s disaster management information;
- Reduce the community consequences following an event; and
- Ensure compliance with the Queensland Disaster Management Act 2003 (the Act).

Refer to: Queensland Disaster Management Act

To achieve this, the Moreton Bay Region Local Disaster Management Group (MBR LDMG) adopts the following principles:

- Leadership - commitment to a shared culture of disaster management excellence, through effective strategic planning such as risk and resource management, planning and prioritising for successful outcomes across our community.
- Public Safety - promote ongoing community safety by improving disaster management arrangements and shared responsibilities through stakeholder engagement, policies and procedures.
- Partnership - foster effective partnerships between the community, Moreton Bay Regional Council (MBRC), also referred to as the council, emergency services, disaster management agencies, state and federal governments, to build a resilient community.

- Performance - ensure effective management of disaster events within council’s boundaries.


Information for agencies

This Plan does not provide details or guidance to disaster management agencies in relation to operational polices and procedures.

Agencies are required to ensure that they individually meet their workplace health and safety obligations while acting under the Plan.

Objectives

The overall objective of this plan is to ensure the safety of the Moreton Bay Region (the region) community. The key objectives of this plan are:

Prevention

- Increase adherence to systems and regulations to reduce disaster risks; and
- Investigate and implement (where appropriate) strategies and initiatives to eliminate or reduce the impact of hazards on the community using emergency risk management processes.

Preparedness

- Increase community safety through public awareness, information and education;
- Encourage an all-agency, all-hazards approach to disaster management within the region;
- Identify resources to maximise the region’s disaster response capability;
• Develop contingency plans to address response and recovery issues; and
• Enhance the capability of disaster management agencies by encouraging participation in training and exercises, equipment acquisition, programs and the building of relationships.

Response
• Provide effective and efficient coordination of disaster response efforts during a disaster event;
• Minimise the impact on the community of a disaster event; and
• Ensure effective communication with the Moreton District Disaster Management Group (DDMG).

Recovery
• Provide adequate immediate post-event welfare through the Moreton Recovery Group (MRG); and
• Ensure the recovery priorities of the community are identified and met.

Compliance
Council manages and coordinates effective disaster management activities to meet legislative requirements, state guidelines, corporate plans, policies and community expectations. These include, but are not limited to:

Disaster Management Act 2003 outlines the primary responsibility of local government in disaster management (section 4A), which council is committed to undertaking.

Emergency Management Assurance Framework (EMAF) supports accountability and builds consistency across all levels of the disaster management arrangements to reinforce a shared responsibility for delivering better disaster management outcomes for the community. Council adopts the EMAF, as developed by the Office of the Inspector-General Emergency Management, in its commitment to keep the region communities safe. This provides a standard for council, emergency services and non-government agencies in delivering effective disaster management across the region.

Fire and Emergency Services Act 1990 provides for the prevention of and response to fires and other incidents. Also provides for the establishment and operation of the State Emergency Service (SES).

Forestry Act 1959 provides for forest reservations, the management, treatment and protection of State forests.

Council’s ‘Corporate Plan’ promotes safe and harmonious communities with high public health standards. To achieve this outcome council will lead and coordinate well-planned responses to community emergencies. For more information, visit: Council’s Corporate Plan

Council’s ‘Budget and Operational Plan’ provides funding, planning, preparation, response and recovery activities for community disaster events.

For more information, visit: Council’s Budget and Operational Plan
Council’s ‘Community Plan’ aims to increase the resilience of communities and businesses to a disaster. For more information, visit: Council’s Community Plan

Public Safety Preservation Act 1986 provides protection for members of the public in emergencies that may create danger of death, injury or distress to any person, loss of or damage to any property or pollution of the environment and related purposes.

Queensland Disaster Management Strategic Policy Statement guides the development and implementation of disaster management policy and programs at State, district and local levels to keep people safe and make communities more resilient to disaster risks and impacts.

Queensland Disaster Management Arrangements (QDMA)
The arrangement for disaster management in Queensland comprises a 4-tiered structure involving management at local, district, state and Commonwealth levels.

The disaster management structure for the region is initiated at the Local Disaster Management Group level, with escalation to the DDMG if needed, then to the Queensland Disaster Management Committee (QDMC) as required. These arrangements enable a progressive escalation of support and assistance through each tier as required.

The Australian government is also included in the arrangements as a fourth level, recognising that Queensland may need to seek Commonwealth support during times of disaster.

For more information, visit: State Disaster Management Strategic Policy Statement

Queensland Local Disaster Management Guideline, incorporating guidelines for evacuation, recovery and resupply.

For more information, visit: State Disaster Management Guideline

Queensland State Disaster Management Plan (SDMP) incorporating the direction set by the Disaster Management Strategic Policy Statement and Queensland’s arrangements for disaster management.

For more information, visit: Queensland State Disaster Management Plan
Moreton Bay Region - Disaster Management Structure

The MBR LDMG has been established in accordance with the Act to coordinate disaster management activities within the region.

Functions of the MBR LDMG

The MBR LDMG functions are in accordance with section 30 of the Act:

(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;

(b) To develop effective disaster management and regularly review and assess the disaster management;

(c) To help council prepare the LDMP;

(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;

(e) To ensure the community is aware of ways of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster;

(f) To manage disaster operations in the area under policies and procedures decided by the State group;

(g) To provide reports and make recommendations to the relevant district group about matters relating to disaster operations;

(h) To identify, and coordinate the use of, resources that may be used for disaster operations in the area;

(i) To establish and review communication 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;

(j) To ensure information about a disaster in the area is promptly given to the relevant district group;

(k) To perform other functions given to the group under the Act; and

(l) To perform a function incidental to a function mentioned in paragraphs (a) to (k).

MBR LDMG Membership and Structure

MBR LDMG members are appointed in accordance with section 33 of the Act. Representatives are appointed by position and are deemed to have the necessary expertise or experience and delegation authority to support all aspects of disaster management and agreed arrangements.

Membership of the MBR LDMG includes the following appointed positions and agency members:

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<th>MBR LDMG Roles</th>
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<tr>
<td>Mayor</td>
<td>The primary spokesperson for the MBR LDMG, including liaising with the media and the community. If the Mayor is not available, the Deputy Mayor and/or the Chair of the MBR LDMG, or delegate, will be the primary spokesperson.</td>
</tr>
<tr>
<td>Chair</td>
<td>In accordance with section 34 of the Act, a Councillor is appointed by council as the Chair of the MBR LDMG.</td>
</tr>
<tr>
<td>Deputy Chair</td>
<td>In accordance with section 34 of the Act, a Councillor is appointed by council as the Deputy Chair of the MBR LDMG.</td>
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<td>Local Disaster Coordinator (LDC)</td>
<td>In accordance with section 35 of the Act, after consultation with the Chief Executive, the Chair appointed the Director Engineering, Construction and Maintenance to the role of LDC.</td>
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<tr>
<td>Moreton Recovery Coordinator</td>
<td>In accordance with section 33 of the Act, the Director of Community and Environmental Services is appointed by council as the MRC.</td>
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<tr>
<td>Coordinator Disaster</td>
<td>In accordance with section 33 of the Act, the Coordinator Disaster Management is appointed by council to the MBR LDMG.</td>
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MBR LDMG Member Agencies

- Australian Red Cross
- Department of Communities, Disability Services and Seniors (DCDSS)
- Department of Education
- Energex
- MBRC
- Queensland Ambulance Service (QAS)
- Queensland Fire and Emergency Services (QFES) - Emergency Management
- QFES - Fire and Rescue
- Queensland Health
- Queensland Police Service (QPS)
- State Emergency Service (SES)
- Unitywater

In accordance with section 33 of the Act, council appoints persons as members of the MBR LDMG. Council may appoint members of the group provided they have the necessary expertise or experience to assist the group to undertake its functions.

Each agency representative is required to maintain appropriate levels of authority for decision making and commitment of resources for each agency, as outlined in the Terms of Reference.

MBR LDMG membership, including deputies and support agency representatives, is reviewed annually. The Chair is authorised to invite individuals or organisations as advisors and/or observers, to assist the MBR LDMG as required.

DDMG / LDMG Meetings

The MBR LDMG together with the Moreton DDMG will conduct 3 ordinary meetings per year at times and places decided by the Chair. Extraordinary meetings will take place as required for specific events.

Details of actions taken, and issues discussed by the MBR LDMG and Moreton DDMG at meetings are communicated and made available to council in the form of minutes, agendas, reports and schedules. These are also distributed to members and advisor agencies.

The Terms of Reference for MBR LDMG members outlines the requirements for individuals and their agencies with respect to levels of authority, the ability to make decisions and commit resources on behalf of agency.

A quorum for the group is set at one half of the number of members plus one; or if one half of the number of members is not a whole number, the next highest whole number.

The MBR LDMG may constitute permanent or temporary sub-groups for specific issues or tasks to assist the MBR LDMG with its business.

Each sub-group chair will report their group’s progress to the MBR LDMG as required.

The current sub-group of the MBR LDMG is the MRG. The MRG includes the following recovery sub-committees:

- Economic
- Environment
- Human-social
- Infrastructure

District Disaster Management Group

The Moreton DDMG provides a whole-of-government planning and coordination capability for disaster management. This includes:

- Making decisions on how to best allocate State resources in the support of council undertaking disaster management activities; and
- The regular review and assessment of disaster management by the MBR LDMG.

During operational activities, the MBR LDMG reports to the DDMG through Situation Reports (SITREPs). The frequency of the provision of SITREPs by the MBR LDMG to the...
DDMG is dependent on the nature of the event and the advice of the DDC.

Additionally, the MBR LDMG may approach the DDMG regarding:

- Requests for assistance; and
- Consideration of the Declaration of a Disaster Situation.

When activated, the District Disaster Coordination Centre (DDCC) will support the Moreton DDMG in the provision of State level support to the MBR LDMG. The DDCC coordinates the collection and prompt dissemination of information to and from the Local Disaster Coordination Centre (LDCC) and State Disaster Coordination Centre (SDCC) about disaster events occurring within the Moreton Disaster District. The DDCC will implement decisions of the DDC and DDMG and coordinate State and Australian government resources in support of the MBR LDMG and disaster affected communities within the region.

Roles and Responsibilities

Disaster Management is not the responsibility of any one agency. All Queenslanders have a shared responsibility for preventing, preparing for, responding to and recovering from the impacts of disasters.

Building resilience within the region requires a collaborative approach from multiple stakeholders. All disaster management stakeholders across the private and public sector need to undertake an integrated risk-based approach to ensure initiatives are locally driven and address the hazards and associated risks specific to the community.

Moreton Bay Region - the Community

Council and relevant emergency services agencies will continue to do all they can to assist the community in times of disaster; however, it should be remembered that individuals are ultimately responsible for their own safety at any given time. Responsibilities of the region’s communities include:

- Be aware of local hazards and nearby safety issues;
- Take precautions against risks such as flood levels and known road closure points;
- Know where to shelter and stay safe in a disaster;
- Make plans to prepare for disruptions that disaster events may cause, such as
  - seeking shelter,
  - making bushfire plans,
  - registering for MoretonAlert,
  - monitoring disaster events via radio social media or television,
  - sand bagging likely areas that may flood,
  - making alternative accommodation arrangements during possible evacuation, and
  - preparing and managing pets;
- Create and check emergency kit contents, including medication, non-perishable foods, water, radio and batteries;
- During a disaster event, keep up to date and follow the directions of emergency services agencies and issued public warnings;
- Know who to get help from when needed, such as the SES, police, fire, Energex, MBRC; and
- Help neighbours in need.

Moreton Bay Regional Council

Roles and responsibilities of MBRC include:

**MBR LDMG Support**

- Manage, support and provide policy advice and coordination of the business of council and its subgroups, including the development and maintenance of this LDMP and relevant procedures;
• Design, maintain and operate an LDCC, including the training and staffing of sufficient personnel to operate the centre (at a primary location and maintenance of an alternative location/s);
• Coordinate disaster operations through the LDCC for the MBR LDMG and LDC ensuring that strategic decisions of the MBR LDMG are implemented;
• Coordinate immediate community support and recovery needs in conjunction with the DCCSDS;
• Assist the community to prepare for, respond to and recover from an event or disaster;
• Issue public information or warnings about disaster situations in accordance with the LDMP and relevant processes; and
• Provide advice and support to the DDC and DDMG.

General Responsibilities

• Maintain council’s function (via council’s business continuity planning);
• Develop and maintain prevention and mitigation strategies such as Land Use Planning and Capital Works Programs;
• Develop and maintain response plans where council is the lead agency;
• Maintain essential council services to the community including:
  o Animal control;
  o Civic leadership;
  o Community contact and information provision;
  o Disaster and emergency management;
  o Environmental protection;
  o Maintain local roads and bridges (including debris clearance);
  o Maintain refuse disposal and waste management; and
  o Public health and safety;
• Maintain rainfall and flooding telemetry and warning systems;
• Collect and interpret information from telemetry systems for rainfall and flooding, conjointly with Bureau of Meteorology (BoM);
• Develop and maintain communication systems between response and recovery agencies and coordination centres;
• Provide support with QFES to the SES; and
• Request and provide assistance through the LDCC as required during disaster response and recovery operations

Moreton Bay Region - Local Disaster Management Group - Members and Deputies

Roles and responsibilities of the MBR LDMG include:

• Functions in accordance with section 30 of the Act;
• Be appropriately trained in accordance with the Queensland Disaster Management Training Framework;
• Attend MBR LDMG activities with a full knowledge of their agency’s /organisation’s resources and services and the expectations of their agencies;
• Be available and appropriately briefed to actively participate in MBR LDMG activities to ensure that plans, projects and operations use the full potential of their agency or function, while recognising any limitations;
• Be appropriately positioned within their agency/organisation to be able to fully commit resources to MBR LDMG business activities;
• Have a deputy who is appropriately trained to take on responsibilities should they be unavailable, or to provide additional support during extended operations;
• Report on their agency’s disaster management actions and future plans;
• Notify the MBR LDMG of any disaster or potential disaster;
• Contribute to disaster response and recovery actions, including the provision of a liaison officer for the LDCC;
• Participate in other business of the MBR LDMG, such as training, exercises and community awareness; and
• Comply with relevant Terms of Reference.

Australian Red Cross
An auxiliary organisation to government in the humanitarian field, the Australian Red Cross functions are to:
• Provide advice and support to the QDMC, Moreton DDMG and MBR LDMG in relation to disaster management planning and disaster operations;
• Provide preparedness activities and resources to assist people to be better prepared for, better connected, and more resilient to emergencies;
• Work with partner agencies to ensure basic human needs are met during the response stage of a disaster, with a particular focus on assisting local government authorities with sheltering (evacuation centres and cyclone shelters);
• Assist QPS in the management of Register.Find.Reunite. – the registration of evacuees and associated enquiries;
• Provide a liaison officer to the LDCC during disaster events;
• Provide support to DCDSS in the provision of psychosocial support and community development activities during recovery; and
• Provide teams of well trained volunteers to assist communities prepare for, respond to and recover from a disaster.

Department of Communities, Disability Services and Seniors
Roles and responsibilities of the (DCDSS) include:
• Provide human and social relief and recovery information and advice across all stages of disaster management;
• Administer personal financial assistance under the SDRA or the DRFA;
• Provide support and resources to the local impacted area;
• Purchase and coordinate efforts of extraordinary relief, recovery and resilience focused services following a disaster;
• Provide State level human and social recovery reporting metrics;
• Maintain and coordinate the Queensland Government’s human and social recovery workforce, known as Ready Reserve;
• Provide a liaison officer to the LDCC during disaster events;
• Assist Volunteering Queensland’s (VQ) Community Response to Extreme Weather (EV CREW) online service and the referral of spontaneous volunteer offers following a disaster; and
• Source additional relief and recovery volunteers as required.

Department of Education
Roles and responsibilities of the Department of Education include:
• Maintain the safety and wellbeing of students, staff and volunteers who work or participate in state schools, institutes and workplaces;
• Ensure, as far as practicable, that all State instructional institutions and workplaces have a documented emergency management plan;
• Minimise interruption to essential services to allow teaching and learning to be maintained or resumed as a priority;
• Provide a liaison officer to the LDCC during disaster events;
• Protect critical resources where possible; and
• Facilitate the return of State instructional institutions to normal operations as soon as possible.

Energex
Roles and responsibilities of Energex include:
• Provide electricity supply information and warnings to MBR LDMG agencies and the community;
• Maintain electrical power supply distribution;
• Provide advice in relation to electrical power outages to agencies and the community;
• Restore power and provide advice regarding timeframes for power restoration;
• Provide safety advice for the public during disaster and emergency situations;
• Assist the community to prepare for, respond to and recover from an event or disaster, e.g. public education and awareness programs;
• Provide advice in relation to life support customers;
• Provide advice and communication to the LDCC about the operations of Energex;
• Provide a liaison officer to the LDCC during disaster events; and
• Request and provide assistance through the LDCC during disaster response and recovery operations.

Queensland Fire and Emergency Services

Roles and responsibilities of QFES include:

• Primary agency for bushfire response;
• Primary agency for Hazardous Materials (HazMat) related incidents;
• Prepare guidelines on behalf of the QDMC as per section 63 of the Act;
• Establish and maintain arrangements between the State and Commonwealth about matters relating to effective disaster management;
• Ensure that disaster management and disaster operations in the State are consistent with the State group’s strategic policy framework; the SDMP, the disaster management standards and the disaster management guidelines;
• Ensure that persons performing functions under the Act in relation to disaster operations are appropriately trained;
• Provide advice and support to the State group and local and district groups in relation to disaster management and disaster operations;
• Provide situational monitoring of events and incidents across the State via the SDCC Watch Desk;
• Provide control, management and pre-incident planning of fires (structural, landscape and transportation);
• Provide rescue capability for persons trapped in any vehicle, vessel, by height or in confined space;
• Rescue of persons isolated or entrapped in swift-water / floodwater events;
• Provide advice, chemical analysis and atmospheric monitoring at HazMat incidents;
• Provide mass and technical decontamination capabilities under State biological disaster and State radiological disaster response;
• Provide Urban Search and Rescue (USAR) capability for building collapse events;
• Support the Queensland Hazardous Materials Incident Recovery Plan;
• Support the Queensland Coastal Contingency Action Plan – Chemical Spill Response Plan (a supporting plan of the National Marine Chemical Spill Contingency Plan, and National Marine Oil Spill Contingency Plan);
• Provide impact assessment, and intelligence gathering capabilities;
• Provide a liaison officer to the LDCC during disaster events;
• Ensure the availability, maintenance and operation of the SDCC which includes the following:
  o operate intelligence, logistics, operations, planning and aviation capabilities;
  o coordinate emergency supply;
  o coordinate resupply operations;
  o coordinate and implement the logistics support framework; and
  o coordinate, support and manage the deployment of SES resources (as required, in consultation with local government, appoint a suitably experienced and/or qualified officer as SES Coordinator to support the coordination of SES operations).

Queensland Health

Roles and responsibilities of Queensland Health include:

• Functional lead agency for health response;
• Primary agency for heatwave and pandemic, biological and radiological incidents;
• Protect and promote health in accordance with Hospital and Health Boards Act 2011, Hospital and Health Boards Regulation 2012, Health and Public Health Act 2005, other relevant legislation and regulation;
• Provide a whole-of-health emergency incident management and counter disaster response capability to prevent, respond to, and recover from a State declared emergency or disaster event;
• Provide coordinated multidisciplinary support for disaster response and recovery including specialist health services and specialist health knowledge representation through hospital and health services;
• Provide state representation at the Australian Health Protection Principal Committee;
• Provide clinical, state-wide and forensic services support for disaster and response recovery;
• Promote optimal patient outcomes;
• Provide appropriate on-site medical and health support;
• Clinically coordinate aeromedical transport throughout the state;
• Provide a liaison officer to the LDCC during disaster events;
• In a disaster situation provide staff to the Emergency Helicopter Tasking Cell; and
• Provide health emergency incident information for media communications.

Queensland Ambulance Service
Roles and responsibilities of QAS include:
• Provide, operate and maintain ambulance services;
• Access, assess, treat and transport sick and/or injured persons;
• Protect persons from injury or death, during rescue and other related activities;
• Coordinate all volunteer first aid groups during major emergencies and disasters;
• Provide and support temporary health infrastructure where required;

• Collaborate with Queensland Clinical Coordination Centre in the provision of paramedics for rotary wing operations;
• Participate in search and rescue, evacuation and victim reception operations;
• Participate in health facility evacuations;
• Provide a liaison officer to the LDCC during disaster events;
• Collaborate with Queensland Health in mass casualty management systems; and
• Provide disaster, USAR, HazMat, biological and radiological operations support with specialist logistics and specialist paramedics.

Queensland Police Service
Roles and responsibilities of QPS include:
• Primary agency responsible for terrorism response;
• Provide executive support to the QDMC;
• Preserve peace and good order;
• Prevent crime;
• Manage crime scenes and potential crime scenes;
• Conduct investigations pursuant to the Coroners Act;
• Provide a disaster victim identification capability;
• Provide for the effective regulation of traffic;
• Coordinate evacuation operations;
• Control and coordinate search and rescue operations;
• Manage the registration of evacuees and associated inquiries in conjunction with the Australian Red Cross;
• Provide security for damaged or evacuated premises;
• Respond to and investigate traffic, rail and air incidents;
• Coordinate the review and renewal of the SDMP;
• Provide a liaison officer to the LDCC during disaster events;
• Command the SDCC on activation; and
• Command the SDCC capabilities of operations and intelligence on activation.

State Emergency Service
Refer QFES.

Unitywater
Roles and responsibilities of Unitywater include:
• Develop and maintain the Unitywater Operations Centre, including the training and staffing of sufficient personnel to operate the Centre;
• Maintain essential water supply and related services to the community including:
  o waste water treatment and disposal (sewage);
  o water (via business continuity planning);
  o public health; and
  o environmental protection;
• Provide advice and communication to the LDC and DDC in relation to the operations of Unitywater during disaster operations;
• Assist the community to prepare for, respond to and recover from an event or disaster, e.g. public education and awareness programs;
• Provide safety advice for consumers during disaster and emergency situations (e.g. boil water before drinking);
• Undertake an impact assessment of services and infrastructure;
• Provide a liaison officer to the LDCC during disaster events;
• Provide a liaison officer to the LDCC (as required); and
• Request and provide assistance through the LDCC as required during disaster response and recovery operations.

Moreton Bay Region - Advisory and Support Agencies

Department of Agriculture and Fisheries
Roles and responsibilities of the Department of Agriculture and Fisheries (DAF) include:
• Primary agency for the containment and eradication of emergency animal and plant diseases;
• Coordinate efforts to prevent, respond to, and recover from pests and diseases, and livestock welfare;
• Provide advice relative to stock;
• Coordinate destruction of stock or crops in an emergency pest/disease situation; and
• Administer relevant DRFA relief measures.

Bureau of Meteorology
Roles and responsibilities of the BoM include the provision of forecasts, warnings and long-term outlooks on environmental phenomena that affect the safety, prosperity and resilience of Australians.

Maritime Safety Queensland
Refer DTMR.

Queensland Rail
Refer DTMR.

Department of Environment and Science
Roles and responsibilities of Department of Environment and Science (DES) include:
• Functional lead agency for the Environmental Recovery Group;
• Regulate the operation of mining, petroleum and gas, and other industrial sites regarding their environmental impacts, and including water and waste treatment operations;
• Provide situational monitoring of events and incidents across industrial sites, and authorise emergency waste water releases as necessary;
• Monitor and advise on management of impacted native wildlife outside the national park estate, and reduce conflict and risks to the community due to their displacement;
• Support the Queensland Coastal Contingency Action Plan (QCCAP);
• Establish mechanisms for industry, landowners and local governments to receive necessary environmental approvals for recovery (e.g. Temporary landfills, beach replenishment, replacement of coastal infrastructure, fill extraction for road repairs, port facility dredge spoil disposal, retrieval of hazardous materials, repairs to heritage listed places and dispensation to nature refuge holders);
• Conduct investigations pursuant to the Environmental Protection Act and other environment and conservation legislation;
• Provide for the safety of national parks and agency owned recreational centre users including issuing warnings in extreme conditions, closing areas where necessary and coordinating evacuations with QPS;
• Provide advice on the management of national parks and expert knowledge of national parks to responding agencies;
• Lead fire-fighting on the protected areas of State and State forests where there is no threat to life or property;
• Maintain a network of storm tide monitoring sites along the Queensland coastline and provide real time sea level data during severe weather events; and
• Provide storm tide and wave height information and expertise.

Department of Housing and Public Works

Roles and responsibilities of Department of Housing and Public Works (DHPW) include:

• Functional lead agency for building and engineering services;
• Coordinate structural assistance grant assessments (excluding caravans and vessels) on behalf of DCDSS;
• Provide temporary accommodation solutions and services for impacted members of a community – non-social housing clients and/or response/recovery teams;
• Coordinate temporary office-type accommodation for use by state government agencies and departments as forward command posts, recovery centres, local disease control centres, storage facilities and ablution facilities, including connection of building services;
• Coordinate temporary leased accommodation for state government agencies and departments;
• Coordinate technical advice on the structural suitability of buildings for use as community evacuation centres, places of refuge or cyclone shelters;
• Other building and engineering services tasks requested by the DDC or the SDCC within the scope of the building and engineering services function;
• Coordinate emergency fleet vehicles;
• Functional lead agency for the Building Recovery Group which coordinates the efficient and effective information exchange, issues identification and resolution between government agencies, local government, building industry and insurance providers to ensure efficient and prioritised use of available resources in rebuilding dwellings following a disaster;
• Functional lead agency for coordination of telecommunications providers in relation to the availability and restoration of critical infrastructure;
• Provide community call centre operations and government websites for the provision of public information about major events and/or disasters in partnership with relevant content/franchise owners;
• Actively manage whole-of-government information and technology infrastructure, including data centres and networks; and
• Provide whole-of-government and agency specific services that contribute to the government’s frontline service delivery priorities.

Department of Natural Resources, Mines and Energy

Roles and responsibilities of Department of Natural Resources, Mines and Energy (DNRME) include:
• Manage impacts on unallocated State land including lead fire-fighting where there is no threat to life or property;
• Provide spatial information for data sets that are owned and managed by the department;
• Regulate the operation of energy and water supply industries;
• Maintain and develop a readiness for energy and water supply emergencies, regardless of the hazard type, for electricity, liquid fuels and natural gas sectors;
• Develop the capability to coordinate action to mitigate against energy supply deficiencies during any emergency evident (including a terrorist incident);
• Facilitate actions within, and across, the energy sectors in response to an emergency event;
• Ensure emergency action plans are in place for referable dams to ensure appropriate action is taken in the event of incidents or failures of the dams;
• Exercise dam safety emergency powers if needed to minimise the risk of failure of a dam or to minimise the consequences of failure; and
• Oversight of drinking water and recycled water incident management;
• Maintain departmental stream gauges that provide stream height, flow and rainfall utilised by BoM;
• Assist in flood planning, management and study; and
• Provide assistance to QFES in capturing spatial imagery and spatial information analysis and product production as necessary.

Department of State Development, Manufacturing, Infrastructure and Planning

Roles and responsibilities of the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) include:
• Functional lead agency for the Economic Recovery Group; and
• Assist business and industry in business resilience and recovery strategies (in conjunction with Department of Tourism, Major Events, Small Business and the Commonwealth Games (DITIDCG)).

Department of Tourism, Major Events, Small Business and the Commonwealth Games

Roles and responsibilities of the Department of Tourism, Major Events, Small Business and the Commonwealth Games include:
• Advocate / point of contact for tourism industry and tourism-related businesses;
• Advocate / point of contact for small business community;
• Initial situation reporting of impacts on tourism infrastructure;
• Initial situation reporting of impacts on tourists in affected zones and referral to appropriate agencies for response;
• Initial situation reporting of impacts on small business and major events (assisted by DSDMIP) with localised reporting and intelligence through the ‘Regional Services Queensland’ partnership); and
• Assist business and industry in building resilience and recovery strategies.

Department of Transport and Main Roads
Roles and responsibilities of the DTMR include:
• Functional lead agency for transport systems;
• Functional lead agency of the Roads and Transport Recovery Group;
• Primary agency for ship-sourced pollution where it impacts, or is likely to impact, on Queensland coastal waters;
• Provide information and advice on the impact of disruptive events on road, rail, aviation and maritime infrastructure as it affects the transport system;
• Enable an accessible transport system through reinstating road, rail and maritime infrastructure;
• Provide a liaison officer to the LDCC during disaster events;
• Assist with the safe movement of people as a result of mass evacuation of a disaster affected community; and
• Ensure the capability of logistics related industries are appropriately applied to disaster response and recovery activities.

