



ORDINARY MEETING

AGENDA

8 OCTOBER 2019

Your attendance is required at an Ordinary meeting of Council to be held in the Council Chambers, 4 Lagoon Place, Yeppoon on 8 October 2019 commencing at 9.00am for transaction of the enclosed business.

Dan Toon
ACTING CHIEF EXECUTIVE OFFICER
2 October 2019

Next Meeting Date: 22.10.19

Please note:

In accordance with the *Local Government Regulation 2012*, please be advised that all discussion held during the meeting is recorded for the purpose of verifying the minutes. This will include any discussion involving a Councillor, staff member or a member of the public.

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1 OPENING

Acknowledgement of Country

"I would like to take this opportunity to respectfully acknowledge the Darumbal People. The traditional custodians and elders past, present and emerging of the land on which this meeting is taking place today."

2 ATTENDANCE

Members Present:

Mayor, Councillor Bill Ludwig (Chairperson)
Deputy Mayor, Councillor Nigel Hutton
Councillor Adam Belot
Councillor Pat Eastwood
Councillor Jan Kelly
Councillor Glenda Mather
Councillor Tom Wyatt

Officers in Attendance:

Mr Dan Toon – Acting Chief Executive Officer
Mr Brett Bacon – Executive Director Liveability and Wellbeing
Mrs Andrea Ellis – Chief Financial Officer
Mr Matthew Willcocks - Chief Technology Officer
Mr Nick Sheehan - Chief Human Resources Officer

3 LEAVE OF ABSENCE / APOLOGIES

Nil

4 CONFIRMATION OF MINUTES OF PREVIOUS MEETING

Minutes of the Ordinary Meeting held 17 September 2019

Minutes of the Special Meeting held 30 September 2019

5 DECLARATION OF INTEREST IN MATTERS ON THE AGENDA

6 PUBLIC FORUMS/DEPUTATIONS

Nil

7 BUSINESS ARISING OR OUTSTANDING FROM PREVIOUS MEETINGS

Nil

8 PRESENTATION OF PETITIONS

Nil

9 MAYORAL MINUTE

Nil

10 COUNCILLOR/DELEGATE REPORTS

Nil

**11 AUDIT, RISK AND BUSINESS IMPROVEMENT COMMITTEE
 REPORTS**

Nil

12 REPORTS

12.1 COUNCILLOR AGENDA ITEM REQUESTS

File No: GV13.4.1
Attachments: Nil
Responsible Officer: Dan Toon - Acting Chief Executive Officer
Author: Nicole Robertson - Coordinator Executive Support

SUMMARY

This report is to provide information in relation to Councillor requests for agenda items.

OFFICER'S RECOMMENDATION

THAT Council receive the report in relation to the following items requested by Councillors for inclusion in an agenda:

- Reticulated Water to Mabel Edmund Park
- Reallocation of Funding
- Reinstate Meeting Procedures
- Beach Access Bangalee
- Yeppoon Aquatic Centre

BACKGROUND

The information contained in the commentary of this report is being provided in accordance with section 2.9.2 of *Council Meeting's Procedures Policy*, Request by a Councillor to Place an Item on the Agenda.

COMMENTARY

Councillor	Subject	Action	Outcome / Update
Kelly	Reticulated Water to Mabel Edmund Park	Referred to officers to provide a briefing to Councillors.	A contractor has been engaged to complete water divining and bore testing.
Mather	Reallocation of Funding	Referred to officers to provide a briefing to Councillors.	A briefing has been rescheduled to be presented to Councillors by the end of October 2019.
Mather	Reinstate Meeting Procedures	Referred to officers to provide a briefing to Councillors.	A briefing was provided to Councillors on 30/09/19. This matter will be presented to the Ordinary Council meeting scheduled for 22 October 2019 for consideration.
Hutton	Beach Access Bangalee	Referred to officers to provide a briefing to Councillors.	Councillors have been provided background information on this matter. A briefing is scheduled to be provided to Councillors by the end of October 2019.

Councillor	Subject	Action	Outcome / Update
Kelly Mather	Yeppoon Aquatic Centre	Referred to officers to provide a briefing to Councillors.	A briefing has been rescheduled to be presented to Councillors on 14 October 2019.

CORPORATE/OPERATIONAL PLAN

Corporate Plan Reference: Strategy GO4: Provide transparent and accountable decision making reflecting positive leadership to the community.

LOCAL GOVERNMENT PRINCIPLES

The local government principles are –

- (a) Transparent and effective processes, and decision-making in the public interest; and
- (b) Sustainable development and management of assets and infrastructure, and delivery of effective services; and
- (c) Democratic representation, social inclusion and meaningful community engagement; and
- (d) Good governance of, and by, local government; and
- (e) Ethical and legal behaviour of councillors and local government employees.

CONCLUSION

This report, presented in accordance with the *Meeting Procedures Policy* is provided for the information of Councillors.

**12.2 PROPOSED PERMANENT ROAD CLOSURE ADJOINING LOT 166 ON MC175,
KNOWN AS 103 BELAR STREET, OGMORE**

File No: GR14.4.2
Attachments: 1. Aerial of proposed closure area [↓](#)
Responsible Officer: David Mazzaferri - Executive Director Livability and Wellbeing
Author: Maddie Crigan - Property Officer

SUMMARY

This report pertains to a request to permanently close approximately 700 square metres of road reserve in Belar Street, Ogmore to enable it to be amalgamated with the adjoining freehold land, described as Lot 166 on MC175, known as 103 Belar Street.

OFFICER'S RECOMMENDATION

THAT Council resolve to advise the owner of Lot 166 on MC175 that it does not object to the proposal to close approximately 700 square metres of road reserve in Belar Street, Ogmore so that it may be amalgamated with Lot 166 on MC175.

BACKGROUND

On 15 August 2019, Council received a request from the owner of Lot 166 on MC175 at Dempsey Street, Ogmore, for its views on a proposal to permanently close approximately 700 square metres of road reserve in Belar Street, Ogmore, so the land can be incorporated into the adjoining freehold land (Attachment One depicts the proposed permanent road closure area).

COMMENTARY

Under the *Land Act 1994*, an adjoining land owner may apply to have an area of road permanently closed and incorporated into the applicant's adjoining freehold land. The owner of Lot 166 on MC175 is seeking Council's views on this proposal prior to lodging an application with the Department of Natural Resources, Mines and Energy for the closure.

Comment was sought from Council's Infrastructure Services Portfolio, Development Assessment section, Natural Resource Management section, Disaster Management and Resilience section and Community Development and Sport and Recreation section. The following comments have been provided.

Infrastructure Services**Water and Waste**

No objection. The water main runs in front of the property. Council has no water infrastructure in Belar Street, that Water and Waste is aware of.

Engineering Services

In current transport network database, there is an Access Place existing along this corridor, which needs minimum 16m road reserve as per the CMDG standards. Considering existence of this Access Place, I am not able to agree with this road closure.

However, Infrastructure Planning has no plans at present to construct a road (Access Place) along this corridor to provide access the block(s) in the west. My understanding is it is not vital to maintain a road corridor of minimum 16m in order to provide access if ever required (which, in my view, is very unlikely) as there will be other alternative measures available (through a laneway or from Charon Street).

Therefore, if all internal key stakeholders agree, I will be able to revoke the above objection from Infrastructure Planning, and support the proposal.

Construction and Maintenance

Construction and Maintenance agree with comments from Engineering Services.

Development Assessment

The road reserve will take the Township Zone. It is affected by the following overlays:

Overlay Map OM11 Biodiversity – Stream Order

- *Waterway Potential Assessment Area*

Overlay Map OM23 Transport Noise Corridors

- *Transport Noise Corridor (Rail) Category 2 and Category 3*

Development Assessment does not have any objections to the road closure and the land being amalgamated with Lot 166 on MC175.

Natural Resource Management

The property and adjacent road reserve (Belar St) contain environmental values in relation to the waterway and regrowth riparian vegetation.

The two vegetation types identified are Wetlands (11.4.9) and Brigalow/ Belah woodland/forest (11.3.1).

Interesting that the road reserve appears to be named after the tree, Casuarina cristata, a sheoak known as belah.

These factors would not necessarily negate the application for partial road closure, particularly at the frontage to Dempsey Street however may restrict future clearing and some uses in the area closer to the waterway.

Disaster Management and Resilience

No comments.

Community Development and Sport and Recreation

No comments.

PREVIOUS DECISIONS

This request has not been the subject of any previous Council resolution or direction.

BUDGET IMPLICATIONS

There are no budget implications associated with the consideration of this matter.

