

Document control

This sub plan will be reviewed regularly and updated as necessary. The Local Disaster Coordinator (LDC) will ensure contact details are kept and up to date.

Minor amendments to this plan can be made by the LDC. Amendments which affect the intent of the plan must be endorsed by the LDMG.

All approved amendments are to be listed below.

Version	Date	Comments	Approved by
1.1	June		LDMG on 13 January 2022
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Table of Contents

Abbreviations	4
Introduction	5
Purpose	5
Objective	5
Key contacts	5
Responsibilities	5
CONTEXT	6
PLANNING ASSUMPTIONS	7
PLANNING PRINCIPLES	7
OTHER SUPPORT AGENCIES	7
CRITICAL VULNERABILITIES	8
Critical Information Requirements	8
CONCEPT OF OPERATIONS	9
Annexure A: Key Responsibilities for Fitzroy River Flood Event	12
Annexure B: Fitzroy River Flood Event Tasking Matrix	14
Annexure C: Decision Support Tools	20
Annexure D: Hazard / Threat	22
Annexure E: Critical Vulnerabilities	26
Annexure F: Fitzroy River Flood Potential Impacts Table	27
Annexure G: Flood Height Calculations	38
Annexure H: LDCC Operational Checklist	39

Abbreviations

Abbreviation	Full title
AHD	Australian Height Datum
AIIMS	Australasian Inter-Service Incident Management System
ALO	Agency Liaison Officer
ВСР	Business Continuity Plan
BOM	Bureau Meterology
Council	Rockhampton Regional Council
DDC	District Disaster Coordinator
DMO	Coordinator Disaster Management
DRFA	Disaster Recovery Funding Arrangements
DRP	Disaster Recovery Plan
DTMR	Department of Transport and Main Roads
FRW	Fitzroy River Water (a business unit of RRC)
ICC	Incident Control Centres
LDC	Local Disaster Coordinator
LDCC	Local Disaster Coordination Centre
LDMG	Rockhampton Regional Council Local Disaster Management Group
LDMP	Local Disaster Management Plan
MSL	Mean Sea Level
MSQ	Maritime Safety Queensland
QAS	Queensland Ambulance Service
QFES	Queensland Fire and Emergency Services
QPS	Queensland Police Service
RRC	Rockhampton Regional Council
RRWR	Rockhampton Regional Waste and Recycling (a unit of RRC)
SDRA	State Disaster Recovery Arrangements
SES	State Emergency Service
Sitrep	Situation Report

Introduction

Purpose

This Sub Plan is to be used in conjunction with the Local Disaster Management Plan and its Sub Plans. It sets out the agreed responsibilities and actions for the Local Disaster Management Group (LDMG).

The purpose of this Sub Plan is to detail the agreed arrangements, at the local level to respond to a Fitzroy River Flood that has impacted the community within the Rockhampton Region Council (RRC) Local Government Area.

Objective

The objectives of the Sub Plan are to:

- 1. guide the flood response through a Fitzroy River Flood
- 2. provide the context and a greater understanding of potential impacts
- 3. provide advice on triggers and preparation activities to mitigate impacts
- 4. ensure the release of clear and accurate information and warnings
- 5. provide advice on response activities to mitigate impact and manage consequences.

Key contacts

- LDMG Chair
- LDMG Deputy Chair
- Local Disaster Coordinator
- Deputy Local Disaster Coordinator
- Disaster Management Coordinator
- State Emergency Service Rockhampton Unit Local Controller
- Queensland Police Services
- Maritime Safety Queensland
- Queensland Fire and Emergency Service

Responsibilities

Rockhampton Regional Council (RRC) will be the lead agency for responding to and recovering from flood events. The Council objectives during a flood event, through the LDMG, are to disseminate community information and warnings, coordinate disaster response and recovery operations in order to minimise community disruption and achieve the resumption of normal services and community activity.

Council's role in flood management is not limited to just the response to an event but also involves implementing development controls, planning and constructing resilient infrastructure, building community awareness and disaster planning and management. To undertake these roles Council has adopted a Flood Management Strategy. This Flood Management Strategy provides an overarching framework for Council's current and future floodplain risk management activities and plans. This strategy and associated flood reports, plans, studies and mitigation projects are located on Council's website.

Council, through the LDMG and LDCC under the LDMP and relevant sub-plans is responsible for enacting the North Rockhampton Flood Management Area Levee Emergency Response Plan (Levee ERP) if required. Rockhampton Regional Council is responsible for maintaining and exercising this document.

Key Responsibilities for Fitzroy River Flood Event are further described in Annexure A.

CONTEXT

The Fitzroy River catchment is the second largest catchment in Australia and because of its size, is capable of producing severe flooding on its floodplain following heavy rainfall events. The Fitzroy River catchment includes the Dawson, Mackenzie, Comet, Nogoa, Connors and Isaac River systems and Fitzroy River floods can come from any of these rivers. Large volumes of rainfall in the lower catchment also have the potential to cause flooding.

The Fitzroy River flood warning system aims to provide at least three day's notice of a flood event above 7 metres at the town gauge. This provides ample warning time for people to evacuate should water levels be forecast to rise to moderate levels.

Moderate riverine flooding occurs when the Fitzroy River rises to a height greater than 7.5 metres and less than 8.5 metres at the Rockhampton town gauge. There have been 21 moderate flooding events in 110 years across the Rockhampton Region. Predicted increases in storm intensity may result in a higher risk of flooding and inundation throughout the Rockhampton Region. Major flooding occurs when the Fitzroy River rises to a height greater than 8.5 metres at the Rockhampton town gauge. There have been seven major flooding events in the Rockhampton Region over 110 years, with the highest in 1918 reaching 10.1 metres. Predicted increases in storm intensity may result in a higher risk of flooding and inundation throughout the Rockhampton Region.

The LDMG has a mature approach to flooding and has shown in past events that it has the knowledge and systems in place to respond. The Rockhampton Region Planning Scheme contains flood hazard overlay mapping that provides detailed information on areas of land within the Rockhampton Region which have been, or could be, impacted by a flood. It also seeks to ensure that new development and redevelopment is not located in flood prone areas. Council's Flood Management Strategy has been developed to improve community resilience and provide appropriate flood mitigation infrastructure associated with riverine, local creek and overland flooding.

Council's Flood Management Strategy has been developed to improve community resilience and provide appropriate flood mitigation infrastructure associated with riverine, local creek and overland flooding. The North Rockhampton Flood Management Area (NRFMA) improves the flood immunity in the locality of Berserker, North Rockhampton during major flooding. The Rockhampton Region Strengths, Mitigation and Preparedness measures for major flooding are largely the same as for moderate flooding. Refer to the Flooding (Moderate) risk page for more information. When major flooding is predicted a temporary flood barrier is constructed at Rockhampton Airport to protect key infrastructure.

The Yeppen North and Yeppen South Bruce Highway upgrade projects have significantly increased the capacity for connecting Gracemere and Rockhampton, and beyond, during flood. The Rockhampton SES Unit has the capability to support and resupply to the community through flood boat operations. Queensland Fire and Emergency Services have Water Rescue response capabilities. Agencies such as Queensland Police Service have models in place to operate during flood events with stations and staff spread across Rockhampton, Mount Morgan, Gracemere and more remote single officer stations.

Remote services for those in need of medical attention can be supplied by RACQ Capricorn Helicopter Rescue Service and the State Emergency Service who provide assistance on behalf of Queensland Health and Queensland Ambulance Service.

A detailed description of hazards and threats associated with floods has been included in *Annexure D*. Further details are contained within Council emergency and floodplain risk assessments and studies.

PLANNING ASSUMPTIONS

The following planning assumptions have been made:

- (a) Many of the regions residents are familiar with the impacts associated with a Fitzroy River Flood however travellers, visitors and tourists may remain unfamiliar with the region's susceptibility to flood events;
- (b) Strategic land transport corridors (Road and Rail) and the airport are key dependencies for the region's social and economic prosperity;
- (c) The Bureau of Meteorology (BoM) will provide timely warnings and alerts for flood events;
- (d) Maritime Safety Queensland (MSQ) will be engaged to provide advice around the timings of the closure of the river, and MSQ enacting the Extreme Weather Event Contingency Plan Gladstone Region;
- (e) The LDCC will be activated in accordance with established triggers and protocols;
- (f) Council will continue to maintain accurate mapping and associated data and this will be available to all relevant stakeholders;
- (g) All stakeholder agencies and Council departments have in place effective business continuity plans (BCP), that enable them to effectively respond in support of this plan;
- (h) All stakeholder agencies and Council departments have sufficient trained, equipped and available personnel to perform the roles and responsibilities identified in this Sub Plan and their respective BCPs.

PLANNING PRINCIPLES

The key principles for Fitzroy River Flood event management include:

- (a) Decentralised control and centralised coordination responsibility for response and recovery actions remains at the local level and the deployment and coordination of the right resources to the right places at the right time is achieved centrally through the LDCC;
- (b) Effective information flow timely and accurate information (including alerts, warnings and situation updates), is received, processed and disseminated to relevant stakeholders and members of the public, enabling effective decision making;
- (c) Flexibility maintaining agility, responsiveness, and adaptability in order to readily adjust to changing circumstances;
- (d) Cooperation requires a partnership approach between all stakeholders that is focused on achieving the best possible outcomes for the community, regardless of circumstances or the risks;
- (e) Sustainability resources and effort applied to flood event management should be sustainable over an extended period and capable of responding to concurrent or consecutive disaster events.

OTHER SUPPORT AGENCIES

The other support agencies most likely required to assist the RRC responding to and recovering from Fitzroy River Flood events are as follows:

- Ergon Energy;
- Bureau of Meteorology (BoM);
- Department of Environment and Science;
- Department of Communities, Housing and Digital Economy;
- Local Community Groups;
- Media outlets for the provision of advice to the community;
- Public and private transportation providers;
- Queensland Ambulance Service (QAS);
- Queensland Department of Transport and Main Roads (DTMR);
- Volunteer Coast Guard;
- Queensland Health; and
- Australian Red Cross.