Inspector-General Emergency Management
Roles and responsibilities of the Office of the Inspector-General Emergency Management include:
• Regularly review and assess the effectiveness of disaster management by the state, including the State disaster management plan and its implementation;
• Regularly review and assess the effectiveness of disaster management by district and local groups, including district and local disaster management plans;
• Regularly review and assess cooperation between entities responsible for disaster management in the state, including whether systems and procedures employed by those entities are compatible and consistent;
• Make disaster management standards;
• Regularly review and assess disaster management standards;
• Review, assess and report on performance by entities responsible for disaster management in the state against disaster management standards;
• Work with entities performing emergency services, departments and community to identify and improve disaster management capabilities, including volunteer capabilities;
• Monitor compliance by departments with their disaster management responsibilities; and
• Identify opportunities for cooperative partnerships to improve disaster management outcomes.

Local Government Association of Queensland
Roles and responsibilities of Local Government Association of Queensland include:
• Advocate on behalf of council at state level; and
• Provide representation and facilitate collaboration with (and between) councils.

Queensland Reconstruction Authority
Roles and responsibilities of Queensland Reconstruction Authority (QRA) include:
• Lead agency for disaster recovery, resilience and mitigation policy;
• Lead agency for flood risk management and resilience;
• Lead agency for recovery coordination and monitoring, including developing event-specific recovery plans and reporting to government and the community on recovery progress;
• Functional lead agency for the administration of the DRFA and SDRA relief measures and negotiations with the Commonwealth for natural disaster funding arrangements in consultation with Department of Premier and Cabinet and Queensland Treasury;
• When requested, support QFES with rapid damage assessments of housing in disaster impacted areas;
• Provide input as required by QFES to statewide risk-based planning;
• Support QFES to coordinate whole-of-government disaster management data and data management policy;
• Undertake damage assessments if public infrastructure in collaboration with local governments;
• Liaise with local governments and state agencies to gather information to ensure DRFA disaster activations meet Commonwealth Government criteria and prepare briefs to request activation of the DRFA and SDRA;
• Share knowledge and innovation solutions to build resilience, sustainability and self-reliance across governments, industry and communities;
• Drive the enhancement of disaster resilience throughout Queensland, ensuring that the state’s resilience goals and objectives are achieved, including the implementation of the Queensland Strategy for Disaster Resilience; and
• Facilitate activities that assist in the coordination of offers of goods and services through its partnership with the not- for-profit organisation, GIVIT.

Royal Society for the Prevention of Cruelty to Animals

Roles and responsibilities of the Royal Society for the Prevention of Cruelty to Animals (RSPCA) include:

• Monitor the responsible care of animals and protect animals from unjustifiable, unnecessary or unreasonable pain;
• Collaborate with partner agencies and others to ensure effective prevention, preparedness, response and recovery strategies and priorities for disaster management within a community; and
• Assist in identifying and addressing immediate, medium and long-term animal welfare recovery needs so as to enhance the capacity of the local community to recover from a disaster.

Seqwater

Roles and responsibilities of Seqwater include:

• Primary agency for the coordination of the South East Queensland water supply system;
• Provide essential flood mitigation services and manage water catchment health;
• Provide advice to council regarding the operations of the North Pine and Sideling Creek Dams and other bulk drinking water infrastructure;
• Activate the Emergency Operations Centres, Emergency Management Team, Control Group, Flood Operations Group and various plans as required (disruption plans, contingency plans, flood operations manuals and emergency action and response plans); and
• Disseminate alert messaging to stakeholders and the community in relation to the impacts of North Pine and Sideling Creek Dam operations on downstream communities and businesses.

Surf Life Saving Queensland

Roles and responsibilities of Surf Life Saving Queensland include:

• Queensland’s peak beach safety and rescue authority;
• Provide advice on coastal and aquatic rescue management to government (state and local) agencies across the state; and
• Provide a network of support and advice to the QDMC, DDMG and MBR LDMG in relation to disaster and emergency response via volunteer surf life savers, professional lifeguards and a helicopter rescue service.

Telstra

Roles and responsibilities of Telstra include:

• Provide communications facilities;
• Maintain and restore communications infrastructure;
• Advise MBR LDMG on communications issues;
• Provide a liaison officer to the LDCC, as required; and
• Request and provide assistance through the LDCC, as required, during disaster response and recovery operations.

Volunteer Marine Rescue (Bribie Island)

Roles and responsibilities of Volunteer Marine Rescue include:

• Maintain the capacity to respond to or assist agencies in disaster and emergency situations;
• Provide advice, assistance and support on coastal, inland and offshore waters for aquatic incidents and rescue, to council and stakeholders, as well as other state agencies via volunteer boat crews, radio operators and a fleet of rescue vessels;
• Provide support and advice to the QDMC, DDMG and MBR LDMG in relation to disaster management and emergency management on the water, including First Aid and medical evacuations; and
• Provide buildings, facilities and a council approved helicopter landing area capable of supporting disaster management activities.
Information Management

Council, MBR LDMG and any supporting agency involved in disaster management are bound by the requirements of the QLD Information Privacy Act 2009. This means that any information that is collected, used, disclosed, accessed or stored for disaster management purposes is done so in accordance with that Act.

COMMUNITY CHARACTERISTICS

Geography and Topography

The Moreton Bay Region, located between Brisbane and the Sunshine Coast, covers an area of 2,037 square kilometres, or 206,959 hectares, spanning the mountainous areas of Mount Delaney, Mount Mee, Mount Glorious and Mount Nebo in the west to the coastal areas of Deception Bay, Redcliffe and Bribie Island in the east, hosting 45km of coastline.

The region includes mountain ranges, water supply catchments, coastal wetlands, national parks, state forests, rural townships and urban centres. The region’s diverse terrain can be described as undulating coastal plain bordered to the west by the higher country of the Conondale and D’Aguilar Ranges.

The transition from coastal plain to foothills marks the line of the Bracalba Fault in the north and the Normanby Fault in the south.

The immediate offshore topography and tidal regime is significant to an understanding of the nature of many hazards that affect the area.

Deception Bay is one of the shallower parts of Moreton Bay with depths typically less than 15 metres.

Bribie Island is separated from the mainland by the Pumicestone Passage. The island is approximately 32km long and 8km across at its widest point. Only the southern part of the island is included in the Moreton Bay Council area.

The region also encompasses the flood plains of the Caboolture, Pine and Stanley Rivers.

The Pine River has 2 branches – north and south. The North Pine has 5 major tributaries of Kobble Creek, Lacey’s Creek, Terrors Creek, Browns Creek and Sideling Creek, while the South Pine has Samford Creek, Dawsons Creek and Cedar Creek as its main tributaries.

Sideling Creek, dammed to form Lake Kurwongbah (about 3.5 km² in area), and the North Pine, dammed to form Lake Samsonvale (29.3 km² in area).

The Caboolture River rises in the D’Aguilar Ranges and flows in an easterly direction towards the coast passing through Caboolture and entering Deception Bay (the northern part of Moreton Bay) near the township of Beachmere.

The Caboolture River has 5 major tributaries including Wararba Creek, Sheep Station Creek, King Johns Creek, Gympie Creek and Lagoon Creek.
The Stanley River rises in the Conondale Ranges southeast of Maleny and travels in a southeast direction through the township of Woodford and downstream into Somerset Dam. The Stanley River tributaries include Monkeybong, One Mile and Post Office Creeks.

Moreton Bay Regional Council shares local government borders with Sunshine Coast Council to the north, the Brisbane City Council to the south and Somerset Regional Council to the west. The Moreton Bay Region is divided into 12 jurisdictional divisions.

For more information, visit: Council - Suburbs

Population and Demographics

The Moreton Bay Region is one of the fastest growing population areas in Australia, with the rate of growth outstripping that of South East Queensland.

It has substantial rural, rural residential, commercial and industrial areas. The population resides in the urban coastal suburbs including Redcliffe, Beachmere and Bribie Island; rural townships and mountain villages like Mount Mee, Woodford, Dayboro and Mount Glorious; established areas such as the Hills district; and rapidly expanding urban centres like North Lakes, Morayfield and Narangba.

According to the Australian Bureau of Statistics 2016 Census data, the population of the region was 425,302 persons, see table below. The population of the region increased by 35,641 since the 2011 Census.

Population by Age:

<table>
<thead>
<tr>
<th>Age range</th>
<th>Number</th>
<th>% of region</th>
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<tbody>
<tr>
<td>0-14</td>
<td>89,130</td>
<td>21</td>
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<tr>
<td>15-24</td>
<td>53,306</td>
<td>11.5</td>
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<td>25-44</td>
<td>109,636</td>
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<td>45-64</td>
<td>106,905</td>
<td>25.1</td>
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<tr>
<td>65+</td>
<td>66,344</td>
<td>15.7</td>
</tr>
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</table>

Source: Australian Bureau of Statistics (2016 Census)

Cultural and Linguistic Diversity

Statistically, the region is among the most culturally diverse areas in Australia with 157 different languages spoken and 1 in every 4 people born overseas from 184 countries. The facts and figures are available in the table below.

Disaster preparedness information is available in several languages including Australian Sign Language (Auslan) and specific engagement is undertaken catering for cultural, religious and language differences. For further information, visit: Council - Translated Materials
Country of Birth:

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<thead>
<tr>
<th>Country</th>
<th>Number</th>
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<tbody>
<tr>
<td>Australia</td>
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<tr>
<td>New Zealand</td>
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<tr>
<td>England</td>
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<tr>
<td>Scotland</td>
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</table>

Source: Australian Bureau of Statistics (2016 Census)

Language:

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<th>Language</th>
<th>Number</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>English</td>
<td>371,380</td>
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<td>Samoan</td>
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<td>Mandarin</td>
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<td>Afrikaans</td>
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<td>Tagalog</td>
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<tr>
<td>Hindi</td>
<td>1,463</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics (2016 Census)

Aboriginal and/or Torres Strait Islander Peoples:

<table>
<thead>
<tr>
<th>People characteristics</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>6,163</td>
<td>49</td>
</tr>
<tr>
<td>Female</td>
<td>6,411</td>
<td>51</td>
</tr>
<tr>
<td>Median age</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics (2016 Census)

People with Vulnerabilities

The MBR LDMG recognises that individuals, families and specific population groups susceptible to vulnerability factors and low levels of resilience, can require more targeted support to remain safe and to prepare for, respond to, and recover from, disaster events.

Those at risk may include isolated communities, culturally and linguistically diverse communities, the elderly and those with special needs.

Vulnerability can also be determined by factors such as:

- Geographic location (proximity to a disaster event);
- Level of understanding of likely events;
- Socio-economic status;
- Insecure housing; and
- Access to information, supplies and transport.

A person’s level of vulnerability to a disaster impact is not determined by a single indicator. A number of factors, including protective factors, must be taken into consideration before determining the vulnerability of a person in relation to the disaster rather than being a vulnerable person within society.

Council works with state government agencies and non-government organisations to increase the resilience of people who would benefit from additional and targeted assistance.

People with a Need for Assistance

The number of people with a need for assistance in the areas of self-help, mobility or communication, because of a disability:

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>2,246</td>
<td>1,069</td>
<td>3,315</td>
</tr>
<tr>
<td>15-24</td>
<td>1,131</td>
<td>642</td>
<td>1,773</td>
</tr>
<tr>
<td>25-44</td>
<td>1,442</td>
<td>1,472</td>
<td>2,914</td>
</tr>
<tr>
<td>45-64</td>
<td>2,617</td>
<td>2,991</td>
<td>5,608</td>
</tr>
<tr>
<td>65+</td>
<td>4,545</td>
<td>5,778</td>
<td>10,323</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>23,933</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics (2016 Census)
Climate and Weather

The region lies on the coast of Queensland just north of Brisbane City and consequently has a moist sub-tropical climate. Rainfall is seasonal, with the heaviest rain occurring during the summer months. Rainfall and temperatures, however, are modified by altitude on the western side of the region.

Average summer temperature range: 18-21°C to 27-30°C (Jan – Mar)

Average winter temperature range: 6-9°C to 18-21°C (June – Aug)

Average summer rainfall range: 400 to 600mm (Jan – Mar) *

Average winter rainfall range: 100 to 200mm (June – Aug) *

*Based on Bureau of Meteorology – 50th percentile
Moreton Bay Regional Council’s jurisdictional boundaries
Vegetation and General Land Use

The region forms part of a recognised biodiversity ‘hot spot’ of significant habitats. These include mountain and lowland subtropical rainforest, wet and dry eucalypt-dominant forest, rocky outcrops, wetlands of Hays Inlet and the Pine Rivers estuaries, as well as coastal mangrove communities and other ecosystems.

Extensive areas have been cleared of natural vegetation to make way for cropping, orchards, grazing (especially dairying), hobby farming and urban development.

### Broad Scale Land Use

<table>
<thead>
<tr>
<th>Area Type</th>
<th>Area (ha)</th>
<th>% of Total Land Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Activity Centres</td>
<td>1,143</td>
<td>0.6</td>
</tr>
<tr>
<td>Urban Areas + Infill Development</td>
<td>22,389</td>
<td>10.8</td>
</tr>
<tr>
<td>Rural Residential</td>
<td>24,927</td>
<td>12.0</td>
</tr>
<tr>
<td>Enterprise and Employment Area</td>
<td>1,700</td>
<td>0.8</td>
</tr>
<tr>
<td>Extractive Industry</td>
<td>1,187</td>
<td>0.6</td>
</tr>
<tr>
<td>Future Enterprise and Employment</td>
<td>1,541</td>
<td>0.7</td>
</tr>
<tr>
<td>Cropping</td>
<td>14,284</td>
<td>6.9</td>
</tr>
<tr>
<td>Forestry</td>
<td>15,628</td>
<td>7.6</td>
</tr>
<tr>
<td>Water bodies</td>
<td>9,334</td>
<td>4.5</td>
</tr>
<tr>
<td>Rural Bushland (Remnant Vegetation)</td>
<td>55,239</td>
<td>26.7</td>
</tr>
<tr>
<td>Rural Grazing and Pastures</td>
<td>59,588</td>
<td>28.8</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics (2016 Census)

Industry

The region is home to major growth industries such as manufacturing, construction and retail trade. It also accommodates a large range of property, health and community services, and primary producers.

Many businesses provide services to the population inside and outside the region. Key industrial and commercial centres are located at Brendale, Burpengary, Caboolture, Clontarf, Dakabin, Deception Bay, Kallangur, Kippa-Ring, Lawnton, Narangba, North Lakes and Strathpine.

Narangba Innovation Precinct

Formerly known as the Narangba Industrial Estate, this precinct comprises businesses that either store or use dangerous goods. The primary responsibility for the safe management of hazardous materials remains with the occupiers of each premises within the precinct. Council has developed a specific response plan in conjunction with QPS, QFES and other stakeholder agencies. It details the response and recovery arrangements required for a hazardous materials incident at that location.

Tourism and Events

The Moreton Bay Region is known for its vibrant lifestyle and tourism industry, accommodating approximately 80,000 visitors to the area annually. In addition, there are thousands of tour operators, as well as a high number of community events held across the region each calendar year.

Infrastructure and Essential Services

The region is heavily reliant on its internal and external links for road, rail, air and sea transportation.

Road Network

The main highway link through the region is the 6-lane Bruce Highway, part of the east coast national highway network. It links the region with Brisbane and the Gold Coast to the south and the Sunshine Coast and beyond to the north. From the west, the D’Aguilar Highway connects with major highways into New South Wales and to other parts of Queensland. The main roads listed below are located within the region and are
the responsibility of the DTMR. Also included under the DTMR’s responsibility are related highway overpasses, entry and exit ramps.

DTMR roads within the region:

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Road Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany Creek Road</td>
<td>Linkfield Road</td>
</tr>
<tr>
<td>Anzac Avenue</td>
<td>Lower King St (Beerburrum Rd to Bruce Hwy)</td>
</tr>
<tr>
<td>Beerburrum Road</td>
<td>Main Street, Samford</td>
</tr>
<tr>
<td>Bribie Island Road</td>
<td>Maleny-Stanley River Road</td>
</tr>
<tr>
<td>Bruce Highway</td>
<td>Morayfield Road</td>
</tr>
<tr>
<td>Beachmere Road</td>
<td>Mt. Glorious Road</td>
</tr>
<tr>
<td>D’Aguilar Highway</td>
<td>Mt. Mee Road</td>
</tr>
<tr>
<td>Dayboro Road</td>
<td>Mt. Samson Rd, Samford Valley (between Eatons Crossing Rd and Main St, Samford)</td>
</tr>
<tr>
<td>Deception Bay Road</td>
<td>Old Gympie Road, Burpengary</td>
</tr>
<tr>
<td>Eatons Crossing Road</td>
<td>Old Northern Rd (excluding the section from Wruck Cres to Greensill Rd, Albany Creek)</td>
</tr>
<tr>
<td>Elizabeth Avenue (Anzac Ave to Amersham St)</td>
<td>Oxley Avenue (Hornibrook Espl to Klingner Rd)</td>
</tr>
<tr>
<td>Elizabeth Avenue (King St to Hornibrook Espl)</td>
<td>Pumicestone Road (Section from the Bruce Hwy to Toorbul township)</td>
</tr>
<tr>
<td>Gympie Road</td>
<td>Samford Road</td>
</tr>
<tr>
<td>Hornibrook Esplanade</td>
<td>Snook Street (Amersham St to King St)</td>
</tr>
<tr>
<td>Kilcoy-Beerwah Road</td>
<td>South Pine Road (excl Everton Hills and Arana Hills)</td>
</tr>
<tr>
<td>King St (Beerburrum Rd to D’Aguilar Hwy)</td>
<td></td>
</tr>
</tbody>
</table>

Rail Network

The Queensland Rail electrified main north rail line runs through the region, with linkages via bus services to the coastal areas, including the Sunshine Coast to the north and Brisbane to the south, supported by Translink operations. The railway stations located within the region are:

- Bald Hills
- Bray Park
- Burpengary
- Caboolture
- Dakabin
- Elimbah
- Kallangur
- Kippa-Ring
- Lawnton
- Mango Hill
- Mango Hill East
- Murrumba Downs
- Mt. Glorious
- Mt. Mee Road
- Mt. Samson Rd, Samford Valley (between Eatons Crossing Rd and Main St, Samford)
- Mt. Mee Road
- Mt. Samson Rd, Samford Valley (between Eatons Crossing Rd and Main St, Samford)

Aviation Services

The region is serviced by 2 airfields, Redcliffe Aerodrome and Caboolture Airfield.

Redcliffe Aerodrome

Redcliffe Aerodrome is located at the northern end of Nathan Road, Kippa-Ring, off Anzac Ave, and is managed by council.

Redcliffe Aerodrome is classified as not certified or registered but served by regular public transport services or by charter operations at least once per week, in accordance with the Civil Aviation Safety Regulation 1998, operating aircraft with the capacity of up to 9 passengers.

Runways and taxiways are sealed surfaces, with a load restriction of 5700kg, including aircraft with up to a 20m wingspan. Aviation activities at the aerodrome include: general aviation, charter operations, flying training, corporate aircraft, skydiving and helicopter operations.

In the event of an emergency, C130 aircraft operations at 45,000kg are permitted subject to council approval.
Caboolture Airfield

Caboolture Airfield is located on McNaught Road, Caboolture, approximately 7km to the east of the Caboolture city centre and just to the east side of the Bruce Highway.

The airfield is owned by the State of Queensland and managed and operated by the Caboolture Aero Club under lease from council.

The airfield is classified as Uncertified or Unregistered, in accordance with the Civil Aviation Safety Regulation 1998; operating aircraft with the capacity of up to 9 passengers.

The aerodrome has 2 grass runways that are smooth, flat and firm. Taxiways near the hangar facilities are also used by airside vehicles.

Aviation activities at the aerodrome include pilot training, warbird joy flights, formation flight training, private flying, helicopter operations and maintenance, agricultural operations, glider and banner towing, ultra-light and gyrocopter flying, parachute club operation, hot air balloon launching and fire and rescue airborne unit training.

Ground-based activities include aviation museums and training for the SES and QPS. In the event of an emergency, C130 aircraft operations up 45,000 kg are permitted by arrangement with Caboolture Aero Club.

Marine Services

Newport Marina

Located at Newport, near Redcliffe, Newport Marina offers deep water access for both power and sailing vessels up to 17 metres in length.

Pacific Harbour Marina

The Pacific Harbour Marina at Bribie Island is owned by the Star Marina Group and forms part of the Bribie Island master-planned canal and golf community. It has 82 berths for mono and multi sizes up to 18 metres; holding tank pump out facilities; bathroom and laundry services.

Scarborough Boat Harbour

The Scarborough Boat Harbour’s public boating infrastructure is owned and managed by DTMR. It includes 3 privately operated marinas offering various berthing, storage and marine related facilities and services.

Spinnaker Sound Marina

Located at Sandstone Point, on the mainland/western side of the Bribie Island bridge, the Spinnaker Sound Marina is owned by Spinnaker Sound Joint Venture Pty Ltd. It provides wet and dry berthing for over 200 boats, fuel facilities, lifting equipment and various marine services.
Critical infrastructure in the Moreton Bay Region
Electricity Supply

The electricity supply within the region is supplied via Energex transmission lines from the Powerlink South Pine substation at Brendale.

Power is reticulated across the region predominantly via 110kV and 33kV overhead power lines.

Gas Supply

APA Group maintains a major natural gas reticulation network within the region. For further information, visit: APA Group

Water Supply

Seqwater owns and operates the North Pine Dam (214,302ML) and Sideling Creek Dam at Lake Kurwongbah (8,590ML) for water supply. Water is distributed via trunk mains into the local distribution network operated by Unitywater. The trunk main network connects multiple regional treatment plants fed from multiple dam storages, and a desalination plant. Water can also be supplied in combination from as far south as the Hinze Dam on the Gold Coast and as far north as the Lake MacDonald, Noosa Water Treatment Plant.

Seqwater maintains Emergency Action Plans for these dams.

For further information, visit: Seqwater - Sideling Creek Dam, Seqwater - North Pine Dam

These arrangements provide resilience over much of the supply area, but of particular note is the Dayboro, Woodford / D’Aguilar and Bribie Island areas.

Dayboro is entirely dependent upon the local treatment plant. (This plant may need to be shut down during periods of high storm flow, in which case water supplies would be delivered to the plant).

Similarly, the Woodford plant may be taken off line during storm events, but the area can be supplied by pumping from the Caboolture supply area. Bribie Island has its own treatment plant which is capable of meeting basic needs but could be supplied entirely through water mains delivered via the Bribie Island bridge.

Unitywater’s local service reservoirs and a degree of planned network redundancy provide resilience for the major population areas in the event of local supply failure.

For further information, visit: Council’s Water and Dam Information

Also: Unitywater

Sewerage

Most residential parts of the Moreton Bay Region are connected to a reticulated sewerage network. Sewage treatment plants are located at Murrumba Downs, Brendale, Dayboro, Clontarf, Bribie Island, Burpengary East, Caboolture South, and Woodford. Sewage is transported to the local treatment plant through a sewerage network comprising gravity sewers and pressure mains with associated sewage pumping stations.

For sewer network maps, visit: Unitywater

Telecommunications

Telstra, Optus and other service providers maintain telecommunications networks within the region. This includes Public Switched Telephone Network (PSTN), National Broadband Network (NBN), mobile services and internet connection (fixed line, WiFi, 3G, 4G).
Medical Facilities

The Moreton Bay Region is serviced by two public hospitals operated by Queensland Health, located at Caboolture and Redcliffe; and three private hospitals located at Caboolture, Kippa-Ring and Strathpine.

DISASTER MITIGATION

Council adopts a vast range of approaches and measures to mitigate the adverse effects of disasters on the community.

Overview of Hazards

A number of hazards have the potential to impact the communities of the region, as summarised below:

<table>
<thead>
<tr>
<th>OVERALL RISK RATING</th>
<th>HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>Bushfire</td>
</tr>
<tr>
<td></td>
<td>Severe weather - flooding</td>
</tr>
<tr>
<td></td>
<td>Severe weather - storm</td>
</tr>
<tr>
<td></td>
<td>Chemical incident</td>
</tr>
<tr>
<td></td>
<td>Earthquake</td>
</tr>
<tr>
<td></td>
<td>Landslide</td>
</tr>
<tr>
<td></td>
<td>Major fire</td>
</tr>
<tr>
<td></td>
<td>Major transport incident (road, rail, air, marine)</td>
</tr>
<tr>
<td></td>
<td>Pandemic</td>
</tr>
<tr>
<td></td>
<td>Severe weather - heatwave</td>
</tr>
<tr>
<td></td>
<td>Severe weather - storm Tide</td>
</tr>
<tr>
<td></td>
<td>Tsunami</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>Aircraft, meteor, or space debris strike</td>
</tr>
<tr>
<td></td>
<td>Civil disturbance</td>
</tr>
<tr>
<td></td>
<td>Exotic and endemic animal disease</td>
</tr>
<tr>
<td></td>
<td>Exotic plants, pests and diseases</td>
</tr>
<tr>
<td></td>
<td>Industrial accident</td>
</tr>
<tr>
<td></td>
<td>Plague - insect or vermin</td>
</tr>
<tr>
<td></td>
<td>Radiological incident</td>
</tr>
<tr>
<td></td>
<td>Terrorist attack</td>
</tr>
<tr>
<td></td>
<td>Volcanic eruption</td>
</tr>
<tr>
<td>LOW</td>
<td></td>
</tr>
</tbody>
</table>

Hazard specific arrangements have been established by each lead agency for the coordination of incident response, relief and recovery activities. It is acknowledged that agencies have arrangements in place to deal with such hazardous situations, should they occur.

Council works continuously with agencies to ensure that adequate risk mitigating strategies are in place for each hazard. For further information, refer to the Hazard Specific Arrangements and Other Hazards section.

Note: Hazards listed in the above table with a ‘Low’ risk rating have been identified as less likely to impact the region and residents on a seasonal or regular basis.

Hazard and Risk Assessment

The risks associated with each of the above hazards have been identified by council. Risk management programs have been developed to ensure that the likelihood of these risks occurring is minimised by means of anticipating and controlling the community’s exposure to risk, where possible.

**Risk Assessment Tools**

The following table shows the various tools adopted in the risk assessment process for the known hazards identified in the Moreton Bay Region.

<table>
<thead>
<tr>
<th>Qualitative Risk Matrix:</th>
<th>Consequence Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insignificant</td>
</tr>
<tr>
<td>Almost Certain</td>
<td>Medium</td>
</tr>
<tr>
<td>Likely</td>
<td>Low</td>
</tr>
<tr>
<td>Possible</td>
<td>Low</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Low</td>
</tr>
<tr>
<td>Rare</td>
<td>Low</td>
</tr>
<tr>
<td>Very Rare</td>
<td>Low</td>
</tr>
<tr>
<td>Almost Incredible</td>
<td>Low</td>
</tr>
</tbody>
</table>

**Source:** Natural Disaster Risk Management Assessment for MBRC

**Risk Treatment**

Council manages detailed hazard identification, risk assessments, treatment strategies and action plans as part of its overall risk management strategy. Risks unable to be treated (residual risk), are either accepted or escalated to the DDMG for consideration.

**Communities with Vulnerabilities**

There are several communities that may be exposed to additional risks. Council identifies these as those subject to isolation through flooding, storm tide inundation, exposure to bushfire threats and hazardous materials.

Council has developed specific arrangements for risk mitigation, incident response and recovery. This includes the provision of public information, alerts and warning systems to provide timely advice for residents in these higher risk areas.

**Community Engagement**

Council develops and maintains an education program to deliver information to the public regarding disaster management arrangements and initiatives. This program is designed to create an aware, informed and resilient community.

The aim is to enable the community to identify threats and how they, at an individual, household or business level, can mitigate the possible effects of a given disaster.
Community engagement strategies adopted by the MBR LDMG include:

- Publications explaining disaster preparedness and emergency procedures such as Councillor Newsletters and brochures. Council produces emergency management publications in English and 16 other languages;
- Council website: a key public information source providing information about disaster risks, preparation activities and actions to undertake;
- Media releases explaining disaster preparedness and emergency procedures;
- Publications prepared by lead agencies detailing the measures that should be taken to prevent, minimise and deal with the effects of emergency and disaster events;
- Ongoing media campaigns to raise awareness and encourage the community to implement preventative measures;
- Programs that raise awareness of evacuation procedures and the location of evacuation centres during a particular disaster event;
- Participating in various community forums, meetings and exercises with specific groups with common needs such as isolated communities, aged care facilities and people with vulnerabilities;
- Ongoing liaison with lead and support agencies, local community groups, local volunteer service groups and the Moreton DDMG. This furnishes a culture of ownership and partnership with group members to increase its overall disaster management capability;
- Ongoing public presentations provided on request to community groups;
- The “Prepare, Act, Survive” campaign; a joint initiative with QFES annually, prior to fire season;
- Development of individual campaigns in response to specific threats;
- Ongoing support to community groups addressing disaster events, such as aged care facilities and disability groups;
- Hazard-specific tools, including individual property reports, flood modelling, storm-tide and bushfire mapping;
- Social media; and
- MoretonAlert.