LEGISLATIVE CONTEXT

The disposal of public land is undertaken in accordance with the provisions of the *Land Act 1994*.

LEGAL IMPLICATIONS

There are no legal implications associated with the consideration of this matter.

STAFFING IMPLICATIONS

There are no staffing implications for Council associated with the consideration of this matter.

RISK ASSESSMENT

The risk associated with closing the subject area of road is that the remaining road reserve may not be wide enough to construct a road in the future should Council have a requirement to do so. The necessity to construct a road in this particular location is considered remote,

given the existing lot configuration in the immediate area and the natural topography and characteristics.

CORPORATE/OPERATIONAL PLAN

This report links to Strategy AM4 of Council's Corporate Plan which states: '*Operate, maintain and use Council assets to deliver efficient and cost effective services to the community.*'

LOCAL GOVERNMENT PRINCIPLES

The local government principles are –

- (a) *Transparent and effective processes, and decision-making in the public interest; and*
- (b) *Sustainable development and management of assets and infrastructure, and delivery of effective services; and*
- (c) *Democratic representation, social inclusion and meaningful community engagement; and*
- (d) *Good governance of, and by, local government; and*
- (e) *Ethical and legal behaviour of councillors and local government employees.*

CONCLUSION

The owner of Lot 166 on MC175 located at Dempsey Street, Ogmore is seeking Council's views on a proposal to close approximately 700 square metres of road reserve in Belar Street, Ogmore, so that it may be amalgamated into the adjoining freehold land. Consultation was undertaken with internal Council stakeholders. No objection was raised in relation to the proposed closure and thus it should be supported.

**12.2 - PROPOSED PERMANENT ROAD
CLOSURE ADJOINING LOT 166 ON
MC175, KNOWN AS 103 BELAR
STREET, OGMORE**

Aerial of proposed closure area

Meeting Date: 8 October 2019

Attachment No: 1



Proposed road closure area - 103 Dempsey Street, Ogmore



Revised from doc/PDF on 15/06/201

Map Created by: Web AppBuilder for ArcGIS



Proposed road closure area 103 Dempsey Street, Ogmoo

Map Created by: Web AppBuilder for ArcGIS

Relieved from doc/Prelim on 5/10/2018

12.3 CANCELLATION OF RESERVE FOR PARK - LOT 22 ON CROWN PLAN 905907

File No: GR14.4.2
Attachments: 1. Locality plan of boat ramp site [↓](#)
Responsible Officer: David Mazzaferri - Executive Director Livability and Wellbeing
Author: Maddie Crigan - Property Officer

SUMMARY

This report discusses options available to rectify an inconsistency of tenure over an area of Corbetts Landing Road, Byfield which is located in a Reserve for Park described as Lot 22 on Crown Plan 905907.

OFFICER'S RECOMMENDATION

THAT Council resolve to endorse Option B proposed by Officers in this report to make an application to the Department of Natural Resources, Mines and Energy to have the Reserve for Park described as Lot 22 on Crown Plan 905907 cancelled and re-dedicated as a Reserve for Landing Place.

BACKGROUND

The Department of Transport and Main Roads is seeking to construct a new public boat ramp located at Corbetts Landing Road, Byfield. The proposed works will be undertaken within the Reserve for Landing Place described as Lot 1 on Crown Plan 905907, of which Council is Trustee, and will extend into unallocated state land associated with Water Park Creek.

Access to the proposed boat ramp will be achieved via Corbetts Landing Road which traverses Lot 22 on Crown Plan 905907 before reaching the proposed boat ramp site. Lot 22 on Crown Plan 905907 is a Reserve for Park, of which Council is trustee. Refer Attachment One for a locality plan and aerial photograph. Although Corbetts Landing Road has been constructed within Lot 22, the area is not dedicated as road reserve and its use is inconsistent with the purpose of the reserve as park.

The Department of Transport and Main Roads is required to submit an owner's consent application to the Department of Natural Resources, Mines and Energy for approval to undertake construction of the proposed boat ramp. The Department of Natural Resources, Mines and Energy has advised that it is supportive of the proposal but would require an appropriate tenure over the area of Corbetts Landing Road within Lot 22 before owner's consent can be provided.

COMMENTARY

Two options are available to rectify the inconsistent tenure over Corbetts Landing Road.

Option A

Option A would require the Department of Transport and Main Roads or Council to make an application to the Department of Natural Resources, Mines and Energy to have the area of Corbetts Landing Road located within Lot 22 on Crown Plan 905907 dedicated as road reserve. This would incur costs for the application to the Department of Natural Resources, Mines and Energy, survey of the road area and purchase of the land.

Option B

Option B involves an application to the Department of Natural Resources, Mines and Energy by Council, as Trustee, to cancel the existing reserve over Lot 22 and re-dedicate the land as a Reserve for Landing Place. The Department of Natural Resources, Mines and Energy has advised that this would be permitted in terms of native title and the *Land Act 1994*, and

would provide an appropriate tenure for the existing road on the basis that it will service the boat ramp. A survey of the site would not be required and there would be no fee associated with the application.

Consultation has occurred with Council's Infrastructure Services portfolio, Development Assessment section, Natural Resource Management section, Community Development and Sport and Recreation section and Disaster Management Section and the following comments have been provided.

Infrastructure Services

Engineering Services

Engineering Services supports Option B.

Water and Waste

There are no objections from Water and Waste in progressing Option B.

Construction and Maintenance

Construction and Maintenance supports Option B.

Planning and Design

Planning and Design supports Option B.

Development Assessment

Planning has no objections to option B.

Natural Resource Management

Natural Resource Management offer no objection but ask that the environmental values of the reserve be noted.

Community Development and Sport and Recreation

No comments.

Disaster Management

No obligation from Disaster Management.

PREVIOUS DECISIONS

The content of this report has not been the subject of any previous Council decision or direction.

BUDGET IMPLICATIONS

There are no foreseeable costs associated with Option B.

LEGISLATIVE CONTEXT

The options presented in this report are administered under the *Land Act 1994*.

LEGAL IMPLICATIONS

There are no foreseeable legal implications associated with the consideration of this matter.

STAFFING IMPLICATIONS

Progression of Option B would be managed in-house with existing resources.

RISK ASSESSMENT

The risk in progressing Option B is that the purpose of the reserve will change from park to landing place. Park reserves are to be used for low-key recreational uses (e.g. picnics, small children's playground, park bench). Landing Place reserves are to be used for a landing place in a waterway (id est public landing place for marine craft boats and barges) and not for a commercial operation.

CORPORATE/OPERATIONAL PLAN

This report links to Strategy AM4 of Council's Corporate Plan which states: '*Operate, maintain and use Council assets to deliver efficient and cost effective services to the community.*'

LOCAL GOVERNMENT PRINCIPLES

The local government principles are –

- (a) Transparent and effective processes, and decision-making in the public interest; and
- (b) Sustainable development and management of assets and infrastructure, and delivery of effective services; and
- (c) Democratic representation, social inclusion and meaningful community engagement; and
- (d) Good governance of, and by, local government; and
- (e) Ethical and legal behaviour of councillors and local government employees.