CRITICAL VULNERABILITIES

The following critical vulnerabilities should be taken into consideration when implementing a response to a disaster event:

- Strategic Routes. With a small number of strategic land transport corridors into and through the region, the denial or restricted use of any strategic routes may have a significant impact on accessibility for external support. Consequential impact on adjacent regions or other parts of the State may also occur; it is likely that during a major flood event, some people, communities and assets will be subject to isolation or restricted mobility. This will impact on movement and the capacity to deploy resources. With a small number of strategic land transport corridors into and through the Region, the denial or restricted use of any strategic routes may have a significant impact on accessibility for external support. The airstrip at the Rockhampton Airport will be inundated during a major flood.
- Infrastructure across the Region will be impacted by water inundation and isolation during a major flood. Recovery times can vary for each event as they rely on the water levels to recede prior to the commencement of clean-up operations. This can have a lasting impact for industry, particularly those under/not insured.
- The vast majority of medical facilities and services are not located within the flood prone areas and if impacted by a probable maximum flood, mitigation strategies are available to defend from flood waters entering infrastructure. The impact from major flooding would be primarily from the influx of possible casualties from water borne infections/disease or those suffering injury from the flood event.
- Major flooding can impact agricultural land throughout the Rockhampton Region and has done so in recent history. The December 2010/ January 2011 flood event caused widespread disruption to primary producers in the Region and impacted livestock, crops and fencing. Significant industry impact is similar to that of moderate flooding.
- Washouts and other debris within waterways can impact the environment through erosion and bank destabilisation.
- Intra-Region Mobility. It is likely that during a significant disaster event, people and assets throughout the Region will be subject to isolation or restricted mobility. This will impact on movement within the region and the capacity to deploy some resources;
- Communications. With first order impacts of flood events potentially including loss of power in some areas or damage to telecommunications infrastructure, communications to and from some organisations or localities may be difficult. This may impede the ability to request or coordinate assistance at the local level.

More detail on critical vulnerabilities has been included in Annexure E and potential impacts in Annexure F Fitzroy River Flood Potential Impacts Table and Annexure G Flood Height Calculations.

Critical Information Requirements

Current And Forecast Meteorological Conditions

- When and where is the event likely to occur?
- What are the likely impacts on disaster planning and operations (route closures, warning times etc)?

Resource Availability

- What resources are required to manage the response and recovery efforts?
- What internal resources are available to support disaster operations (location, type, capacity)?
- What external resources need to be requested, how will they be deployed and supported?
- What resources may be required to mutually support adjacent regions?

Evacuations

- What are the triggers for the initiation of voluntary and directed evacuations?
- What is the most appropriate risk based timeline for evacuation decision points (issuing alerts, activating evacuation centres and routes, moving vulnerable segments of the population)?
- What internal and external assets will be required to execute the evacuation?

CONCEPT OF OPERATIONS

GENERAL CONCEPTS

The RRC response to a Fitzroy River Flood event will be implemented in three phases (Preparation, Response, and Recovery) and will be controlled through existing structures. The operation will leverage both formal disaster and emergency response capabilities (LDMG, Emergency Services) and informal capabilities (volunteers, community groups and social networks).

The degree of activation of command and control structures will be scaled to suit the magnitude, nature, locations and duration of the disaster.

Council is the designated lead agency for overall control of Fitzroy River Flood response and recovery operations. The coordination of these operations will be managed by the LDCC, when activated. The LDCC provides the primary coordination point for RRC resources and external agencies involved in the response and recovery effort. The LDCC is responsive to strategies, priorities and direction from the LDMG.

Single lines of communication and points of contact between all the agencies will be implemented where possible. Agency Liaison Officers (ALO) from stakeholder agencies in the LDCC will provide the mechanism for information flows, task management and situational awareness.

Transition between phases of the operation will be controlled and communicated clearly throughout the organisation to ensure tasks are completed, resources postured appropriately and clarity exists for command, control and coordination at all times.

Authority and decisions will be delegated to the lowest effective level to allow for management of issues at an appropriate level and use of local resources to best effect. Any decisions will be based on corroborated information or the most credible data available at the time.

All agencies and the public will be given access to appropriate, timely and accurate information wherever possible.

The overall concept for managing the disaster event is premised on the community being responsible for and taking decisive action early, critical infrastructure and essential services are protected where possible to ensure continuity of services and emergency services resources being protected and positioned for rapid response.

SPECIFICACTIONS

Throughout the year the Local Disaster Coordinator (LDC) or delegate will maintain an ongoing watch for weather events such as tropical cyclone, east coast low or severe storm that may result in flooding in the Fitzroy River catchment and have a significant effect on the community.

The LDC on receipt of advice that a significant event is likely to occur, which may require the coordination of disaster operations and coordination of responding agencies, will consider the activation of the LDCC in accordance with the Activation Sub Plan. Initially the LDC may activate the LDCC to Alert or Lean Forward level or directly to Stand Up stage if the situation warrants.

As the LDC activates the LDCC to the various levels, Council should also activate to the same level.

The key task of the LDC and the LDCC is to coordinate disaster operations. The LDC will be supported by the Coordinator Disaster Management (DMO) and may delegate the task of coordinating disaster response to the DMO. The resourcing of the LDCC is to be determined in consultation with the LDC and DMO.

The LDC will determine with the Chair of the LDMG the requirement to hold an Extraordinary LDMG meeting. A key task of these meetings is to determine and to provide strategic direction to the LDC and LDCC.

COMMUNICATON

Communication will be in accordance with Council's and response agencies' normal methods until the ability to do so is lost. The LDCC will have a designated contact number for public use (1300 652 659) and ALOs within the LDCC will have direct landline access for their use. ALOs may provide access to their agencies two way radio system. The LDCC will have the ability to use the Council two way radios and also has the use of satellite phones. Internet and email access will be available for all agencies within the LDCC. Distribution of situation reports (Sitrep) will be via email/the internet until the ability to do so is lost. All communication deemed significant is to be recorded in the disaster management system.

EVACUATIONS

Evacuations will be conducted in accordance with the Evacuation Planning Sub-Plan which contains information that can be used to guide evacuation route planning, evacuation timelines and possible shelters. Timeframes and restrictions on vessel operations will be implemented by MSQ in accordance with the Exremee Weather Event Contingency Plan Gladstone Region.

Note that in the case of a Fitzroy River Flood, the need and extent of evacuations is directly related to the predicted flood height and the relative impacts of inundation on various localities within Rockhampton. Isolation of visitors and travellers within the region can also contribute to evacuation numbers. Generally sufficient time is provided to enable a planned voluntary evacuation of impacted areas. Directed evacuations may be necessary in the more severe flood events. Consideration should also be given to the fact that it is preferable to carry out any evacuations during daylight hours. This could see the evacuation cut-off time being shifted forward a number of hours. This type of scenario will have to be kept in mind in pre-planning and taken into account for approval timelines for any directed evacuations.

Consideration needs also to be given to the vunerabilities of possible evacuation routes. Riverine flooding and backflow flooding within local creek catchments discharging into the Fitzroy River may have a severe effect on possible evacuation routes and would be further exacerbated when in conjunction with local rain events. All major routes leading in, through and out of Rockhampton including the Bruce Highway (Yeppen Crossing, Lower Dawson Road, Gladstone Road, Alligator Creek), Capricorn Highway (Rockhampton to Gracemere), Rockhampton – Emu Park Road, Lakes Creek Road and Rockhampton – Ridgelands Road are subject to flooding. Numerous local roads are also impacted by flood events.

REQUESTS FOR ASSISTANCE

Once the LDCC is activated, all requests for assistance from the community and participating agencies will be initially dealt with by the LDCC using the disaster management system. The LDC is responsible for forwarding any requests beyond the capability of the local response to the District Disaster Management Group (DDMG) via the District Disaster Coordinator (DDC).

COMMAND, CONTROL AND COORDINATION

Council has control over the response to a Fitzroy River flood event and as such, is designated the lead agency. This control is executed through the LDCC when activated. When the LDCC is not activated, in the case of minor event, Council and other key agencies will control the response through normal business operations and resources.

The LDMG will determine strategic priorities and provide direction to the LDCC on disaster response and initial recovery operations. The LDCC is responsible for coordinating disaster operations and maintaining a full record of the event including all details of tasks in the disaster management system.

The LDCC provides the focal point for coordination of disaster operations in the Rockhampton Region. The LDCC is reliant on information inputs from a range of sources to prioritise efforts across the region and is dependent on external agencies and Council to execute the plan through the deployment of resources to achieve the stated objectives.

TASKING MATRIX

The allocation of key tasks associated with a Fitzroy River Flood event is attached at Annexure B.

DECISION POINTS

A number of decision points exist in managing the response to a Fitzroy River Flood event. These are captured in the Decision Support Tool at *Annexure C*.

PUBLIC INFORMATION

Upon the activation of the LDCC, all public information and warnings will be distributed to the local media outlets via the Media Liaison Officer following approval of the LDC.

The key messages for a Fitzroy River Flood event will vary between phases. The key messages outlined below align with the messaging identified in the Communications Sub Plan and are supported by multiple public awareness initiatives.

PREPARATION PHASE

- Know if you are at risk from a Fitzroy River Flood event and prepare evacuation kits and plans;
- Actively monitor alerts, warnings and situation updates;
- Check on neighbours and family members and offer support to those less prepared;
- Prepare your property for the event as best as possible to minimise damage; and
- Any pre-emptive actions that may impact on mobility for residents (airport, port, railway or road closures).

RESPONSE PHASE

- What actions to take in response to the actual occurrence on the ground;
- Locations of evacuation centres and what evacuees will need to bring with them;
- Likely timeframes for the event;
- Any emerging safety or security issues associated with the event; and
- Where to go for further information or assistance.

RECOVERY PHASE

- What the impact of the event was on the region or particular areas including degraded infrastructure or essential services;
- What actions authorities are undertaking to address the impacts and what the priorities are;
- Likely timeframes for recovery of infrastructure and essential services;
- Any no-go areas or transport corridors that are unavailable; and
- Location of Recovery Hubs and where to go for additional information.