For more information regarding disaster preparedness, visit:

- Council - Disaster Management
- Council - Bushfire
- Council - Flood and Storm Tide
- Council - Severe Storm
- Queensland Government - Get Ready

Disaster Management Capacity

The region has considerable capacity to effectively respond to and recover from the effects of a disaster. These elements include:

Moreton Bay Regional Council

- Approximately 1,800 staff;
- A dedicated disaster management unit;
- Approximately 70 trained staff may be allocated roles during disaster response and recovery activation;
- Administration centres located at Caboolture, Strathpine and Redcliffe;
- Council depots at Arana Hills, Bribie Island, Burpengary, Caboolture, Dayboro, Deception Bay, Margate, Petrie, Samford and Woodford;
- A dedicated disaster coordination venue established to activate at any time;
- Dedicated evacuation centres and a number of secondary evacuation centres;
- Direct access to equipment (including heavy equipment) and plant within council and through commercial providers; and
- The MoretonAlert public information system to communicate general warnings and specific threats.
Emergency Services Agencies
Services which maintain dedicated emergency facilities, resources and response equipment within the region are:

- QAS
- QFES
- Queensland Health
- QPS
- SES
- Other Queensland Government departments.

Emergency Services Volunteer Organisations
Organisations with representation in the region are:

- Rural Fire Service Queensland
- SES
- Surf Life Saving Clubs
- St John Ambulance
- Australian Volunteer Coastguard
- Volunteer Marine Rescue

Numerous community service organisations that contribute to the region’s disaster management arrangements include:

- Adventist Development Relief Agency (ADRA)
- Australian Red Cross
- GIVIT
- Lifeline
- RSPCA
- Salvation Army
- St Vincent de Paul
- Service clubs, community organisations
- Culturally and linguistically diverse organisations.

At the time of the 2016 Census, there were 58,371 volunteers in the region, representing 17.4% of the population over 15 years of age.

Other arrangements:

Memoranda of Understanding
The following Memoranda of Understanding (MoU) have been established to support disaster management response and recovery activities:

- Council and Australian Red Cross (evacuation centre management);
- Council and St John Ambulance Australia (first aid);
- Council and ADRA (accommodation services);
- Council and GIVIT (management of offers of goods and services, community appeals);
- Council, QFES, QPS and NPSR (Mt Nebo/ Mt Glorious Early Warning System);
- Council and QFES for the delivery of QDMA training; and
- Council and QFES, on behalf of the SES.

Private Businesses
Businesses that contribute to the region’s disaster management arrangements, include:

- APA Group
- Energex
- Optus
- Telstra
- Unitywater
- Seqwater.
Additional capacity

- Residents: the MBR LDMG encourages residents to be self-reliant for at least 3 days during disaster events.
- Vulnerable communities: the residents of vulnerable communities are supported by additional planning and resources which increases resilience and capacity to these areas.
- Lead agencies are responsible for:
  o maintaining their disaster management plans and sub-plans;
  o controlling hazards for which they are responsible (threat specific sub-plans);
  o managing the delivery of disaster management functions for which they are responsible (functional sub-plans); and
  o reviewing and updating their plans at least annually and presenting enhancements to the MBR LDMG for consideration;
- Community emergency plans: the MBR LDMG encourages community groups, businesses, developers and others to prepare emergency and business continuity plans. The group especially encourages organisations that care for vulnerable sections of the community, such as aged care facilities to prepare emergency and evacuation plans.
- The MBR LDMG and council encourage all property owners in the region to arrange appropriate insurance cover to mitigate the effects of a disaster event.

Exercises

Council will test the effectiveness of this LDMP at least annually, in the form of controlled, scenario-driven exercises. These may comprise a table top discussion or a field exercise. The exercise content and subsequent debriefing activities are designed to enhance inter-agency confidence and coordination, promote continuous improvement and maintain the accuracy of the LDMP contents.

Exercises may be arranged in one or more of the following formats:

- An LDCC exercise, where the focus of the exercise is determined by the Disaster Management unit and/or the LDC;
- A small-scale exercise involving the testing of a single element of the capacity of the LDCC;
- A small-scale exercise involving the partial testing of a plan or sub-plan;
- An exercise determined by the lead agency designed to test the lead agency’s response coordination capacity;
- A table top discussion exercise, with the focus of the exercise to be determined by the MBR LDMG or DDMG; or
- A joint LDCC/DDCC disaster management system exercise with the focus of the exercise to be determined by the MBR LDMG and DDMG.

Exercises are usually arranged well in advance, with consideration given to planning, conducting, evaluating and post-exercise recommendations.

Following each exercise, evaluations take place to identify lessons learned and areas for continuous improvement. Where discrepancies are identified, council will endeavour to review this LDMP, policies and procedures, or make recommendations to amend the LDMP as required.

In addition, the MBR LDMG may participate in other local, district or state exercises to enhance knowledge, experience and skills in disaster management activities.
Land Use Management Initiatives

Best practice land use management initiatives have been introduced and implemented by council to minimise and mitigate the potential impact of disasters.

These initiatives include:

• A risk-based land-use approach to the Moreton Bay Regional Council Planning Scheme which incorporates:
  o Use of appropriate zoning based on extent of risk identified such as Limited Development Zone for areas deemed to have an extremely intolerable flood risk;
  o Restriction of the establishment of certain new uses such as child care and aged care in areas vulnerable to unacceptable risk;
  o Use of overlays including Flood Hazard, Coastal Hazard, Bushfire, and Landslide to support the identification of constrained lands; and
  o Use of development controls in areas identified as constrained such as minimum flood planning levels, freeboard requirements and use of resilient materials.
• A comprehensive Flood and Coastal Hazard Evaluation Report was developed with industry experts to meet the requirements of AS/NZS ISO 31000:2009 Risk Management. This has subsequently shaped the land use policy response embedded within the planning scheme.
• Application of the State Planning Policy 2017 in both plan-making as well as development assessment including the incorporation of safety measures and resilience to hazards.
• Council is developing a Coastal Hazard Adaptation Strategy. The strategy will be prepared in accordance with the LGAQ guidelines and will further progress the council’s plans and preparation for storm tide, coastal erosion and rising sea levels resulting from climate change. The results of the Strategy will see the planning scheme amended to incorporate any recommendations adopted.

Post-disaster Reviews

A review of operational activities conducted in the form of debriefings and feedback received for disaster response and recovery, is a key component of developing capacity and provides opportunities for the improvement of disaster management arrangements. Post-disaster reviews and assessments are conducted to:

• Assess disaster operations undertaken for an event, including actions, decisions and processes;
• Document processes that did and didn’t work well and identify a course of action to ensure they are captured and updated in relevant plans/sub-plans; and
• Assess capability and consider where additional planning, training and/or exercises may be required.

The MBR LDMG may need to consider post-event issues identified during debriefings. Where appropriate, post-event reports, lessons identified and learned may be forwarded to the DDC for review or action as required.

Training

Council works closely with QFES and other relevant agencies to ensure an effective ongoing training program is provided for council staff, MBR LDMG members and
agency representatives involved in disaster management.

The primary training structure for all disaster management stakeholders is the Queensland Disaster Management Training Framework. It provides the essential knowledge, skills and attitudes required to assist communities prepare for, respond to and recover from disasters.

This state-wide consistent approach ensures a seamless and integrated coordination of disaster management activities.

Each MBR LDMG member agency is responsible for ensuring that staff undertaking a disaster management role receives appropriate training for their role, particularly those courses identified in the training framework.

Key features of this approach include:

- Training members of the MBR LDMG and the DDMG in disaster management procedures, including council’s systems and processes;
- Training LDCC staff to provide disaster coordination services through the LDCC on behalf of the MBR LDMG;
- Training the region’s disaster management agencies (including council, emergency services, community agencies and volunteer organisations) in disaster management concepts and operations; and
- Exercising to test and develop disaster management capacity.
DISASTER MANAGEMENT OPERATIONS

General Operations

Financial Management

Financial assistance is provided to communities through the DRFA and SDRA. These arrangements are administered by the QRA for eligible disaster events. Such assistance is based on various trigger points and may include personal hardship assistance, concessional loans and grants, restoration of public assets, subsidies for primary producers and essential services contributions.

Council works with the QRA to meet various financial requirements when funding is provided to council.

When activated for disaster response and recovery activities, all relevant agencies are responsible for meeting and processing operational expenses incurred during a disaster event, as per their relevant policies, and obligations under SDRA and DRFA, if activated.

Information Handling and Privacy

All agencies and staff involved in disaster management activities are bound by the QLD Information Privacy Act 2009. Therefore, all operational information is to be stored securely and protected against unauthorised access, use, modification, disclosure or misuse.

Personnel must not intentionally access files, registers or any other documents that contain operational information unless it is necessary for their duties. Where access is necessary for work purposes, recipients must not disclose operational information to an unauthorised person.

Public Health

Disaster events may pose a risk to public health. Water supplies, sewage treatment, refuse disposal, power supply and access to safe food may be compromised and there may be an increased risk of disease. These issues are addressed through council’s public health policies, community health surveillance, risk management and public awareness programs involving basic hygiene practices, immunisation and household and individual disaster preparation.

Queensland Health, as a member of the MBR LDMG, will also provide advice and assistance on public health matters.

For further information on public health in disasters, visit: Queensland’s Health role in a disaster

For further council information on Health and Safety, visit: Council’s General Health Information

Public Information and Warnings

The MBR LDMG is responsible for ensuring the community is aware of ways to mitigate the adverse effects of a disaster event and preparing for, responding to and recovering from a disaster. This involves the dissemination of accurate, useful and timely public information and warnings before, during and after disasters.

Upon notification of a disaster event, the release of public information includes road closures, advice on evacuation procedures, staying safe during a disaster, and effects on critical infrastructure and council services. Emergency warnings may be issued by any agency that has a primary responsibility for a hazard, such as the BoM, MBRC, QPS and QFES.
Warnings are usually distributed via the LDCC via the most appropriate means. These may include:

- Media warnings including the utilisation of local community radio stations 101.5FM, 99.7FM and ABC 612AM, and/or commercial radio networks, internet and social media (website, Facebook, Twitter), other local media, radio and television services and local newspapers;
- Alerts to registered subscribers of council’s MoretonAlert service;
- Broadcast alert messages to mobile and landline telephones via the Emergency Alert (EA) system through collaboration and approval of relevant agencies: QPS and QFES;
- Door knocks by police, emergency services, SES, council staff and/or others as appropriate; and
- Predetermined warning device(s) (e.g. horns or alarms) including sirens at Mt Nebo and Mt Glorious which are operated via a MoU and Standard Operating Procedures (SOP) between QFES, QPS, NPSR and council.

The SDCC may decide to issue an emergency alert message without consultation with council or the MBR LDMG; however, during these situations the SDCC will inform council of any warnings issued.

Additional disaster-related information may be available via the following channels:

- Facebook and Twitter posts;
- Community workshops, such as bushfire awareness; and
- Community and Emergency Services Expo events.

Council works with other LDMG agencies to facilitate consistent messaging.

For further information on warnings and alerts, visit: Council’s Stay Alert Information

MoretonAlert

MoretonAlert is a public messaging system managed by council, to provide critical information to registered users in the region.

MoretonAlert provides free SMS, email and voice notifications to the public for severe weather warnings, QFES bushfire warnings, and council prescribed burn notifications, potential flash flooding incidents as well as planned dam releases within the region.

For further information, visit: MoretonAlert

Emergency Alert

EA is a national emergency public warning system that involves sending warning messages to fixed telephone lines and mobile phone numbers based on their physical location within a defined warning area. It is similar to MoretonAlert.

EA can be used to convey emergency warnings to the public. The initiating and approving authority for the use of EA in Queensland is QFES.

For further information, visit: Queensland Govt, Weather Warnings and Emergency Alerts

Use of Emergency Alert versus MoretonAlert

The primary difference between EA and MoretonAlert is that MoretonAlert is an opt-in system while EA is not. This means that EA messages are sent to all fixed telephone lines and mobile phones in a defined area whereas MoretonAlert is sent only to registered users. This is an important distinction between the 2 systems. It means that EA will likely reach more users in a defined area.
In situations where there is a risk of loss of life or serious harm to people, it will be critical that warning messages are received by the most number of affected residents in a timely fashion. In such cases EA is to be used over MoretonAlert to ensure public safety.

For public messaging that does not affect people’s lives or safety; or where EA is not required or cannot be used, MoretonAlert should be used.

The use of both systems concurrently for the same warning is not recommended. In such cases, it is likely that some people will receive 2 messages from 2 different systems with the potential for confusion, particularly if messages are inconsistent. The LDC and QFES should coordinate their usage of EA and MoretonAlert to ensure public safety.

**Standard Emergency Warning Signal**

The Standard Emergency Warning Signal (SEWS) is a nationally agreed warning tone that alerts the community via public broadcast of an urgent safety message. This is the same warning signal used to alert the public of a cyclone.

For further information, visit: Emergency Alert SEWS

**Volunteer Coordination**

Volunteers are a vital resource during all phases of disaster management. Council supports the use of volunteers that provide unpaid assistance to residents, businesses, the wider community and other government sectors.

The lead agency for volunteer management is VQ. Council encourages all residents who wish to volunteer for community recovery activities to register with VQ.

Council’s activation of volunteer deployment and management will be conducted by the MRC. A volunteer coordination team will be led by an officer appointed by the Human-social Sub-committee, in the role of Volunteer Coordinator. The team may include council staff from several sections such as Visitor Information Centres, Community Development and Library Services.

On activation, the volunteer coordination team will implement a volunteering strategy tailored to the size, scope and nature of the particular disaster event that is occurring, for approval by the MRC. The strategy will be guided by the level of interest council receives from volunteering stakeholders and the community and will be reviewed throughout the recovery phase as required.

The MRC will report to the MBR LDMG on the adequacy of the planning and operational arrangements for volunteers. Such arrangements will include, as a minimum: volunteer registration, clear actions and responsibilities, health and safety, status of the environment, individual ability, skills, experience, transport, the appropriate use and availability of equipment and other resources and debriefings.

Volunteers that are deployed by council, under existing volunteer arrangements, will be insured by council.

For further information, visit: Council’s Volunteer Program or Volunteering Queensland

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**Disaster Response Operations**

**Activation**

Timely activation of the MBR LDMG is critical for an effective response to an event. The MBR LDMG will activate using an escalation model based on the table on page 39, reflecting state response phases.
MoretonAlert Groups:
The level of activation and movement through this escalation phase depends entirely upon the complexity, nature and extent of an event.

The LDC will determine the level of activation required and the specific actions to be undertaken at each level.

Council adopts a flexible and scalable approach to activating its response. Activation levels are based on community impacts or consequences, and the required level of coordination of council’s response.

Level 1: Managed through core business functions and normal incident response reporting as per corporate policies and procedures. Normal after-hours arrangements are in place and managed through On-Call and Escalation Officers.

Level 2: Managed by the key council business departments. Management of council’s operational response is undertaken by the Event Manager. Coordination of council’s response is required. The LDCC may be on Alert/Lean Forward.

Level 3: The LDCC is activated (Stand Up). Management of the disaster response is undertaken by the LDC. The MBR LDMG may also be activated.

Level 4: Full activation of the MBR LDMG, and LDCC, as well as activation of the district and state arrangements. Commonwealth assistance may also be required. These events require a complex response through high level coordination, resource allocation and forward planning from a range of internal stakeholders and external agencies.
### Disaster response phases - Local and District Levels:

<table>
<thead>
<tr>
<th>TRIGGERS</th>
<th>ACTIONS</th>
<th>COMMUNICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALERT</strong></td>
<td><strong>Local</strong></td>
<td><em>Awareness of a hazard that has the potential to affect the region</em>&lt;br&gt;• Hazard and risks identified&lt;br&gt;• Information sharing with warning agency&lt;br&gt;• LDC informs QFES and DDC of ALERT status</td>
</tr>
<tr>
<td></td>
<td><strong>District</strong></td>
<td><strong>MBR LDMG at LEAN FORWARD</strong>&lt;br&gt;Situation being monitored by DDC</td>
</tr>
<tr>
<td><strong>LEAN FORWARD</strong></td>
<td><strong>Local</strong></td>
<td><em>There is a likelihood that the threat may affect the region&lt;br&gt;• Threat is quantified but may not yet be imminent&lt;br&gt;• Public awareness required</em></td>
</tr>
<tr>
<td></td>
<td><strong>District</strong></td>
<td><strong>MBR LDMG on STAND UP</strong>&lt;br&gt;<strong>DDC to liaise with LDC regarding level of response&lt;br&gt;• DDMG members advised&lt;br&gt;• DDCC prepares for operations&lt;br&gt;• XO to commence rosters for DDCC staff functions</strong></td>
</tr>
</tbody>
</table>
### Disaster response phases - Local and District Levels, continued:

<table>
<thead>
<tr>
<th>TRIGGERS</th>
<th>ACTIONS</th>
<th>COMMUNICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAND UP</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Local | • Threat is imminent  
• Community will be or has been impacted  
• Need for coordination in the LDCC  
• Requests for support received by MBR LDMG agencies or to the LDCC  
• Coordinated response required  
• Additional support may be required | • Meeting of MBR LDMG  
• LDCC activated  
• Rosters for LDCC planned and implemented  
• Commence disaster operations  
• MBR LDMG meetings as required, members provide advice and direction  
• SOPs activated  
• DDMG on LEAN FORWARD or STAND UP  
• MRG on LEAN FORWARD OR STAND UP | • LDCC commence SITREPs to DDMG  
• Distribute contact details  
• DDMG advised of potential requests for support  
• LDCC contact through established landlines and generic email addresses  
• LDC present at LDCC  
• MBR LDMG members attending meetings and/or available via phone, monitoring emails |
| District | • Event requires additional resources and support  
• Requests from MBR LDMG  
• Event activation by District or State | • DDMG to meet as required to provide advice and assistance  
• DDMG to support  
• Use of EA  
• Resupply  
• Evacuation  
• Declarations  
• DDCC roster activated | • SITREPs received from LDCC  
• SITREPs sent to SDCC  
• DDCC to action RFAs, including EA |
| **STAND DOWN** | | |
| Local | • No requirement for coordinated response  
• Community has returned to normal function  
• Recovery may be taking place | • Final checks for outstanding requests  
• Implement plan to transition to recovery Debrief of staff in LDCC  
• Debrief with MBR LDMG members  
• Consolidate financial records  
• MRG at STAND UP if required  
• Handover to MRC for reporting  
• Return to council’s normal business  
• Final situation report sent to DDG | • MBR LDMG members not involved in recovery operations resume standard business and after hours contact arrangements |
| District | • Support no longer required from MBR LDMG  
• Recovery may have commenced | • Final checks for outstanding requests  
• Debrief with DDMG members  
• Consolidate financial records  
• Support MRG at STAND UP if required  
• Return to member normal business  
• Final situation report sent to SDCC  
• Maintain situational awareness of recovery if required | • DDMG members not involved in recovery operations resume standard business and after hours contact arrangements  
• DDC receive recovery SITREPs |
Disaster Response Arrangements

The region’s response strategy involves the conduct of activities and appropriate measures necessary to respond to a disaster event. Council and the MBR LDMG adopt an all hazards response strategy to enable potential impacts and the consequences of a disaster to be addressed through a flexible and scalable approach.

This strategy:

• Incorporates those actions that help reduce loss of human life, illness or injury to humans, property loss or damage, or damage to the environment;
• May commence prior to the impact of an event, if advance warning is given and known;
• Concludes once the risks of loss of human life, illness or injury, property loss or damage, or damage to the environment are reduced to an acceptable level; and
• Is supported by a series of arrangements, policies, procedures and sub-plans coordinated within council and across all involved agencies.

Disaster response arrangements will be activated in a timely manner relevant to the level of the perceived or actual threat.

Elements of MBR LDMG disaster response arrangements include:

• Activation of the LDCC;
• An event communication strategy;
• Functional plans to address operational requirements and processes required to manage an event;
• Enacting threat-specific plans to support the arrangements and operations of lead agencies, for example Queensland Health for pandemics; QFES for the Narangba Innovation Precinct;
• Cooperative and collaborative arrangements with other emergency response agencies such as QPS and SES;
• Media management;
• Logistics support and resource management, such as resupply;
• Impact assessments; and
• Operational reporting.

Each MBR LDMG member establishes a capacity to coordinate their agency’s resources and actions. Overall management of the coordinated response is the responsibility of the LDC.

The authority to activate the MBR LDMG rests with the Chair. The Chair may consider requests from the Mayor, LDC, or consult with other members, before deciding to activate.

It is the responsibility of the Chair or delegate to inform the DDC of the group’s activation to ensure a coordinated response by all tiers of the QDMA.

This plan may also be activated at the request of the DDC.

The primary functions of the LDCC revolve around 3 key activities: forward planning, resource management and information management.

The LDC has overall responsibility for the establishment and operation of the LDCC.

During a disaster event, council will coordinate operational response activities at a regional level. It is responsible for:

• Managing the implementation of strategic decisions through operational tasks allocated by the LDCC;
• Maintaining operations of council assets;
• Managing all internal operations directly related to the event response within the region;
• Collecting, evaluating, disseminating and using information about the event and status of resources; and
• Providing and managing council and operational personnel and resources within the region.
Declaration of a Disaster

The DDC may, with the approval of the Minister, and in consultation with the Moreton LDMG and the Moreton DDMG, declare a disaster situation for the district or part thereof. This enables additional powers for particular groups to perform actions, give directions and control movements within a disaster declared area.

The declaration of a disaster situation relates directly to the provision of additional powers for a specific event. A disaster situation is not required to activate the disaster management arrangements or to obtain financial assistance through established disaster relief schemes.

The MBR LDMG may request the DDC to consider declaring a disaster situation for the district, or a part of it, if the group feels that disaster declared powers may be required for a disaster which has occurred, is occurring or is likely to occur in the region.

A request on behalf of the MBR LDMG to the DDC will be in writing signed by the LDC and will provide justification for such a request.

Cross-boundary Arrangements

Cross-boundary arrangements exist between council and other local government areas. If resources permit, activities relating to disaster response and recovery for affected communities across council borders, will be initiated.

In addition, and at the request of the DDC, the Chair of the MBR LDMG or delegate may activate the MBR LDMG and the Plan to provide support to disaster-affected communities outside the region.

Should neighbouring councils request assistance the LDC will request assistance via council to council arrangements.
Evacuation

Evacuation is a risk management strategy that aims to remove people from a dangerous place, or potentially dangerous place, to a place of relative safety.

There are several emergency or disaster situations that may require an evacuation or temporary relocation of part of the community.

The disaster evacuation process is primarily based on self-evacuation. This involves advice provided to the community to seek temporary accommodation in safer places, such as with family and friends, or accommodation of choice, in the first instance. However, for some individuals, such as travellers from outside the region, the next best option may be to attend an evacuation centre, until the disaster passes.

The key objectives adopted by the MBR LDMG evacuation activities are:

- To ensure preservation of life during a disaster event, including the safety and wellbeing of affected people, prior to, during or after an emergency event;
- To use evacuation when it is deemed to be the most appropriate strategy to mitigate the effects of a disaster event; and
- To ensure the effective coordination of an evacuation operation.

Decision

The decision to evacuate any part or whole of the region will be made by the Chair of the MBR LDMG or the LDC, in consultation with the MBR LDMG and DDMG. This will occur where the nature of a risk to the community requires the movement of at risk persons to a safer location. Evacuations can be either voluntary (self-evacuation), usually upon recommendation by the MBR LDMG, or directed evacuation, on the order of QPS, which is compulsory relocation enforced by law to relocate people at risk to a safer location.

Evacuation is planned and managed in five phases, they are:

- Making the decision to evacuate,
- Providing warning to people at-risk,
- Undertaking the withdrawal of people at risk,
- Seeking shelter until safe to return, and
- Managing the return of evacuees when safe to do so.

The following diagram broadly depicts how these phases unfold.
Warning

The LDMG will issue timely warnings to at-risk communities to provide them appropriate time to prepare for the impact of the event including any evacuations that are necessary.

Withdrawal

The withdrawal of people from areas of potential danger to places of relative safety occurs via a coordinated approach to ensure evacuees are safe during the withdrawal process. Clear and timely public information about the process of the withdrawal is required including insuring the community is prepared to withdraw, identification of safe evacuation routes, and the provision of designated timings for the withdrawal process.

Once a decision has been made, QPS has the functional responsibility for carrying out evacuations with the assistance of the MBR LDMG. This may be done in conjunction with other agencies, such as QFES, SES and other LDMG agencies.

For further information, visit council’s website: Council’s Evacuation Centres

Shelter

Shelter in place refers to residents taking refuge in their own home if it is considered safe to do so. Evacuation can be a highly disruptive activity for a community that may cause anxiety or stress. It is generally accepted that sheltering in place is the most viable survival strategy to be used during most types of disasters/emergencies. Exceptions to this include, water over the liveable floor level of a dwelling, predicted bushfire impact, toxic gas release, police emergency, total utility failure or as determined by QPS.

Depending on the nature of the event, it may be safer for people to shelter in place as an alternative. Typically, for flood events, residents of dwellings that are unlikely to have flood waters over their floor level should shelter in place. Shelter in place may be considered where the structure or location of the available building/s provide adequate protection from the hazard or where time does not permit a safe withdrawal.

In many cases, people evacuating a dangerous area may prefer to stay with family and friends. This is always preferred.

The maximum time for sheltering in place is generally 3 days. It requires the community to be fully aware of the hazard and what they need to do to maximise survival.

Return

Any evacuation is not complete until the evacuated community is returned after the event. The return of evacuees must be managed to ensure their safety when going back to their homes/businesses. Return can occur once necessary safety inspections of the impacted area have been undertaken. Return may be full, partial or temporary.

A full return occurs when the entire evacuated area is deemed safe and all evacuees are permitted to permanently return.

A partial return may be necessary when only parts of an evacuated area are safe for permanent return.

Temporary return may be necessary when services have not yet been restored and people will be unable to return permanently. However, it may be determined that the evacuated area is safe enough for evacuees to return during designated times to inspect and clean their properties. In such cases, evacuees will return to family, friends or evacuation centres overnight.
Evacuation Planning and Implementation

When a decision or order to evacuate part/s of the community has been made, the MBR LDMG will also make arrangements for:

- Warnings to at-risk communities,
- Effective planning and timing of evacuation processes;
- Coordination of the evacuation operation,
- Safe evacuation routes;
- Traffic management strategy;
- Transportation;
- Establishing and managing evacuation centres; and
- Public information to the affected community.

Animal Management

During disasters, it can become difficult to look after pets and livestock, particularly during evacuation. The sheltering, welfare, protection and identification of domestic animals (including livestock) is the responsibility of their owners. Public interests and welfare may take precedence regarding sheltering, evacuating and care of animals.

All animal owners are encouraged to have a pet emergency plan.

For further information on pet emergency plans, visit: Queensland Government - Preparing pets for disasters

For information on livestock management, visit: Department of Agriculture and Fisheries

The LDMG may initiate additional disaster management arrangements such as:

- Local and state resources for care;
- Shelter;
- Information, emergency veterinary and supportive care; and
- The collection and housing of stray animals.

At the onset of a disaster event, domestic animals are permitted to be taken to evacuation centres, under the responsibility of their owners, and will be subject to a separate registration process. Owners are required to provide for their animals, including providing adequate food, medication and restraints etc. Animals will be housed in areas separate from residents. Some animals may not be accepted due to the species or behaviour of the animal and the need for specialised care.

Livestock will not be accepted at evacuation centres, and if required, arrangements will be made to transport these animals to an appropriate facility.

The evacuation planning for animals kept at theme parks or wildlife sanctuaries will be in accordance with that facility’s established plans for an emergency or disaster event.

Primary producers are responsible for their animals and should ensure that all efforts are made to protect their safety.

Disaster Relief and Recovery Operations

Disaster relief and recovery is a complex and often lengthy process, requiring a collaborative, coordinated, adaptable and scalable approach in which responsibility for its delivery is shared between all sectors of the community including individuals, families, community groups, businesses and all levels of government.

Recovery within this plan incorporates both relief and recovery phases of disaster management in the region.

For the region, recovery involves the coordinated process of supporting individuals and reconstructing communities following a disaster event. It includes a series of arrangements and the coordination of various activities required to restore physical infrastructure, the local economy, the environment and provision of support for the
emotional, social and physical wellbeing of those affected by a disaster event.

The MBR LDMG has adopted the arrangements outlined in the Queensland Recovery Plan. The MBR LDMG recovery arrangements aim to:

- Ensure recovery operations are integrated across entities, locally coordinated and appropriate to the scale of the disaster event;
- Ensure optimum recovery outcomes for disaster-impacted communities;
- Describe the approach to deliver effective recovery and reconstruction to support communities;
- Inform the development of local recovery arrangements;
- Outline recovery requirements and operations at the local level, including the transition from response to recovery;
- Drive a collaborative approach to recovery across all levels of government and whole-of-community; and
- Clarify the roles and responsibilities of lead agencies in recovery.

In addition, recovery planning in the region is underpinned by the following National Principles for Disaster Recovery:

- understanding the context
- recognising complexity
- using local, community-led approaches
- ensuring coordination of all activities
- employing effective communication
- acknowledging and building capacity
- identifying lessons and building resilience.