CONCLUSION

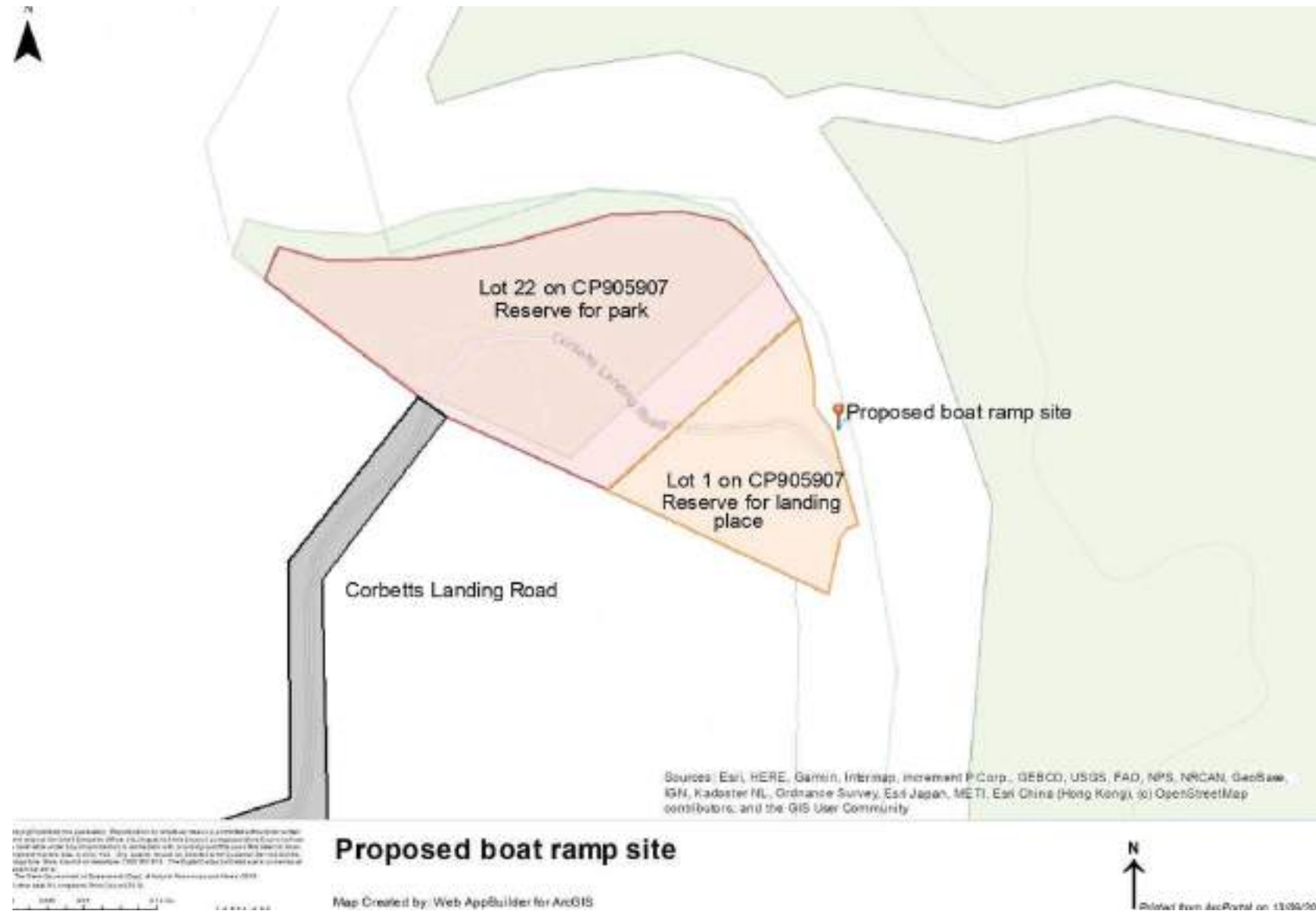
The Department of Transport and Main Roads is seeking to construct a boat ramp on Corbetts Landing Road, Byfield. Corbetts Landing Road traverses the Reserve for Park described as Lot 22 on Crown Plan 905907. The Department of Natural Resources, Mines and Energy has advised that this use is not consistent with the purpose of the reserve. Consultation has occurred with internal Council stakeholders and Option B is supported as the most favourable option to rectify this inconsistency.

**12.3 - CANCELLATION OF RESERVE
FOR PARK - LOT 22 ON CROWN PLAN
905907**

Locality plan of boat ramp site

Meeting Date: 8 October 2019

Attachment No: 1





12.4 CONSIDERATION OF RENEWAL OF TERM LEASE 216952 OVER LOT 5 ON PS120

File No: GR14.4.2
Attachments: 1. Aerial photograph [↓](#)
Responsible Officer: David Mazzaferri - Executive Director Livability and Wellbeing
Author: Maddie Crigan - Property Officer

SUMMARY

This report pertains to a request from the Department of Natural Resources, Mines and Energy for Council's views or requirements on the renewal of Term Lease 0/216952 over Lot 5 on PS120 located at Bamborough Island, Stanage.

OFFICER'S RECOMMENDATION

THAT Council resolve to advise the Department of Natural Resources, Mines and Energy that it does not object to the renewal of Term Lease 0/216952 over Lot 5 on PS120 located at Bamborough Island, Stanage.

BACKGROUND

On 2 September 2019, Council received notice that the Department of Natural Resources, Mines and Energy is considering an application to renew Term Lease 0/216952 over Lot 5 on PS120 which is located at Bamborough Island, Stanage, and comprises approximately 137 hectares (refer to Attachment One for an aerial photograph).

The twenty (20) year term lease, which is for residential purposes, is due to expire in December 2021. The Department of Natural Resources, Mines and Energy has asked whether Council has any views or requirements which should be considered in respect of the renewal of the lease.

COMMENTARY

Under the *Land Act 1994*, a lessee may apply for an offer of a new lease only after eighty (80) per cent of the term of the existing lease has expired. The Department of Natural Resources, Mines and Energy is assessing an application and has advised that Council's response to this request will be considered before a decision is made.

Comment was sought from Council's Infrastructure Services Portfolio, Development Assessment section, Natural Resource Management section, Disaster Management and Resilience section and Community Development and Sport and Recreation section. No objections were raised to the proposed renewal, however, the following comments were provided from Development Assessment.

Development Assessment

The site at Lot 5 Bamborough Island, Stanage is located in the Rural Zone under the Livingstone Planning Scheme 2018. The Rural Zone allows for residential uses to be developed on the land, provided that they can comply with the assessment benchmarks of the Planning Scheme. Any development for a residential purpose on these premises that does not meet the acceptable outcomes of the relevant assessment benchmarks would require a planning application to be submitted to Council for assessment.

Planning has no objections to the renewal of Term Lease 216952 for residential purposes.

PREVIOUS DECISIONS

This matter has not been the subject of any previous Council decision or direction.

BUDGET IMPLICATIONS

There are no foreseeable budget implications associated with this matter.

LEGISLATIVE CONTEXT

The disposal of public land is undertaken in accordance with the provisions of the *Land Act 1994*.

LEGAL IMPLICATIONS

There are no foreseeable legal implications associated with consideration of this matter.

STAFFING IMPLICATIONS

There are no foreseeable staffing implications associated with the consideration of this matter.

RISK ASSESSMENT

The risk in Council objecting to the proposal to renew the term lease is that the land may revert to unallocated state land on which Council would be unable to charge rates.

CORPORATE/OPERATIONAL PLAN

Strategy AM4 of Council's Corporate Plan states: '*Operate, maintain and use Council assets to deliver efficient and cost effective services to the community.*'

LOCAL GOVERNMENT PRINCIPLES

The local government principles are –

- (a) Transparent and effective processes, and decision-making in the public interest; and
- (b) Sustainable development and management of assets and infrastructure, and delivery of effective services; and
- (c) Democratic representation, social inclusion and meaningful community engagement; and
- (d) Good governance of, and by, local government; and
- (e) Ethical and legal behaviour of councillors and local government employees.

CONCLUSION

The Department of Natural Resources, Mines and Energy is seeking Council's views on an application to renew Term Lease 0/216952 over Lot 5 on PS120 at Bamborough Island, Stanage. Internal Council stakeholders have offered no objection to the renewal. The renewal does not compromise any land use, environmental or social objectives and thus there is no reason for Council to offer any objection.

12.4 - CONSIDERATION OF RENEWAL OF TERM LEASE 216952 OVER LOT 5 ON PS120

Aerial photograph

Meeting Date: 8 October 2019

Attachment No: 1



highly sensitive and specific. However, as for all self-assessment measures, it is possible that some people will not report the full range of their symptoms or that they will report symptoms that they do not actually have. The authors of this study also attempted to address this by asking respondents to read the following statement: "We understand that you may not know for sure, but we would like you to report what you think is true based on the best of your knowledge." The authors also included a statement of confidentiality: "The results of this study will be kept confidential and used only for research purposes."

1000 1000 1000

Lot 5 on PS120 - Bamborough Island, Stanage

Map Created by: Web AppBuilder for ArcGIS



Deleted from docPortal on 23/05/2011

12.5 DEVELOPMENT APPLICATION FOR A DEVELOPMENT PERMIT FOR RECONFIGURING A LOT (TWO LOTS INTO SIX LOTS) AT 535 BUNGUNDARRA ROAD AND LOT 100 BUNGUNDARRA ROAD, BUNGUNDARRA

File No: D-29-2019

Attachments:

1. [Proposal Plan](#)
2. [Annotated Covenant Plan](#)

Responsible Officer: David Battese - Manager Liveability

Author: Jenna Davies - Principal Planning Officer

SUMMARY

This matter was resolved, at the Council Meeting on 17 September 2019, that Council approve the development application for the six properties subject to appropriate conditions being brought back to the table for ratification by resolution. The matter is now presented to Council to be dealt with.