Annexure A: Key Responsibilities for Fitzroy River Flood Event

Organisation	Preparation Phase	Response Phase	Recovery Phase
Local Disaster Manangement Group	 Maintain situational awareness of the developing event Implementing actions in accordance with the LDMP Activation Framework (Alert, Lean Forward, Stand Up, Stand Down) Be prepared for activation including the provision of appropriate personnel to the LDMG/LDCC 	 Provision of response and recovery strategies, priorities and directions to internal Council business units and the LDCC Appoint a Local Recovery Coordinator and initiate through the Recovery Sub Committee, Recovery Phase planning and prepare to activate recovery structures 	 Implement recovery structures and supporting resource management mechanisms Facilitate formal requests for external support as appropriate for the recovery effort Management of resource reconstitution and conduct a review of response and recovery operations
LDCC	 Active monitoring of alerts and warnings from the BoM and local data sources Implementing actions in accordance with the LDMP Activation Framework (Alert, Lean Forward, Stand Up, Stand Down) Developing an appreciation of the conditions and likely outcomes for the specific flood event and coordinate any resource pre-positioning and pre-emptive external resource requests as appropriate and within existing authorities Coordinate the construction of mitigation works (levees etc) and provision of materials to the public (sandbags etc) Coordinate the maintenance of evacuation routes and key access routes for disaster operations 	 Continued monitoring of forecasts and situation updates from the BoM and local data sources Implementation of actions in accordance with the LDMP Activation Framework (Alert, Lean Forward, Stand Up, Stand Down) Coordinate the protection, maintenance and repair of critical infrastructure and essential services throughout the region through working with owners and operators of the infrastructure (health services, water, electricity, gas, telecommunications, transport) Conduct evacuations and provide for immediate evacuee welfare through establishment and operation of evacuation centres Coordinate provision of essential items and services to isolated communities Coordinate the responses to support requests escalated from field operations Information management including the receipt and provision of timely and accurate warnings and situation updates to disaster management stakeholders and the public 	 Establishment of Recovery Hubs Coordinate restoration of critical infrastructure and services to pre-event levels as quickly as possible Continued monitoring of situation updates from the BoM and local data sources Coordination of evacuation centre closures and re-occupation of public facilities as appropriate Implementation of actions in accordance with the LDMP Activation Framework (Alert, Lean Forward, Stand Up, Stand Down) Coordinate reconstitution of disaster management assets Facilitate handover of any recovery or residual response activities to appropriate agencies

Organisation	Preparation Phase	Response Phase	Recovery Phase
LDCC Cont.		 Maintain ALO network and communications protocols appropriate to the event Coordinate the transition to the Recovery Phase with internal assets returning to business as usual activities and external assets reducing operational tempo and availability 	
Council	 Monitoring and dissemination of warnings from the BoM Developing Fitzroy River Flood mapping, local catchment flood modelling and supporting geospatial products to enable detailed local planning Activating internal BCPs as appropriate Communicating with Council staff Managing media queries Maintaining LDMG/LDCC administration (contact lists, rosters) 	 Provision of response and recovery strategies, priorities and directions to internal Council business units and the LDCC Ongoing provision of Fitzroy River flood mapping, local catchment modelling and supporting geospatial products to enable detailed local planning and response Enact the North Rockhampton Flood Management Area Levee Emergency Response Plan (Levee ERP). 	 Implement recovery structures and supporting resource management mechanisms Management of volunteer capabilities that exist outside existing structures Restore Council services to pre-event levels as quickly as possible

Annexure B: Fitzroy River Flood Event Tasking Matrix

Organisation	BU / Branch	Supporting Agencies	Key Tasks	Key Decisions
Rockhampton Regional Council Local Disaster Management Group	LDMG		 Manage events in line with the priorities and planning principles outlined in the LDMP and this plan. Provide direction to the LDC. Issue community information / advice. Maintain situational awareness of the event through the LDCC. Provide situation updates to the DDC. Request assistance from DDMG if required. Convene the Recovery Sub Committee as soon as practical. Appoint a Recovery Manager. 	 LDMG Establishment LDCC Activation LDCC Stand Down Transition between phases Recovery Sub Committee activation.
	Recovery Sub Committee	Dept of Communities, Housing and Digital Economy	 Develop a Recovery event specific plan for endorsement by the LDMG. Coordinate community recovery activities (Recovery Coordination Centres) and resources including; information, personal support, specialist counselling, mental health and community services. Restoration of infrastructure as soon as practical to allow resumption of normal operations for the community as soon as practical. Coordinate recovery efforts with District and State recovery mechanisms. Liaise with external stakeholders to determine recovery priorities, resourcing and coordination. 	 Recovery committee activation and deactivation. Recovery Coordination Centre opening and close down.
	LDCC Communication / Media Liaison Officer	Council Communication / ICT Teams	 Activate Communication Sub Plan. Provide a single point of contact for media queries. Support the Chair of the LDMG in providing situational awareness to the community and wider public through preparation of media statements, talking points and supporting products. Assist the LDCC to source and disseminate information. Coordinate the use of social media for dissemination of factual information and direction to members of the public. Assist the LDCC in communicating quickly and consistently with internal Council Stakeholders and employees. 	 Communication Sub Plan Activation following LDC approval. Release of public information following LDC approval.

Organisation	BU / Branch	Supporting Agencies	Key Tasks	Key Decisions
	LDCC or LDMG Sub Committees	QPS, QFES, SES, MSQ	 Coordinate alerts and warnings to members of the public. Coordinate Council support to disaster operations. Coordinate external agency support to disaster operations. Coordinate communications with the community through the Media Liaison team. Establish liaison linkages with key stakeholder organisations including relevant authorities, agencies, Non-Government organisations and businesses. Maintain situational awareness of the event. Coordinate delivery of planning, modelling and data to relevant stakeholders. Coordinate public safety activities (road closures, door knocks etc). 	 Release of alerts and warnings to the public. Resource allocation. Evacuation Sub Plan Activation. Evacuation Centre establishment and close down. Recovery Coordination centre establishment and close down.
	QPS	Evacuation Sub Committee, SES, QAS, QFES	 Maintain law and order. Traffic and crowd control. Provide Emergency Response Direct and conduct evacuations. Security of damaged / evacuated areas. Monitoring waterways and coastal areas re boat users. 	Directed Evacuations.
	QFES	Council SES	 Emergency Response. Swift Water Rescue. Hazardous Chemical response. Urban search & rescue. Post Disaster Impact Assessment. 	
	Dept of Communities, Housing and Digital Economy	Recovery Sub Committee Council	Plan and conduct recovery operations.	
	QAS		 Pre hospital emergency treatment and transport of casualties. Evacuation of persons with medical conditions. Medical and health support. 	
	Ergon Energy		 Protect and repair power infrastructure and prioritised restoration of power to affected areas. Isolation of network where necessary. Provide situation updates to LDMG and LDCC to assist with response and recovery planning. 	De-energising of networkPrioritised restoration.

Organisation	BU / Branch	Supporting Agencies	Key Tasks		Key Decisions
MSQ			Maritime safety and warnings. Close / Restrict use of waterway areas if required under the authority of the Extreme Weather Event Contingency Plan Gladstone Region Preparing for severe weather (Maritime Safety Queensland) (msq.qld.gov.au) https://www.msq.qld.gov.au/-/media/MSQInternet/MSQFiles/Home/Safety/Extreme-weather-plans/Severe-weather-EWE/gladstone-region-EWE-2020_21.pdf?la=en	•	Closure of waterways.
	State Emergency Service (SES)	QPS, QFES	 Support evacuation operations in accordance with QPS. Conduct rescue and response operations as required. Support repairs to houses – tarping. Support protection of critical infrastructure – sandbagging. Support opening of roads – debris removal. 	•	Activation of plans and resources in support of LDCC operations.
Federal Government	BoM	Council	 Provide Flood watches and warnings and weather forecast to LDCC. Provide Flood updates and warnings to LDCC. 		
	Telstra	Other telecommunications providers	 Protect and repair key communication assets. Provide temporary / mobile communications equipment. Provide situation updates to LDMG and LDCC to assist with recovery planning. 		

Organisation	BU / Branch	Supporting Agencies	Key Tasks	Key Decisions
	All Council Departments (including Rockhampton Airport)		 Lead Agency for Council response and recovery activities. Activate BCP to minimise disruption to services. Pre-position critical resources as directed by the LDCC for response and recovery operations. Post impact reconnaissance and damage assessment of physical infrastructure. Protect and repair Council infrastructure to minimise impact on operations and the community. Provide required personnel to LDCC and to augment Council efforts in disaster operations. Maintain health and safety of Council employees including fatigue management. Ensure Council employees are aware of the situation, impacts and priorities. Maintain business as usual as best as possible. Capture lessons learned and costs associated with the event. 	BCP Activation.