Community-led Recovery

The MBR LDMG recognises that recovery is best undertaken at a community level. Disaster-affected communities are best placed to understand and identify their own needs for recovery. They have inherent strengths, assets and resources that should be actively engaged during the response and recovery phases of a disaster. In consultation, communities can be assisted to create their own solutions, improve overall social cohesion and deliver sustainable recovery outcomes, including enhancement of disaster management capability and capacity to build resilience to future disaster events.
Phases of Recovery

The MBR LDMG acknowledges that individuals, groups and communities may be at different stages of recovery simultaneously and as such, recovery arrangements may reflect the non-linear nature of recovery. However, overall recovery operates through the following 3 phases:

Phase 1: Post-impact and early recovery

Early recovery includes impact and damage assessments. They are conducted as soon as possible to identify and meet the immediate needs of individuals and communities affected by an event. Immediate support (relief) may include:

- Immediate provision of shelter, food and clothing;
- Restoration of affected utilities and communications; and
- Clearance of debris and other hazards resulting from an event.

Initial recovery works may be commenced as well as the development of a Moreton Recovery Plan. Potential indicators for transition from immediate/short-term recovery to medium-term recovery may include:

- Immediate needs of affected individuals have been met,
- Recovery structures are in place, and
- Recovery plans for medium and long-term arrangements have been developed.

Phase 2: Recovery and Reconstruction

Medium-term recovery involves the implementation of the Moreton Recovery Plan. The plan will detail the coordinated process of supporting affected communities in the reconstruction of physical infrastructure, restoration of the economy and of the environment, and support for the emotional, social, and physical wellbeing of those affected. The building of future community resilience will also be addressed.

The recovery and resilience building activities of this stage will assist the affected community to return to a state of normality.

This phase ends when the progressive achievement of strategic milestones is sufficiently advanced to enable the transition of responsibilities from the MRG to other agencies.

Phase 3: Transition

This phase sees a progressive handover of recovery and reconstruction responsibilities to agencies or organisations including government, local government, community-based or industry-led sectors that would normally support the functional area. This phase ends when all recovery and reconstruction responsibilities are managed as business as usual.
Transitional arrangements must be continually planned for to allow return to normal business for agencies and so the ‘stand down’ level of activation of recovery operations can be completed, while still ensuring the longer-term recovery needs of individuals and communities are addressed.

Considerations will include:

- A full assessment of work remaining in each function;
- Decisions on the retention of, and education about, a modified, scaled-down recovery structure;
- Decisions on tasks to be transferred to mainstream governance activity;
- Documented, revised roles and responsibilities, and a broad timeframe; and
- Working with local organisations, community organisations, cultural groups and their leaders (identified in the immediate/short-term stage of recovery) to plan the transition of ongoing support and activities to the appropriate sources of support in the local community.

Functions of Recovery

The MBR LDMG organises its approach to recovery into four interdependent functions. The four functions of recovery include environmental, roads and transport, human and social, economic and building which often overlap, and recovery arrangements must consider the interrelationship between these functions. The MBR LDMG has established sub groups of the MRG to coordinate recovery for each functional area. These sub-groups function in accordance with their own Terms of Reference.

**Economic Recovery** refers to the ability of communities to prepare for, and recover from, economic impacts caused by a disaster. Considerations include:

The MBR LDMG recognises that the DSDMIP is the lead agency for economic recovery and will support the efforts of this department.

**Environmental Recovery** addresses the impacts of a disaster on the natural environment including topography, hydrology, amenity value, waste and pollution management, biodiversity and ecosystems.

With respect to recovery of the natural environment, the MBR LDMG recognises that the DES is the lead agency for environmental recovery and will support the efforts of this department.

**Human-Social Recovery** is the coordinated process of supporting disaster-affected individuals, families and communities towards the restoration of emotional, social, economic and physical wellbeing. Services typically include the provision of information, payment of financial assistance, and provision of personal and psychosocial support.

The MBR LDMG recognises that the DCDSS is the lead agency for longer-term human-social recovery and will support the efforts of this department.
Infrastructure Recovery focuses on the facilities, installations and utilities necessary for the proper functioning of the community. These include power, water supply, transport systems, communications etc. Infrastructure is broadly defined as anything that contributes to the normal function of a community and includes things, people and organisations.

The MBR LDMG expects that lead agencies develop and maintain relevant plans to address their area/s of the recovery function, refer table below. Each plan should detail the arrangements for the dedicated function of recovery.

Recovery Operations

Immediately following a disaster event, the community recovery strategy for the region will be activated via the MBR LDMG and sub-group, the MRG.

The recovery phase is activated alongside the response phase, and due to the complex nature of rebuilding communities, the recovery phase may continue well after the response to a disaster event has concluded. In some cases, this could be several years.

Activation includes the commitment of recovery resources, development of action plans, event recovery plans, deployment of staff and operational activities and the provision of community recovery services.

Initial activation of recovery operations and implementation of the MBR Recovery Plan is at the discretion of the Chair MRG or their delegate. Alternatively, recovery may also be activated upon request of the DDC. Activation of recovery functional sub-groups will be determined by the MRG.
Action plans may be developed for each recovery function. The action plans will list the tasks to be performed by each functional area, agencies/individuals responsible for the tasks and timeframes for completion.

Formal Handover from Response to Recovery

It is important to ensure there is a clear handover from disaster operations to recovery. This cannot occur until the areas affected have been:

- Deemed safe;
- Emergent actions to mitigate remaining risks have been undertaken;
- Disaster victim identification operations have been completed;
- Post-disaster assessments have been commenced and initial reports have been produced; and
- Initial relief and community services are in place.

These things define the point where disaster operations cease, and recovery can take over. Recovery staff should be undertaking recovery planning while the above measures are taking place and working closely with the LDCC staff to collate information to support recovery plans. When those plans are sufficiently robust, the formal handover from disaster operations to recovery can occur.

The handover should be documented and signed by both the LDC and MRC. It should be widely promulgated among all MBR LDMG agencies and supporting recovery entities.

Disaster operations post-event reviews and debriefs can then be scheduled.

Recovery is undertaken in accordance with the Moreton Recovery Plan.

Offers of Assistance

Following disaster events, the broader community may offer assistance to affected individuals and communities in the form of financial donations, volunteering and donated goods and services. These offers of assistance provide significant support to the people and communities affected by a disaster event. Offers of assistance will be managed and coordinated in accordance with the Queensland Policy for Offers of Assistance and the Queensland Offers of Assistance Guidelines.

State Recovery Arrangements

The QRA is the lead agency responsible for disaster recovery, resilience and mitigation policy in Queensland. The QRA Chief Executive Officer is the State Recovery Policy and Planning Coordinator to assist in the rapid recovery of communities following natural disasters.

The Queensland Recovery Plan describes arrangements in Queensland for disaster recovery governance, preparedness, planning and operations. The Queensland Recovery Plan applies to Queensland Government agencies, and informs local governments, Local Disaster Management Groups, District Disaster Management Groups, government-owned corporations, statutory bodies representing the state, non-government organisations and other disaster recovery stakeholders of the procedures and processes that will be employed by the state during recovery operations.

For further information, visit: [State Recovery Plan]

In the event local and district level resources are insufficient to deal with the recovery process, the Premier may establish a task force or statutory authority. The Premier, and where necessary the Queensland Parliament, will determine the level of authority and powers given to the task force or statutory authority for central coordination, support and overall direction of resource allocation.
The accountability structures, role and powers for the task force or statutory authority will be determined by the Premier and/or Queensland Parliament.

In parallel, the state may choose to establish one or more State Recovery Coordinators appointed by the Premier to assist in ensuring a cohesive recovery and reconstruction program. State Recovery Coordinators will act as a focal point for recovery and reconstruction between the affected region and the State Government through the Minister for Local Government, Community Recovery and Resilience.

HAZARD-SPECIFIC ARRANGEMENTS - BUSHFIRE

The Moreton Bay Region is particularly vulnerable to bushfires. The MBR LDMG is responsible for ensuring that a coordinated approach across the Prevention, Preparedness, Response and Recovery (PPRR) spectrum is undertaken and for directing efforts to reduce the region’s bushfire vulnerability.

This section details responsibilities, considerations and activities required to prevent and mitigate the risk of bushfires, effectively prepare for, manage and coordinate bushfire responses, and undertake recovery after bushfires.

Moreton Bay Region – Bushfire Management Strategies

The MBR LDMG is committed to the following overarching bushfire management strategies:

- Adopting a risk-based approach to bushfire management in the region;
- Undertaking appropriate bushfire prevention and mitigation activities on an ongoing basis in order to reduce bushfire risk in the region;
- Ensuring the community is informed of all relevant bushfire management activities including mitigation and hazard reduction as well as bushfire response and recovery operations;
- Helping communities, families and individuals to prepare themselves for potential bushfire events;
- Providing communities at risk of a bushfire or potential bushfire with appropriate early warning so that they can take appropriate and early action to preserve life and property;
- Providing bushfire affected communities with appropriate community support, including evacuation support if required;
- Ensuring that accurate and timely public information regarding bushfire impact or potential bushfire impact is provided;
- Activating early during bushfire events that have potential to impact on the community;
- Ensuring that multi-agency bushfire responses are coordinated and are appropriately resourced to minimise disruption and to preserve life and property, via the Area Fire Management Group (AFMG);
- Ensuring that all necessary actions to ensure public safety are undertaken;
- Ensuring that the communities are provided with relevant and appropriate recovery services after the impact of a bushfire so that they can quickly and effectively return to normal; and
- Ensuring the continuity of essential services to minimise the disruption to the community from bushfire events.

In achieving the above strategies, the MBR LDMG will utilise the expertise of multiple agencies that contribute to bushfire management and response. To assist in bushfire management for the region, the MBR LDMG also utilises the expertise and advice of the Moreton Bay AFMG, convened by QFES.
Key responsibilities

The key agency responsibilities for disaster management are outlined in the SDMP and this LDMP.

The following agencies have responsibilities relating to bushfire management and contribute to the maintenance of this plan.

All agencies are also responsible for bushfire mitigation for agency-owned land and assets. This includes fuel load reduction activities for agency-controlled areas. These responsibilities are part of individual agency core business and details are contained within agency documentation.

Agency responsibilities relating to bushfire management in the region:

<table>
<thead>
<tr>
<th>Entity</th>
<th>Specific Bushfire Responsibilities</th>
</tr>
</thead>
</table>
| LDMG   | • The MBR LDMG has overarching responsibility for bushfire management across the PPRR spectrum in order to enhance public safety  
        • Primary entity responsible for public information related to bushfire management in the region |
| QFES   | • Primary agency for bushfire response  
        • Primary agency for post-bushfire “make safe” operations  
        • Primary agency for community education on bushfire risk, warnings, and community bushfire preparedness  
        • Chair and convene the AFMG and the Regional Interdepartmental Development Committee (RIDC) to coordinate bushfire management in the region  
        • Develop the regional Wildfire Mitigation and Readiness Plan  
        • Provide the MBR LDMG with situational awareness of events and incidents within the region |
| MBRC   | • Identification of bushfire prone areas and implementation of development controls to reduce bushfire risk under the region’s planning scheme  
        • Management of council owned land including prescribed burns to reduce fuel loads  
        • Supporting agency for bushfire warnings in the region  
        • Supporting agency for public information regarding bushfire management within the region  
        • Supporting agency for community education on bushfire risk, bushfire warnings, advice and support to landowners for fuel load reduction programs, and community bushfire preparedness  
        • Member of AFMG  
        • Member of RIDC |
| QPS    | • Lead agency for post-bushfire disaster victim identification  
        • Supporting agency for bushfire warnings  
        • Supporting agency for public information for bushfire management within the region  
        • Provide support, as required, to QFES Incident Control Centres (ICC) when established  
        • Member of RIDC |
<table>
<thead>
<tr>
<th>Entity</th>
<th>Specific Bushfire Responsibilities</th>
</tr>
</thead>
</table>
| DES             | • Supporting agency for bushfire warnings in relation to fires in national parks and other state-owned reserves  
|                 | • Supporting agency for public information regarding bushfire management of national parks and other state-owned reserves  
|                 | • Provide support, as required, to QFES ICC when established  
|                 | • Member of AFMG  
|                 | • Member of RIDC  
| DTMR            | • Supporting agency for bushfire warnings in relation to fires and associated hazards along state and federal roads and transport corridors  
|                 | • Supporting agency for public information regarding bushfire management in relation to fires and hazards along State and Federal roads and transport corridors.  
|                 | • Member of AFMG  
|                 | • Member of RIDC  
| Seqwater        | • Provide advice to the MBR LDMG on bushfire impacts on strategic water assets  
|                 | • Member of AFMG  
| Unitywater      | • Provide advice public information relating to impacts of bushfire on water supply  
|                 | • Member of AFMG  
| Energex         | • Provide representation on RIDC  
| Hancock Plantations | • Member of the AFMG and RIDC  

**Bushfire - Hazard Identification and Risk Assessment**

This section outlines the nature of the bushfire hazards and associated risks in the region. Bushfire prevention and preparedness also takes into account seasonal variations and their likely impact on bushfire risk.

**Bushfire Prone Areas**

Bushfire prone areas in Queensland have been identified and mapped under the State Planning Policy (SPP). These mapped bushfire hazard areas enable councils to identify areas of high-risk and very-high-risk and provide the basis for the application of additional controls to mitigate the bushfire risk for developments under the MBRC Planning Scheme.

The map below provides a snapshot of the bushfire prone areas within the region and broadly depicts the range of bushfire hazard across the region. The map clearly illustrates the increased risk in the western areas of the region where significant tracts of bush land and mountainous terrain exist. Small pockets of very high bushfire risk occur throughout the region.

While these bushfire hazard areas are mapped primarily for land use planning purposes, they are useful in identifying areas of high risk for general planning and mitigation purposes.

The SPP Interactive Mapping System is a repository for all Geographic Information System mapping that relates to matters of state interest under the SPP. Layers for bushfire hazards can be accessed allowing users to zoom in to individual parcels of land to view the general level of bushfire risk for that parcel of land. It should be noted that these layers are primarily for use as part of the Development Application process. However, they provide a useful tool to visualise the bushfire hazard across the region.

For further information, visit the [Queensland Government - SPP Interactive Mapping System](#).
Summary of Risk Factors

The risk factors that may influence bushfire risk include:

- The region’s extensive areas of retained forest cover, particularly in the western parts, with connectivity into urbanised areas;
- The proximity of bushland areas in the eastern parts of the region to urban populations (and an associated increased ignition risk);
- The high proportion of native vegetation that is fire prone;
- Roads, overhead power lines, telecommunications equipment and other
Key community infrastructure is situated in positions where they can be cut or damaged by bushfires;

- Weather and climate conditions;
- The proximity of bushfire prone areas to isolated communities and the limited road network to support evacuation i.e. Mt Nebo/Mt Glorious;
- Limited access to fire prone areas that may hamper bushfire mitigation and response;
- General lack of community awareness of fire risk, fire behaviour, fire danger or how to prepare and respond to bushfire threats; and
- Changing climate that may extend traditional bushfire seasons.

**Key Localities of Bushfire Risk**

Large areas of the region, including 9,000 hectares of council managed bush land, remain under remnant vegetation and are at risk of bushfires.

**Key consequences of bushfires in the region:**

Bushfires are often more likely to occur near small communities adjacent to parks, forests and nature reserves. In these communities there are significant numbers of properties on the urban fringe, or at the interface (I-zone). Properties on the urban fringe, or at the rural/urban interface between bush land and built up areas, are more susceptible to bushfire and pose a greater risk to people and property.

**Bushfire Consequences**

Bushfires can affect people, the environment, the economy, public administration, the social setting and infrastructure. Effects may be primary or secondary.

The table below highlights the key consequences of bushfires:

<table>
<thead>
<tr>
<th>Vulnerable Element</th>
<th>Consequence</th>
</tr>
</thead>
</table>
| People            | - Homes may be destroyed  
- Injuries / loss of life  
- People may need to be evacuated  
- People may suffer breathing problems, and suffer temporary or permanent lung damage  
- Loss of power supply and water may occur in localised or widespread areas  
- Loss of communications may result in people unable to call for help |
| Environment       | - Loss of species and potential extinction of sensitive species  
- Burnt animals/livestock will have to be disposed of safely. Burnt and/or injured animals will require care  
- Topsoil will be subject to wind-blown and scour when it rains resulting in reduced fertility of soils and poorer pasture/crops post-burn  
- Impacts on the biodiversity of ecosystems and the inability of ecosystems to regenerate after multiple bushfire events  
- Loss of commercial forestry with attendant economic impact to the region  
- Runoff from fire-affected areas may pollute creeks and waterways by increasing sediment load and suspended solids and may result in loss of habitat and loss of species  
- Increased greenhouse gas production |
<table>
<thead>
<tr>
<th>Vulnerable Element</th>
<th>Consequence</th>
</tr>
</thead>
</table>
| Economy            | • Short term loss due to damage or destroyed premises or stock losses  
|                    | • Recovery of business activities may be hampered due to loss of power and road blockages  
|                    | • Extensive loss of pastures may require supplementary fodder for livestock  
|                    | • Fencing and water pipes may require replacement  
|                    | • Tourists may require evacuation from nature parks and resorts in the event of bushfire  
| Public Administration | • Services may be disrupted due to loss of power and/or structural damage  
|                     | • Emergency services may be unable to respond to people in need  
|                     | • Contaminated/lack of water supply  
| Social Setting      | • Permanent loss of cultural artefacts and data  
|                     | • Social networks weakened and unable to assist the community  
|                     | • Non-urban sector of the population may be temporarily unable to contact and be helped by social structures  
| Infrastructure      | • Possible property damage leaving people homeless  
|                     | • Public buildings and amenities may be damaged or destroyed  
|                     | • Transport infrastructure may be damaged (roads, bridges, rail lines, rail yards, air strips, etc.)  
|                     | • There may be power cuts in affected areas  
|                     | • People may be unable to communicate due to damage to communication lines  
|                     | • Repair of farming infrastructure may require state or federal funding assistance  

Previous bushfires and major fires in the region:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>Extensive fire throughout the Samford district, at least 1 house destroyed</td>
</tr>
<tr>
<td>1910</td>
<td>Fire in the Wights Mountain area destroyed 1 house</td>
</tr>
<tr>
<td>September 1927</td>
<td>Grass fires in the Samford area destroyed banana crops</td>
</tr>
<tr>
<td>November 1928</td>
<td>Fires at Camp Mountain, Mt Nebo and Cedar Creek, several outbuildings destroyed</td>
</tr>
<tr>
<td>October 1936</td>
<td>Bushfire along the D’Aguilar range from Mt Glorious to The Gap produced a 5-mile fire front over the Samford Range and spread through the Bunya area, destroying 3 houses and a fuel depot</td>
</tr>
<tr>
<td>1948</td>
<td>Fires in the Camp Mountain area led to the formation of a local fire brigade</td>
</tr>
<tr>
<td>December 1951</td>
<td>Major fire at Wights Mountain, Samsonvale and Kobble Creek</td>
</tr>
<tr>
<td>1952</td>
<td>Several fires across the state, including the Moreton Bay region</td>
</tr>
<tr>
<td>1964-65</td>
<td>Fires burnt 92,000 hectares in South East Queensland</td>
</tr>
<tr>
<td>1968</td>
<td>Severe fire at Mt Nebo, formed part of the larger fire at Brookfield that threatened the western suburbs of Brisbane</td>
</tr>
<tr>
<td>October 1971</td>
<td>Fires in the Bunya area</td>
</tr>
<tr>
<td>August 1974</td>
<td>Fires in the Bunya area</td>
</tr>
<tr>
<td>1976</td>
<td>Fires burnt 300 hectares of pine plantation at Petrie</td>
</tr>
<tr>
<td>April 1980</td>
<td>Fires in the Bunya area</td>
</tr>
<tr>
<td>September 1982</td>
<td>Fires in the Highvale and Yugar areas. 39 fires recorded that year</td>
</tr>
<tr>
<td>September 1984</td>
<td>Fires at Camp Mountain. 34 fires during the year</td>
</tr>
<tr>
<td>1985</td>
<td>31 fires recorded during the year</td>
</tr>
<tr>
<td>September 1986</td>
<td>Large fires at Mt Glorious, Mt Nebo and Highvale</td>
</tr>
<tr>
<td>1987</td>
<td>11 fires recorded during the year</td>
</tr>
<tr>
<td>1988</td>
<td>25 fires recorded during the year</td>
</tr>
<tr>
<td>1989</td>
<td>46 fires recorded during the year</td>
</tr>
<tr>
<td>November 1990</td>
<td>36 fires recorded during the year</td>
</tr>
<tr>
<td>1991</td>
<td>A long drought period produced several large fires, including 1 at Samsonvale. 55 fires recorded during the year</td>
</tr>
<tr>
<td>1992</td>
<td>29 fires recorded during the year</td>
</tr>
<tr>
<td>1993</td>
<td>Fires at Dakabin and Ocean View. 53 fires recorded that year</td>
</tr>
<tr>
<td>January 1994</td>
<td>A 4,000-hectare fire burnt at Mt Glorious and Mt Nebo</td>
</tr>
<tr>
<td>November 1994</td>
<td>Significant fires at Bunya, Clear Mountain, Mount Samson, Eatons Hill, Narangba, Ocean View, Cedar Creek, Albany Creek, Jolly’s Lookout and Samford Range. 70 fires recorded during the year</td>
</tr>
<tr>
<td>1994-1995</td>
<td>682 major fires across the State in Sep and Nov. Major outbreaks occurred on 27-29 September and again on 4-7 November. 23 houses were destroyed, as well as farm buildings, fences and livestock. 3,000 people were evacuated from their homes. 9 volunteer fire fighters were injured, with 7 suffering extensive burns, north of Caboolture.</td>
</tr>
<tr>
<td>1995</td>
<td>Fires at Samford Village, Wights Mountain, Camp Mountain, Clear Mountain, Eatons Hill, Cashmere, Jolly’s Lookout and Bunya. 80 fires recorded during the year</td>
</tr>
<tr>
<td>1996</td>
<td>80 fires recorded during the year, including Clear Mountain and Highvale</td>
</tr>
<tr>
<td>1998</td>
<td>Fires at Camp Mountain. 89 fires recorded during the year</td>
</tr>
<tr>
<td>Date</td>
<td>Details</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2000</td>
<td>116 fires recorded during the year, including Samford Village, Clear</td>
</tr>
<tr>
<td></td>
<td>Mountain, Samsonvale, Samford Valley, Draper, Closeburn and Yugar</td>
</tr>
<tr>
<td>2001</td>
<td>95 fires recorded during the year, including Samford Valley, Wights</td>
</tr>
<tr>
<td></td>
<td>Mountain, Draper, Clear Mountain and Yugar</td>
</tr>
<tr>
<td>2002</td>
<td>71 fires recorded to August, including Yugar, Closeburn and Highvale</td>
</tr>
<tr>
<td>August 2005</td>
<td>Large chemical fire at a factory in Narangba</td>
</tr>
<tr>
<td>October 2005</td>
<td>Fire in Eucalypt plantation (600ha) at Old North Road, Bellmere.</td>
</tr>
<tr>
<td></td>
<td>Fire at Wamuran threatened farming structures</td>
</tr>
<tr>
<td>December 2009</td>
<td>2 large grass fires at Burpengary and Narangba</td>
</tr>
<tr>
<td>September 2011</td>
<td>Large grass fire in Caboolture</td>
</tr>
<tr>
<td>October 2011</td>
<td>Bushfire in accessible land near Samford</td>
</tr>
<tr>
<td></td>
<td>Grass fire at Murrumba Downs</td>
</tr>
<tr>
<td></td>
<td>Fire at Bribie Island led to a smoke hazard</td>
</tr>
<tr>
<td>November 2011</td>
<td>Large grass fire at Kurwongbah</td>
</tr>
<tr>
<td>December 2012</td>
<td>Fires at Beachmere, Burpengary, Burpengary East, Banks Creek.</td>
</tr>
<tr>
<td></td>
<td>EWS activation at Mt Nebo/Mt Glorious</td>
</tr>
<tr>
<td>January 2013</td>
<td>Bushfire at Bribie Island (over 1200ha)</td>
</tr>
<tr>
<td>October 2013</td>
<td>Large fire at Stanmore, Narangba, Kurwongbah, Caboolture and Elimbah</td>
</tr>
<tr>
<td>December 2013 -</td>
<td>Bushfires at Kippa-Ring and Rothwell</td>
</tr>
<tr>
<td>January 2014</td>
<td></td>
</tr>
<tr>
<td>September 2014</td>
<td>Bushfires at Delaney’s Creek, Elimbah and Caboolture</td>
</tr>
<tr>
<td>November 2014</td>
<td>Bushfire at Beachmere</td>
</tr>
<tr>
<td>October 2015</td>
<td>Bushfire at England Creek</td>
</tr>
<tr>
<td>October-November</td>
<td>Very large fires at Bellthorpe</td>
</tr>
<tr>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>November 2016</td>
<td>Bushfires at Banks Creek, Kurwongbah and Beachmere</td>
</tr>
<tr>
<td>December 2016 -</td>
<td>Bushfires at Bribie Island</td>
</tr>
<tr>
<td>January 2017</td>
<td></td>
</tr>
</tbody>
</table>

**Bushfire - Hazard Mitigation and Risk Reduction**

Bushfire hazard mitigation and risk reduction requires a multi-agency approach to be effective. This section outlines how the MBR LDMG seeks to ensure effective bushfire hazard mitigation and risk reduction.

**Bushfire Mitigation Plan**

The bushfire mitigation plan draws together key stakeholders with bushfire mitigation and management responsibilities and develops a coordinated approach to bushfire mitigation and preparedness for the region. It outlines the mitigation and preparedness measures to be undertaken to reduce bushfire risk and assist in preparedness.

The plan is updated annually to take into account variable seasonal weather patterns that impact on bushfire mitigation and preparedness measures. The AFMG develops this plan in consultation with those agencies that have bushfire management and mitigation responsibilities. The (regional) Wildfire Mitigation and Readiness Plan supports this LDMP.

**MBR LDMG Bushfire Mitigation Strategies**

The MBR LDMG seeks to achieve effective bushfire mitigation and risk reduction through three key mitigation strategies:

1. Planning schemes
2. Hazard reduction programs
3. Education programs
Strategy 1 - Mitigation through Planning Schemes

The MBRC Planning Scheme and the Development Application process ensures all planned development in bushfire hazard areas is subject to appropriate development controls in accordance with the SPP.

The SPP is a key component of Queensland’s land use planning system. It defines the Queensland Government’s policies about matters of state interest in land use planning and development, including bushfire prone areas.

A bushfire prone area is land considered likely to support a significant bushfire.

Under the SPP, areas that have been identified as bushfire prone require additional development controls to reduce the bushfire risk. Applications for development in these areas are assessed against criteria\(^1\).

For further information, visit the SPP Interactive Mapping System

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Strategy 2 - Mitigation through Hazard Reduction Programs

Hazard reduction programs are an important element in effective bushfire mitigation. Such programs should aim to:

• Modify fuel loads to reduce community vulnerability to bushfire hazards;

• Support appropriate planning and environmental management processes; and

• Assist in natural area maintenance activities.

Each of the bushfire mitigation entities are responsible for planning, coordinating, undertaking and evaluating their own hazard reduction programs using their own resources, with support from other agencies and landowners as required.

Agencies and entities undertaking fire management activities must follow the relevant legislative and published guidelines including:

- Environmental Protection and Biodiversity Conservation Act 1999;
- Sustainable Planning Act 2009 – State Planning Policy;
- Fire and Emergency Services Act 1990;
- Fire and Rescue Service Regulation 2011;
- Land Act 1994;
- Nature Conservation Act 1992; and
- Vegetation Management Act 1999.

Bushfire hazard reduction programs are usually conducted before the fire season and are aimed at reducing fuel loads in high and very high bushfire risk areas. They are typically conducted during the period February to August each year when conditions are suitable; although, burns may be undertaken outside this window subject to appropriate approvals.

Hazard Reduction Burns by Landowners

While numerous agencies contribute to bushfire hazard reduction through fuel load management activities, landowners can play a significant role in managing fire risk on their land.

Council and QFES encourage landowners to contribute to the regional bushfire hazard reduction process and receive the necessary education, physical support and approvals to undertake controlled burns of high-risk and very high-risk areas annually.

For further information, visit: Queensland Government - Obtaining a Permit to Light Fire

\(^1\) State Planning Policy, April 2016
Strategy 3 - Mitigation through Education Programs

Community education focusing on fire risk, fire prevention and fire safety is a key element of the MBR LDMG’s bushfire prevention and mitigation effort. This provides the community with appropriate knowledge of the actions and safeguards they need to take in order to prevent or reduce the impact of bushfires.

QFES with support from MBRC, QPS and other agencies, is responsible for defining and delivering bushfire safety education programs.