<i>Applicant:</i>	<i>C. & M. Roebuck</i>
<i>Consultant:</i>	<i>Capricorn Survey Group (CQ) Pty Ltd</i>
<i>Real Property Address:</i>	<i>Lot 1 on SP289213 and Lot 100 on SP280113</i>
<i>Common Property Address:</i>	<i>535 Bungundarra Road and Lot 100 Bungundarra Road, Bungundarra</i>
<i>Area of Site:</i>	<i>291 hectares combined (approximately)</i>
<i>Planning Scheme:</i>	<i>Livingstone Shire Planning Scheme 2005 (reprint 7, in force 10 July 2017)</i>
<i>Planning Scheme Zone:</i>	<i>Rural Zone</i>
<i>Planning Scheme Overlays:</i>	<i>Overlay Map O2 Steep Land Overlay Map O2 Drainage Problem Area Overlay Map O3 Wetlands and Wetlands 100 metre buffer Overlay Map O3 Waterways and Waterways 100 metre buffer Overlay Map O5 Bushfire Hazard Overlay Map O9 Special Management Area – Precinct B</i>
<i>Planning Scheme Maps:</i>	<i>PSM2A Agricultural Land Classification – Shire Balance PSM10 Locally Significant Vegetation</i>
<i>Existing Development:</i>	<i>Dwelling house and Kennels (not approved)</i>
<i>Level of Assessment:</i>	<i>Code assessable</i>
<i>Submissions:</i>	<i>Not applicable</i>
<i>Referral matters:</i>	<i>Infrastructure – Clearing native vegetation (10.3.4.2.1)</i>
<i>Infrastructure Charge Area:</i>	<i>Outside the Priority Infrastructure Area</i>
<i>Application progress:</i>	

Application received:	12 February 2019
Development control unit meeting:	13 February 2019
Application properly made:	19 February 2019
Confirmation notice issued:	26 February 2019
Extension of time agreed to (referral period):	5 March 2019
Application referred to State agency:	8 March 2019
Information request issued:	12 March 2019
State agency response:	8 April 2019
Information request response received:	30 May 2019
Further advice issued:	2 July 2019
Extension of time agreed to:	5 July 2019
Further advice response received:	26 July 2019
Council meeting date:	8 October 2019
Statutory determination date:	11 October 2019

OFFICER'S RECOMMENDATION

THAT notwithstanding the Officers Recommendation presented at the Council Meeting of 17 September 2019, should Council resolve to approve Development Application D-29-2019 for a Development Permit for Reconfiguring a Lot (two lots into six lots) located at 535 Bungundarra Road and Lot 100 Bungundarra Road, Bungundarra, Council resolve to:

- A1** Develop a Statement of Reasons in accordance with section 63(5) of the *Planning Act 2016* for inclusion in any Decision Notice to be issued.
- A2** Issue a Decision Notice which includes all of the following conditions:
 - 1.0** ADMINISTRATION
 - 1.1** The Developer is responsible for ensuring compliance with this approval and the Conditions of the approval by an employee, agent, contractor or invitee of the Developer.
 - 1.2** Where these Conditions refer to "Council" in relation to requiring Council to approve or to be satisfied as to any matter, or conferring on the Council a function, power or discretion, that role of the Council may be fulfilled in whole or in part by a delegate appointed for that purpose by the Council.
 - 1.3** All conditions of this approval must be undertaken and completed to the satisfaction of Council, at no cost to Council.
 - 1.4** All conditions, works, or requirements of this approval must be undertaken and completed prior to the approval of a plan of subdivision (survey plan endorsement), unless otherwise stated.
 - 1.5** Where applicable, infrastructure requirements of this approval must be contributed to the relevant authorities, at no cost to Council prior, to the approval of a plan of subdivision (survey plan endorsement), unless otherwise stated.

- 1.6 The following further Development Permits must be obtained prior to the commencement of any works associated with its purposes:
- 1.6.1 Operational Works:
- (i) Access Works;
 - (ii) Clearing Vegetation Works;
- 1.7 Unless otherwise stated, all works must be designed, constructed and maintained in accordance with the relevant Council policies, guidelines and standards.
- 1.8 All engineering drawings/specifications, design and construction works must comply with the requirements of the relevant *Australian Standards* and must be approved, supervised and certified by a Registered Professional Engineer of Queensland.
- 1.9 This approval is for the reconfiguration of Lot 1 on SP289213 and Lot 100 on SP280113 into six (6) separate titles. The approved plan illustrates a Building Location Envelope over proposed Lots 2, 3, 4, 5 and 6, which denotes the location within which a future Dwelling house and ancillary buildings or structures must be located within. This approval does not negate the requirement for a future Material Change of Use, Building Works regulated under the Planning Scheme or Operational Works, pursuant to the categorising instrument in effect at the time of development.

2.0 APPROVED PLANS AND DOCUMENTS

- 2.1 The approved development must be completed and maintained generally in accordance with the approved plans and documents, except where amended by the conditions of this permit:

<u>Plan/Document Name</u>	<u>Plan/Document Reference</u>	<u>Dated</u>
Reconfiguration Plan 2 lots into 6 lots (with Ortho Underlay)	6537-07-ROL, Revision C	29 July 2019
Bushfire Hazard Assessment	PR4406-RE, Revision 02	19 July 2019
Bushfire Management Plan	PR4406-RE, Revision 0	19 July 2019
Slope Stability Assessment Report	GEO154779-B	29 June 2017
Annotated Covenant Plan	Not numbered	25 September 2019

- 2.2 Where there is any conflict between the conditions of this approval and the details shown on the approved plans and documents, the conditions of approval must prevail.
- 2.3 Where conditions require the above plans or documents to be amended, the revised document(s) must be submitted for approval by Council prior to the submission of a Development Application for Operational Works.

3.0 STAGED DEVELOPMENT

- 3.1 This approval is for a development to be undertaken in three (3) discrete stages, namely:
- 3.1.1 Stage One: Lot 3 and Lot 4 and balance land; and
 - 3.1.2 Stage Two: Lot 2 and balance land; and
 - 3.1.3 Stage Three: Lot 1, Lot 5 and Lot 6.

Stage One must be completed prior to any other Stage.

- 3.2 Unless otherwise expressly stated, the conditions must be read as being applicable to all stages.

- 3.3 Where expressly stated, the conditions must be read as being applicable only to the particular stages(s) being developed.

4.0 ACCESS AND PARKING WORKS

- 4.1 A Development Permit for Operational Works (access and parking works) must be obtained prior to the commencement of any access and parking works on the site.

- 4.2 All works must be designed and constructed in accordance with the approved plans (refer to condition 2.1), *Capricorn Municipal Development Guidelines*, *Australian Standard AS2890 "Off Street Car Parking"* and the provisions of a Development Permit for Operational Works (access and parking works).

- 4.3 As part of Stage Two, a compliant vehicle access crossover and driveway must be designed and constructed for proposed Lot 2, within the road reserve, in accordance with the *Capricorn Municipal Development Guidelines*.

- 4.4 As part of Stage Two, an access easement must be registered, burdening Lot 1 and in benefit of Lot 2. The access easement must be shown on the Survey Plan and the respective documentation submitted to Council as part of the approval of a plan of subdivision (survey plan endorsement).

- 4.5 As part of Stage Three, a compliant vehicle access crossover and driveway must be designed and constructed for proposed Lots 1, 5 and 6, within the road reserve, in accordance with the *Capricorn Municipal Development Guidelines*.

- 4.6 As part of Stage Three, an access easement must be registered, burdening Lot 1 and in benefit of Lots 5 and 6. The access easement must be shown on the Survey Plan and the respective documentation submitted to Council as part of the approval of a plan of subdivision (survey plan endorsement).

- 4.7 All access easements must be a minimum of twenty (20) metres wide.

- 4.8 The internal access driveways (private roads) must be designed, constructed and maintained in accordance with the Bushfire Management Plan (refer to condition 2.1).

- 4.9 The internal access driveway (private road) for proposed Lot 2 must be designed and constructed in accordance with the revised Slope Stability Report (refer to condition 8.4) and Bushfire Management Plan (refer to condition 2.1). Where the gradient of the driveway is greater than 12.5 per cent at any point, the driveway must be sealed with concrete or bitumen.

- 4.10 The internal access driveways for proposed Lots 1, 2, 4 and 6 must be provided with a minimum ten (10) per cent Annual Exceedance Probability flood immunity.

- 4.11 Rural addressing must be provided for proposed Lots 1, 2, 5 and 6, in accordance with Council's Rural Addressing Policy and Procedure.

5.0 CLEARING VEGETATION WORKS

- 5.1 A Development Permit for Operational Works (Clearing Vegetation Works) must be obtained prior to the commencement of any clearing works on the site.