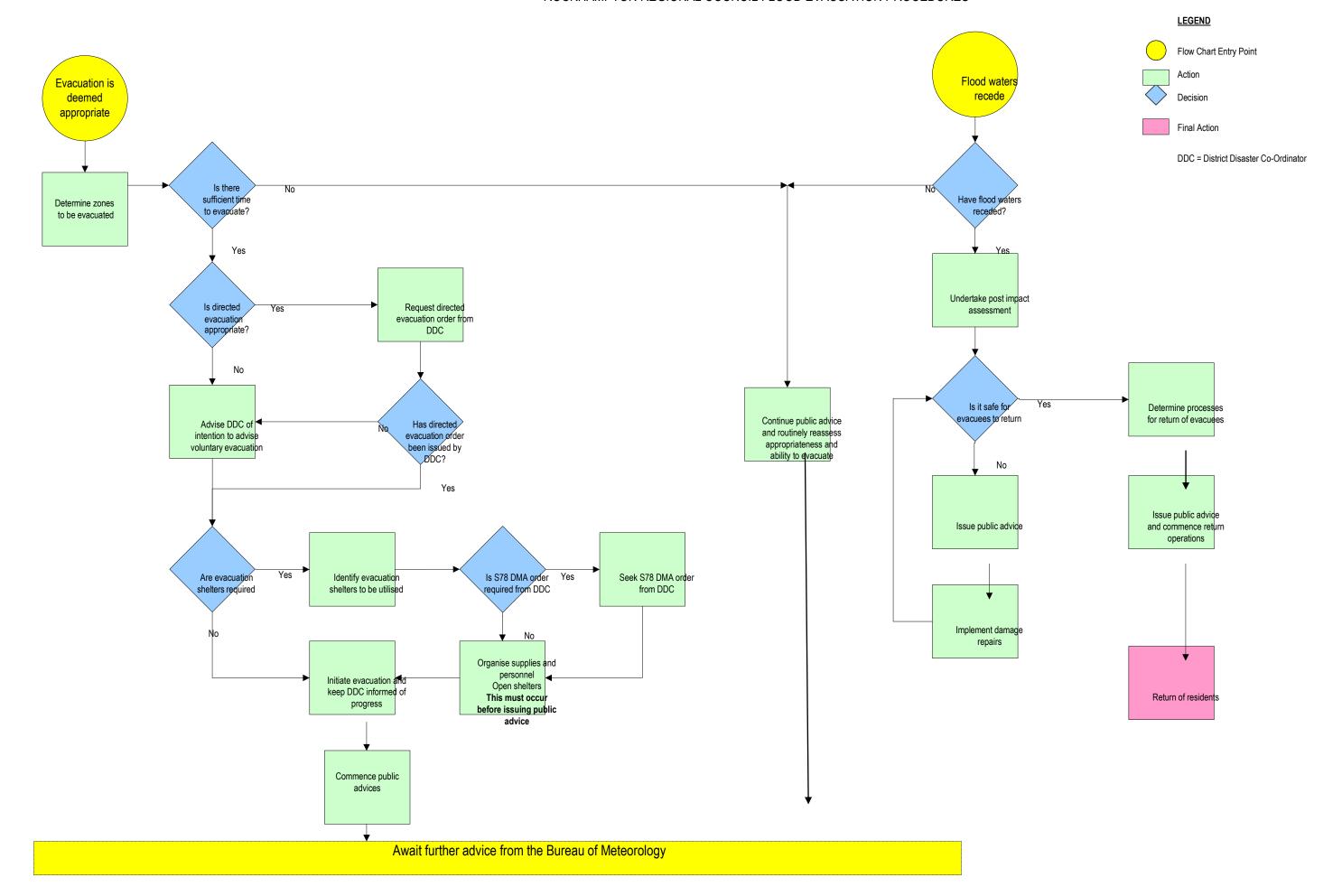
Organisation	BU / Branch	Supporting Agencies	Key Tasks	Key Decisions
	Civil Operations	DTMR, QPS, SES	 Traffic Management. Monitoring and maintenance of evacuation routes, emergency service routes and alternate routes for the public. Ensure communication links with LDCC via phone, email or radio if telecommunications fail. Provide public information on Council road status and closures. Coordination of resources required for road/crossing/bridge closures. Coordinate route clearance as required to ensure key routes remain open. Protect internal assets – plant & equipment, depots, fuel. Relocate essential resources to safe areas as required. Repair or make safe to the public any area impacted by the event where directed by the LDCC. Stockpile the following in preparation for emergency deployment: sandbags, sand, road base, barricades, mesh, A-Frames, star pickets, road hazard signage, flash lights. Respond to road and drainage incidents. Clear debris from the storm water system. Coordinate contractors in support of Community Response tasks. Support road closures through the provision of field teams. Support debris and tree clean up (ground work only). Provide barricades and equipment for response and traffic operations. 	 Road closures. Alternate route designation. Allocation of resources to response and recovery operations.
	Corporate / Procurement / ICT / Customer Service		 Provide materials and support for response and recovery operations. Coordinate contracting, procurement and logistics arrangements. Arrange legal advice to LDMG/LDCC as required. Manage and capture finances related to the flood event. Support DRFA and SDRA applications. Provide information products incorporating disaster information and critical infrastructure as necessary to internal and external stakeholders. Activate IT DRP as required to protect information systems and data. Provide information to the public. Provide customer service staffing support to the LDCC operations. Provide situation briefings to the LDCC on call volumes, nature of requests and any capability issues. 	Activation of IT Disaster Recovery Plan (DRP).

Organisation	BU / Branch	Supporting Agencies	Key Tasks		Key Decisions
	FRW	Ergon Energy, Queensland Health	 Maintain water quality and supply. Manage sewerage overflow related issues. Be prepared to 'close down' infrastructure. Notify residents in sewage affected areas. Prepare and issue public information through the LDMG for residents in isolated communities to manage sewerage and potable water. Liaise with RRC Environment and Public Health unit and Queensland Health regarding public health warnings. Protect internal assets – plant & equipment, depots, fuel. Relocate essential resources to safe areas as required. Repair or make safe to the public any area impacted by the event. Provide materials for recovery operations. Enact the North Rockhampton Flood Management Area Levee Emergency Response Plan (Levee ERP). 	•	Allocation of resources to response and recovery operations Deactivation of critical infrastructure
	Parks & Gardens	RSPCA, Private Animal Shelters	 Protect internal assets – plant & equipment, depots, fuel. Relocate essential resources to safe areas as required. Repair or make safe to the public any area impacted by the event. Clear debris from the parks and recreational areas. Support debris and tree clean up (ground work only). Provide materials for recovery operations. Maintain liaison with DES Parks and Wildlife Services. Establish emergency animal shelters in line with the Evacuation Plan. 	•	Establish emergency animal shelters (Zoo). Allocation of resources to response and recovery operations.
	RRWR	DEHP	 Establish liaison with waste management contractors. Identify and prepare alternate waste management collection options. Be prepared to open and manage emergency waste / dumping locations. Maintain information flows to the public through the LDMG on waste related issues. 	•	Open/closure of temporary dump sites.

LEGEND ROCKHAMPTON REGIONAL COUNCIL FLOOD EMERGENCY PROCEDURES EXPECTED PEAK FLOOD LEVEL AT THE ROCKHAMPTON GAUGE - BASED UPON WARNINGS FROM THE BUREAU OF METEOROLOGY Bureau of Meteorology Warning (Flow Chart Entry Point) **MINOR MODERATE MAJOR** Action Gauge Level Gauge peak has Decision <7.0m 7.0m 7.5m 8.0m 8.5m 9.0m 9.5m passed Zone 4 Zone 5 Zone 6 Zone 7 Zone 3 Zone 1 Zone 2 Final Action DDC = District Disaster Co-Ordinator LDMG = Local Disaster Management Group Convene Implement recovery LDMG plan and actions actions for lower gauge levels also apply Warn residents of Warn residents that For each gauge level all decisions and West Rocky, Warn residents of Warn Depot Hill Warn Pink Lily city is likely to become Prepare to close Berserker, SE City that Depot Hill and Port residents they are residents they are isolated riverside carparks inundation may occur Curtis that inundation likely to be isolated likely to be inundated is likely to occur No Have flood waters Identify critical Warn residents of receded infrastructure at risk Allenstown, Lakes Warn residents that Creek. Park Avenue. Pink Lily breakout is Kawana that some likely to occur Yes inundation is likely to occur Issue public advice/ Prepare for road warnings closures Undertake post impact Organise flood boats assessment to be on standby for access to city Is evacuation required? Consider water & Initiate priority actions sewerage actions Consider water & Do nursing for reinstatement of sewerage actions homes/retirement critical infrastructure No villages need to be evacuated? Yes Are sandbags to Organise damage be issued? Is there repair sufficient time to evacuate at risk areas or Yes people? Yes No Organise sand bags for issue Issue public advice/ Consider stand down Refer to Organise clean up Supply to strategic Issue public advice/ evacuation of LDMG crews locations warnings and routinely reassess appropriateness and ability to evacuate

Await further advice from the Bureau of Meteorology (refer to gauge levels above)

ROCKHAMPTON REGIONAL COUNCIL FLOOD EVACUATION PROCEDURES



Annexure D: Hazard / Threat

Hazard Description

Also refer to the Rockhampton Emergency Risk Management Assessment 2020.

Riverine floodings occur when the amount of water reaching the drainage network exceeds the amount of water which can be contained by the system and subsequently water overflows out onto floodplain areas or via overland flowpaths.

Localised and/or flash flooding typically occurs when intense rain falls over a small sub-catchment which responds to that rainfall in six hours or less. In urban or rural areas where drainage is poor, the risk of localised flooding is high under such circumstances. Widespread flooding, by contrast, occurs following rainfall of high intensity or long duration over the whole, or a large proportion of a catchment.

Flood levels in urban areas quickly rise where the percentage of impermeable surfaces in the local catchment, such as buildings, roads and car parks, is high. On sloping concrete and bitumen surfaces, for example, runoff is immediate. Flooding can also occur from the unplanned release of water from dams.

Flood levels are typically related to the Australian Height Datum (AHD), which is approximately Mean Sea Level (MSL). In some cases flood levels are related to a flood gauge datum, which is location specific and dependent upon the presence of a flood gauge. Generally in these cases, the zero level of the river gauge is set at the low flow level of the stream and flood levels are measured in metres above the gauge zero.

The primary effects of flooding are physical damage to property, infrastructure, people or livestock and disruption to regular way-of-life. Flood damage to buildings can be separated into contents and structural damage. The greatest increase in damage to single storey residential buildings, both structural and to contents, occurs within the first half metre of over floor flooding. Almost all damage to contents occurs within the first metre of over floor flooding.

Building construction/materials also contribute to the susceptibility of a building to structural failure. Typically, brick veneer residential buildings can withstand higher velocities and depths than single storey weatherboard residential buildings before building failure occurs. Building age can also play a contributing factor to the amount of flood losses, as age can indicate the condition of the building and materials used in construction.

Heavy rainfall capable of causing flooding (flash and non-flash) in the study area can arise from a number of different meteorological mechanisms, as described below:

- Severe thunderstorms that may affect a number of catchment areas;
- Tropical cyclones that are capable of causing widespread flooding across large catchment areas;
- East Coast Lows that have similar impacts to tropical cyclones, but are more common in autumn and early winter;
- Fronts and troughs;
- Low pressure systems; and
- Coastal convergence.

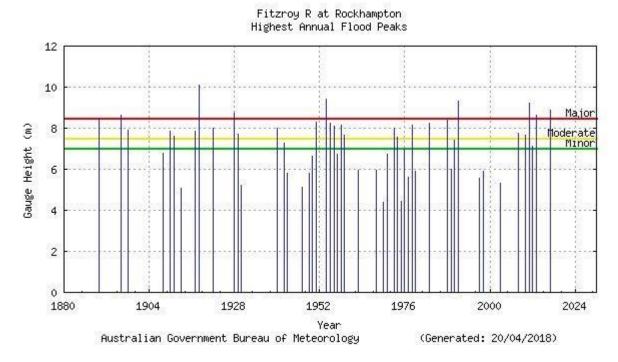
All of these events are also influenced by the regional topography which provides significant orographic lift to assist in the creation of favourable conditions for heavy rainfall.

Flood risks within the Rockhampton region come from three main sources: Fitzroy River flooding, local creek/river flooding and local flash flooding. These mechanisms are described further in the following sections.

Fitzroy River Events

The Fitzroy River catchment is the second largest catchment in Australia and because of its size is capable of producing severe flooding on its floodplain following heavy rainfall events as a result of any one of the mechanisms described above. The Fitzroy River catchment includes the Dawson, Mackenzie, Comet, Nogoa, Connors and Isaac River systems, and Fitzroy River floods can come from any of these rivers. Large volumes of rainfall in the lower catchment also have the potential to cause flooding.