Key elements of an annual bushfire safety education program include:

- General information on bushfire prone areas so that the community is aware of areas that are at higher risk of bushfires;
- Fire safety – including measures the community can take to minimise the risk of bushfires;
- Information on fire weather to help educate the community on the conditions that are conducive to start and spread of bushfires;
- The Fire Danger Rating (FDR) system including where the community can access information on the current fire danger rating;
- The system of fire controls e.g. permits and fire bans and the fire warden system;
- Guidance on bushfire survival planning;
- Bushfire warning systems; and
- Preparing for the fire season.

Annual bushfire education programs utilise multiple strategies to communicate with the public and may include:

- Use of traditional media outlets e.g. television, radio, newspapers;
- Agency websites;
- Social media including Facebook, Twitter, Instagram, YouTube, etc;
- Displays at public events and in public spaces;
- Community meetings (useful for high risk communities); and
- Mail outs and provision of pamphlets, guidelines and other paper based/electronic information products.

In addition, MBRC is an active member of the Brisbane Community Engagement Working Group, which facilitates a coordinated process with various agencies for collaborative prioritising, planning and delivery of bushfire and severe weather event community engagement activities across South East Queensland.

MBR LDMG Review of Annual Community Bushfire Education Programs

The MBR LDMG periodically reviews the collective efforts of all relevant agencies in delivering bushfire education throughout the year with a focus on increasing community awareness prior to the fire season.

Bushfire - Preparedness and Planning

Preparedness and planning for bushfires must be undertaken to ensure that appropriate, timely and effective responses to bushfire events can be provided. This section outlines how the MBR LDMG seeks to ensure effective bushfire preparedness and planning.

MBR LDMG Bushfire Preparedness and Planning Strategies

The MBR LDMG has established the following strategies to ensure effective preparedness and planning for bushfire response/disaster operations:

1. Regional bushfire readiness postures
2. Contingency plans for high risk communities
3. Community bushfire education and awareness
4. Fire response planning and exercises

Fire Danger Ratings

For bushfire preparedness, QFES adopts the FDR scale to demonstrate the likelihood of fire behaviour, ability to suppress a fire and the potential of impact on the community should a bushfire occur. It takes into account forecast temperatures, humidity, wind speed and dryness of vegetation. For further information, visit: Rural Fire Service
Strategy 1: Regional Bushfire Readiness Postures

Levels of preparedness can be linked to the FDR and/or the QFES Wildfire Alert Levels, both of which provide QFES with a guide to increasing levels of preparedness based on risk.

The MBR LDMG agencies are required to maintain situational awareness of the current and expected FDR and to be prepared to implement appropriate internal preparedness measures for each FDR in order to mount an effective response when required.

Strategy 2: Contingency Plans for High Risk Communities

A number of bushfire high-risk communities exist within the region.

Bushfire high-risk community contingency plans are developed to ensure that response agencies have immediate access to relevant population and infrastructure data pertaining to these areas as well as a set of pre-defined and tested arrangements for warning and evacuation in order to maximise public safety during dangerous fires.

Community Plans

Bushfire community plans for high-risk areas include the following:

- Community profiles (such as population, services, facilities, vulnerable persons, evacuation centres, neighbourhood safe zones, MoretonAlert groups, land usage);
- Arrangements for specific bushfire warnings (includes MoretonAlert, EA and early warning systems where fitted, such as Mt Glorious and Mt Nebo); and
- Specific arrangements for the evacuation of the community, including evacuation routes and traffic plans (such as road capacity, travel times, traffic control points and possible traffic congestion points).

Strategy 3: Community Bushfire Education and Awareness

Preparing the community for the potential for bushfires and ways for residents to minimise their personal risk is an important component of community preparedness. Emphasis is placed on the following:

- The current seasonal outlook for bushfires including information on seasonal variations may apply e.g. High fuel loads, season rain outlooks, etc;
- Information on fire weather to help educate the community on the conditions that are conducive to start and spread of bushfires;
- The FDR system including where the community can access information on the current fire danger rating;
- The system of fire controls e.g. permits and fire bans and the fire warden system;
- Guidance on bushfire survival planning;
- Bushfire warning systems;
- Public information - the MBRC website details evacuation routes and evacuation centres; and
- Community and school presentations and information sessions, particularly in high-risk communities.
Strategy 4: Fire Response Planning and Exercises

Agencies that provide bushfire response and community support also plan and prepare specific arrangements, activities and exercises on an annual basis.

The MBR LDMG recommends that QFES, in conjunction with the QPS, NPSR and MBRC, undertake a major bushfire planning and response desktop exercise at least every 2 years that simulates a major bushfire event impacting the region.

Evaluation and reporting of the outcomes of annual and bi-annual planning activities and exercises is provided to the MBR LDMG along with recommendations for improvement to current plans and arrangements.

Bushfire - Emergency Communications

Effective communication across the community and between agencies is critical. This section outlines the emergency communication systems and outlines procedures for their use during bushfires.

Bureau of Meteorology - Fire Weather Warnings

Wind, temperature, humidity and rainfall are weather elements that affect the behaviour of bushfires. In Australia, there is a system of assessing these in conjunction with the state of the available fuels to determine a "fire danger" or suppression difficulties. The BoM issues Fire Weather Warnings to alert the public when conditions are likely to be dangerous. QFES agencies in each jurisdiction determine FDR and, in some cases, declare fire restrictions or bans. The major trigger for QFES to increase their response level is when the FDR is 50+.

The BoM issues Fire Weather Warnings when weather conditions are conducive to the spread of dangerous bushfires. Warnings are generally issued within 24 hours of the potential onset of hazardous conditions. Warnings are also broadcast on radio and television.

The information contained in Fire Weather Warnings includes:

- The local time, day and date that it was issued;
- A description of the relevant meteorological conditions and FDR;
- The area where weather conditions are conducive to the spread of dangerous fires; and
- The time period for which it will be in effect.

Fire Weather Warnings are distributed through the media, fire agencies and other key emergency service organisations. Warnings are normally issued in the afternoon for the following day so to be available for evening television and radio news broadcasts. Warnings are renewed at regular intervals and generally at the same time major forecasts are issued. However, warnings may be issued or amended and reissued at any time if a need is identified.

Bushfire Warning Messages

QFES is responsible for issuing bushfire warnings to affected communities during periods of increased fire risk. Bushfire warnings are issued by QFES and are disseminated by radio, social media and the Rural Fire Service website. There are 3 levels of warning issued for a defined area at risk of a bushfire event. They are Advice, Watch and Act and Emergency Warning.

Standard Emergency Warning Signal during Bushfires

SEWs is used to alert the community to the public broadcast of an urgent safety message relating to a bushfire.

For further information, visit: National Emergency Alert and Standard Emergency Warning Signal.
**Emergency Alert during Bushfires**

EA can be used to convey bushfire warnings to the public. The initiating and approving authority for the use of EA during bushfires in Queensland is QFES.

For further information, visit: [Queensland Government - About Emergency Alert](#)

**MoretonAlert during Bushfires**

During bushfires, the primary purpose of MoretonAlert is to assist in the dissemination of bushfire warning messages as issued by QFES. MoretonAlert can also be used to convey important community messages issued by other agencies. The LDC authorises all bushfire messages issued via MoretonAlert.

For further information, visit: [MoretonAlert](#)

**Mt Nebo / Mt Glorious Early Warning System**

The Mt Nebo / Mt Glorious Early Warning System (EWS) is a purpose-built system dedicated to providing early warning to these communities.

The system comprises a siren with variable sounds and road signs. Additionally, information regarding the phases of activation and the use of the siren is available to all residents by calling 1800 MT NEBO (1800 68 6326).

The operation and maintenance of the system is governed under a MoU between QFES, MBRC, QPS and NPSR.

The Mt Nebo/Mt Glorious EWS does not negate the use of other emergency warning or alert systems. In particular, should any event be deemed to fit within the guidelines of EA, then that system may be utilised to provide warnings to the communities.

For further information, visit: [Council’s Mt Nebo and Mt Glorious Early Warning System](#)
### Three levels of warning messages issued by QFES

<table>
<thead>
<tr>
<th>MoretonAlert issued by MBRC</th>
<th>Emergency Alert issued by QFES</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>When a Watch and Act warning is issued, there is a heightened level of threat. The public are advised to be aware of the situation and take action to be prepared and protect yourself and your family.</td>
<td>✗</td>
</tr>
<tr>
<td>When an emergency warning is issued, people in the path of the fire are in danger and should take immediate action as recommended in the warning.</td>
<td>✗</td>
</tr>
</tbody>
</table>

### Community Education

QFES and MBRC are responsible for ensuring residents of Mt Nebo and Mt Glorious maintain a high level of awareness concerning the risk of bushfire in the area and are aware of and able to respond to the EWS signals.

Mechanisms to improve awareness and understanding of the EWS may include but not be limited to:

- Direct mail to all residents via annual post box distribution;
- PREPARE.ACT.SURVIVE. community meetings (conducted annually);
- EWS information displayed at key locations - e.g. Post Office; and
- Other events undertaken by Mt Nebo Brigade from time to time.

Note: arrangements are in place with the Post Office, and the Post Office also assists by providing information to new residents.
Bushfire - Response

Bushfire response is a complex endeavour requiring a coordinated effort by all agencies. This section outlines the framework for bushfire response in the region.

It is acknowledged that each fire event is unique and, at times, variations in the response framework may be necessary.

**Primary Responsibilities for Bushfire Response and Community Consequences**

QFES is the primary agency for bushfire response - the actions necessary to combat the fire and minimise loss of life and damage to property. MBR LDMG agencies may support QFES to minimise the community consequences of bushfires.

**Scalable Nature of Bushfire Response**

Bushfire response is often escalatory in nature where increasing levels of response occur as a particular fire grows in intensity. This increasing level of response is driven by the FDR where small fires on low-risk FDR days will typically involve fewer resources than a similar fire on a high-risk FDR day. On high-risk FDR days, QFES will position resources in accordance with their preparedness levels and will apply a greater level of attack to fires to prevent dangerous and uncontrollable fires.

**Moreton Bay Region - Bushfire Response Management Framework**

The QFES bushfire response framework provides the means to control QFES resources involved in combatting fires. It cannot, however, effectively manage the community consequences that may arise from bushfire events.

Equally, fire response operations for complex and dangerous fires may require significant resources from the community and the state.

While QFES operations may escalate over time, the requirements for support from disaster management arrangements may also escalate.

As complex or dangerous bushfires develop, or where the FDR poses a potential risk of such fires developing, it will be necessary for other agencies to become involved to support fire response operations and to manage community consequences.

Other entities in the region have firefighting responsibilities within defined areas including DES, MBRC and Hancock Plantations.
### Triggers for activation of the Moreton Bay Bushfire Response Framework

<table>
<thead>
<tr>
<th>Fire Danger Rating</th>
<th>Incident Classification</th>
<th>QFES ICP</th>
<th>QFES ICC</th>
<th>QFES ROC</th>
<th>LDCC</th>
<th>MBR LDMG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low / Moderate</strong></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STAND DOWN</td>
</tr>
<tr>
<td></td>
<td>1 ✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STAND DOWN</td>
</tr>
<tr>
<td></td>
<td>2 ✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STAND DOWN</td>
</tr>
<tr>
<td></td>
<td>3 ✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STAND DOWN</td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>0</td>
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<td></td>
<td></td>
<td>STAND DOWN</td>
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<tr>
<td></td>
<td>1 ✓</td>
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<td></td>
<td>STAND DOWN</td>
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<tr>
<td></td>
<td>2 ✓</td>
<td></td>
<td></td>
<td>LEAN FORWARD</td>
<td>LEAN FORWARD</td>
<td>ALERT</td>
</tr>
<tr>
<td></td>
<td>3 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
<tr>
<td><strong>Very High</strong></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STAND DOWN</td>
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<tr>
<td></td>
<td>1 ✓</td>
<td></td>
<td></td>
<td>LEAN FORWARD</td>
<td>LEAN FORWARD</td>
<td>ALERT</td>
</tr>
<tr>
<td></td>
<td>2 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
<tr>
<td></td>
<td>3 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
<tr>
<td><strong>Severe</strong></td>
<td>0</td>
<td></td>
<td></td>
<td>ALERT</td>
<td></td>
<td>STAND DOWN</td>
</tr>
<tr>
<td></td>
<td>1 ✓</td>
<td></td>
<td></td>
<td>LEAN FORWARD</td>
<td>STAND UP</td>
<td>ALERT</td>
</tr>
<tr>
<td></td>
<td>2 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
<tr>
<td></td>
<td>3 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
<tr>
<td><strong>Extreme/ Catastrophic</strong></td>
<td>0</td>
<td></td>
<td></td>
<td>LEAN FORWARD</td>
<td>ALERT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
<tr>
<td></td>
<td>2 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
<tr>
<td></td>
<td>3 ✓</td>
<td></td>
<td></td>
<td>STAND UP</td>
<td>STAND UP</td>
<td>LEAN FORWARD</td>
</tr>
</tbody>
</table>
QFES Bushfire Response Framework
QFES manage bushfire response operations through a framework of: initial response teams, Incident Control Points, ICCs and Regional Operation Centres.

Provision of Liaison Officers
Liaison Officers from agencies such as QFES and QPS may be deployed to both the ICC and council to facilitate improved communication and decision making at both centres.

Media Management
Media Management during large scale, dangerous bushfires is particularly critical to ensure public messages and bushfire warnings are delivered effectively. QFES maintain their own media management arrangements for bushfire response. Council’s media staff also play a crucial role in coordinating and delivering public messages and bushfire warnings.

Neighbourhood Safer Places
A Neighbourhood Safer Place (NSP) is an approved local open space or building, such as ovals or sports clubs, where people may gather, as a last resort, to seek shelter from a bushfire. An NSP may be used by the public when:

- A Bushfire Survival Plan has failed,
- A plan was to stay but the extent of the fire means that a home cannot withstand the impact of the fire and therefore is not a safe place to shelter, and
- The fire has escalated to an ‘extreme’ or ‘catastrophic’ level and voluntary evacuation is the safest option.

Other information for the use of NSPs:
- Firefighters may not be present, due to operational needs to fight the fire front elsewhere;
- NSPs are not evacuation centres and do not have security measures, amenities, accommodation or any other provisions or services;
- NSPs do not cater for animals or pets;
- NSPs do not provide meals or amenities;
- People should not drive through fire affected areas to get to a NSP; and
- NSPs may not provide shelter from the elements, particularly flying embers.

For a list of NSP in the region, visit: Rural Fire Service.

Bushfire - Relief and Transition to Recovery
Once a bushfire has passed, it is important that the affected community receives appropriate relief measures and that recovery commences as quickly as possible. Refer to the Relief and Recovery Operations section detailed earlier in this LDMP.

The transition from disaster operations to recovery is critical and should be planned and managed to ensure a seamless transition that enables the recovery effort to be effective as soon as possible. This section outlines the key measures that must be undertaken before recovery operations can commence effectively and which should be undertaken in the transition period after the main response effort before the disaster operations response structure stands down.

MBR LDMG Strategies for Transition to Recovery
The passing of a bushfire through an area is the trigger for the commencement of immediate relief services and the transition to recovery.

Planning for post-bushfire operations in support of the transition to recovery should be undertaken during the bushfire event itself in order to be effectively implemented immediately the fire danger has passed. It
should be noted that a bushfire may have passed through an area but still be active in other areas.

Post-bushfire operations will be conducted as soon as possible for those areas affected by fire, regardless of any bushfires that may still be burning in other areas of the region.

**Strategy 1: Planning Post-Bushfire Operations during Response**

It is imperative that post-bushfire operations are conducted quickly after the passage of a fire through an area. There may be people and animals that require immediate assistance after a bushfire and there may be actions necessary to help reduce further loss or damage to property.

Concurrent planning of the post-fire operations is necessary to ensure that such operations can be immediately undertaken once the bushfire has passed through an area.

Waiting until a bushfire is completely extinguished before commencing post-bushfire operations in areas where the bushfire has already passed is unacceptable.

**Strategy 2: Safety Assessments of Burnt Out Areas**

Safety assessments of burnt out areas must be undertaken before agencies and the public are allowed to enter. They should be undertaken as soon after the passage of the bushfire as practicable commensurate with available resources. Safety assessments of burnt out areas will usually follow behind the bushfire front.

QFES is responsible for undertaking safety assessments of burnt out areas.

**Strategy 3: Undertake Disaster Victim Identification**

QPS will mobilise appropriate resources and deploy into the burnt-out areas as required once the area has been deemed safe by QFES.

If it is suspected, or known, that there have been deaths from the bushfire, those areas should be assessed for safety as a priority to enable special teams to be deployed as soon as possible.

QPS may declare parts of the fire ground a crime scene which will impact on the ability of other agencies and the public to return to the area. The public will not be permitted to return to areas deemed to be a crime scene where these operations are being undertaken, until approval is given by QPS.

**Strategy 4: Coordinated Disaster Assessment and Reporting Processes**

Post-disaster assessment is the formal process undertaken to assess the damage caused by the event in order to:

- Assess the immediate community support and relief services needed by those impacted;
- Determine the immediate action, in priority order, that needs to be taken for public safety or to restore essential services; and
- Provide data on damage for use by recovery managers when planning and implementing recovery programs.

Initial damage assessments may be included in the QFES safety assessment of burnt out areas; however, more formal and focused damage assessment processes should be undertaken for the above purposes.

For further Bushfire information, visit: [Council - Bushfire Preparedness](#)
HAZARD SPECIFIC ARRANGEMENTS - SEVERE WEATHER

The Moreton Bay Region is subject to severe weather such as flooding, heatwave, storms and storm tide. Each year, on average, severe weather is responsible for more damage and cost to the insurance industry than tropical cyclones, earthquakes and bushfires combined. Lightning strikes, falling tree limbs, windblown debris, flash flooding and the capsizing of small boats in open water causes most deaths and injuries. This section focuses on council’s approach to respond to and recover quickly from the impacts these events have on our community.

Moreton Bay Region - Severe Weather Strategies

The MBR LDMG is committed to the following overarching severe weather strategies:

- Adopting a risk-based approach to the overall management of severe weather hazards;
- Ensuring the community is informed of the potential dangers associated with severe weather so that they are aware of what they need to do to preserve life and property;
- Providing the community with appropriate early warning of potential or actual severe weather that may impact the region to enable them to take early action to preserve life and property;
- Ensuring that accurate and timely public information regarding the impact of severe weather is provided;
- Providing storm and flood affected communities with appropriate support, such as evacuation, relief and recovery, as required;
- The early activation of response agencies and coordination mechanisms before or during severe weather events that have potential to cause severe impact on the community;
- Ensuring that multi-agency responses are coordinated and are appropriately resourced in order to minimise disruption and to preserve life and property;
- Ensuring that all necessary actions to ensure public safety are undertaken;
- Ensuring that the communities are provided with relevant and appropriate relief and recovery services after the impact of severe weather so that they can quickly and effectively return to normal;
- Wherever possible, ensuring the continuity of essential services to minimise the disruption to the community caused by storm events;
- Undertaking appropriate flood prevention and mitigation activities on an ongoing basis in order to reduce the flood risk in the region;
- Helping communities, families and individuals to prepare themselves for potential flood events; and
- Providing communities at risk of potential flooding with appropriate early warning so that they can take appropriate and early action.
Key responsibilities

The following agencies have responsibilities relating to severe weather hazard management, response and recovery activities:

<table>
<thead>
<tr>
<th>Entity</th>
<th>Specific Severe Weather Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBR LDMG</td>
<td>The MBR LDMG has overarching responsibility for severe weather hazard management to enhance public safety</td>
</tr>
</tbody>
</table>
| MBRC       | • Primary agency for severe weather response  
             • Undertaking flood studies, preparing, and maintaining flood mapping and modelling  
             • Floodplain and land use management and environmental assessments  
             • Community education, staff training and exercises  
             • Road closures  
             • Stormwater and catchment management  
             • Public warnings for potential or actual severe weather  
             • Clearing debris from public assets  
             • Assisting the community as required regarding storm debris removal  
             • Activating resources and operational centres for disaster response and recovery  
             • Opening and managing evacuation centres |
| QPS        | • Supporting agency for public information and warnings  
             • Policing of road closures as required  
             • Assistance with policing road closures as required  
             • Support to evacuations as required  
             • Coordination of search and rescue operations |
| QFES       | • Supporting agency through provision of swift water rescue capability  
             • Response to vehicle accidents, building collapse, hazardous materials, search and rescue |
| SES        | • Storm damage response  
             • Assist with search and rescue  
             • Flood response operations |
| DTMR       | • Supporting agency for flood warnings and public information on flood events in relation to State/Federal roads and major transportation corridors  
             • Road closures for State roads |
| Seqwater   | • Operation of the North Pine Dam in accordance with its ‘Flood Operation Manual’  
             • Providing advice to the MBR LDMG on the impact of proposed releases that may affect downstream communities  
             • Additional information relating to Seqwater’s responsibilities for North Pine Dam and Sideling Creek is provided in subsequent paragraphs |
| Energex    | • Public information regarding power outages and restoration times  
             • Restoration of impacts on electricity supply |
| BOM        | Provision of generalised storm and flood warnings for coastal rivers  
             *Note: the BOM does not provide Flood Warnings for the Pine and Caboolture Rivers due to the relatively fast nature of flooding in these areas* |
| DCCSDS     | Provision of Human/Social support to storm and flood affected people and communities as required |
| Queensland Health | Provision of public health information in relation to health and safety during severe weather events |
| Red Cross  | • Support in evacuation centre and recovery management as required.  
             • Provide outreach services |
## Severe Weather Consequences:

<table>
<thead>
<tr>
<th>Element at Risk</th>
<th>Detail</th>
</tr>
</thead>
</table>
| **PEOPLE**      | • Impact on physical wellbeing (injury or death)  
|                 | • Impact on social wellbeing (isolation, missing persons, stranded, trapped, lifestyle disruption)  
|                 | • Impact on psychological wellbeing (stress, irrational behaviour)  |
| **ENVIRONMENT** | • Loss or damage to vegetation and/or degradation of land  
|                 | • Displace or loss/injury of fauna  
|                 | • Contamination of water bodies and water quality impacts  
|                 | • Increase in noxious pests/change in habitable areas  
|                 | • Loss or disruption to the provision of environmental services  |
| **ECONOMY**     | • Interruption to business operations:  
|                 | o Major - Top 5 (retail trade, construction, health care and social assistance, manufacturing, education and training)  
|                 | o Minor - tourism and other sectors  
|                 | o Decrease in business output  
|                 | o Major - Top 5 (manufacturing, construction, health care and social assistance, retail trade, education and training)  
|                 | o Minor - tourism and other sectors  
|                 | o Disruption to or loss of transport and handling facilities/systems affecting supply of goods, product, stock  |
| **PUBLIC**      | • Loss of or reduced capacity to sufficiently respond to an event  
| ADMINISTRATION  | • Disruption to staff through the loss or interruption of the provision of corporate services  
|                 | • Reduced ability of elected officials to represent the constituents  |
| **SOCIAL**      | • Permanent loss of cultural artefacts and data  
| SETTING         | • Social networks weakened and unable to assist the community  
|                 | • Non-urban sector of the population may be temporarily unable to contact and be helped by social structures  
|                 | • Loss or disruption to the provision of community services  
|                 | • Inability to participate in community activities (e.g. sports, social clubs)  
|                 | • Inability to function and/or provide services (e.g. support groups)  
|                 | • Inability to interact with other communities  |
| **INFRASTRUCTURE** | • Loss or disruption to the provision and maintenance of public assets (roads, bridges, drainage systems, etc)  
|                 | • Damage, loss, disruption to the operation or provision of:  
|                 | o Critical infrastructure (trunk infrastructure)  
|                 | o Rail and road networks  
|                 | o Sewerage treatment plants/pump stations  
|                 | o Dams, water treatment plants/pump stations  
|                 | o Communications networks  
|                 | o Electrical sub-stations  
|                 | o Hospitals  
|                 | • Damage, loss, disruption to the operation or provision of:  
|                 | o Power and water supply networks  
|                 | o Communications  
|                 | o Jetties, marinas, slipways and airports  
|                 | • Damage, inundation or destruction (structural or internal) of:  
|                 | o Residential and non-residential buildings  
|                 | o Government buildings  
|                 | • Medical and emergency facilities  |
Flood - Hazard Identification and Risk Assessment

The Moreton Bay Region is characterised by steep mountainous terrain in the west of the region from which numerous rivers and streams flow eastwards to the sea across a relatively narrow floodplain.

The region is affected annually by severe weather that can deposit large amounts of rain in the river and creek catchments resulting in riverine flooding, flash flooding and overland flows which can have a significant impact on communities.

Very high tides can also cause flooding in coastal areas and can exacerbate inland flooding by disrupting river and creek outflows.

Flooding in the region occurs quickly as water drains from the mountainous areas in the west of the region.

The relatively narrow nature of the floodplain means that flooding occurs quickly after heavy rain and generally recedes within a day.

Flood Hazard Areas

Flood hazard areas, as defined under the MBRC Planning Scheme, are provided as map overlays available to the public. Areas depicted in these overlays are defined as high, medium or balance (low or negligible) risk flood hazard areas. Climate change considerations have been considered in these overlays.

For council’s flood hazard overlay map, visit: Council's Planning Scheme Interactive Map

River/Stream Catchments

A total of 14 separate drainage catchments are located within the region including the Pine and Caboolture Rivers, the headwaters of the Mary River, the Stanley River (a major tributary of the Pine River).
of the Brisbane River) and numerous large creek catchments. Some of these catchments straddle the boundary of the region. This means there is 630km² of additional catchment area that is located outside the region, which may contribute to the floodplains located within the region. The catchment area therefore has a total footprint of 2,700km².

The 14 catchment basins in the region are:

- Caboolture River (CAB)
- Hays Inlet (HAY)
- Lower Pine River (LPR)
- Brisbane Coastal (BCC)
- Bribie Island (BRI)
- Byron Creek (BYR)
- Burpengary Creek (BUR)
- Mary River (MAR)
- Neurum Creek (NEU)
- Pumicestone Passage (PUM)
- Redcliffe (RED)
- Sidling Creek (SID)
- Stanley River (STA)
- Upper Pine River (UPR)

According to the BOM (2012), major flooding in the region requires large-scale rainfall situated over the Pine and Caboolture River catchments. When the North Pine Dam is at full capacity, overflow may occur, and inundation of the Petrie is likely. The likelihood of flooding in the catchment is as follows:

- Average catchment rainfalls in excess of 200mm in 12 hours cause minor to moderate flooding in both the Pine and Caboolture catchments. This flooding may lead to minor traffic difficulties as well as inundation of low lying areas.
- Average catchment rainfalls in excess of 300mm in 12 hours may cause major flooding. Rises in stream height may severely affect traffic capabilities and may affect houses and businesses on a widespread level. Releases from the North Pine Dam spillway during flood events usually result in the closure of Young's Crossing Road.

For information relating to MoretonAlert flood warning groups and associated gauges, visit: Council's Flood Gauge Information
MBRC Catchments:
Flood Categories

The flood categories, as categorised by the BoM are:

**Minor Flood:** May cause inconvenience. Low-lying areas next to watercourses are likely to be inundated. Minor roads may be closed, and low-level bridges submerged. In urban areas, inundation may affect some backyards and buildings below floor level as well as bicycle and pedestrian paths. In rural areas, removal of stock and equipment may be required.

**Moderate Flood:** In addition to the above, the area of inundation is more substantial. Main traffic routes may be affected. Some buildings may be affected above the floor level. Evacuation of flood affected areas may be required.

**Major Flood:** In addition to the above, extensive rural areas and/or urban areas are inundated. Many buildings may be affected above the floor level. Properties and towns are likely to be isolated and major road and traffic routes closed. Evacuation of flood affected areas may be required. Utility services may be disrupted.

**Extreme Flood:** This causes inundation of houses and business premises and is beyond the current 1 in 100-year flood level used to control development levels. The general evacuation of people from significantly populated areas is likely to be required. Inundation up to the maximum footprint of the floodplain corresponding to probable maximum flood is considered very unlikely to occur but may be possible.

**Flash Flood:** The BoM describes flash flooding as situations where the rain to flood time is less than 6 hours. As with the locations where river/creek flooding occurs, it is typically the older developed areas which are subject to flash flooding. In these areas, the standards and methods used in design of the drainage systems was not comparable with current standards and therefore larger volumes of rainfall remain in the overland conveyance system. Areas in which flash flooding has historically occurred are Redcliffe, Bellara, Bongaree, Kallangur, Petrie Ferny Hills, Arana Hills and Everton Hills. The short duration of flash flooding events makes them harder to predict and more difficult to provide warnings. Flash flooding is considered the most dangerous form of flooding and the most likely to cause loss of life.

Summary of Risk Factors

The risk factors that may influence flood risk include:

- The nature of flooding in the region is characterised by the short interval between intense rainfall caused by slow moving thunderstorms or east coast lows and resultant flood impact. Generally, this interval is between 6 to 9 hours but for some areas of the region is less than 2 hours. This reduces warning time and increases the need for early activation of flood prediction and response capabilities.
- Older, developed areas of the region are more vulnerable to flash flooding caused by the inability of existing drainage structures to cope with large rainfall events. Large numbers of people live in these older areas and flooding is likely to have a greater effect on people in these older developed areas.
- A large number of roads within the region may be affected by flooding and may need to be closed to ensure public safety. The rapid onset of flooding means that a large number of roads may need to be closed in very short time frames.
- The short duration of flooding across the region dictates the need for well-developed post-flood operations procedures including damage assessment, disaster relief services, debris clearance and clean-up.
Changing climate that may lead to greater intensity in storms with higher levels of short duration rainfall could increase the flood risk across the region.