- 5.2 Any application for a Development Permit for Operational Works (Clearing Vegetation Works) associated with this Development Permit, must be limited to purposes required for survey of proposed allotment boundaries and the internal access driveways, generally in accordance with the approved plans (refer to condition 2.1) and must include, but is not limited to, the following:

- 5.2.1 A plan documenting the "Extent of Works" and supporting documentation

which includes (but not limited to):

- (i) location and name of existing trees, including those to be retained (the location of the trees shall be overlaid or be easily compared with the proposed lot layout);
- (ii) important spot levels and/or contours. The levels of the trees to be retained shall be provided in relation to the finished levels of the proposed building envelopes;
- (iii) underground and overhead services; and
- (iv) typical details of critical design elements (such as, stabilisation of batters, retaining walls, fences).

5.3 The boundaries of areas proposed to be cleared must be clearly delineated for machinery operators, with clearing confined to the area required, in order to minimise impacts on adjacent habitats prior to and during vegetation clearing.

5.4 Clearing of vegetation must only occur in the stage being developed (refer to condition 3.1). Clearing may only occur outside the stage boundaries where approved by a Development Permit for Operational Works (Clearing Vegetation Works).

5.5 Any clearing must comply with the recommendations of the approved Bushfire Hazard Assessment and Bushfire Management Plan (refer to condition 2.1).

5.6 Any vegetation cleared or removed must be:

- (i) mulched on-site and utilised on-site for landscaping purposes; or
- (ii) removed for disposal at a location approved by Council;

within sixty (60) days of clearing. Any vegetation removed must not be burnt without a fire permit.

5.7 Vegetative materials cleared from the site must not be placed near or within vegetation adjacent to the site, other than strategic placement of fauna habitat if required.

5.8 Clearing of the Building Location Envelopes and clearing recommended by the Bushfire Management Plan for future buildings and structures, must not occur until all related approvals are granted including a Development Permit for a Material Change of Use and/or Building Works regulated under the Planning Scheme. This does not negate the requirement to obtain a Development Permit for Operational Works (Clearing Vegetation Works).

6.0 FAUNA MANAGEMENT

6.1 A fauna spotter / catcher must be onsite prior to and during vegetation felling activities to ensure fauna and habitat management actions are taken as required. All clearing works must be halted if fauna is likely to be injured.

7.0 STORMWATER WORKS

7.1 All stormwater must achieve demonstrated lawful discharge in accordance with the *Queensland Urban Drainage Manual* and must not adversely affect the upstream or downstream land or damage infrastructure when compared to pre-development condition by way of blocking, altering or diverting existing stormwater runoff patterns or cause an actionable nuisance or damage infrastructure.

8.0 SITE WORKS

8.1 All earthworks must be undertaken in accordance with *Australian Standard AS3798 "Guidelines on Earthworks for Commercial and Residential Developments"* and in accordance with the revised Slope Stability Assessment Report (refer to condition 2.1 and condition 8.4).

8.2 Site works must be constructed such that they do not, at any time, in any way restrict,

impair or change the natural flow of runoff water that causes a nuisance or worsening to adjoining properties or infrastructure.

- 8.3 Vegetation must not be cleared unless and until written approval has been provided by Council by way of a Development Permit for Operational Works (Clearing Vegetation Works).
- 8.4 The Slope Stability Assessment Report (refer to condition 2.1) must be updated to reflect the changed Building Location Envelope and internal access driveway for proposed Lot 2 and provided to Council with any development application for a Development Permit for Operational Works.
- 8.5 All future owners of the proposed lot 2 must be advised by the developer in writing of their responsibility to comply with the requirements of the revised Slope Stability Report (refer to condition 2.1).

9.0 ELECTRICITY AND TELECOMMUNICATIONS

- 9.1 Electricity and telecommunication connections must be provided to the proposed development to the standards of the relevant authorities.
- 9.2 Evidence must be provided of a certificate of supply with the relevant service providers to provide each lot with live electricity and telecommunication connections, in accordance with the requirements of the relevant authorities prior to the approval of a plan of subdivision (survey plan endorsement).

10.0 ASSET MANAGEMENT

- 10.1 Any alteration necessary to electricity, telephone, water mains, sewerage mains, and/or public utility installations resulting from the development or in connection with the development, must be at full cost to the Developer.
- 10.2 Any damage to existing kerb and channel, pathway or roadway (including removal of concrete slurry from public land, pathway, roads, kerb and channel and stormwater gullies and drainage lines) which may occur during any works carried out in association with the approved development must be repaired. This must include the reinstatement of the existing traffic signs and pavement markings which may have been removed.
- 10.3 'As constructed' information pertaining to assets to be handed over to Council and those which may have an impact on Council's existing and future assets must be provided prior to the issue of the Compliance Certificate for the Survey Plan. This information must be provided in accordance with the Manual for Submission of Digital As Constructed Information.

11.0 ENVIRONMENTAL

- 11.1 All future owners of the proposed lots must be advised by the developer in writing of their responsibility to comply with the requirements of the approved Bushfire Hazard Assessment and Bushfire Management Plan (refer to condition 2.1).
- 11.2 All future buildings and structures must be designed, constructed and certified to satisfy the performance requirements for bushfire ignition risk under the *National Construction Code Building Code of Australia (Volume 2)*.
- 11.3 An environmental covenant, pursuant to Section 97A of the *Land Title Act 1994*, must be entered into with respect to the extent of vegetation, outside of the proposed building location envelope and ancillary internal access driveway(s) over proposed Lots 2, 3 and 4, to the north and south of Daly Creek over proposed Lot 1, and generally in accordance with the approved annotated covenant plan (refer to condition 2.1) to the effect that:
 - 11.3.1 the area is protected as a vegetated flora habitat and all native vegetation must be retained; and
 - 11.3.2 there is to be no artificial interference or disturbance of the habitat, except

as approved by Council by a Development Permit for Operational works (Clearing Vegetation) for the following activities:

- (i) essential management as defined in the *Planning Regulation 2017* (current as at 1 September 2019);
- (ii) management of a declared pest, in accordance with the requirements of the relevant State agency and/or Council;
- (iii) Bushfire management activities as recommended in the approved Bushfire Hazard Assessment and Bushfire Management Plan under Development Permit D-29-2019 for Reconfiguring a Lot (two lots into six lots) over 535 Bungundarra Road and Lot 100 Bungundarra Road, Bungundarra.

11.4 An environmental covenant must be registered over proposed Lots 1, 2, 3 and 4. The above wording (condition 11.3) must be incorporated into the covenant schedule. The covenant area must be shown on the Survey Plan and the respective documentation submitted to Council, prior to the approval of a plan of subdivision (survey plan endorsement).

11.5 As part of Stage Three, Covenant B on SP289213 must be amended to be wholly located on proposed Lot 6. The amended covenant area must be shown on the Survey Plan and the respective documentation submitted to Council, prior to the approval of a plan of subdivision (survey plan endorsement).

11.6 Any application for a Development Permit for Operational Works must be accompanied by a detailed Environmental Management Plan, which addresses, but is not limited to, the following matters:

- (i) water quality and drainage;
- (ii) erosion and silt/sedimentation management;
- (iii) fauna management;
- (iv) vegetation management and clearing;
- (v) top soil management;
- (vi) interim drainage plan during construction;
- (vii) construction programme;
- (viii) geotechnical issues;
- (ix) weed control;
- (x) bushfire management;
- (xi) emergency vehicle access;
- (xii) noise and dust suppression; and
- (xiii) waste management.

11.7 Any application for a Development Permit for Operational Works must be accompanied by an Erosion and Sediment Control Plan.

11.8 The Erosion Control and Sediment Control Plan must be implemented and maintained on-site for the duration of the works, and until all exposed soil areas are permanently stabilised (for example, turfed, hydromulched, concreted, landscaped). The prepared Erosion and Sediment Control Management Plan must be available on-site for inspection by Council Officers during those works.

12.0 OPERATING PROCEDURES

12.1 All construction materials, waste, waste skips, machinery and contractors' vehicles must be located and stored or parked within the site. No storage of materials, parking of construction machinery or contractors' vehicles will be permitted in Bungundarra

Road or Madges Road.

ADVISORY NOTES

NOTE 1. Aboriginal Cultural Heritage

It is advised that under Section 23 of the *Aboriginal Cultural Heritage Act 2003*, a person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal Cultural Heritage (the "cultural heritage duty of care"). Maximum penalties for breaching the duty of care are listed in the Aboriginal Cultural Heritage legislation. The information on Aboriginal Cultural Heritage is available on the Department of Aboriginal and Torres Strait Islander Partnerships website <https://www.datsip.qld.gov.au/>.