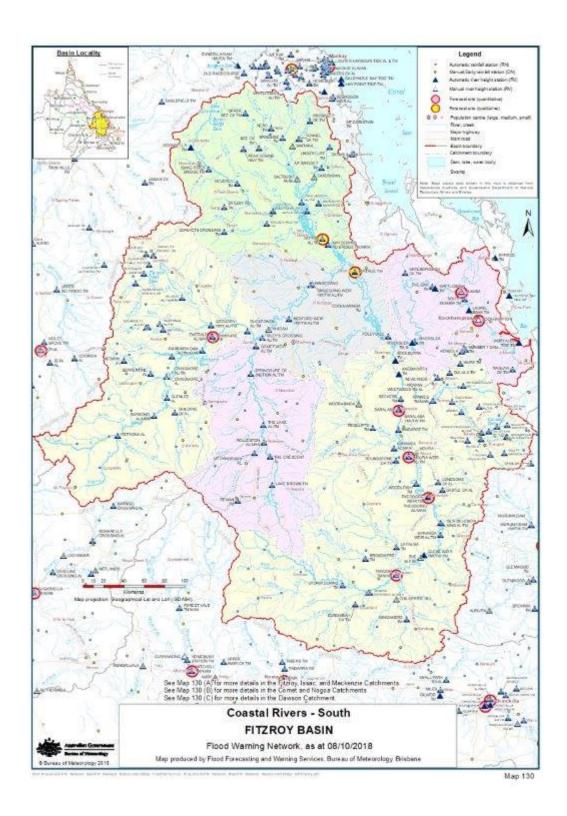
A number of significant flood events have occurred in the lower Fitzroy River as shown in the image below, with the largest recorded event occurring in 1918. This event reached 10.1m on the city flood gauge and inundation lasted over six weeks. Three events of similar magnitude occurred in 1954, 1991 and 2011 (9.4, 9.3 and 9.2m on the city gauge respectively) and cut major transport routes (road and rail) to the north, south and west of the city and caused closure of the airport.



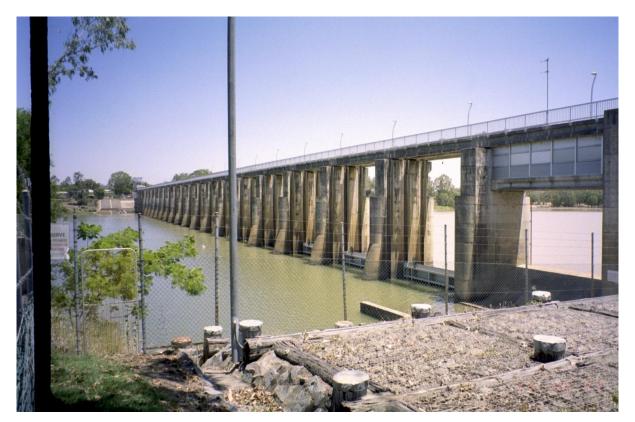
With reference to the recorded flood heights in the above figure, it is important to note that a relatively large number of moderate and major flood events have occurred throughout recorded history and this reflects the flood hazard for Rockhampton. There is also the potential for significantly greater floods to occur in the Fitzroy River basin as a result of more extreme rainfall both in terms of intensity and duration occurring over a large proportion of the catchment area.

There is a large flood warning network throughout the Fitzroy River catchment, as shown in the following image. This flood warning system has been established to address the flood hazard and is operated by the BoM. Working with the RRC, the BoM issues predictions of flood heights for the Fitzroy River Rockhampton whenever the height is expected to exceed the minor flood level at the city gauge. This procedure is designed to provide at least 60 hours warning of flood heights above 7 metres.

A number of flood studies have been undertaken by Council and address the flood characteristics of the Fitzroy River in and around Rockhampton City, from Alton Downs and Pink Lily in the north to Port Curtis in the south. Fitzroy River flooding occurs both upstream and downstream of this study area, however the population at risk is fairly small in comparison to the city area.



Water supply for a large portion of the Rockhampton region is managed by FRW; with water sourced from the upstream side of the Barrage. The Barrage was constructed in 1971, it is 13 metres high and 400 metres long and there are 18 vertical lift gates. The barrage impounds 81,300 megalitres of water and typically supplies 60,000 megalitres of water a year.



Further upstream on the Fitzroy River, Eden Bann Weir has a supply capacity of 26,000 megalitres per year. This weir is owned and operated by Sunwater which stores and releases water from Eden Bann into the Fitzroy River Barrage.

Due to the operation of these facilities they essentially provide no flood mitigation for Fitzroy River flooding.

Annexure E: Critical Vulnerabilities

The proximity of significant portions of the Rockhampton region to the Fitzroy River and its floodplain, mean that many localities are vulnerable to major flood events. In addition, areas close to local creeks/rivers and overland flowpaths are also vulnerable to flooding, in particular flash flooding and in some cases backflow from the Fitzroy River.

Vulnerability of People

Residents located in areas that are inundated or cut off by floodwaters and attempting to use flooded roadways are at risk. Council policy is to require new development to be placed above the 100 year ARI flood levels; however development and infrastructure in older portions of the region, such as Depot Hill and parts of Berserker and Koongal, are at risk of inundation and isolation.

The Fitzroy River, and its tributaries, influence a significant portion of the region and can cause inundation for prolonged periods. The Fitzroy River flood warning system aims to provide at least 60 hours notice of a flood event above 7 metres at the city gauge. This provides ample warning time for people to evacuate should water levels be forecast to rise to unacceptable levels. No or limited warning time is available for events on smaller local systems.

Vulnerability of Social Structures

The urban areas, where most of the flooding will occur have medium to strong social structures, therefore family support groups and community groups should fare reasonably well. Support for the aged and people on welfare is generally good.

Vulnerability of Buildings

Most of the buildings which may be flooded in the larger flood events are located adjacent to the Fitzroy River and its tributaries, in particular those in Depot Hill and Port Curtis. These dwellings are typically elevated homes that will suffer minor consequences in an event. Low rise housing and commercial/industrial premises may however suffer significant impact. These impacts are also likely to occur during local creek and overland flowpath flood events, however the duration of inundation, and therefore the extent of damage, is likely to be much less.

Vulnerability of Lifelines

Streets and some major access roads will be impacted and closed in a flood event. It is expected that the Capricorn Highway will be closed when floods reach a gauge level of 8.4 metres, and the Bruce Highway across the Yeppen will be closed at gauge level 8.8 metres. Sections of the Bruce Highway (Lower Dawson Road and Gladstone Road) will close at gauge level 8.4 metres with traffic detoured via Upper Dawson Road. The airstrip at the Rockhampton Airport will be inundated when floods reach gauge level 8.7 metres. In the rural areas, many local roads are cut during flood events, both Fitzroy River flooding and local creek flooding.

Sewerage facilities may be vulnerable as well as the sewerage pumping stations. Electrical substations and some Telstra exchanges may be isolated due to flooded roads.

Vulnerability of Critical Facilities

No critical facilities that will overly impact the community have been identified.

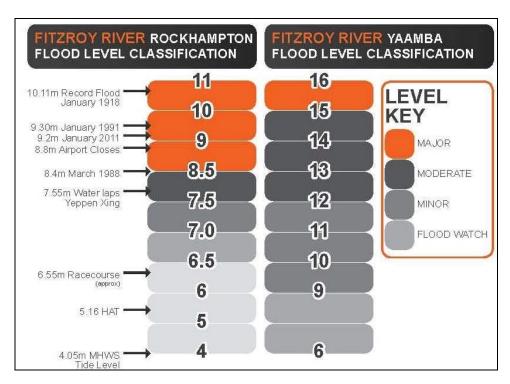
Vulnerability of Local Economic Production and Employment

The local economy can be affected through lost production, through the period of the event and the recovery phase, which may also impact on employment levels. There may also be crop, fencing and livestock losses.

Annexure F: Fitzroy River Flood Potential Impacts Table

In the event of a flood event affecting Rockhampton, the following information (as of February 2013) is provided as to the number of properties and or persons that may be at risk and therefore require evacuation.

This information is s to be used as a guide only.



Appendix B - Critical infrastructure inundation levels

Critical infrastructure, emergency facilities and possible evacuation shelters

Approx Gauge Level at which Building Location Starts to Become Inundated*	Approx Gauge Level at which Property Starts to Become Inundated	Infrastructure Type	Address	Suburb	Nam e
<7.0	<7.0	Coast Guard	299 Quay Street	Rockhampton City	Rockhampton Coast Guard
8.0	8.0	Child Care	16-20 Bridge Street	Berserker	PCYC Child Care Centre Vacationa Care
8.2	8.0	Education Facility	145 Port Curtis Road	Port Curtis	Port Curtis Rd Primary School
8.6		Airstrip	Rockhampton Airport	West Rockhampton	Rockhampton Airport Main
8.7		Airstrip	Rockhampton Airport	West Rockhampton	Rockhampton Airport Alternate
8.7		Airstrip		Glenlee	Orana-Lara Property
8.8	7.7	Education Facility	19 Reaney Street	Berserker	Central Queensland Christian College
9.0	6.8	Education Facility and Possible Evacuation Shelter	1 Campbell Street	Wandal	Rockhampton State High School
9.1		Helipad	Rockhampton Airport	West Rockhampton	Rockhampton Airport
9.1	8.7	Retirement Village	155-157 Glenmore Road	Park Avenue	Oak Tree Retirement Village
9.1	9.1	Education Facility	186 West Street	Allenstown	The Cathedral College
9.1	<7.0	Education Facility	53-63 O'Connell Street	Depot Hill	Depot Hill State School
9.3	<7.0	Retirement Village	228-230 Lion Creek Road	Wandal	Talbot Estate
9.6	<7.0	Nursing Care Homes	121 Maloney Street	Kawana	Shalom Good Samaritan Care
9.6	9.4	Education Facility	240 Quay Street	Rockhampton City	Rockhampton TAFE
9.6	9.2	Education Facility	282-284 Bolsover Street	Rockhampton City	St Andrews Church House

Project 32513 | File 32513-002 Flood Study Report Rev3 | 18 July 2011 | Revision 3