Historical flood data for selected river height stations in Caboolture and Pine Rivers catchments for the period 1972-2017:

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</tr>
</thead>
<tbody>
<tr>
<td>Baxters Creek</td>
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</table>

All heights are in metres

Flood - Hazard Mitigation and Risk Reduction

This section outlines the hazard mitigation and risk reduction measures to reduce flood vulnerability.

Minimising or mitigating the flood risks to life and property is generally achieved in three ways:

1. **Property Modification** – by modifying or removing existing buildings and infrastructure and/or by imposing controls on future property and infrastructure development (e.g. planning scheme and development controls);

2. **Flood Modification** – by modifying the behaviour of the flood itself (capital works, drainage improvements and local building protective measures);

3. **Response Modification** – by modifying the response of the population at risk to better cope with a flood event (flood prediction and warnings, community education and preparedness, emergency response plans, etc.)

These form the basis of the MBR LDMG flood mitigation strategies, outlined below.
MBR LDMG FLOOD MITIGATION STRATEGIES

Strategy 1: Mitigation through Planning Schemes - Property Modification

Council’s planning scheme and development application process ensure all planned development in flood and overland flow hazard areas is subject to appropriate development controls in accordance with the SPP.

The SPP is a key component of Queensland’s land use planning system. It defines the Queensland Government’s policies about matters of state interest in land use planning and development, including flood hazard areas.

A flood or overland flow hazard area is land that is considered likely to be impacted by flooding and overland flow that will impact on the community in a significant way.

Under the SPP, areas that have been identified as flood or overland flow prone require additional development controls to reduce flooding risk. Applications for development in these areas are to be assessed against the following requirements2:

- Avoids natural hazard areas or mitigates the risks of the natural hazard to an acceptable or tolerable level;
- Supports, and does not unduly burden, disaster management response or recovery capacity and capabilities;
- Directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties;
- Maintains or enhances natural processes and the protective function of landforms and vegetation that can mitigate risks associated with the natural hazard; and
- Facilitates the location and design of community infrastructure to maintain the required level of functionality during and immediately after a natural hazard event.

The MBRC Planning Scheme outlines provisions and development controls that relate to the level of risk for premises.

For free Flood Check Property Reports, visit: Council’s Flood Check Web Page

For further information, visit: Council’s Overland flow path overlay Council’s Flood Hazard Overlay

Strategy 2: Mitigation through Hazard Reduction Programs - Flood Modification

Flood modification involves changing the characteristics of the land or flood-proofing buildings to eliminate or reduce flood hazards. Council undertakes annual programs aimed at improving drainage and flood proofing assets where possible, based

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2 State Planning Policy, April 2016
on an assessed priority of works and available funding.

Flood modification can also include property owners undertaking local drainage improvements on their properties to avoid or minimise flooding risk. These may be permanent works or temporary in nature, such as the laying of sandbags to provide protection to property. Council encourages property owners to undertake improvements to their property drainage in accordance with the planning scheme.

Correct installation of sandbags is critical to ensure they are effective.

For sandbag locations, availability and instructions for the correct use of sandbags, visit: Council's Sandbag information

Strategy 3: Mitigation through Community Education Programs

Community education is a key element of council’s flood management effort. This provides the community with appropriate knowledge of the actions and safeguards they need to take in order to prevent or reduce the impact of flooding. Council, with support from QPS and other agencies is responsible for defining and delivering community flood awareness and flood safety programs.

Key elements of these programs include:
- General information on flood risks;
- How and where the community can access severe weather and flood warnings including the BoM, MoretonAlert and road conditions; and
- Safety measures for people to observe during flood conditions.

Council is an active member of the Brisbane Community Engagement Working Group, which facilitates a coordinated process with various agencies for collaborative prioritising, planning and delivery of severe weather community engagement activities across South East Queensland.

MBR LDMG Annual Review Community Flood Awareness and Safety Education Programs

The MBR LDMG periodically reviews the collective efforts of relevant agencies in delivering community flood awareness and safety education throughout the year with a focus on increasing community awareness prior to the wet season.

MBRC Flood Information Centre

During a flood event, the MBRC Drainage Waterways and Coastal Planning unit activates the Flood Information Centre (FIC), to provide all flood information to the LDC.

Memorandum of Understanding

The BoM, in conjunction with MBRC operates a flood warning system for the Pine and Caboolture Rivers, based on the network of rainfall and river height stations.

A MoU between the BoM and council defines the responsibility of respective parties in a program for development and operation of a cooperative local flood warning system.

Floodplain Risk Management Framework

Council has developed a risk management framework to help ensure that floodplains within the region are managed for the long-term benefit of the community, hazards to people and infrastructure are minimised and environmental values of the floodplain are protected.

The framework is designed to meet the following broad principles:
- All levels of government and the local community know and accept their responsibilities for managing flood risk and all relevant agencies provide aid to the community in recovering from the devastating impacts of flooding;
• Flood risk and flood behaviour is understood and considered in a strategic manner in the development decision-making process;
• Land use planning and development controls minimise both the exposure of people to flood hazard and the potential damages to property and infrastructure;
• A broad range of floodplain management measures are assessed across a broad range of floods up to the Probable Maximum Flood, and floodplain management measures appropriate to the location and acceptable to the local community economically, socially and environmentally are used to manage flood risk; and
• All relevant agencies work in partnership to provide flood forecasting and warning systems and emergency response arrangements that cope with the impacts of flooding on the community in light of the available flood intelligence.

For further information, visit: Council’s Floodplain Risk Management Framework

Flood - Preparedness and Planning

Flood Prediction and Warning Strategies

Council is the primary agency for flood prediction and the provision of flood warnings in the region. The key strategies for effective flood prediction and warnings are:

• Maintenance of the regional flood-warning network in conjunction with the BoM;
• Allocation of clear responsibilities within council for flood prediction and for the development of warning messages;
• Rapid activation of council resources for effective flood prediction and warning services including the activation of a FiC, when required;
• Documented procedures for managing flood prediction and warning services in fair weather, flood events, post-flood events and storm tide;
• Maintenance of flood intelligence tables, flood mapping, gauge data and flood warning manual;
• Documented procedures for flood warning messaging;
• Maintenance of defined Alert Groups to streamline the delivery of warnings to those at risk; and
• Conduct of flood planning exercises based on realistic scenarios to practice and test council’s response.

The regional flood warning system:

• Provides predictions of flood magnitude for fast, medium and slow response zones of the region’s catchments;
• Provides flood level predictions for key sites and river height stations; and
• Compares flood levels with potential impacts at each gauge location.

Mitigation through Response Plans

Mitigating the effects of flooding is also achieved by effective response plans which include:

• Road closures and signage of alternate routes;
• Public information;
• Pre-positioning of emergency services e.g. swift water rescue teams at strategic locations to ensure a rapid response; and
• Evacuation plans for high risk areas.

Flood Prediction and Outputs

The MBRC FiC develops flood intelligence and specific reports, based on either forecast rainfall or real time rainfall events. The centre also responds to BoM warnings and considers the likely flood magnitude based on forecast rainfall.

Flood - Emergency Communications

Effective emergency communications across the community and between agencies is critical due to the fast-moving nature of flood events in the region.
Standard Emergency Warning Signal

The SEWS can be used during major floods, flash floods and/or dam breaks as well as for intense rainfall leading to flash floods.

The BoM is the authorising authority. Council may request the BoM to use the SEWS for a particular severe weather event.

MoretonAlert

Due to the rapid onset of flooding, the use of MoretonAlert is vital for timely flood warnings to flood affected communities or those likely to be impacted.

For the issuing of targeted warnings across the region, council has developed a number of flood alert groups.

Public Access to Flood Gauge and MoretonAlert Information

Data from BoM river height gauges is readily available to the public along with a copy of the above MoretonAlert flood alert groups. These allow the public to monitor relevant gauges to assess their own flood risk.

For more information, visit: Council's Flood Gauges

Emergency Alert

The rapid onset of flood events in the region may prevent the use of EA.

In this case, MoretonAlert is likely to provide a much more rapid and focused warning capability.

Flood - Response

A number of agencies provide effective flood response including council, QPS, QFES, SES, Seqwater, Energex, DTMR, Australian Red Cross, DCCSDS and Queensland Health.

Primary Responsibilities for Flood Response

Council is the primary agency for flood management and has the following key strategies for flood response operations.

Strategy 1 - Activation of Resources

Council will activate various resources to adequately respond to the flood event. Centres such as FIC, LDCC and operational staff will be activated early to manage the short intervals between heavy rainfall and flooding effects.

Strategy 2 - Provision of Warnings and Public Information

BoM Severe Weather Warnings and Flood Watches are the first warning levels issued to the public. Council receives these warnings and rapidly disseminates these to residents using traditional and social media.

Specific flood warnings follow to warn people who may be significantly affected by flooding may need to be undertaken. An example may include door-knocking campaigns by council staff or emergency services where public safety may be jeopardised in areas of high flood risk.

Other information issued may include:

- Road closures, traffic diversions and re-opening of closed roads;
- Public safety messages;
- Opening of evacuation centres;
- Likely duration of flood events;
- Anticipated clean-up operations and information on property clean-up and safety advice; and
- Information on the council operations and the operations/activity of key supporting agencies.

Note: The BoM does not issue site specific flood warnings in the region

Strategy 3 - Road Closures, Diversions and Signage

Council closely monitors the status of all roads that may be affected by flooding and where required will:

- Close affected roads;
- Establish traffic diversions as required;
• Install road closure signage; and
• Maintain the Road Conditions report.

For state road conditions, visit: Department of Transport and Main Road State Roads conditions

For local road conditions, visit: Council’s Road Conditions Report

**Strategy 4 - Opening of Evacuation Centres**

Flooding can result in people being unable to remain in or access their homes. For those affected, the best option is to stay temporarily with family and friends. Council can make arrangements for those needing temporary accommodation, through the opening and management of evacuation centres.

For further information, visit: Council’s Evacuation Centres

**North Pine Dam Releases**

Seqwater provides information about water releases from North Pine Dam.

On receipt of a dam release notification from Seqwater, council will issue warning messages as required.

For further information, visit: Seqwater

**Flood - Relief and Transition to Recovery**

Flood impacts require effective and immediate relief services to those affected. Plans to activate community assistance in a timely and coordinated approach, are enacted early for a rapid transition to recovery after flooding has passed.

**MBR LDMG Strategies for Transition to Recovery**

The strategies for immediate post-flood operations are:

1. Effective planning for post-flood operations that establishes priority of effort across the region.
2. Undertaking timely and coordinated flood damage assessments and reporting for flood impacted areas.
3. Timely clearance of debris and hazards associated with flooding from public assets (roads, bridges, culverts, etc).
4. Re-opening of closed roads and providing up to date public information on the opening of roads.
5. Providing timely assistance to the community for flood clean-up operations in flood affected areas.
6. Providing appropriate and timely disaster relief to people impacted by flooding.
7. The conduct of formal handover procedures from disaster operations to recovery.

**Strategy 1 - Planning Post-Flood Operations during the Response Phase**

Flood impacts vary across the region and floodwaters recede at different times. Additionally, some areas may require assistance ahead of others. Council applies a planned, prioritised and coordinated approach for the provision of relief services, clean-up operations and restoration of council assets and services.

**Strategy 2 - Flood Damage Assessment and Reporting Processes**

Flood damage assessments and safety inspections are usually required after flood events. Damage may occur to public assets, businesses, and private residences. The nature of damage and safety assessments is likely to differ for each. Council arranges any required damage and safety assessments for public assets such as bridges, culverts and local roads.

Emergency services and private sector agencies such as insurance companies may also undertake assessments of damage to business and private homes.
All assessments require careful coordination to develop a comprehensive understanding of the overall flood impact, such as:

- Impact on businesses and industry to determine economic impact;
- Environmental impact;
- Human-social infrastructure, e.g. community clubs, sporting associations; and
- Public infrastructure and assets.

**Strategy 3 - Removal of Debris and Flood Related Hazards from Public Assets**

Flood events create large volumes of debris that will need to be cleared from public assets such as roads, bridges and culverts. This is required before assets can be properly inspected, deemed safe and returned to normal use. In addition, flood debris may include hazardous materials that pose a safety risk to the public or the environment.

Council plans for and arranges:

- The returning of assets and services to normal operation as soon as possible, and
- Disposal of debris that requires clearance.

**Strategy 4 – Re-opening of Roads and Public Information**

Closed roads can have a significant economic impact on the region. Council will re-open closed roads as soon as possible and when safe to do so.

The status of local roads are updated at: [Council's Road Conditions Report](#)

**Strategy 5 - Provision of Assistance to the Community for Clean-Up Operations**

The removal of flood debris and flood damaged goods from homes and businesses is primarily the responsibility of the owner.

However, flood events can cause significant damage and the community will often require assistance in the removal and clean-up of damaged goods after a flood event.

Council will consider ways to assist the community to clean-up after a flood event.

Clean-up operations can only commence when it is safe for home and business owners to return to their properties after a flood.

**Strategy 6 – Provision of Appropriate Disaster Relief to People impacted by Flooding**

The provision of disaster relief varies from government payments to the provision of temporary accommodation or counselling services provided by a range of agencies. Council is committed to identifying people that may have been impacted by a flood event and providing appropriate relief to those who need it.

**Strategy 7 - Formal Handover from Disaster Operations to Recovery**

Disaster operations cease when the above strategies have been undertaken and detailed flood impact analysis is complete. The above strategies enable council to develop specific recovery plans to address the needs of the community following a flood event.

For further Flooding information, visit: [Council – Flood](#)

**Heatwave - Hazard Identification and Risk Assessment**

A heatwave is defined as any long period of very hot weather usually above 37°C.

Heatwaves have the potential to kill more people than any other hazard in Australia. They can also cause economic losses through livestock and crop loss, damage to roads, transport infrastructure, bridges and essential services.
Maximum temperatures in the region typically occur between November and February; however, excessive heat can occur between October and March. January is the most common month where heatwave conditions are experienced.

The mean annual temperature in the region has risen by 0.2 degrees per decade since 1960, and the predicted rise in temperature by 2070 is 3 degrees.

The level of individual discomfort is determined by the following factors:

- **Meteorological:** air temperature, humidity, wind and direct sunshine;
- **Cultural:** clothing, occupation and accommodation; and
- **Physiological:** health, fitness, age, level of acclimatisation.

Impacts of high temperatures, above 35 degrees include:

- Heat exhaustion;
- Increased mortality among people with vulnerabilities;
- Reduced food crops;
- Increase in plant diseases and pests;
- Reduced water supply; and
- Increased bushfire hazards.
Heatwave history of South East Queensland, including the Moreton Bay region, 1899-2017:

<table>
<thead>
<tr>
<th>Period</th>
<th>Description</th>
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<tbody>
<tr>
<td>1-3 January 1899</td>
<td>At least 3 days with daily maximum temperatures in the top 5%</td>
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<tr>
<td>1-7 January 1903</td>
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<td>1-5 January 1905</td>
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<td>5-6 March 1919</td>
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<td>9-12 January 1924</td>
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<td>16-18 January 1929</td>
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<td>6-9 January 1994</td>
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<tr>
<td>6-8 November 1994</td>
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<tr>
<td>January 1940</td>
<td>One of the most severe heatwaves in South East Queensland in terms of fatalities. At least 80 people died. Brisbane had 9 consecutive days of extreme heat with a maximum temperature of 43.2°C</td>
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<tr>
<td>January 2000</td>
<td>South East Queensland recorded 22 fatalities</td>
</tr>
<tr>
<td>January 2001</td>
<td>One of the worst heatwaves since 1903</td>
</tr>
<tr>
<td>24-27 September 2002</td>
<td>Widespread heatwave included Sunshine Coast, Amberley and Gatton</td>
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<tr>
<td>10-23 February 2004</td>
<td>Temperatures recorded up to 41.7°C</td>
</tr>
<tr>
<td>April 2005</td>
<td>Australia recorded 3.11°C above average temperatures for the month</td>
</tr>
<tr>
<td>December 2005-January 2006</td>
<td>From 21 December, temperatures 39°C or above recorded in most states</td>
</tr>
<tr>
<td>5-8 October 2006</td>
<td>Maximum temperatures reached 8-12°C above average reaching 40.2°C</td>
</tr>
<tr>
<td>22 February 2008</td>
<td>South East Queensland reached temperatures of 36°C</td>
</tr>
<tr>
<td>January to February 2009</td>
<td>South and Eastern Australia recorded widespread temperatures over 45°C</td>
</tr>
<tr>
<td>24 August 2009</td>
<td>Brisbane set a new record for the hottest August day in history with 35.4°C</td>
</tr>
<tr>
<td>January 2012</td>
<td>Maximum temperatures exceeded the long term average</td>
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<tr>
<td>January 2013</td>
<td>South East Queensland recorded temperatures up to 10°C higher than average</td>
</tr>
<tr>
<td>January-February 2014</td>
<td>Temperatures reached up to 43.5°C, just above the highest recorded in 1940</td>
</tr>
<tr>
<td>14-17 November 2014</td>
<td>Brisbane recorded temperatures up to 37.9°C, Amberley reached 43.7°C</td>
</tr>
<tr>
<td>March 2015</td>
<td>Unseasonal temperatures recorded of up to 36.1°C in Brisbane</td>
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<tr>
<td>February 2016</td>
<td>Temperatures reached 38.9°C in Amberley</td>
</tr>
<tr>
<td>January-February 2017</td>
<td>Fifth-warmest February on record for Queensland. Gatton recorded 46.8°C</td>
</tr>
</tbody>
</table>
Heatwave - Response
Queensland Health is the primary agency responsible for managing the effects of heatwave in our region.

The MBR LDMG will provide support to Queensland Health as required, to reduce the effects on residents. This may include providing temporary shelters from the heat and public information.

Heatwave - Emergency Communications
Queensland Health in conjunction with the MBR LDMG will provide warnings and public information relating to heatwave events.

For further Heatwave information, visit:
Council - Heatwave
Queensland Government - Heatwave

Storm - Hazard Identification and Risk Assessment
This section outlines the nature of storm hazards and associated risks in the MBR.

The region averages between 20 and 25 thunder days each year. On each of these days there are often up to 5 individual storm systems involved. In summary:
• The thunderstorm ‘season’ is usually October to April.
• The predominant storm approach direction is from the south-west.
• The typical forward speed of storms is 40 km/hr.
• Approximately 30% of severe storm days involve severe hail.
• Tornadoes occur on average about 1 day per year in the region.

Historically, a total of 33 cyclone events that passed within 200km of the region have been recorded over the past 100 years. Apart from strong winds, these systems bring intense storms and heavy rainfall over wide areas and produce extensive localised and regional flooding.

It is expected that climate change could result in an increase in the severity of cyclones and associated severe thunderstorms and possibly extend their tracks southward. Projected southward shifts in the primary regions of cyclone development through the coming century could result in a greater cyclone impact within the region in the future.

Although a thunderstorm is typically only about 10km across and exists for only 30 minutes or so, severe storms can have devastating impacts due to structural damage, flooding and disruption to infrastructure. Hail causes the greatest proportion of the damage, accounting for nearly half the total losses from severe storms. Severe winds can be associated with severe storms. Recent severe localised thunderstorm events experienced in the region have proved that they can cause significant community disruption and damage.

Severe thunderstorms bring destructive winds over limited areas as well as intense rainfall that can cause localised flash flooding. Destructive winds have gusts over open flat land of between 125-164km/hr.

These wind speeds are associated with Category 2 Tropical Cyclones and can cause:
• Minor house damage;
• Significant damage to signs, trees and caravans;
• Damage to crops;
• Risk of power failure; and
• Small craft to break moorings.

Lightning strikes that reach the ground (‘forked lightning’) can spark fires and cause electrocution. Hailstones can form in a thunderstorm and have been recorded to become larger in size than cricket balls across Queensland.

Thunderstorms can bring intense rainfall that can exceed 200mm/hr, provided enough humidity exists. Flash floods often result from such a deluge where a relatively confined area receives most of the rain, but the drainage and runoff characteristics on the ground can also determine the area of greatest impact (see Hazard Specific Arrangements – Flood).

There is a high risk to the community should a very rare, high intensity severe storm move across populated areas.

The most significant impact of storms in our region is considered to be severe wind, even without rainfall or hail occurring. No part of the region is immune. Rural areas are more likely to suffer the impact of severe wind and hail than urban centres. However, when a severe storm does hit in an urban centre the damage and economic losses can be considerable.

Risks Associated with Severe Storms

The risk posed by destructive winds to buildings and infrastructure in a severe thunderstorm is similar to that experienced in cyclones and the risk of flooding is similar to that for creek flooding. Buildings can be destroyed, infrastructure damaged, power lines brought down, hail damage to cars, property and crops, loss of livestock and injuries or deaths.

The cumulative damage from frequent thunderstorms can be catastrophic, particularly if an area is hit by a sequence of storms during a single season and without adequate time to recover and rebuild.

Partially damaged structures may become more susceptible to frequent, severe storm damage. Buildings under construction/repair will be less robust during ongoing storm activity.

Locations at risk of Severe Storms

While no area within the region is immune from the risks posed by severe storms, some locations are more vulnerable to the effects of this weather form. The tops of hills are at risk of high wind and associated damage, the bottoms of valleys are at risk of flooding and all foreshore areas are at risk of storm tides.

Secondary Hazards

The impact of wind, hail, lightning and flooding may cause the following secondary hazards:

• Fires from lightning strikes;
• Rock falls and landslides/slumps in road cuttings and over-steepened slopes;
• Loss of sewerage and water supply causing health hazards;
• Traffic accidents;
• Inability of emergency services to respond to life threatening circumstances due to inaccessibility and road blocks;
• Large volumes of debris including material such as fibro (AC sheeting and roofing material) and asbestos insulation that will require special handling;
• Disruption of power supply for an extended period, with the knock-on failure of water supply and sewerage systems would pose a public health risk. Further risks to people on home dialysis, ventilators or defibrillators;
• Trees can be brought down on houses, cars, powerlines and people; and
• Damage by wind or wind-blown debris to infrastructure (phone, data services etc).
Summary of Risk Factors

The factors that may influence storm risk include:

- Lack of public knowledge and understanding of the risks posed by severe storms;
- The characteristic rapid formation and movement of individual or multiple storm cells across the region making localised predictions difficult and limiting the issue of timely warnings;
- Inadequate maintenance of homes and businesses that increases the risk of property damage due to storm impact;
- Lack of public knowledge of where to seek assistance in the event of loss of life, injury or damage to property; and
- Road closures due to vehicle accidents, wind debris or localised flooding may limit operational response and pose a public safety risk to the travelling public.

Storm and severe weather history of South East Queensland, affecting the region:

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 February 1893</td>
<td>Ex Tropical Cyclone brought a 15.2m high wall of water down the Stanley River, 150 homes were washed away, several fatalities</td>
</tr>
<tr>
<td>12-14 February 1898</td>
<td>Ex Tropical Cyclone brought 30 known deaths</td>
</tr>
<tr>
<td>April 1927</td>
<td>Severe cyclone</td>
</tr>
<tr>
<td>20 February 1954</td>
<td>East Coast Low saw 900mm rainfall, 0.64m storm surge and gale-force winds pushed boats into trees at Beachmere</td>
</tr>
<tr>
<td>28-30 January 1967</td>
<td>Ex Tropical Cyclone Dinah produced a 1.5m storm tide, flooding over 100 homes</td>
</tr>
<tr>
<td>February 1971</td>
<td>Cyclone crossed the coast at Redcliffe</td>
</tr>
<tr>
<td>February 1972</td>
<td>Cyclone Daisy</td>
</tr>
<tr>
<td>24-27 January 1974</td>
<td>Ex Tropical Cyclone produced 1318mm of rainfall at Mt Glorious recorded. Over 6,000 homes were flooded across Brisbane</td>
</tr>
<tr>
<td>27 October 1985</td>
<td>Tornado across Redcliffe</td>
</tr>
<tr>
<td>24 December 1989</td>
<td>185km/hr winds at Redcliffe caused damage to over 500 homes</td>
</tr>
<tr>
<td>2 December 1990</td>
<td>Cricket ball-sized hail at Samford and Ferny Grove with 12 homes damaged</td>
</tr>
<tr>
<td>16 December 1990</td>
<td>Hail storm at Margate, minor damage to buildings</td>
</tr>
<tr>
<td>1 July 1992</td>
<td>Gale force winds brought down power lines and damaged 30 homes in the Strathpine area</td>
</tr>
<tr>
<td>22 March 1992</td>
<td>Hail storm at Narangba with egg-sized hail damaged 24 homes and several vehicles and caravans</td>
</tr>
<tr>
<td>26 December 1992</td>
<td>Strong winds damaged 50 homes including the Albany Creek area</td>
</tr>
<tr>
<td>28 December 1992</td>
<td>Tornado recorded at Samford/Ferny Hills</td>
</tr>
<tr>
<td>8 January 1993</td>
<td>Golf ball-sized hail reported at Caboolture, damage unknown</td>
</tr>
<tr>
<td>28 March 1993</td>
<td>Gale force winds unroofed 7 houses and trees</td>
</tr>
<tr>
<td>29 October 1993</td>
<td>Large hail caused damage to houses and the Strathpine shopping centre</td>
</tr>
<tr>
<td>10 December 1994</td>
<td>Intense rainfall, large hail and wind gusts exceeding 100km/hr at Morayfield damaged houses and uprooted trees</td>
</tr>
<tr>
<td>19 November 1995</td>
<td>A 50m narrow storm cell destroyed several houses and unroofed 6 others at Caboolture. Damage was blown up to 300m away</td>
</tr>
<tr>
<td>18 December 1995</td>
<td>Cricket ball-sized hail and strong winds damaged property, brought down trees and power lines at Caboolture and Morayfield, estimated damage $2 million</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>19 February 1996</td>
<td>Heavy rainfall exceeded the 1 in 10-year rainfall amount</td>
</tr>
<tr>
<td>29 September 1996</td>
<td>Gail force winds recorded</td>
</tr>
<tr>
<td>6 November 1996</td>
<td>25mm rainfall recorded in 10 minutes at Wamuran</td>
</tr>
<tr>
<td>31 March 1997</td>
<td>Pea-sized hail and strong wind damaged property, uprooted trees and</td>
</tr>
<tr>
<td></td>
<td>caused airborne debris at Ningi, Beachmere and Bribie Island</td>
</tr>
<tr>
<td>7 November 1999</td>
<td>Golf ball-sized hail reported at Caboolture</td>
</tr>
<tr>
<td>10 July 2000</td>
<td>Cricket ball-sized hail reported at Woodford</td>
</tr>
<tr>
<td>30 December 2001</td>
<td>Strong wind caused unroofed houses and fallen trees at Caboolture</td>
</tr>
<tr>
<td>2 February 2002</td>
<td>70mm rain in 45 minutes fell at Camp Mountain</td>
</tr>
<tr>
<td>24 December 2002</td>
<td>Strong wind brought down power lines at Woodford</td>
</tr>
<tr>
<td>February 2003</td>
<td>Cyclone Beni</td>
</tr>
<tr>
<td>25 October 2003</td>
<td>Wind gusts of up to 90km/hr brought down trees at Redcliffe</td>
</tr>
<tr>
<td>26 October 2003</td>
<td>200m wide tornado damage track sighted at Mt Nebo</td>
</tr>
<tr>
<td></td>
<td>90 homes damaged at Samford, Mt Glorious, Yugar and Camp Mountain, also at</td>
</tr>
<tr>
<td></td>
<td>Redcliffe</td>
</tr>
<tr>
<td></td>
<td>Golf ball-sized hail at Redcliffe and Strathpine</td>
</tr>
<tr>
<td>23 November 2003</td>
<td>Strong winds brought down trees and power lines and unroofed caravans</td>
</tr>
<tr>
<td></td>
<td>at Caboolture</td>
</tr>
<tr>
<td>24 January 2004</td>
<td>Tree damage to homes in the Pine Rivers area</td>
</tr>
<tr>
<td>29 January 2004</td>
<td>Tornado signed at Mt Mee and Ocean View, uprooting trees and throwing</td>
</tr>
<tr>
<td></td>
<td>industrial bins up to 6 metres. Tree damage to homes in Ferny Hills</td>
</tr>
<tr>
<td>30 January 2004</td>
<td>Strong wind damage to property resulted in over 30 SES calls for help at</td>
</tr>
<tr>
<td></td>
<td>Strathpine. Golf ball-sized hail recorded at Woodford.</td>
</tr>
<tr>
<td>26 October 2004</td>
<td>Tornado across Mt Nebo, Samford and Redcliffe caused extensive damage</td>
</tr>
<tr>
<td>26 March 2005</td>
<td>Large hail at Burpengary and Deception Bay</td>
</tr>
<tr>
<td>25 November 2005</td>
<td>Tornado at Narangba unroofed buildings</td>
</tr>
<tr>
<td>27 November 2005</td>
<td>Heavy rainfall at Scarborough was recorded at 1 in 20-50 years</td>
</tr>
<tr>
<td></td>
<td>Golf ball-sized hail at Redcliffe</td>
</tr>
<tr>
<td>29 November 2005</td>
<td>Heavy rainfall at Drapers Crossing was recorded as 1 in 20-50 years</td>
</tr>
<tr>
<td>25 December 2005</td>
<td>Strong wind event at Redcliffe</td>
</tr>
<tr>
<td>8 November 2006</td>
<td>Storms with golf ball-sized hail at Caboolture and Woodford, unroofed</td>
</tr>
<tr>
<td></td>
<td>houses, brought down trees and power lines</td>
</tr>
<tr>
<td>8-9 October 2007</td>
<td>Large hail at Godwin Beach, Mango Hill, Redcliffe and Caboolture</td>
</tr>
<tr>
<td>26 October 2007</td>
<td>Large hail at Albany Creek</td>
</tr>
<tr>
<td>15 October 2008</td>
<td>Strong winds of up to 102km/hr and pea-sized hail damaged houses</td>
</tr>
<tr>
<td>16 November 2008</td>
<td>Severe ‘microburst’ storm with widespread damage at Ferny Hills, Albany</td>
</tr>
<tr>
<td></td>
<td>Creek, Everton Hills and The Gap</td>
</tr>
<tr>
<td></td>
<td>Heavy rainfall at Burpengary and Moorina - a 1 in 10-20-year event</td>
</tr>
<tr>
<td>20 November 2008</td>
<td>Large hail and flooding at Kippa-Ring, 18mm rain in 7 mins</td>
</tr>
<tr>
<td>4 December 2008</td>
<td>Golf ball-sized hail at Redcliffe</td>
</tr>
<tr>
<td>6 December 2008</td>
<td>Large hail and heavy rainfall at Upper Caboolture</td>
</tr>
<tr>
<td>7 December 2008</td>
<td>Large hail and 110km/hr wind gusts at Godwin Beach and Bribie Island</td>
</tr>
<tr>
<td>13 April 2009</td>
<td>Heavy rainfall at Wamuran and Upper Caboolture</td>
</tr>
<tr>
<td>12 August 2009</td>
<td>Strong wind gusts uprooted trees at Caboolture</td>
</tr>
<tr>
<td>29 November 2009</td>
<td>Large hail at Redcliffe</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>29 January 2010</td>
<td>Heavy rain flooded roads at Burpengary</td>
</tr>
<tr>
<td>29 September 2010</td>
<td>Heavy rain produced flash flooding at Bellmere - 50mm in 15 mins</td>
</tr>
<tr>
<td>27 October 2010</td>
<td>Heavy rainfall in excess of 100mm in 40 mins at Ningi</td>
</tr>
<tr>
<td>18 November 2010</td>
<td>Heavy rainfall of 80mm in 1hr at Caboolture</td>
</tr>
<tr>
<td>11 December 2010</td>
<td>Heavy rainfall of 58mm in 30mins at Drapers Crossing, also 75mm in 30mins at Ferny Hills</td>
</tr>
<tr>
<td>16 December 2010</td>
<td>Heavy rainfall of 44mm in 20mins at Bribie Crossing</td>
</tr>
<tr>
<td>17 December 2010</td>
<td>Strong wind gusts of 104km/hr at Redcliffe</td>
</tr>
<tr>
<td>15 October 2011</td>
<td>Golf ball-sized hail at Albany Creek</td>
</tr>
<tr>
<td>21 January 2012</td>
<td>81mm rainfall in 1hr at Mt Glorious</td>
</tr>
<tr>
<td>27 January 2012</td>
<td>120mm rainfall in 2 hours at Godwin Beach, Bribie Island and Caboolture</td>
</tr>
<tr>
<td>18 November 2012</td>
<td>3cm hail at Caboolture and Albany Creek</td>
</tr>
<tr>
<td>24-28 January 2013</td>
<td>Ex Tropical Cyclone Oswald</td>
</tr>
<tr>
<td>6 April 2014</td>
<td>Heavy rainfall, flash flooding, strong winds at Bribie Island</td>
</tr>
<tr>
<td>5 December 2014</td>
<td>Heavy rainfall 97mm in 1hr at Mt Glorious</td>
</tr>
<tr>
<td>19-21 February 2015</td>
<td>Ex Tropical Cyclone Marcia</td>
</tr>
<tr>
<td>21 March 2015</td>
<td>Heavy rainfall 66mm in 30 mins at Mt Nebo, 71mm in 1hr at Bribie Island</td>
</tr>
<tr>
<td>1 May 2015</td>
<td>East Coast Low - significant rainfall of up to 233mm in 3 hours at Caboolture, Beachmere, Bellmere, Ellenbah. Widespread damage</td>
</tr>
<tr>
<td>5 November 2015</td>
<td>44mm of heavy rainfall in 15mins at Moorina</td>
</tr>
<tr>
<td>1 February 2016</td>
<td>Large hail recorded at Narangba, North Lakes and Ocean View</td>
</tr>
<tr>
<td>4-5 June 2016</td>
<td>East Coast Low - significant rainfall of up to 162mm in 3hrs at Lawnton, Ellenbah, Burpengary and Deception Bay</td>
</tr>
<tr>
<td>19 June 2016</td>
<td>Heavy rainfall of 111mm in 3hrs at Caboolture, Morayfield, Burpengary, Lawnton and Narangba</td>
</tr>
<tr>
<td>March 2017</td>
<td>Ex Tropical Cyclone Debbie</td>
</tr>
</tbody>
</table>