NOTE 2. General Environmental Duty

General environmental duty under the *Environmental Protection Act* prohibits unlawful environmental nuisance caused by noise, aerosols, particles dust, ash, fumes, light, odour or smoke beyond the boundaries of the property during all stages of the development including earthworks, construction and operation.

NOTE 3. General Safety Of Public During Construction

The *Workplace Health and Safety Act* and *Manual of Uniform Traffic Control Devices* must be complied with in carrying out any construction works, and to ensure safe traffic control and safe public access in respect of works being constructed on a road.

NOTE 4. Property Notes

- a. All future buildings on the proposed lots must be constructed in compliance with the *National Construction Code* and the approved Bushfire Hazard Assessment and Bushfire Management Plan.
- b. An environmental covenant applies to each lot pursuant to Section 97A of the *Land Title Act 1994*.

NOTE 5. Infrastructure Charges Notice

This application is subject to infrastructure charges in accordance with Council resolution. The charges are presented on an Infrastructure Charges Notice which has been supplied with this decision notice.

A3 Issue an Infrastructure Charges Notice for the amount of \$61,000.00 in accordance with Council's *Adopted Infrastructure Charges Resolution (No. 3) 2018*.

COMMENTARY

The proposed subdivision is for the creation of six (6) allotments of the following sizes, road frontages and Building Location Envelopes;

Lot no.	Size area (hectares)	Road frontage and access length	Building Location Envelope size
1	160.4	Fifty five (55) metres frontage and accessed via an access handle of approximately 524.79 metres	Nil
2	35.83	508 metre long easement from Bungundarra Road	8,000 square metres
3	25.1	218 metres frontage to Madges Road	1 hectare

4	25.1	101 metres frontage to Madges Road	8,000 square metres
5	15.76	671 metres frontage to Bungundarra Road	6,400 square metres
6	30.06	233 metre long easement from Bungundarra Road	6,400 square metres

Proposed Lot 1 is the largest allotment and is over the centre of the development. It will have frontage via an access handle with a width of approximately fifty-five (55) metres to Bungundarra Road. Part of this lot will contain the existing vegetation Covenant B on SP289213 and part of the covenant will be over proposed Lot 6, with no change to the area of the covenant.

Proposed Lots 3 and 4 have frontage to Madges Road. Proposed Lot 2 has access via a proposed access easement (with a width of approximately fifty one (51) metres) to Bungundarra Road. Proposed Lot 6 also has access via an easement (shared with proposed Lot 1) to Bungundarra Road.

Three stages have been proposed as follows:

- Stage One: Lots 3 and 4 and balance;
- Stage Two: Lot 2 and balance; and
- Stage Three: Lots 1, 5 and 6.

Change to the application

In response to the Information Request, the building location envelope for proposed Lot 2 was relocated to be outside of the Steep land overlay. The building envelope was reduced from a 100 metre by 100 metre envelope to a 100 metre by eighty (80) metre envelope.

INFRASTRUCTURE CHARGES

Infrastructure charges are levied pursuant to the *Adopted Infrastructure Charges Resolution (No.3) 2018*. The details and breakdown of the charges are outlined below:

Charge:	\$61,000.00
Charge area:	The subject site is located outside the priority infrastructure area
Calculation:	The charge is calculated in accordance with Table 5 - Minimum infrastructure charge for Reconfiguring a Lot partly outside or entirely outside the Priority Infrastructure Area, as follows: <ol style="list-style-type: none"> 1. Six (6) lots at \$15,250.00 per lot; 2. less a credit of \$15,250.00 per lot.
Credit:	The above calculation takes into account a credit of \$30,500.00 for the existing allotments pursuant to Part 4.0 of Council's <i>Adopted Infrastructure Charges Resolution (No. 3) 2018</i> . The credit is calculated as follows: <ol style="list-style-type: none"> 1. two (2) existing lots at \$15,250.00 per lot.
Offset:	No offsets are applicable to the development
Staging:	The charges are payable in accordance with the following stages: <ol style="list-style-type: none"> 1. Stage One: \$15,250.00 <ol style="list-style-type: none"> a. Three (3) lots at \$15,250.00 per lot; b. less a credit of two (2) lots of \$15,250.00 per lot. 2. Stage Two: \$15,250.00 <ol style="list-style-type: none"> a. Two (2) lots at \$15,250.00 per lot;

	<ul style="list-style-type: none">b. less a credit of one (1) lot at \$15,250.00 per lot.
	3. Stage Three: \$30,500.00
	<ul style="list-style-type: none">a. Three (3) lots at \$15,250.00 per lot;b. less a credit of one (1) lot at \$15,250.00 per lot.

A total charge of **\$61,000.00** is payable and will be reflected in an Infrastructure Charges Notice for the development.

PREVIOUS DECISIONS

This matter was resolved, at the Council Meeting on 17 September 2019, that Council approve the development application for the six properties subject to appropriate conditions being brought back to the table for ratification by resolution.

It is noted that Council has previously approved development applications for Reconfiguring a Lot within the immediate vicinity of the subject site which also failed to meet the minimum lot size stipulated in the *Livingstone Shire Planning Scheme 2005*. These decisions include the following;

- D-Y/2007-519 Reconfiguring a Lot (one lot into six lots) at 817 Bungundarra Road
- D-44-2010 for Reconfiguring a Lot (one lot into three lots) at 487 Bungundarra Road
- D-156-2011 Reconfiguring a Lot (three lots into four lots) at 777 Bungundarra Road
- D-396-2011 for Reconfiguring a Lot (two lots into seven lots) at 777 and 487 Bungundarra Road
- D-52-2015 for Reconfiguring a Lot (one lot into three lots) at 487 Bungundarra Road

It should also be noted that Development Application D-17-2017 for Reconfiguring a Lot (two lots into four lots) located 535 Bungundarra Road and Lot 100 Bungundarra Road, Bungundarra (being the same subject site of this development application), was refused by Council (as per the officers recommendation included at attachment three) at its meeting of 17 April 2018. This application was lodged in January 2017, assessed pursuant to the provisions of the *Livingstone Shire Planning Scheme 2005* with some weight given to the provisions of the 2018 scheme, through the Coty principle as permitted at the time of assessment.

As can be seen above, each approval paves the way for additional applications and the impacts of such decisions should not be considered in isolation, in particular the extent of vegetation clearing which has taken place as a direct result of the creation of additional allotments within the vicinity. In each instance above, a large 'balance area' has remained intact in order to provide an ecological and scenic function. This area is now the subject of the current development application.

In addition, it should be noted that each decision is made on its merits at the time and with the best planning information available. There are instances above whereby there were sufficient grounds to support the proposals, subject to reasonable and relevant conditions, which are not considered to exist in the current case. Specifically, the land use conflicts between adjoining properties, bushfire hazard and clearing of locally significant vegetation are unavoidable for the current proposal. It should also be noted that a large consideration in supporting these previous applications was on the proviso that the intact vegetation on this subject site (formerly the balance land for previous decision) remain intact and in some cases be protected by a vegetation covenant.

BUDGET IMPLICATIONS

Management of this application has been within the existing budget allocations.

LEGISLATIVE CONTEXT

The application is being assessed pursuant to the *Planning Act 2016* and all subordinate legislation and policies.

LEGAL IMPLICATIONS

The legal implications of deciding this development application favourably or unfavourably is the risk of appeal from the developer. It is noted that the applicant currently has an appeal before the Planning and Environment Court in relation to the Decision to Refuse Development Application D-17-2017. Should Council refuse this Development Application, it is thought that the existing appeal would be discontinued given the lower resultant lot yield and an appeal may be lodged against this Decision. These potential legal implications also bring unknown budget implications.

STAFFING IMPLICATIONS

No staffing implications have been identified in the assessment.

RISK ASSESSMENT

A determination of the application contrary to the outcome sought by the applicant may be escalated to appeal by the applicant, should they contend the position by Council is unreasonable. Officers consider that the risk of appeal is a medium to high probability. Costs of an appeal would be borne by Council.

Council's reputation may be impacted if it does not maintain the policy position of the planning scheme given it is the endorsed policy position. Decisions divergent from these policies may undermine future decision making.

CORPORATE/OPERATIONAL PLAN

Strategy GO4 of the Corporate Plan is relevant to the assessment of this application and states: *'Provide transparent and accountable decision making reflecting positive leadership to the community.'*

LOCAL GOVERNMENT PRINCIPLES

The local government principles are –

- (a) Transparent and effective processes, and decision-making in the public interest; and
- (b) Sustainable development and management of assets and infrastructure, and delivery of effective services; and
- (c) Democratic representation, social inclusion and meaningful community engagement; and
- (d) Good governance of, and by, local government; and
- (e) Ethical and legal behaviour of councillors and local government employees.