Aurecon

Page i

Flood Study Report

Approx Gauge Level at which Building Location Starts to Become Inundated*	Approx Gauge Level at which Property Starts to Become Inundated	Infrastructure Type	Address	Suburb	Name
10.0	10.0	Media	110 Victoria Parade Rockhampton City		Rockhampton Media Centre
10.0	9.8	Media	236 Quay Street	Rockhampton City	Australian Broadcast Corporation
10.0	9.0	Nursing Care Homes	20 Withers Street	Kawana	PresCare Alexandra Gardens
10.0	9.8	Ambulance	57 Fitzroy Street	Rockhampton City	Rockhampton Ambulance Centre
10.1	9.9	Fire	59 Fitzroy Street	Rockhampton City	Rockhampton Fire Station
10.4	<7.0	Child Care	100 Water Street	Berserker	Tarumbal Kindergarten
10.5	10.3	Possible Evacuation Shelter	62 Victoria Parade	Rockhampton City	Pilbeam Theatre
10.6	9.2	Education Facility	13-33 Upper Dawson Road	Allenstown	Allenstown State School
10.6	10.4	Child Care	245 Campbell Street	Rockhampton City	A.B.C. Developmental Learning Centre
10.7	9.7	Child Care	55-57 Edward Street	Berserker	Lead Child Care Berserker
10.7	9.7	Possible Evacuation Shelter	92-94 Musgrave Street	Berserker	North Rockhampton Squash Bowl
10.8	8.6	Retirement Village	14 Pauline Martin Drive	Wandal	Rockhampton Gardens
10.8	10.8	Education Facility	5-13 Main Street	Park Avenue	Park Avenue Primary School
11.0	10.6	Media	130 Victoria Parade	Rockhampton City	Seven Queensland Rockhampton
11.1	9.6	Education Facility	99-109 North Street Extended	West Rockhampton	Crescent Lagoon State School
11.3	11.2	Possible Evacuation Shelter	229 Campbell Street	Rockhampton City	Squash World
11.4	11.3	Education Facility	29 Main Street	Park Avenue	St Josephs Primary Park Avenue
11.6	11.4	Police	161 Bolsover Street	Rockhampton City	Rockhampton Police Station
11.6	11.3	Education Facility	91-115 William Street	Rockhampton City	Rockhampton Special School
11.9	11.8	Child Care	27 Ross Street	Allenstown	Allenstown Childcare

Project 32513 | File 32513-002 Flood Study Report Rev3 | 18 July 2011 | Revision 3

Aurecon

Page ii

Approx Gauge Level at which Building Location Starts to Become Inundated*	Approx Gauge Level at which Property Starts to Become Inundated	Infrastructure Type	Address	Suburb	Name
12.1	9.5	Nursing Care Homes	97 Campbell Street	Wandal	Eventide Home
12.2	11.9	Possible Evacuation Shelter	157 Campbell Street	Rockhampton City	Rockhampton Indoor Bowls
12.3	8.7	Education Facility and Possible Evacuation Shelter	128-140 Berserker Street	Berserker	Berserker Street State School
12.3	11.4	Police	109 Musgrave Street	Berserker	Police Station
12.3	12.3	Child Care	189 Alma Street	Rockhampton City	City Occasional Childcare Centre
P.	10.0	Education Facility	451 Paterson Street	Lakes Creek	Lakes Creek State High School
8	12.0	State Emergency Service	90 Charles Street	Berserker	SES Rockhampton

^{*} Building locations were determined from the aerial image and are indicative only

Water and sewerage infrastructure

Approx Gauge Level at which Infrastructure becomes Inundated*	Infrastructure Type	Suburb	Name
<7.0	Water Intake	Parkhurst	
<7.0	Sewage Pump Station	The Common	Nth STP Pump (No1)
<7.0	Sewage Pump Station	The Common	Nth STP Pump (No2)
<7.0	Sewage Treatment Plant	The Common	North Rockhampton STP
<7.0	Sewage Treatment Plant	Depot Hill	South Rockhampton STP
7.1	Sewage Pump Station	Wandal	Harmon St
7.2	Sewage Pump Station	Depot Hill	Arthur Street
7.5	Sewage Pump Station	The Common	Reaney Street
8.2	Sewage Pump Station	Wandal	Jardine Park
8.3	Sewage Pump Station	Park Avenue	Wattle Street
8.3	Water Pump Station	Gracemere	WR-395a
8.5	Sewage Pump Station	Koongal	Water Street
8.5	Sewage Pump Station	Allenstown	Ferguson Street
8.7	Sewage Pump Station	Kawana	Capricorn Country Club
9.0	Sewage Pump Station	Wandal	Lion Creek Road
9.0	Sewage Pump Station	West Rockhampton	Canoona Road (Airport No3)
9.0	Sewage Pump Station	West Rockhampton	Millewa Street
9.2	Sewage Pump Station	West Rockhampton	Melbourne Street
9.3	Sewage Pump Station	West Rockhampton	Canoona Road (Airport Terminal Sth)
9.3	Sewage Pump Station	West Rockhampton	Canoona Road (Airport Carpark)
9.4	Sewage Pump Station	The Range	Blackall Street
9.4	Sewage Pump Station	Gracemere	Victoria Street (No1)
9.4	Sewage Pump Station	Gracemere	Old Capricorn Highway
9.5	Sewage Pump Station	Gracemere	Stanley Road
9.6	Sewage Pump Station	Wandal	Campbell Street
9.6	Sewage Pump Station	Koongal	Lakes Creek Rd (No1)
9.6	Sewage Pump Station	West Rockhampton	Kalare Street
9.7	Sewage Pump Station	Wandal	Victoria Park
9.8	Sewage Pump Station	Gracemere	Armstrong Street
9.8	Sewage Treatment Plant	Pink Lily	West Rockhampton STP
9.9	Sewage Pump Station	Lakes Creek	Lakes Creek Rd (No2)
10.2	Sewage Pump Station	Rockhampton City	Denison Lane
10.6	Sewage Pump Station	Parkhurst	Plover Street

Project 32513 | File 32513-002 Flood Study Report Rev3 | 18 July 2011 | Revision 3 $\,$

Aurecon

Page iv

Approx Gauge Level at which Infrastructure becomes Inundated*	Infrastructure Type	Suburb	Name
10.8	Sewage Pump Station	Rockhampton City	East Lane
11.0	Water Reservoir	Parkhurst	Reservoir (G.T.P. 4.5ML)
11.0	Water Pump Station	Parkhurst	WP002-Pump (Highlift Glenmore WTP)
11.1	Sewage Pump Station	Gracemere	Victoria Street (No2)
11.3	Sewage Pump Station	Gracemere	Breakspear Street
11.4	Sewage Pump Station	Kawana	Elsie Marsh Park
12.3	Sewage Pump Station	Parkhurst	Belmont Road (No3)

^{*} Gauge level was determined based upon the location of the water/sewerage point object, as provided in GIS. It may not be representative of the facility as a whole.

Approx Gauge Level at which Road becomes Inundated (not Closure Level)	Road/Street Name*	Suburb	Road/Street Section*	Location where Road/Street First Becomes Inundated	
8.8	Glenmore Road	Park Avenue	Haynes Street to Moores Creek	East of Moores Creek Road	
8.8	Haynes Street	Park Avenue	Richardson Road to Dooley Street	East of Wackford Street	
8.9	Lakes Creek Road	Berserker, Koongal, Lakes Creek	Bridge Street to Dorly Street	North of Dorly Street	
9.4	Elphinstone Street	Berserker, Koongal	Moores Creek to Ascot Lane	Part Street intersection	
9.4	Gladstone Road	Allenstown, Rockhampton City	George Street to Lower Dawson Road	Stanley Street intersection	
9.4	Hunter Street	West Rockhampton	Canoona Road to Melbourne Street	Canoona Road intersection	
9.4	Lion Creek Road	Wandal, West Rockhampton	Lion Creek to North Street	West of Huet Street	
9.4	Lion Creek Road	Wandal, West Rockhampton	Lion Creek to North Street	Near Canoona Road	
9.4	Rockhampton Emu Park Road	Nerimbera	Hartington Street to Black Creek Road	South of Nerimbera School Road	
9.4	Wandal Road	Wandal	Lion Creek Road to Campbell Street	Near Western Street	
9.5	Bridge Street	Berserker	Queen Elizabeth Drive to Lakes Creek Road	Near Queen Elizabeth Drive	
9.5	Bruce Highway	Allenstown, Fairy Bower, Port Curtis	Gladstone Road to Gavial Gracemere Road	Gavial Creek crossing	
10.0	George Street	Rockhampton City	Fitzroy Street to Gladstone Street	William Street intersection	
10.0	Glenmore Road	Park Avenue	Haynes Street to Moores Creek	West of Highway Street	
10.0	Lakes Creek Road	Berserker, Koongal, Lakes Creek	Bridge Street to Dorly Street	Near Bawden Street	
10.0	Main Street	Park Avenue	Fitzroy River to Bertram Street	Near the Fitzroy River	
10.0	North Street	Rockhampton City, Wandal	Campbell Street to Victoria Parade	Victoria Parade intersection	
10.0	Queen Elizabeth Drive	Berserker	Bridge Street to Macaree Street	Brown Street intersection	
10.5	Bolsover Street	Depot Hill, Rockhampton City	North Street to O'Connell Street	Archer Street intersection	
10.5	Fitzroy Street	Rockhampton City	George Street to Quay Street	Denison Street intersection	
10.5	Richardson Road	Kawana, Park Avenue	Haynes Street to Alexandra Street	Haynes Street intersection	

Project 32513 | File 32513-002 Flood Study Report Rev3 | 18 July 2011 | Revision 3

Aurecon

Page vii

Approx Gauge Level at which Road becomes Inundated (not Closure Level)	Road/Street Name*	Suburb	Road/Street Section*	Location where Road/Street First Becomes Inundated
10.6	Dooley Street	Park Avenue	Glenmore Road to Haynes Street	Glenmore Road intersection
10.6	Musgrave Street	Berserker	Queen Elizabeth Drive to Charles Street	At Queen Elizabeth Drive
10.8	Albert Street	Rockhampton City	Kent Street to Victoria Parade	West of Victoria Parade
10.8	Elphinstone Street	Berserker, Koongal	Moores Creek to Ascot Lane	Craig Street to Rush Street
10.8	Gavial Gracemere Road	Bouldercombe, Gracemere, Midgee	Watts Road to Bruce Highway	Breakspear Street intersection
11.0	Moores Creek Road	Park Avenue	Alexandra Street to Glenmore Road	North of Knight Street
11.4	Hinchliff Street	Kawana	Farm Street to Alexandra Street	South of Munro Street
12.0	Alexandra Street	Kawana	Hinchliff Street to Richardson Road	Mungarra Drive intersection