**Storm - Hazard Mitigation and Risk Reduction**

This section outlines the hazard mitigation and risk reduction measures applied within the region to reduce storm vulnerability.

Strategies used within the region are through response activities, aimed at adapting adequate measures needed by the community in a timely manner. They include:

1. Provision of community education and awareness of storm risks, including the measures people can take to enhance their resilience and protect life and property.
2. Provision of timely warnings of potential and actual severe storms that pose a threat within the region.
3. Early activation of emergency services and council operations staff to provide timely responses as required.
4. Provision of evacuation centres as required.

**MBR LDMG Storm Mitigation Strategies**

**Strategy 1: Community Education and Awareness Programs**

Community education is a key element of the council’s storm management effort. This provides the community with appropriate knowledge of the actions and safeguards they need to take in order to prevent or reduce the impact of severe storms. Council, with support other MBR LDMG agencies, is responsible for defining and delivering storm awareness and safety programs.

Key elements of these include:

- General information on storm risks in the region;
- Preparations that the community can undertake to improve their resilience to storm events including the maintenance of homes and businesses, the clearing of items that could become wind borne and
general advice on storm safety (avoiding flooded areas, safety from lightning);
• How and where the community can access severe weather and storm warnings such as the BoM, Moreton Alert and road conditions; and
• Where to access additional information or seek physical assistance before, during and after storms. For example, seeking SES assistance for storm damage.

In addition, council is an active member of the Brisbane Community Engagement Working Group. This group facilitates a coordinated process with various agencies for collaborative prioritising, planning and delivery of community engagement activities across Southeast Queensland, with respect to severe weather impacts.

Strategy 2: Mitigation through Provision of Public Warnings

Providing timely public warnings of severe storms is critical to ensure the community is aware of the storm risk and are able to take precautionary and preventative action for personal safety and protection of property. The BoM is the primary agency responsible for the provision of severe weather and storm warnings.

Severe thunderstorm warnings are provided by the BoM when thunderstorms are expected to produce dangerous or damaging conditions. Severe weather warnings are also issued for land gales and destructive gusts or flash flooding.

Warnings may be limited in accuracy because of the complexities involved in detecting thunderstorms, assessing their severity and predicting how they will move and evolve.

Warnings may not provide much advance notice (maybe less than 15 minutes). Warnings are usually issued only after evidence of severe thunderstorms has been received. There can also be delays in communications systems and in getting the warning broadcast by radio and TV.

Severe thunderstorms should not be expected to occur everywhere in the warned area or for the entire period covered by the warning.

Warnings can only be effective if people take appropriate protective actions.

Council receives all issued severe weather and storm warnings from the BOM and assists the BoM in their dissemination to people within the region. Due to the short advance notice of many severe weather and storm warnings, council’s dissemination of warnings will usually be limited to the use of social media and through MoretonAlert.

Strategy 3: Mitigation through Response Plans

Mitigating the effects of storms is also achieved by ensuring that key emergency response agencies are prepared and mobilised quickly to provide response operations as required. Considerations include:

• MBR LDMG/LDCC – to provide strategic direction and coordination of the response by multiple agencies including the opening of evacuation centres as required to provide support to people displaced by the storm event;
• Council’s operational response teams including road closure crews;
• SES activated to provide storm damage assistance to the community;
• QPS to provide additional public safety and traffic management functions as required;
• Energex to manage and restore electricity supply disrupted by the storm event; and
• QFES to provide response crews to a range of emergency situations including traffic accidents, building collapse and search and rescue; and swift water rescue.
Storm - Preparedness and Planning

The onset of storm events dictates that the MBR LDMG and response agencies maintain an ongoing preparedness to respond to short notice severe weather. Elements of readiness include:

- Activation of resources such as the LDCC and FIC,
- Engagement with the Disaster District for possible District support requirements,
- Mobilisation of emergency services agencies,
- Pre-positioning of signage at strategic locations,
- Stocking of sand and sandbags at designated locations,
- Planning and preparation for specific response operations at known high-risk locations,
- Planning for the potential closure of roads, schools and public facilities,
- Planning for the opening of evacuation centres including preparing resources needed for their operation,
- Provision of public warnings and public information to prepare the community,
- The stocking of critical supplies such as fuel, generators and storm damage supplies by key agencies,
- Provision of assistance to move vulnerable people to areas of safety,
- Providing assistance to the community to remove potential wind-borne debris through the provision of increased waste removal services, and
- Undertaking key asset protection measures on public assets.

MBR LDMG Review of Annual Community Storm Awareness and Safety Education Programs

The MBR LDMG periodically reviews the collective efforts of all relevant agencies in delivering community storm awareness and safety education throughout the year with a focus on increasing community awareness prior to the storm season.

Storm - Emergency Communications

Effective emergency communications across the community and between agencies is critical due to the fast-moving nature of storm events. For the various public information warnings and information issued during a storm event, please refer to the Public Information and Warnings section located under ‘Disaster Management Operations’ in the Plan.

Storm – Response

A number of agencies provide effective flood response including council, QPS, QFES, SES, Energex, DTMR, Australian Red Cross, DCDSS and Queensland Health.

The MBR LDMG, has overall responsibility for managing severe storm response, and manages this through the following strategies.

1. Early activation of resources to prepare for, plan and coordinate disaster operations, as well as the transition to recovery.
2. Provision of timely and accurate public warnings and information.
3. Effective and timely management of storm related disaster operations including road closures, diversions and associated signage, clearance of storm debris, search and rescue and provision of Evacuation Centres as required.

These strategies are elaborated upon in the following paragraphs.

Strategy 1: Activation of Resources

Council typically activates various resources and centres as early as possible, due to the short nature of severe weather and storm onset in the region. These include the LDCC, FIC, operational crews, emergency services and support agencies.

Strategy 2 - Provision of Warnings and Public Information

BoM Severe Weather Warnings and Storm Warnings are often the first level of warning provided within the region. Council receives these warnings disseminates these via
traditional media, social media and MoretonAlert.

This information may include details of:

- Road closures, traffic diversions and re-opening of closed roads;
- Safety messages such as ‘If it’s Flooded, Forget It’; or public safety messages related to storm safety e.g. safety during lightining;
- Evacuation centres as required including detail location, timings, support services available, pet management and what evacuees are required to bring with them to the evacuation centre;
- The likely duration of storm events;
- Anticipated storm clean-up operations and information on property clean-up and safety advice; and
- Information on council and other agency operations.

### Strategy 3 - Storm Related Disaster Operations

There are a range of disaster operations council may undertake during or immediately after severe storms. These include (but are not limited to):

- Road closures, traffic diversions and installation of relevant signage;
- Immediate clearance of storm debris from key public assets;
- Search and rescue operations for people either lost or trapped as a result of the storm event;
- Restoration of disrupted services such as electricity, water, and telecommunications services; and
- Provision of support to displaced persons including the operation of evacuation centres, essential supplies and services.

### Storm - Relief and Transition to Recovery

Most storm events will not require a formal recovery effort. However, major or catastrophic storm events will likely require a comprehensive recovery phase. In such cases, it is vital that the transition from disaster operations to recovery is planned and implemented seamlessly, through the following strategies:

1. Effective planning for post-storm operations that establishes priority of effort across the region.
2. Undertaking timely and coordinated storm damage assessments.
3. Timely clearance of debris and other hazards from public assets (roads, bridges, culverts, etc).
4. Re-opening of closed roads and providing up to date public information.
5. Providing timely assistance to the community for clean-up operations in storm affected areas.
6. Providing appropriate and timely disaster relief to people impacted by the storm.
7. Formal handover procedures from disaster operations to recovery.

### Strategy 1 - Planning Post-Storm Operations during the Response Phase

The effects of a storm will vary across the region. Some areas may have little impact while other areas may have small pockets of devastation. In some cases, there may be a large number of areas that require clean-up, debris removal, infrastructure inspections and safety assessments that will require the setting of clear priorities based on available resources. A post-storm operations plan will be developed to prioritise community needs and apply resources to areas that need it most.
Strategy 2 - Timely and Coordinated Storm Damage Assessment and Reporting Processes

Storm damage assessments and safety inspections are usually required after significant storm events. Damage may occur to public assets, businesses, and private residences. Council is the lead agency for damage/safety assessments for public assets such as bridges, culverts, local roads. QFES may undertake assessments of damage to business and private homes. They may also be undertaken by private sector building inspectors under arrangements between the business or home owners and private assessors e.g. insurance. Assessment of damage to utilities will be undertaken by the operators of those utilities e.g. Unitywater, Energex, etc. These assessments provide a comprehensive understanding of the overall storm impact.

Strategy 3 - Timely Clearance of Debris and Other Storm Related Hazards from Public Assets

Debris clearance is required from public assets before they can be properly inspected, deemed safe and returned to normal use. In addition, storm debris may include hazardous materials that pose a safety risk to the public or the environment. Council determines the priority and manages this based on community need and available resources to return these to normal operation as soon as possible.

In large storm events, there is likely to be a large volume of debris that requires clearance. Disposal of significant quantities of storm debris may pose additional issues and the impact on regional waste management facilities and arrangements should be considered.

Strategy 4 – Timely Re-opening of Roads including Public Information

A priority task in post-storm operations is the re-opening of closed roads. Closed roads can have a significant economic impact on a region as well as causing significant inconvenience to the travelling public. Public expectations are high that roads will be re-opened as soon as possible.

The re-opening of roads usually requires clearance of debris and the conduct of road safety inspections before the road can be re-opened after a significant storm event. Coordination between debris clearance teams and asset safety assessors is required to minimise delays in re-opening roads/bridges, etc.

Providing public information on the re-opening of roads is considered a key priority in post-storm operations. Council will ensure that road re-opening information is provided to the public as soon as possible after the road is re-opened via media, social media and the council’s Road Conditions Report website page.

Strategy 5 - Provision of Assistance to the Community for Clean-Up Operations

The removal of storm debris and storm damaged goods from homes and businesses is primarily the responsibility of the owner. However, storm events can cause significant damage and the community will often require assistance in the removal and clean-up of damaged goods after an event.
Considerations for assisting the community to clean-up after a storm event include:

- Provision of kerbside/street waste collection bins in major storm affected areas that can be used to deposit damaged goods, and
- Provision of advice on:
  - removal of dangerous goods e.g. asbestos,
  - disposal of spoilt food,
  - electrical safety to homes/businesses including required safety inspections,
  - cleaning tips of cleaning mould and fungus caused by the effects of water ingress, and
  - health and safety measures to prevent injury/illness when working in storm affected areas e.g. hygiene tips, use of personal protective equipment, etc.

Clean-up operations can only commence when it is safe for home/business owners to return to their properties after a storm. Community safety may be affected by the nature of storm debris e.g. sewerage or by electrical safety concerns or lack of access due to excessive amounts of debris on roads. Initial damage assessments of storm affected areas should consider the safety of people to return to their homes/businesses to commence clean-up operations.

**Strategy 6 – Provision of Appropriate Disaster Relief to People impacted by Storms**

The provision of disaster relief may take many forms from payments under DRFA (if activated) to provision of long-term temporary accommodation or counselling/referral services provided by a range of agencies. It is important to identify vulnerable people that may have been impacted by the storm event and put in place measures to provide appropriate disaster relief to those who require support.

Usually some form of outreach services is undertaken in severely affected areas. Outreach is normally coordinated through the DCCSDS and may be undertaken by departmental officers supported by other agencies such as Red Cross. The purpose of outreach operations is to identify vulnerable people and their needs.

Where significant impact on business and industry has occurred, it is important that some form of economic outreach led by council’s Planning and Economic Development Directorate be undertaken to determine possible economic impacts and to enable economic recovery issues to be identified and addressed.

**Strategy 7 - Formal Handover to from Disaster Operations to Recovery**

For each severe storm event requiring disaster recovery measures, council will develop a detailed recovery plan to guide short, medium and long-term community recovery. This will cover the elements of Human-social, Economic, Infrastructure and the Environment, with respect to recovery and restoration needs.

For further Severe Weather information, visit: [Council - Severe Weather](#)

**Storm Tide - Hazard Identification and Risk Assessment**

A storm tide is the rise in seawater that occurs during a cyclone or storm. Storm tides are caused primarily by the effects of wind ‘pulling’ water onshore. They are often accompanied by gale force winds and waves of seawater that may contain trees, building material and other debris. This surge of water onshore, with its associated wave action, may inundate coastal areas causing a risk to life and property.

High rainfall associated with a storm may also cause river and creek rises. A storm tide that coincides with river or creek flooding may disrupt normal outflows leading to increased flooding upstream.
Storm tide is not the same as a tidal wave (which is a towering wall of sea water which comes crashing into shore). A storm tide comes in like a rapidly rising tide, but it can be extremely dangerous and destructive.

Moreton Bay is protected from the open sea by a number of islands, including South Stradbroke, North Stradbroke and Moreton Islands. The Moreton Bay area is located near the southern limit of tropical cyclone activity for east coast Australia under current climatic conditions.

Storm surges in the Moreton Bay Region are more likely to be generated by decaying tropical cyclones, storms or east coast low pressure systems.

The predicted increase in frequency and severity of cyclones impacting Queensland, combined with rising sea levels, are likely to result in more extreme storm tides and a greater potential for flooding along the coastal regions of Moreton Bay.

Locations where land is less than a few meters above sea level are at particular risk of storm surge inundation. The severity of a storm tide is also dependent on the position and path of the storm system in relation to Moreton Bay.

Waves resulting from wind directed from the east or north-east will have maximum effect on water levels.

Storm surges are difficult to predict accurately in advance because they are dependent on central pressures and the approach direction of the east coast low or cyclone. The effect of this surge is dependent on the phase of the tide at which the surge occurs. Tides in the region are predominantly semi-diurnal, meaning there are normally 2 high and 2 low tides daily.

Impacts associated with storm tide may include:

- Seawater flooding to coastal areas;
- Flooding of low lying properties;
- Destruction of near-shore buildings;
- Erosion;
- Contamination due to water inundation of critical services such as water supplies and treatment plants;
- Inundation of key infrastructure such as power supply, telecommunications facilities;
- Community-wide evacuations; and
- Injuries and fatalities.

MBR LDMG Storm Tide Management Strategies

The MBR LDMG is committed to the following overarching storm tide management strategies:

- Adopting a risk-based approach to storm tide management in the region;
- Undertaking coastal hazard mitigation through the MBRC planning scheme;
- Mapping areas at risk of storm tide including storm surge evacuation zones;
- Ensuring residents in areas likely to be affected by storm tide and coastal hazards are informed of the nature of these hazards and their likelihood;
- Assisting communities, families and individuals to prepare for potential storm tide impact;
• Providing communities at risk of storm tide with appropriate early warning so that they can take early action to preserve life and property;

• Providing storm tide affected communities with appropriate community support, including evacuation if required;

• Issuing accurate and timely public information regarding the impact of storm tide events;

• Early activation of response arrangements for events that have potential to lead to storm tide inundation;

• Ensuring multi-agency storm tide responses are coordinated and are appropriately resourced in order to minimise disruption and to preserve life and property;

• Ensuring all necessary actions to ensure public safety in the event of a storm tide are undertaken;

• Ensuring communities are provided with relevant and appropriate relief and recovery services after the impact of a storm tide event so that they can quickly and effectively return to normal; and

• Ensuring the continuity of essential services to minimise the disruption to the community from storm tide events.
Storm Tide Hazard Map of the Region:
Key Responsibilities

This section outlines the key agency responsibilities for storm tide management in the region.

<table>
<thead>
<tr>
<th>Entity</th>
<th>Specific Storm Tide Management Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBR LDMG</td>
<td>Prepare relevant plans to manage possible storm tide events</td>
</tr>
</tbody>
</table>
|            | Primary agency for storm tide mitigation through the provision of storm tide modelling and mapping (including evacuation zones) and managing development under the MBRC Planning Scheme in accordance with the SPP. In addition, council is responsible for:  
- Community education and public information regarding storm tide risks  
- Provision of public warnings to affected communities based on storm tide advice received from the BoM  
- Road closures in storm tide affected areas as required for public safety  
- Provision of community support including evacuation support to people affected by storm tides  
- Assisting in the recovery of storm tide affected communities |
| MBRC       | Police public safety and property security  
Supporting agency for the dissemination of storm tide warnings  
Supporting agency for public information on storm tide impact or potential impact  
Assistance with the policing of road closures as required  
Support to evacuations as required |
| QPS        | Supporting agency for flood response through provision of swift water rescue capability as required  
Coordination of SES support to assist with storm tide warnings and evacuations as required |
| QFES       | Supporting agency for flood response through provision of swift water rescue capability as required  
Coordination of SES support to assist with storm tide warnings and evacuations as required |
| Energex    | Primary agency for the maintenance of electricity supply before, during and after storm tide impacts |
| BoM        | Monitoring the progress of cyclones, east coast lows and other severe weather events and issuing Cyclone, Storm and Storm Tide Warnings as necessary  
Being available to provide technical warning advice to the LDMG before and during a storm tide event |
| DES        | Monitoring water levels using a network of storm tide gauges  
Liasing with the BOM to confirm information in Storm Tide Warnings  
Being available to provide technical advice on storm tide to the LDMG before and during a storm tide event |

Other Agencies with storm tide related management responsibilities

<table>
<thead>
<tr>
<th>Entity</th>
<th>Specific Storm Tide Management Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCDSS</td>
<td>Provision of Human/Social support to storm tide affected persons and communities as required</td>
</tr>
<tr>
<td>Queensland Health</td>
<td>Provision of Health Public Information in relation to health and safety during storm tide events</td>
</tr>
<tr>
<td>Red Cross</td>
<td>Support in Evacuation Centre Management as required</td>
</tr>
</tbody>
</table>

Storm Tide - Hazard Mitigation and Risk Reduction

This section outlines the hazard mitigation and risk reduction measures applied within the region to reduce the effects of a storm tide event. Preventing a storm tide is not possible and measures that reduce the impact of such events must be applied.

Minimising or mitigating the storm tide risks to life and property can generally be achieved in two ways:
Property modification – identifying properties at risk and by modifying or removing existing buildings and infrastructure and/or by imposing controls on future property and infrastructure development (e.g. Coastal Hazards Overlay and Code and storm tide inundation mapping); and

Response modification – by modifying the response of the population at risk to better cope with a storm tide event. Such measures include:

- Storm tide prediction and warnings, and
- Community education and preparedness.

Emergency response plans including the identification of storm tide evacuation zones to ensure timely and effective evacuation from areas at risk of storm tide inundation.

MBR LDMG Storm Tide Mitigation Strategies

Strategy 1: Mitigation through Planning Schemes (Property Modification)

Under the SPP, local planning schemes must identify areas at risk of coastal hazard. Council does this via its planning scheme, in particular, the Coastal Hazard Overlays. Additional development controls are applied to address storm tide risks when assessing new developments.

There are free downloadable maps available showing areas of potential inundation by storm tide at:

Council’s Storm Tide Mapping

Queensland Government - Request a Coastal Hazard Map

Council’s Coastal Hazard Overlays

Below is a list of suburbs in the region that may be affected by a storm tide event (note many of these maps show only minor storm tide effects that do not pose a significant threat to people and property).

| Banksia Beach | Elimbah - North East | Petrie |
| Beachmere - North East | Godwin Beach | Redcliffe |
| Beachmere - North West | Griffin - North | Rothwell |
| Beachmere - South | Griffin - South | Sandstone Point |
| Bellara | Kallangur | Scarborough |
| Bongaree | Kippa-Ring | Strathpine |
| Brendale | Lawnton | Toorbul East |
| Burpengary East - North | Mango Hill | Toorbul West |
| Burpengary East - South | Meldale | Welsby - North East |
| Caboolture - North East | Morayfield - North East | Welsby - North West |
| Caboolture - South East | Murrumba Downs | Welsby - South East |
| Clontarf | Newport | Welsby - South West |
| Deception Bay - North | Ningi - East | White Patch |
| Deception Bay - South | Ningi - North West | Woody Point |
| Donnybrook - North | Ningi - South West | Woorim - North |
| Donnybrook - South | North Lakes | Woorim - South |
### Previous storm tide events in the region:

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 1863</td>
<td>A cyclonic gale along the east coast, including the northern part of Moreton Bay, produced severe erosion along a 32km stretch, with 10m of coastline lost</td>
</tr>
<tr>
<td>March 1864</td>
<td>High waves washed away a jetty south of Brisbane</td>
</tr>
<tr>
<td>April 1927</td>
<td>Cyclone east of the Gold Coast disrupted shipping activities</td>
</tr>
<tr>
<td>1943</td>
<td>1.16m storm tide recorded in Moreton Bay</td>
</tr>
<tr>
<td>January 1950</td>
<td>2m waves in Moreton Bay with houses evacuated</td>
</tr>
<tr>
<td>20 February 1954</td>
<td>0.64km storm surge caused by a cyclone left boats in trees at Beachmere and 2m waves onto roads, there were 26 fatalities</td>
</tr>
<tr>
<td>April 1963</td>
<td>Cyclone offshore created large waves and coastal erosion</td>
</tr>
<tr>
<td>January 1967</td>
<td>0.45m storm tide with the combined TC Dinah and king tide</td>
</tr>
<tr>
<td>April 1967</td>
<td>Cyclone Glenda produced 6m waves at Gold Coast, there were 6 fatalities</td>
</tr>
<tr>
<td>February 1971</td>
<td>Cyclone crossed the coast at Redcliffe, widespread damage and flooding</td>
</tr>
<tr>
<td>February 1972</td>
<td>0.7m storm tide from Cyclone Daisy at Woorim</td>
</tr>
<tr>
<td>March 1976</td>
<td>Huge waves along the south Queensland coast from Cyclone Colin</td>
</tr>
<tr>
<td>January 1980</td>
<td>9.8m waves recorded on coastline, from Cyclone Paul</td>
</tr>
<tr>
<td>April 1984</td>
<td>8.8m waves recorded on coastline, from Cyclone Lance</td>
</tr>
<tr>
<td>March 1993</td>
<td>0.7m storm tide recorded at Moreton Bay following Cyclone Roger</td>
</tr>
<tr>
<td>March 1998</td>
<td>11.5m waves recorded with beach erosion from Sunshine Coast to NSW border, from Cyclone Yali</td>
</tr>
<tr>
<td>February 2003</td>
<td>8.5m waves recorded from Rockhampton to Gold Coast following Cyclone Beni, also causing flooding and over $10 million of damage</td>
</tr>
<tr>
<td>4 March 2004</td>
<td>14.3m wave heights recorded across Brisbane coastlines</td>
</tr>
<tr>
<td>23-30 December 2010</td>
<td>Heavy rainfall fell on the catchment of the Brisbane River causing widespread flooding. The peak surge level of 0.51m occurred 4 days after the peak storm tide and is due to a low-pressure trough developing offshore of northern NSW and moving north. Storm Tide level at Brisbane Bar 1.65mAHD.</td>
</tr>
<tr>
<td>January 2013</td>
<td>Ex tropical cyclone Oswald, which formed in the Gulf of Carpentaria and after making landfall in far north-west Queensland, decreased in intensity and tracked south, inland of Brisbane as a low. Storm Tide Level at Brisbane Bar 1.84mAHD.</td>
</tr>
<tr>
<td>25 December 2013</td>
<td>An east coast low developed off of the NSW mid north on the 23rd of May 2013. The storm crossed the coast in northern NSW. Storm Tide level at Brisbane Bar 1.72mAHD.</td>
</tr>
<tr>
<td>4 June 2016</td>
<td>A severe East Cost Low formed over northern NSW and tracked South, causing large waves, high water levels and severe erosion along the east coast of Australia. Storm Tide Level at Brisbane Bar 1.63mAHD</td>
</tr>
</tbody>
</table>

**Strategy 2: Mitigation through Response Modification**

**Storm tide prediction and warnings**

Storm tides pose a significant threat to coastal communities. In most cases evacuation from the storm tide area is the only effective risk treatment. To that end storm tide prediction and warnings are focused on appropriate information and timely advice to guide the decision making for evacuations.