CONCLUSION

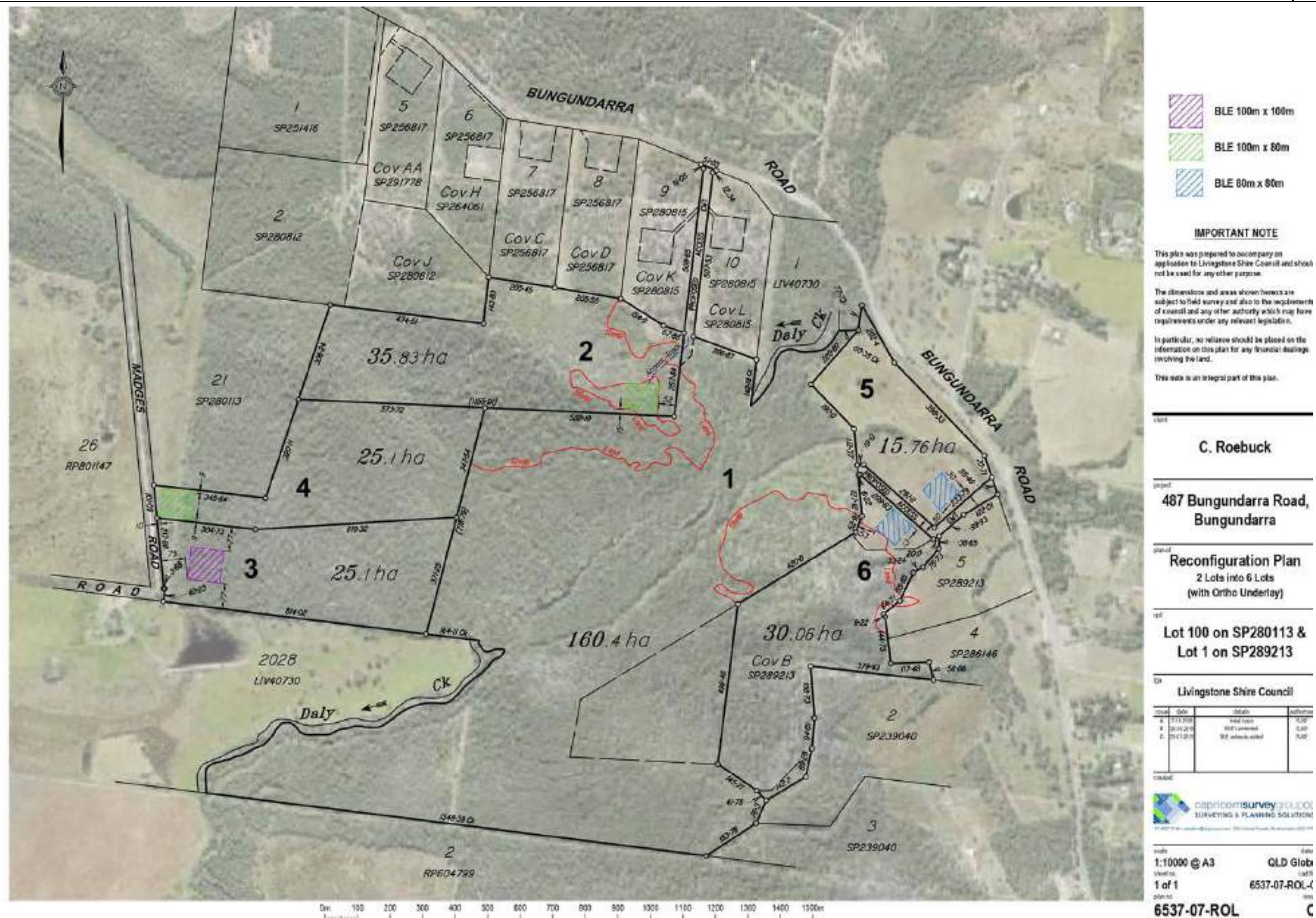
This report provides conditions and Infrastructure Charges as resolved at the Council Meeting on 17 September 2019. This report does not provide the Statement of Reasons to approve the development despite not complying the assessment benchmarks in the Rural Zone Code, Natural Features Code, Capricorn Coast Landscape Code and Clearing Code under the *Livingstone Shire Planning Scheme 2005*.

**12.5 - DEVELOPMENT APPLICATION
FOR A DEVELOPMENT PERMIT FOR
RECONFIGURING A LOT (TWO LOTS
INTO SIX LOTS) AT 535
BUNGUNDARRA ROAD AND LOT 100
BUNGUNDARRA ROAD,
BUNGUNDARRA**

Proposal Plan

Meeting Date: 8 October 2019

Attachment No: 1

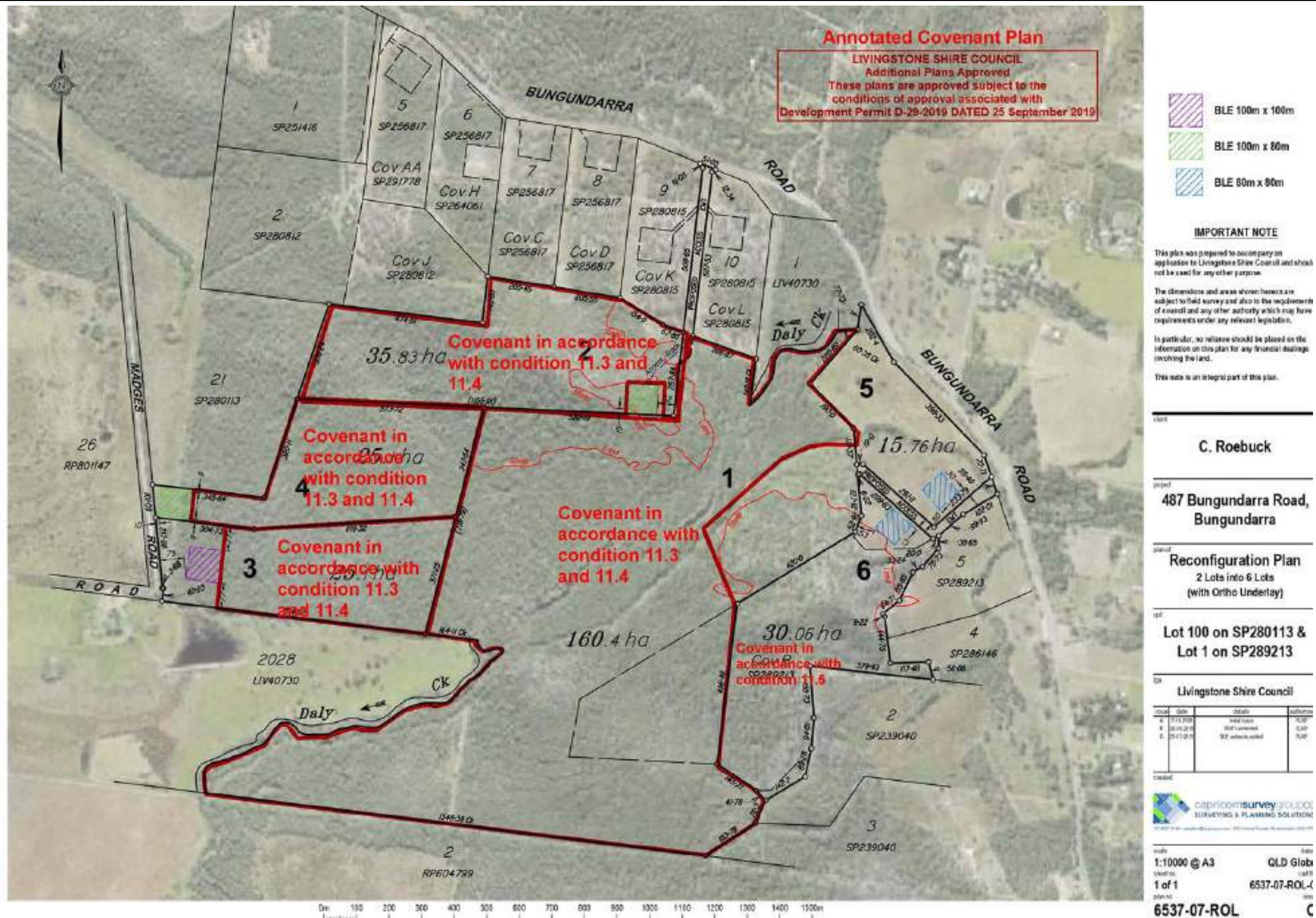


**12.5 - DEVELOPMENT APPLICATION
FOR A DEVELOPMENT PERMIT FOR
RECONFIGURING A LOT (TWO LOTS
INTO SIX LOTS) AT 535
BUNGUNDARRA ROAD AND LOT 100
BUNGUNDARRA ROAD,
BUNGUNDARRA**

Annotated Covenant Plan

Meeting Date: 8 October 2019

Attachment No: 2



12.6 REQUEST FOR REGULATED PARKING CONCESSION

File No: CR2.13.34
Attachments: Nil
Responsible Officer: David Mazzaferri - Executive Director Livability and Wellbeing
Author: David Battese - Manager Liveability

SUMMARY

This report relates to a request for concessions from paid parking received from the Yeppoon Ladies Probus Club Inc., which has written to Council seeking consideration for paid parking concessions to be given to its members for attending monthly meetings at the Keppel Bay Sailing Club.