^{*} Based upon major roads information supplied by Council

Approximate Lengths of Inundation/Closure for Major Roads

Road Name	Suburb	Road Section	GL7.0	GL7.5	GL8.0	GL8.5	GL9.0	GL9.5	GL10.0	GL10.5	GL11.0	GL11.5	PMF Inundated
			Inundated Length	Inundated Length	Inundated Length	Inundated Length	Inundated Length	Inundated Length	Inundated Length	Inundated Length	Inundated Length	Inundated Length	Length
Albert Street	Rockhampton City	Kent Street to Victoria Parade	-	-	-	-	-	-	-	-	Bolsover Street to Victoria Parade	Denison Street to Alma Street and Bolsover Street to Victoria Parade	Kent Street to Victoria Parade
Alexandra Street	Kawana	Hinchliff Street to Richardson Road	-	-	-	-	-	-	-	-	-	-	Hinchliff Street to Richardson Road
Berserker Street	Berserker	Lucas Street to Lakes Creek Road	-	-	Rodboro Street intersection	Charles Street to Lakes Creek Road	Charles Street to Lakes Creek Road	Charles Street to Lakes Creek Road	Charles Street to Lakes Creek Road	Charles Street to Lakes Creek Road	Charles Street to Lakes Creek Road	Charles Street to Lakes Creek Road	Lucas Street to Lakes Creek Road
Bolsover Street	Depot Hill Rockhampton City	North Street to O'Connell Street	-	-	Jane Street to O'Connell Street	Francis Street to O'Connell Street	Stanley Street to O'Connell Street	Derby Street to O'Connell Street	Derby Street to O'Connell Street	Cambridge Street to Archer Street and Market Lane to O'Connell Street	Cambridge Street to Fitzroy Street and Market Lane to O'Connell Street	North Street to Denham Street and Market Lane Street to O'Connell Street	North Street to O'Connell Street
Bridge Street	Berserker	Queen Elizabeth Drive to Lakes Creek Road	-	-	-	-	-	Queen Elizabeth Drive to Lakes Creek Road	Queen Elizabeth Drive to Lakes Creek Road	Queen Elizabeth Drive to Lakes Creek Road	Queen Elizabeth Drive to Lakes Creek Road	Queen Elizabeth Drive to Lakes Creek Road	Queen Elizabeth Drive to Lakes Creek Road
Bruce Highway	Allenstown Fairy Bower Port Curtis	Gladstone Road to Gavial Gracemere Road	-	-	-	Upper Dawson Road intersection	Gladstone Road to Edith Street	Gladstone Road to Edith Street and Gavial Creek crossing	Gladstone Road to Edith Street and Gavial Creek crossing	Gladstone Road to Edith Street and Whyte Road to Gavial Gracemere Road	Gladstone Road to Edith Street and Whyte Road to Gavial Gracemere Road	Gladstone Road to Edith Street and Whyte Road to Gavial Gracemere Road	Gladstone Road to Edith Street and Whyte Road to Gavial Gracemere Road
Burnett Highway	Bouldercombe Gracemere	Bruce Highway to Gavial Gracemere Road	-	-	-	-	Bruce Highway intersection	Bruce Highway intersection	Bruce Highway intersection	Bruce Highway intersection	Bruce Highway intersection	Bruce Highway to Gavial Gracemere Road	Bruce Highway to Gavial Gracemere Road
Canoona Road	West Rockhampton	Lion Creek Road to Hunter Street	-	-	-	-	Lion Creek Road to Hunter Street	Lion Creek Road to Hunter Street	Lion Creek Road to Hunter Street	Lion Creek Road to Hunter Street	Lion Creek Road to Hunter Street	Lion Creek Road to Hunter Street	Lion Creek Road to Hunter Street
Capricom Highway	Fairy Bower Gracemere	McLaughlin Street to Bruce Highway	-	-	-	Fairy Bower Road to Bruce Highway	McLaughlin Street to Bruce Highway	McLaughlin Street to Bruce Highway	McLaughlin Street to Bruce Highway	McLaughlin Street to Bruce Highway	McLaughlin Street to Bruce Highway	McLaughlin Street to Bruce Highway	McLaughlin Street to Bruce Highway
Dean Street	Berserker	Elphinstone Street to Lakes Creek Road	-	-	Rodboro Street intersection	Mason Street to Peter Street	Bedford Street to Peter Street	Elphinstone Street to Lakes Creek Road	Elphinstone Street to Lakes Creek Road	Elphinstone Street to Lakes Creek Road	Elphinstone Street to Lakes Creek Road	Elphinstone Street to Lakes Creek Road	Elphinstone Street to Lakes Creek Road
Dooley Street	Park Avenue	Glenmore Road to Haynes Street	-	-	-	-	-	-	-	-	Glenmore Road to Robison Street	Glenmore Road to Tom Brady Street	Glenmore Road to Haynes Street
East Street	Depot Hill Rockhampton City	Archer Street to Broadway Street	-	-	Wood Street to Broadway Street	Francis Street to Broadway Street	Derby Street to Broadway Street	Market lane to Broadway Street	Denham Street to Broadway Street	Denham Street to Broadway Street	Archer Street to Royal Street and Bus Lane to Broadway Street	Archer Street to Royal Street and Bus Lane to Broadway Street	Archer Street to Broadway Street
Elphinstone Street	Berserker Koongal	Moores Creek to Ascot Lane	-	-	-	-	-	Part Street intersection	Part Street intersection	Moores Creek to Ascot Lane	Moores Creek to Ascot Lane and Craig Street to Rush Street	Moores Creek to Ascot Lane and Craig Street to Rush Street	Moores Creek to Ascot Lane and Craig Street to Rush Street
Emu Park Road	Lakes Creek	Dorly Street to Hartington Street	-	-	-	-	Dorly Street to Hartington Street	Dorly Street to Hartington Street	Dorly Street to Hartington Street	Dorly Street to Hartington Street	Dorly Street to Hartington Street	Dorly Street to Hartington Street	Dorly Street to Hartington Street
Fitzroy Street	Rockhampton City	George Street to Quay Street	-	-	-	-	-	-	-	Kent Street to Bolsover Lane	Campbell Street to Bolsover Street	Campbell Lane to East Street	George Street to Quay Street
Gavial Gracemere Road	Bouldercombe Gracemere Midgee	Watts Road to Bruce Highway	-	-	-	-	-	-	-	-	Breakspear Street intersection	Breakspear Street intersection	Breakspear Street intersection and Burnett Highway to Tipson Road
George Street	Rockhampton City	Fitzroy Street to Gladstone Street	-	-	-	-	-	-	Denham Street to Gladstone Street	Denham Street to Gladstone Street	Fitzroy Street to Gladstone Street	Fitzroy Street to Gladstone Street	Fitzroy Street to Gladstone Street



Road Name	Suburb	Road Section	GL7.0 Inundated	GL7.5 Inundated	GL8.0 Inundated	GL8.5 Inundated	GL9.0 Inundated	GL9.5 Inundated	GL10.0 Inundated	GL10.5 Inundated	GL11.0 Inundated	GL11.5 Inundated	PMF Inundated Length
			Length	Length	Length	Length	Length	Length	Length	Length	Length	Length	Length
Gladstone Road	Allenstown Rockhampton City	George Street to Lower Dawson Road	-	-	-	Prospect Street to Lower Dawson Road	Church Street to Lower Dawson Road	Caroline Street to Derby Street and Church Street to Lower Dawson Road	George Street to Margaret Street and Elizabeth Street to Lower Dawson Road	George Street to Lower Dawson Road	George Street to Lower Dawson Road	George Street to Lower Dawson Road	George Street to Lower Dawson Road
Glenmore Road	Park Avenue	Haynes Street to Moores Creek	-	-	-	-	Moores Creek Road to Moores Creek	Moores Creek Road to Moores Creek	McAlister Street to Highway Street and Moores Creek Road to Moores Creek	Haynes Street to Highway Street and Moores Creek Road to Moores Creek	Haynes Street to Moores Creek	Haynes Street to Moores Creek	Haynes Street to Moores Creek
Haynes Street	Park Avenue	Richardson Road to Dooley Street	-	-	-	-	Glenmore Road to Hogan Street	Glenmore Road to Hogan Street	Richardson Road to Churchill Street and Glenmore Road to Hogan Street and Underwood Street intersection	Richardson Road to Buckle Street	Richardson Road to Main Street	Richardson Road to Dooley Street	Richardson Road to Dooley Street
Hinchliff Street	Kawana	Farm Street to Alexandra Street	-	-	-	-	-	-	-	-	-	Near Munro Street intersection	Farm Street to Alexandra Street
Hunter Street	West Rockhampton	Canoona Road to Melbourne Street	-	-	-	-	-	Canoona Road to Gorle Street	Canoona Road to Gorle Street	Canoona Road to Fenion Street	Canoona Road to Fenion Street	Canoona Road to Fenion Street	Canoona Road to Melbourne Street
Lakes Creek Road	Berserker Koongal Lakes Creek	Bridge Street to Dorly Street	Bryant Street to Stack Street	Bryant Street to Stack Street	Bryant Street to Stack Street	Tucker Street to Stack Street	Tucker Street to Stack Street and Hill Street to Dorly Street	Water Street to Stack Street and Mackay Street to Dorly Street	Bridge Street to Pilkington Street and Mackay Street to Dorly Street	Bridge Street to Pilkington Street and Fargher Street to Cooper Street and Mackay Street to Dorly Street	Bridge Street to Harbourne Street and Fargher Street to Cooper Street and Mackay Street to Dorly Street	Bridge Street to Harbourne Street and Fargher Street to Cooper Street and Mackay Street to Dorly Street	Bridge Street to Harbourne Street and Fargher Street to Cooper Street and Mackay Street to Dorly Street
Lion Creek Road	Wandal West Rockhampton	Lion Creek to North Street	-	-	-	Exhibition Road to North Street	Exhibition Road to North Street	Lion Creek to Wandal Road and Sheehan Avenue to Luck Avenue and Exhibition Road to North Street	Lion Creek to North Street	Lion Creek to North Street	Lion Creek to North Street	Lion Creek to North Street	Lion Creek to North Street
Lower Dawson Road	Allenstown	Upper Dawson Road to Gladstone Road	-	-	Ferguson Street intersection	Ferguson Street intersection	Upper Dawson Road to Gladstone Road	Upper Dawson Road to Gladstone Road	Upper Dawson Road to Gladstone Road	Upper Dawson Road to Gladstone Road	Upper Dawson Road to Gladstone Road	Upper Dawson Road to Gladstone Road	Upper Dawson Road to Gladstone Road
Main Street	Park Avenue	Fitzroy River to Bertram Street	-	-	-	-	-	-	Fitzroy River to Glenmore Road	Fitzroy River to Glenmore Road	Fitzroy River to Lloyd Street	Fitzroy River to Edgar Street	Fitzroy River to Bertram Street
Moores Creek Road	Park Avenue	Alexandra Street to Glenmore Road	-	-	-	-	-	-	-	-	-	Alexandra Street to Knight Street	Alexandra Street to Dowling Street and Welch Street intersection
Musgrave Street	Berserker	Queen Elizabeth Drive to Charles Street	-	-	-	-	-	-	-	-	Queen Elizabeth Drive to Armstrong Street	Queen Elizabeth Drive to Armstrong Street	Queen Elizabeth Drive to Charles Street
North Street	Rockhampton City Wandal	Campbell Street to Victoria Parade	-	-	-	-	-	-	Victoria Parade intersection	Victoria Parade intersection	Bolsover Street to Victoria Parade	Denison Street to Victoria Parade	Campbell Street to Victoria Parade
O'Connell Street	Depot Hill	Bolsover Street to Wharf Street	-	-	Bolsover Street to Quay Street	Bolsover Street to Wharf Street	Bolsover Street to Wharf Street	Bolsover Street to Wharf Street	Bolsover Street to Wharf Street	Bolsover Street to Wharf Street	Bolsover Street to Wharf Street	Bolsover Street to Wharf Street	Bolsover Street to Wharf Street
Port Curtis Road	Allenstown Port Curtis	Gladstone Road to Gavial Creek	Gavial Creek crossing	Gavial Creek crossing	Near Gladstone Road intersection and Jellicoe Street to Gavial Creek	Gladstone Road to Garden Street and Jellicoe Street to Gavial Creek	Gladstone Road to Gavial Creek	Gladstone Road to Gavial Creek	Gladstone Road to Gavial Creek	Gladstone Road to Gavial Creek	Gladstone Road to Gavial Creek	Gladstone Road to Gavial Creek	Gladstone Road to Gavial Creek
Queen Elizabeth Drive	Berserker	Bridge Street to Macaree Street	-	-	-	-	-	-	Bridge Street to Bernard Street	Bridge Street to Macaree Street	Bridge Street to Macaree Street	Bridge Street to Macaree Street	Bridge Street to Macaree Street