Storm Tide Warnings are issued in accordance with the requirements of The Queensland Cyclone Storm Tide Warning - Response System Handbook, 12th edition, 2015. This guideline details the storm tide warning system in place in Queensland.
While the guide refers to storm tides associated with Cyclones, it remains relevant for storm tides caused by other events such as East Coast Lows.

**NOTE:** Storm Tide Warnings are issued for the restricted information of disaster management authorities. Copies of these warnings are not issued to the media or the general community due to the technical expertise needed to interpret them. Release of selected details of the warnings may be made in exceptional circumstances with prior agreement of the issuing authorities if considered to be in the public interest.

The BoM activates the Storm Tide Warning Response System if it is anticipated that a storm tide could occur which would result in a total water level in excess of the Highest Astronomical Tide (HAT) in the area under threat. Estimates of the storm tide associated with the forecast cyclone/east coast low track are provided for agreed locations. In addition, warnings provide estimates of storm tide under the ‘worst case’ assumption should the cyclone/east coast low cross the coast near any of the locations near the time of high tide.

During the cyclone/east coast low information phase and prior to the declaration of a cyclone watch zone, if the forecast track map or text products show a cyclone/east coast low affecting the coast, verbal briefings will be held with SDCC and DES. No additional storm tide products will be issued at this stage.

If the forecast track shows a tropical cyclone/east coast low crossing the coast and there is a possibility that HAT will be exceeded, a storm tide warning will be provided to the SDCC and to DES. Storm tide warnings will be updated at 6-hourly intervals during the cyclone watch phase.

Storm tide heights in the warnings are referenced to Lowest Astronomical Tide (LAT), Australian Height Datum (AHD) and HAT.

Storm tide warnings will, where possible, be issued at least 24 hours prior to the forecast onset of 100km/hr wind gusts affecting coastal and island communities with consideration given, where possible, to issuing evacuation orders during daylight hours.

If there is a possibility of HAT being exceeded, storm tide warnings will be updated at 3-hourly intervals.

It should be noted that whenever a threat exists, the BoM would include a qualitative description of the expected storm tide impact in the routine tropical cyclone advices/severe weather warnings to the general community. If tides are not expected to exceed HAT, a statement to the effect that ‘tides could be higher than normal’ may be included in tropical cyclone advices/severe weather warnings but no storm tide warnings issued.

If a total water level above HAT is expected, a storm tide warning is issued to disaster management authorities before a qualitative description of the storm tide threat is given in warnings to the public.

**Community Education Programs**

Community education focusing on storm tide safety is a key element of the LDMG’s storm tide management effort. This provides the community with appropriate knowledge of the actions and safeguards they need to take in order to prevent or reduce the impact of possible storm tide events. Council, with support from other agencies as required, is responsible for defining and delivering storm tide awareness and safety programs.
Key elements of a community storm tide awareness and safety education program include:

- General information on the storm tide risk in region so that the community is aware of areas that are subject to seawater inundation and the conditions that are likely to cause it. This includes promotion of the storm tide mapping available on the council website;
- How and where the community can access severe weather, tidal information and storm tide warnings including the BoM, Moreton Alert, Road Conditions Report, etc.; and
- Storm Tide Safety detailing the measures at-risk communities should observe during potential storm tide events, specifically the requirement for evacuations from areas of high risk.

Community storm tide awareness and safety education programs utilise multiple strategies to communicate with the public and may include:

- Use of traditional media outlets e.g. television, radio, newspapers;
- Agency websites;
- Social media including Facebook, Twitter, Instagram, YouTube, etc;
- Displays at public events and in public spaces;
- Community meetings (useful for high risk communities); and
- Mail outs and provision of pamphlets, guidelines and other paper based/electronic information products.

Council is an active member of the Brisbane Community Engagement Working Group, which facilitates a coordinated process with various agencies for collaborative prioritising, planning and delivery of bushfire and severe weather event community engagement activities across South East Queensland.

The MBR LDMG periodically reviews the collective efforts of all relevant agencies in delivering community hazard awareness and safety education throughout the year with a focus on increasing community awareness prior to the storm season.

Mitigation through Response Plans

Mitigating the effects of storm tide is also achieved by effective response plans including:

- Road closures, signage of alternate routes including public information;
- Pre-positioning of emergency services e.g. swift water rescue teams at strategic locations to ensure a rapid response; and
- Pre-prepared evacuation plans for high-risk areas.

These matters are discussed further under Storm Tide – Response.

Storm Tide - Preparedness and Planning

Storm tide poses a potentially grave risk to people and property and may lead to death by drowning. It is therefore imperative to ensure that appropriate preparedness and response arrangements are in place to provide adequate warnings and undertake evacuations from storm tide areas where people may be at risk. These 2 imperatives underpin the MBR LDMG preparedness and planning strategies which are:

1. Rapid dissemination of location specific warnings to people and communities that may be at risk of a storm tide
2. Early evacuation of people from defined storm tide evacuation zones as required to preserve life

Strategy 1 – Storm Tide Warnings to People at Risk

The BoM will issue warnings when the predicted tides are expected to exceed HAT as part of their suite of severe weather/tropical cyclone warning products.
Once these warnings have been issued by the BoM, it is vital that people in affected areas receive them.

Council is the primary agency for ensuring that affected communities within the region are provided with adequate warning of any storm tide risk once the BoM has issued warnings of tides above HAT. Other agencies such as QPS and QFES may assist council in ensuring warnings are disseminated to people at risk.

The LDMG should ensure local communities are prepared through providing evacuation maps, with identified evacuation zones so that they can be used to guide evacuations.

Methods for delivering such warnings include, but are not limited to:

- Broadcast by television and radio (possibly in conjunction with the use of SEWS);
- Warnings to defined Alert Groups using MoretonAlert (see section on MoretonAlert);
- Activation of 1 or more campaigns using EA (see section on Emergency Alert);
- Warnings issued on Social Media (Facebook, Twitter, etc);
- Door knocking campaigns in high-risk areas (by council staff, SES, etc); and
- Use of public address/loud hailer systems in high-risk areas.

**Strategy 2 – Early Evacuation of People from Defined Storm Tide Evacuation Zones**

**Storm Tide Evacuation Maps**

Storm tides can cause fatalities and the only effective treatment of this risk is to remove people from a place of danger to a place of relative safety. Evacuations from high-risk storm tide zones may be required to preserve life.

To facilitate this, council maintains a range of storm tide evacuation maps which define likely storm tide evacuation zones within the region. These maps are for use by the LDMG/LDCC and emergency services and assist in identifying areas for evacuation and are an aid to planning.

Refer to the Evacuation section located elsewhere in this plan.

Key considerations for storm tide evacuations include:

- **Accuracy of predictions:** In the early stages of a storm tide event, storm tide estimates are a rough approximation due to the limitations of the science behind predicting these events. As the cyclone/storm moves closer to the coast, it is possible to obtain a higher degree of precision in predicting the storm tide. As the forecast accuracy increases, the time available to evacuate diminishes rapidly.

- **Time available:** Any evacuation should be completed before wind conditions prohibit outside movement (i.e. regular wind gusts to 100 kilometres per hour). For planning purposes, the winds reaching this threshold are most likely to occur 3 to 12 hours before the cyclone centre crosses the coast, though earlier onsets are possible depending on the size and speed of the cyclone. For a particular cyclone, the outer ellipse on tropical cyclone track maps shows the distance of 100km/hr wind gusts from coastal centres.

- **Associated Flooding:** Coincidental river flooding may increase the height and extent of tidal penetration in some localities.

**Storm Tide - Emergency Communications**

As per the section Flood - Emergency Communications, the SEWS, MoretonAlert and EA systems may be used to disseminate storm tide warning and related public information.
Storm Tide - Response

If not previously activated during the weather event, the MBR LMDG and the LDCC will be activated for storm tide response operations.

The 3 operational phases of the storm tide warning system include:
- Initial storm tide warning,
- Subsequent storm tide warnings, and
- Final storm tide warning.

The issue of an initial storm tide warning is the trigger for the activation of the LDMG / LDCC in order to undertake planning and implementation of disaster operations specific to the storm tide threat. Subsequent storm tide warnings may indicate a change in the time, extent and size of any predicted storm tide and may require adjustments to disaster operational plans and public information.

Key Response Strategies for Storm Tide

The key strategies for any storm tide response are as follows:
1. Clarify the storm tide threat
2. Determine possible evacuation requirement
3. Determine public warning requirements
4. Implement evacuation plans including Opening of evacuation centres
5. Implement general public safety arrangements
6. Provide public information about the event

The strategies are not sequential in nature and may be conducted concurrently. Each is discussed further in the paragraphs below.

Strategy 1 – Clarify the Storm Tide Threat

This includes defining the potential localities that may be affected and the size of the storm tide at those locations. Advice from the BoM and DES will be available to the LDC and the MBR LDMG for specific storm tide advice.

Note that subsequent storm tide warnings may change the size, scope and extent of the predicted storm tide. Planners will need to adjust response plans accordingly.

Strategy 2 – Determine Possible Evacuation Requirements

Based on the advice from the BoM and DES, the MBR LDMG and the LDC must consider the possible evacuation requirements based on the anticipated level of storm tide and the risk to the population. Reference to evacuation maps and land use data for evacuation zones will assist in determining the likely impact of any storm tide event. Note that more than 1 evacuation zone may be affected.

Multiple evacuation zones may need to be evacuated and separate evacuation centres may need to be opened to cater for evacuees. Advice on the storm tide threat may change as the cyclone/storm develops. Evacuation planning may need to be modified accordingly.

Strategy 3 – Determine Public Warning Requirements

The MBR LDMG will define what warnings need to be issued, who needs to receive them and how they are to be disseminated. Consideration will be given to the time required to prepare and distribute public warnings and the time needed by the community to respond appropriately.

Initial storm tide advice from the BoM is for planning use by the MBR LDMG and DDMG and should not be released to the community without prior approval by the BoM. However, once the BoM advises the community through their standard warning products that tides are expected to exceed HAT, the MBR LDMG must implement a public
warning and information campaign to ensure people at risk are appropriately informed.

Public warnings should include information about the storm tide threat and expected impact as well as advice regarding evacuation, evacuation routes and evacuation centres.

**Strategy 4 – Implement Evacuation Plans Including Opening of Evacuation Centres**

The MBR LDMG will develop appropriate evacuation plans.

The LDCC will consider the potential for evacuations based on storm tide predictions from the BoM and should strive to make early assessments of evacuation needs in order to enable the mobilisation of required people and resources to operate evacuation centres. This analysis of evacuation needs should include assessments of the likely areas that may need to be evacuated, the number of people impacted and the likely duration of storm tide inundation.

**Strategy 5 – Implement General Public Safety Arrangements**

While a storm tide may not directly impact the wider community, there are considerations required to ensure general public safety during a storm tide event. These include (but are not limited to):

- Undertaking road closures/diversions;
- General safety messages; and
- Measures to protect key assets and services including power, water and telecommunications.

**Strategy 6 – Provide Public Information Regarding the Event**

Public information regarding the impact of a storm tide or potential storm tide should also be widely disseminated to the public usually through the same procedures as for warnings. Public information may include details of:

- Road closures, traffic diversions and re-opening of closed roads;
- Public safety messages such as ‘If it’s Flooded, Forget It’; or public health warnings relevant to the impact of seawater inundation;
- The opening of Evacuation Centres including detail location, timings, support services available, pet management and what evacuees are required to bring with them to the evacuation centre;
- The likely duration of flood events;
- Anticipated clean-up operations and information on property clean-up and safety advice; and
- Information on the council operations and the operations/activity of key supporting agencies.

All public warnings and information must include details on where the public can seek further information.

Overall media management during disaster events is a function of the LDMG. Individual agencies should undertake media management in accordance with their agency’s standard operating procedures and policies.

**Storm Tide - Relief and Transition to Recovery**

This section outlines the strategies and requirements for the conduct of post-storm tide operations including the provision of relief services and the transition to recovery.

**MBR LDMG Strategies for Transition to Recovery**

Storm tides in the region are likely to be of relatively short duration, although remnant inundation in low-lying areas may remain for several days. This short event duration means that post-impact operations including the provision of effective and immediate relief services to those affected must be planned.
early in the response phase to avoid unnecessary delays. It also dictates the need for a rapid transition to recovery after the storm tide (and associated storm/cyclone) has passed. Planning for this transition must coincide with disaster operations.

The passing of the immediate storm tide threat is the trigger for the commencement of post-storm tide operations. It should be noted that impacts might vary across the region. Planning for the provision of relief services, clean-up operations and restoration of services needs to take this variability into account and priorities for post-inundation operations must be established early.

The LDMG strategies for immediate storm tide operations are:

1. Effective planning for post-inundation operations that establishes priority of effort in affected areas.
2. Undertaking timely and coordinated damage assessments and reporting on impacted areas.
3. Timely clearance of debris and hazards associated with the event from public assets (roads, bridges, culverts, etc).
4. Re-opening of closed roads and providing up to date public information on the opening of roads.
5. Providing timely assistance to the community for clean-up operations in affected areas.
6. Providing appropriate and timely disaster relief to people impacted by the event.
7. The conduct of formal handover procedures from disaster operations to recovery.

**Strategy 1 - Planning Post-Storm Tide Operations during the Response Phase**

It is imperative that post-event operations are conducted quickly after the passage of a storm tide. Concurrent planning of disaster operations and post-event operations is required to ensure that operations after the event occur quickly, based on an assessment of priority of needs.

Seawater inundation will generally recede in some areas more quickly than in others and it is important to identify those areas where post-disaster operations can be undertaken while waiting for seawater to recede in other areas. In some cases, there may be a large number of areas that require clean-up, debris removal, infrastructure inspections and safety assessments that will require the setting of clear priorities for effort based on available resources.

A post-event operational plan should be developed as early as possible that will:

- Assess timings when seawaters are likely to recede in key areas along the coastline to define a geographical priority of effort;
- Establish the areas where post-event damage and safety assessments are required in priority order;
- Define the post-event assessment process to be applied including resources needed for damage/safety assessments, timeframes for assessment and reporting and analytical processes to be used to produce effective damage assessment intelligence;
- Anticipate areas where community support is likely to be needed, either for the provision of disaster relief services or for assistance required by the community to support clean-up;
- Outline the resources and timeframes necessary for the removal of debris and other storm tide related hazards from public assets; and
- Anticipate when re-opening of closed roads is likely to occur.

While council is considered lead agency for post-disaster damage/safety assessments, debris and hazard removal and support to
the community for clean-up operations, other agencies may provide a supporting or contributing role. For example:

- QFES may be required to assist in providing resources to hose down seawater debris from key facilities such as sporting complexes, etc.; or
- DCCSDS may be required to provide community support to storm tide victims.

It is therefore imperative that this plan be developed jointly within the LDMG to ensure a comprehensive approach to post-event operations. The plan may need to be routinely updated and further developed during disaster operations as additional information and damage assessments are received. The plan should be distributed to all agencies that have a contributing role in post-storm tide event operations.

Strategy 2 - Timely and Coordinated Storm Tide Damage Assessment and Reporting Processes

Damage assessments and safety inspections are usually required after significant inundation events. Damage may occur to public assets, businesses, and private residences. The nature of damage and safety assessments is likely to differ for each. Council is the lead agency for damage/safety assessments for public assets such as bridges, culverts and local roads.

A range of agencies including QFES Rapid Damage Assessment Teams may undertake assessments of damage to business and private homes. They may also be undertaken by private sector building inspectors under arrangements between the business or home owners and private assessors e.g. insurance companies. Assessment of damage to utilities will be undertaken by the operators of those utilities e.g. Unitywater, Energex, etc.

All of these damage/safety assessments need to be coordinated and collated in order to develop a comprehensive understanding of the overall impact.

Additionally, some analytical effort of damage reporting is required to identify trends or associated issues that may arise as a result of specific damage. For example, the time taken to re-open roads may impact on business cash flow for businesses on that road.

The LDCC should ensure that damage assessment reporting processes allow for the capture and analysis of all major damage impact so that effective planning for recovery can be undertaken.

The LDCC should provide summaries of damage and impact on the community to assist recovery planners in developing appropriate recovery plans. These should include assessment of the:

- Impact on businesses and industry to determine economic impact;
- Environmental impact;
- Human-social infrastructure e.g. community clubs, sporting associations, etc. and
- Public infrastructure and assets.

Strategy 3 - Timely Clearance of Debris and Other Storm Tide Related Hazards from Public Assets

Storm tide events will likely create large volumes of debris that will need to be cleared from public assets such as roads, bridges, culverts, etc. Often this clearance is required before these assets can be properly inspected, deemed safe and returned to normal use. In addition, debris may include hazardous materials that pose a safety risk to the public or the environment.

Determining priority of effort based on community need and available resources is required to ensure that public assets can be returned to normal operation as soon as possible.

Council is the primary agency for the timely clearance of flood debris and other related hazards from public assets. Assistance may be required from other agencies. For example, QFES may be required to assess and assist in the removal of hazardous materials contained within the general debris.

In large storm tide events, there is likely to be a large volume of debris that requires clearance. Disposal of significant quantities of debris may pose additional issues and the impact on regional waste management facilities and arrangements should considered.
Strategy 4 – Timely Re-opening of Roads including Public Information

A priority task in post-event operations is the re-opening of closed roads. Closed roads can have a significant economic impact on a region as well as causing significant inconvenience to the travelling public. Public expectations are high that roads will be re-opened as soon as possible.

The reopening of roads usually requires clearance of debris and the conduct of road safety inspections before the road can be re-opened after significant inundation. Coordination between debris clearance teams and asset safety assessors is required to minimise delays in re-opening roads.

Strategy 5 - Provision of Assistance to the Community for Clean-Up Operations

The removal of debris and water damaged goods from homes and businesses is primarily the responsibility of the owner. However, storm tide events can cause significant damage and the community will often require assistance in the removal and clean-up of damaged goods after an event.

Considerations for assisting the community to clean-up after a storm tide event include:

- Provision of kerbside/street waste collection bins that can be used to deposit damaged goods;
- Provision of assistance in hosing down mud, silt and other debris from property e.g. QFES may be able to assist with RFS water tankers and hoses to clear away large volumes of mud/silt from affected homes, community or sporting facilities; and
- Provision of advice on:
  - removal of dangerous goods e.g. asbestos;
  - disposal of spoil food;
  - electrical safety to homes/businesses affected by inundation including required safety inspections;
  - cleaning tips of cleaning mould and fungus caused by the effects of flooding; and
  - health and safety measures to prevent injury/illness when working in affected areas e.g. hygiene tips, use of personal protective equipment, etc.

Clean-up operations can only commence when it is safe for home/business owners to return to their properties after a storm tide event. Community safety may be affected by the nature of storm tide debris e.g. sewerage or by electrical safety concerns or lack of access due to excessive amounts of debris on roads. Initial damage assessments of storm tide affected areas should consider the safety of people to return to their homes/businesses to commence clean-up operations.

Strategy 6 – Provision of Appropriate Disaster Relief to People Impacted by Storm Tide

The provision of disaster relief may take many forms from payments under DRFA (if activated) to provision of long-term temporary accommodation or counselling/referral services provided by a range of agencies. It is important to identify vulnerable people that may have been impacted by the event and put in place measures to provide appropriate disaster relief to those who require support.

Usually some form of outreach services is undertaken in severely affected areas. Outreach is normally coordinated through the DCCSDS and may be undertaken by departmental officers supported by other agencies such as Red Cross. The purpose of outreach operations is to identify vulnerable people and their needs.
Where significant impact on business and industry has occurred, it is important that some form of economic outreach led by council’s Planning and Economic Development Directorate be undertaken to determine possible economic impacts and to enable economic recovery issues to be identified and addressed.

**Strategy 7 - Formal Handover to from Disaster Operations to Recovery**

The MRG will develop detailed recovery plans to address the needs of the community following a storm tide event. Disaster operations will cease when the above strategies have been undertaken and detailed storm tide impact analysis has been completed. This will provide the basis for the recovery efforts and the commencement of medium to long term recovery.

For further Storm Tide information, visit: [Council - Storm Tide](#)

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**Earthquake and Tsunami**

Earthquakes in the region are unlikely; however, they can be unpredictable and range in strength from slight tremors to great shocks lasting up to a few minutes. Should an earthquake occur causing damage or a tsunami to our region, upon advice, the MBR LDMG will immediately activate all relevant emergency services and disaster response and recovery arrangements.

For further Earthquake information, visit: [Queensland Government - Disaster Management Earthquakes](#)

An earthquake offshore may produce a tsunami or a tidal wave. People living or working in areas potentially affected by a tsunami need to know that they should move to safer areas if a tsunami warning is issued for their area.

The BoM issues land inundation warnings to advise people to move at least 10 metres above sea level or at least 1 kilometre away from all beaches and the water's edge of harbours and coastal estuaries.

For further Tsunami information, visit: [Queensland Government - Get Ready](#)

**Landslide**

Landslides usually involve the movement of large amounts of either earth, rock, sand or mud or any combination of these.

Landslides can be caused by earthquakes, volcanoes, soil saturation from rainfall or seepage or by human activity (e.g. vegetation removal, construction on steep terrain).

For more information about landslides, visit: [Queensland Government - Landslides](#)

**Major fire**

A major fire is a fire that occurs within a built-up area, in contrast to a bushfire which occurs in a rural setting. Major fires within the region’s urban settings have the potential to injure or kill large numbers of people due to the higher density of residents. Fires may spread to surrounding buildings and people may become trapped, overcome by smoke and unable to escape. Buildings within the region
are regulated in terms of the Building Code of Australia, which sets the standards of building work in Australia.

QFES is the primary agency of fire services in our region, responsible for responding to major fires involving buildings, vehicles, hazardous materials and vegetation. For further information, visit: Queensland Fire and Emergency Services

Major transport incident (road, rail, air, marine)

Major accidents involving all transport modes are possible within the region due to extensive road and rail networks, airfields and air traffic corridors including military flight corridors and boating/shipping activities. Should a major transport incident impact the region, all relevant responding agencies will be in attendance, including QPS, QFES, DTMR, SES and Queensland Rail. The MBR LDMG will activate resources as required.

Pandemic

A pandemic is an epidemic of infectious disease that spreads through human populations across a large region causing mass illness, debilitation and death. Pandemics grow from localised epidemics and spread with the movement of people and animals. A pandemic could occur over a prolonged period (over a year) and in several ways. There may be rolling outbreaks of disease and periods where the disease is quite dormant. Its effects could be catastrophic causing geographic widespread death and illness nationally and internationally, and temporary changes in many areas of the region. In the past, pandemics have significantly altered society including the near-eradication of some communities and entire nations have been decimated. The entire population of the region is at risk to pandemic, in particular the aged care sector, hospitals and schools. The high incidence of commuters and users of public transport travelling to/from Brisbane CBD, as well as the numerous community events increases the risk of infection and spread of disease.

The most likely form of pandemic to impact the region is influenza. A human influenza outbreak in Queensland will be a ‘controlled notifiable condition’ under the Public Health Act 2005. The Chief Medical Officer of Queensland Health is responsible for the overall management and control in response to any public health emergency.

For further information, visit: Queensland Health - Pandemic Influenza
CLIMATE CHANGE

While climate change is not in itself a hazard, it is likely to produce more intense and longer duration weather events, such as:

- Sea level rise (particularly Bribie Island);
- Storm surge;
- Precipitation change;
- Heatwave;
- Flooding;
- Extreme weather; and
- National and state regulatory policy changes.

Queensland Government released the Queensland Climate Adaptation Strategy (Q-CAS) in July 2017. The development of eight Sector Adaptation Plans is part of the initial action under the Sectors and Systems pathway of the Q-CAS. The Emergency Management Sector stands to be continually challenged by changes to the frequency, intensity, distribution and duration of acute events, major disasters and long-term climate related stresses. The Emergency Management Sector Adaptation Plan (EM-SAP) provides a vision for the sector and a series of principles and priorities in order to achieve it. This will provide a platform for Moreton Bay Regional Council to more deeply understand its current and future disaster risk, strengthening governance, preparedness and resilience. For further information, visit:

Queensland Government - Climate Change
Council's Climate Change Policy
### EMERGENCY CONTACTS

<table>
<thead>
<tr>
<th>SERVICE / ORGANISATION</th>
<th>CONTACT INFORMATION</th>
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<tbody>
<tr>
<td><strong>Life-threatening emergencies</strong></td>
<td>Triple zero (000) for Police, Fire or Ambulance</td>
</tr>
<tr>
<td>Dept of Agriculture and Fisheries</td>
<td>13 25 23 (Animal and plant biosecurity alerts and services)</td>
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<tr>
<td>Australian Red Cross - Register.Find.Reunite</td>
<td>1300 554 419 or 3367 7222</td>
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<tr>
<td>Crime Stoppers - Anonymous crime reporting</td>
<td>1800 333 000</td>
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<tr>
<td>Dept of Communities, Disability Services and Seniors - Support and financial assistance</td>
<td>1800 173 349 (Community Recovery Hotline)</td>
</tr>
<tr>
<td>Dept of Environment and Science</td>
<td>1300 130 372 (Wildlife emergencies)</td>
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<tr>
<td>Education Queensland - School closures</td>
<td>Contact your child’s school, or go to the Dept website</td>
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<tr>
<td>Energex</td>
<td>13 19 62 (Emergency 24/7 Fallen power lines and electricity faults) 13 62 62 (Power outages)</td>
</tr>
<tr>
<td>APA Group - Gas Leaks and Emergencies</td>
<td>1800 427 532</td>
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<tr>
<td>GIVIT - donate goods and services</td>
<td>givit.org.au</td>
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<tr>
<td>Lifeline</td>
<td>13 11 14</td>
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<tr>
<td>Marine rescue</td>
<td>(07) 3408 7596</td>
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<tr>
<td>Moreton Bay Regional Council</td>
<td>(07) 3205 0555 (24 hours)</td>
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<tr>
<td>National Relay Service - hearing/vision impaired</td>
<td>133 677 (TTY voice calls) 1300 555 727 (speak and listen) 0423 677 767 (SMS relay)</td>
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<tr>
<td>National Security Hotline</td>
<td>1800 123 400</td>
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<tr>
<td>Optus</td>
<td>13 13 44</td>
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<tr>
<td>Poisons information</td>
<td>13 11 26</td>
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<tr>
<td>Policelink - Non-urgent property crime and incidents</td>
<td>131 444</td>
</tr>
<tr>
<td>Queensland Fire and Emergency Services</td>
<td>Triple zero (000) to report a fire</td>
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<tr>
<td>Queensland Health</td>
<td>13 HEALTH (13 43 25 84)</td>
</tr>
<tr>
<td>Road Closures:</td>
<td></td>
</tr>
<tr>
<td>Department of Transport and Main Roads</td>
<td>13 19 40 (State roads) 3205 0555 (Local roads)</td>
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<tr>
<td>Moreton Bay Regional Council</td>
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<tr>
<td>RSPCA QLD - Animal emergencies / injured animals</td>
<td>1300 ANIMAL (1300 264 625)</td>
</tr>
<tr>
<td>Rural Fire Service</td>
<td>Triple zero (000) to report a fire</td>
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<tr>
<td>State Emergency Service (SES)</td>
<td>132 500 (storm damage and flood assistance)</td>
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<tr>
<td>Telstra</td>
<td>13 22 03</td>
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<tr>
<td>Unitywater - Emergencies and faults</td>
<td>1300 086 489 (24 hours)</td>
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<tr>
<td>Vodafone</td>
<td>1300 650 410</td>
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<tr>
<td>Volunteering Queensland</td>
<td>1800 994 100</td>
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### HOSPITALS

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<thead>
<tr>
<th>HOSPITAL</th>
<th>ADDRESS</th>
<th>PHONE</th>
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<tbody>
<tr>
<td>Caboolture Hospital</td>
<td>McKean Street, Caboolture</td>
<td>5433 8888</td>
</tr>
<tr>
<td>Caboolture Private Hospital (adjacent to public hospital)</td>
<td>McKean Street, Caboolture</td>
<td>5495 9400</td>
</tr>
<tr>
<td>Peninsula Private Hospital</td>
<td>George Street, Kippa-Ring</td>
<td>3284 8577</td>
</tr>
<tr>
<td>Pine Rivers Private Hospital</td>
<td>Dixon Street, Strathpine</td>
<td>3881 7222</td>
</tr>
<tr>
<td>Redcliffe Hospital</td>
<td>Anzac Avenue, Redcliffe</td>
<td>3883 7777</td>
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