aurecon Project 216126 | File Road Inundation Table | 18 July 2011 | Page 2

Road Name	Suburb	Road Section	GL7.0 Inundated Length	GL7.5 Inundated Length	GL8.0 Inundated Length	GL8.5 Inundated Length	GL9.0 Inundated Length	GL9.5 Inundated Length	GL10.0 Inundated Length	GL10.5 Inundated Length	GL11.0 Inundated Length	GL11.5 Inundated Length	PMF Inundated Length
Richardson Road	Kawana Park Avenue	Haynes Street to Alexandra Street	-	-	-	-	-	-	-	Haynes Street intersection	Haynes Street to Symons Street	Haynes Street to Alexandra Street	Haynes Street to Alexandra Street
Ridgelands Road	Alton Downs Pink Lily	Woodford Road to Lion Creek Road	-	-	Near Pink Lily Road intersection	Laurel Bank Road to Osborne Road	Woodford Road to Osborne Road	Woodford Road to Lion Creek Road	Woodford Road to Lion Creek Road	Woodford Road to Lion Creek Road	Woodford Road to Lion Creek Road	Woodford Road to Lion Creek Road	Woodford Road to Lion Creek Road
Rockhampton Emu Park Road	Nerimbera	Hartington Street to Black Creek Road	-	-	-	-	-	Barkers Road to Saint Christophers Chapel Road	Hartington Street to Saint Christophers Chapel Road	Hartington Street to Saint Christophers Chapel Road	Hartington Street to Saint Christophers Chapel Road	Hartington Street to Saint Christophers Chapel Road	Hartington Street to Black Creek Road
Thozet Road	Koongal	Grubb Street to Lakes Creek Road	-	-	Grubb Street to Lakes Creek Road	Grubb Street to Lakes Creek Road	Grubb Street to Lakes Creek Road	Grubb Street to Lakes Creek Road	Grubb Street to Lakes Creek Road	Grubb Street to Lakes Creek Road			
Upper Dawson Road	Allenstown	Canning Street to Gladstone Road	-	-	-	-	Nathan Street to Gladstone Road	Nathan Street to Gladstone Road	Nathan Street to Gladstone Road	Nathan Street to Gladstone Road	Nathan Street to Gladstone Road and Canning Street to MacDonald Street	Nathan Street to Gladstone Road and Canning Street to Caroline Street	Nathan Street to Gladstone Road and Canning Street to Glencoe Street
Wandal Road	Wandal	Lion Creek Road to Campbell Street	-	-	-	-	-	Lion Creek Road to Cran Street	Lion Creek Road to Bracher Street and Jardine Street to Oakley Street	Lion Creek Road to Naughton Street and Jardine Street to Birdwood Street	Lion Creek Road to Naughton Street and Jardine Street to Birdwood Street	Lion Creek Road Birdwood Street	Lion Creek Road to Campbell Street

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Project 216126 | File Road Inundation Table | 18 July 2011 | Page 3

Annexure G: Flood Height Calculations

G1 –Introduction

The following general information are basic "rules of thumb" when estimating flood height and travel times. They can be used to supplement but not replace information provided by BoM.

Conversion of Riversleigh Gauge to City Gauge

City Gauge Height = Riversleigh Gauge Height / 3 + 300mm

City Gauge Peak Time = Riversleigh Gauge Peak Time + 52 Hours

Critical gauge levels

	Riverside car parks are inundated	5.5				
Zone 1 < 7.0	Minor flood level	7.0				
Zone 2 7.0 – 7.5	The Common is almost completely inundated Low-lying areas of Port Curtis, Depot Hill, Fairybower and Gracemere are inundated Lakes Creek Road is inundated	7.0				
7.	Moderate flood level	7.5				
°.0	Depot Hill is almost isolated					
Zone 3 7.5 – 8.0	2008 Flood Peak	7.75				
Z ₆	Pink Lily breakout occurs	7.9				
Zone 4 8.0 – 8.5	Depot Hill is isolated Port Curtis is almost completely inundated Ridgelands Road is inundated Inundation occurs in: Western Pink Lily Low-lying parts of Berserker Koongal between Frenchmans Creek and Thozet Creek					
	1988 Flood Peak	8.4				
	Major flood level	8.5				
Zone 5 8.5 – 9.0	Inundation occurs in Most of Fairy Bower and Pink Lily Berserker, between Rodboro Street and Lakes Creek Road Low-lying parts of Allenstown The upper end of Splitters Creek in Kawana Airport is closed	8.5				
	Bruce Highway and Railway are cut	8.8				
Zone 6 9.0 – 9.5	Only the higher eastern parts of Pink Lily remain dry Inundation occurs in Lakes Creek to the west of the railway Nerimbera near Black Creek Western Park Avenue The lower parts of the City Most of the area between Splitters Creek and the Fitzroy River in Kawana	9.0				
O,	2011 Flood Peak	9.2				
	1991 Flood Peak	9.3				
	1954 Flood Peak	9.4				
Zone 7 > 9.5	Pink Lily is almost completely inundated Inundation spreads into West Rockhampton The lower parts of the City 1918 Flood Peak	9.5				
	1910 Flood Feak	10.11				

Annexure H: LDCC Operational Checklist

TASK	RESPONSIBLE ORGANISATION RESPONSIBLE OFFICER	DATE COMMENCED	DATE COMPLETED	NOTES
ALERT STAGE				
Receive initial information regarding situation/event and confirm from different source if necessary.	RRC DMO/LDC			
Issue Alert to LDMG members	RRC DMO/LDC			
LEAN FORWARD				
Monitor information regarding situation/event from official source and activate to Lean Forward if necessary. Activate Severe Storm, Tropical Cyclone, East Coast Low Evacuation Planning, Evacuation Centre, Communication and Recovery Sub Plans and Evacuation Planning and Recovery Sub Group Commence scenario planning identifying areas likely to be impacted, population of at risk areas and timeframes for anticipated impact. Develop preliminary Evacuation Plan including strategy, routes and Evacuation Centre. Develop Communications Strategy in conjunction with LDMG and LDC and	RRC DMO/LDC RRC LDC RRC RRC RRC			
implement preliminary public warnings. Identify emergency services and supporting agencies that may be required	LDMG			

TASK	RESPONSIBLE ORGANISATION RESPONSIBLE OFFICER	DATE COMMENCED	DATE COMPLETED	NOTES
Identify priority groups & special needs groups to be contacted (i.e. schools, hospitals, nursing homes, caravan parks, retirement homes, tourist organisations, CALD groups, indigenous communities etc Identify and coordinate RRC resources required – activate/standby Consider need for waste collection at recycling stations to prevent water borne rubbish/debris and preparation of additional or alternative waste receiving facilities.	LDMG RRC CEO LDMG LDC			
STAND UP				
Review and refine scenario planning identifying areas likely to be impacted, population of at risk areas and timeframes for anticipated impact. Review, Refine and Implement Evacuation Plan including strategy, routes and Evacuation Centre. Continue Implementation of Communications Strategy in conjunction with LDMG and LDC. Prepare protection works for critical infrastructure where possible. Protect and / or preposition response resources where possible	RRC LDMG RRC LDC LDMG Infrastructure Owners LDMG Response Agencies			

TASK	RESPONSIBLE ORGANISATION RESPONSIBLE OFFICER	DATE COMMENCED	DATE COMPLETED	NOTES
Commence Damage Assessments and repairs to critical infrastructure	LDMG			
Identify requirements for emergency provisions/food for isolated communities	LDMG			
Implement Recovery Plan.	LDMG			
	Recovery Committee			
STAND DOWN AND DEBRIEF				
Direct LDCC to Stand Down	LDMG			
	LDC			
Carry out Debrief for Response Agencies	LDMG			
Bissat Bassas Consultant a Consultant	LDC			
Direct Recovery Committee to Stand Down	LDMG			
Communit Dalariot for Document	Local Recovery Coordinator			
Carry out Debrief for Recovery Agencies	LDMG			
	Local Recovery Coordinator			