OFFICER'S RECOMMENDATION

THAT Council resolve to approve the Yeppoon Ladies Probus Clubs request for a twelve (12) month trial of the Clubs membership card being accepted as a parking concession, for Club member vehicles parked in the off-street car park, immediately to the north of the Keppel Bay Sailing Club for the duration of the Clubs meetings (including lunch) that occur on the last Thursday of each month.

BACKGROUND

Yeppoon Ladies Probus Club Inc. has again written to Council raising concerns about the potential impact that the new paid parking will have on its members whilst attending the club's monthly meetings. The meetings are held at the Keppel Bay Sailing Club on the last Thursday of each month; from February to October, (monthly meetings for other months are held at Krackers Bowls Club due to the Sailing Club conducting regattas).

The reasons outlined for the request are the potential financial impacts of paid parking on some members who are on aged pensions as well as some members having impaired mobility, which limits their walking capacity. The Club has requested that that Council consider a twelve (12) month trial of accepting its membership card as a parking fee exemption. Under the proposed trial, the membership card would be displayed within a member's vehicle on the dates and times meetings are conducted. Vehicles would be parked in the off-street carpark to the north of the Keppel Bay Sailing Club. (Meeting duration is approximately four hours, which includes lunch).

COMMENTARY

The existing regulatory regime is uniform in its application and does not benefit one specific group above all other users and user groups. The desire to access the Yeppoon foreshore area and surrounding businesses is not limited to the Yeppoon Ladies Probus Club Inc., it may not be the only group of users who have concerns about the potential impact that paid, and regulated parking may have on their members.

As Council may receive further requests for concessions or variations from the paid parking regime it may be appropriate that Council undertake community consultation to determine if other community groups have similar concerns and then consider a further report on the matter.

However as the request by the Yeppoon Ladies Probus Club Inc. is likely to be limited to only a few vehicles, for up to four (4) hours for approximately nine (9) days a year, it is recommended that Council support the request for a twelve (12) month trial.

PREVIOUS DECISIONS

No Council resolutions have been made in relation to this request

BUDGET IMPLICATIONS

If the existing regulatory regime were to be altered to accommodate the desires of the Yeppoon Ladies Probus Club Inc., there would be a reduction in the estimated revenue to be generated from paid parking. The reduction would be in the order of a few thousand dollars at most (depending upon the number of vehicles and the length of time they occupied the paid spaces).

LEGISLATIVE CONTEXT

A local government may, under a local law, define any part of its area to be controlled by regulated parking. This area must be authorised, defined and signed before any form of regulated parking whether it is by parking meters, park at areas or time limits, can be established.

The introduction of regulated parking to the Yeppoon Central Business District and the Yeppoon Foreshore required a local law amendment; this was approved at the Ordinary Meeting of Council on 4 September 2018 and the amendment has been completed.

LEGAL IMPLICATIONS

There are no legal implications associated with the consideration of this matter

STAFFING IMPLICATIONS

There are no legal implications associated with the consideration of this matter

RISK ASSESSMENT

The risks associated with this matter are considered to be:

- 1) Reputational risks – from members of the Yeppoon Ladies Probus Club Inc. feeling adversely impacted by a Council decision to not provide them with concessions;
- 2) Reputational risks – from members of the general community, if Council provides concessions to the Yeppoon Ladies Probus Club Inc. but not to other groups or individuals who might be considered to be equally 'deserving' (raising questions of fairness and reasonableness).

CORPORATE/OPERATIONAL PLAN

Strategy CO1 of the Corporate Plan applies and states to facilitate, encourage and enable self-sustainable community associations and volunteer groups to pursue their diverse aspirations.

LOCAL GOVERNMENT PRINCIPLES

The local government principles are –

- (a) Transparent and effective processes, and decision-making in the public interest; and
- (b) Sustainable development and management of assets and infrastructure, and delivery of effective services; and
- (c) Democratic representation, social inclusion and meaningful community engagement; and
- (d) Good governance of, and by, local government; and
- (e) Ethical and legal behaviour of councillors and local government employees.

CONCLUSION

As Council may receive further requests for concessions or variations from the paid parking regime it may be appropriate that Council undertake community consultation to determine if other community groups have similar concerns and then consider a further report on the matter.

However as the request by the Yeppoon Ladies Probus Club Inc. is likely to be limited to only a few vehicles, for up to four (4) hours for approximately nine (9) days a year, it is recommended that Council support the request for a twelve (12) month trial.

12.7 LIVINGSTONE SHIRE LOCAL DISASTER MANAGEMENT PLAN 2019

File No: ES9.5.2
Attachments: 1. Livingstone Shire Local Disaster Management Plan 2019 [↓](#)
Responsible Officer: David Mazzaferri - Executive Director Livability and Wellbeing
Author: Laura Bradford - Support Services Officer

SUMMARY

Livingstone Shire Council is dedicated to the continuous improvement of Disaster Management through all levels, including prevention, preparation, response and recovery. The Local Disaster Management Plan has been prepared by the Livingstone Shire Local Disaster Management Group for Livingstone Shire Council under the provisions of Section 57(1) of the Disaster Management Act 2003. The annual review and amendment of the Livingstone Shire Local Disaster Management Plan is a part of this continuous improvement process.

OFFICER'S RECOMMENDATION

That Council adopts the *Livingstone Shire Local Disaster Management Plan* as endorsed by the Livingstone Shire Local Disaster Management Group on 22 August 2019.

BACKGROUND

In accordance with section 59 of the *Disaster Management Act 2003*, it is the responsibility of Council, in conjunction with the Livingstone Shire Local Disaster Management Group, to review the *Livingstone Shire Local Disaster Management Plan*. It is stated that a review is to occur at a minimum of once a year or when the local government considers it appropriate. This review has been undertaken in accordance with the *Disaster Management Act 2003*.

COMMENTARY

On Thursday, 22 August 2019 the Livingstone Shire Local Disaster Management Group met to endorse the latest version of the Plan (refer to Attachment One). The Plan underwent a self-assessment which was carried out by the Local Disaster Management Group, Local Disaster Co-ordinator, Secretariat Local Disaster Management Group and Livingstone Disaster Management unit. This report addresses the review and update of the *Livingstone Shire Local Disaster Management Plan*.

PREVIOUS DECISIONS

The 2018 *Livingstone Shire Local Disaster Management Plan* was presented and endorsed on the 16 October 2018.

BUDGET IMPLICATIONS

No financial implications arise from the matters raised in this report.

LEGISLATIVE CONTEXT

Livingstone Shire Council and Livingstone Shire Local Disaster Management Group are compliant with the requirements under the *Disaster Management Act 2003*.

LEGAL IMPLICATIONS

Under Section 80(1)(b) of the *Disaster Management Act 2003*, one of the functions of Council is to approve its *Livingstone Shire Local Disaster Management Plan*.

STAFFING IMPLICATIONS

There are no known implications to staff from the endorsement of this plan.

RISK ASSESSMENT

There is a risk to Livingstone Shire Council if it does not have an updated *Local Disaster Management Plan* as it would not incorporate known and current hazards and risks. It is a requirement under the *Disaster Management Act 2003* to ensure Council has a Local Disaster Management Plan.

CORPORATE/OPERATIONAL PLAN

Corporate Plan Reference: Strategy GO2: Develop strategic plans and policies to address local and regional issues and guide service provision.

LOCAL GOVERNMENT PRINCIPLES

The local government principles are –

- (a) Transparent and effective processes, and decision-making in the public interest; and
- (b) Sustainable development and management of assets and infrastructure, and delivery of effective services; and
- (c) Democratic representation, social inclusion and meaningful community engagement; and
- (d) Good governance of, and by, local government; and
- (e) Ethical and legal behaviour of councillors and local government employees.

CONCLUSION

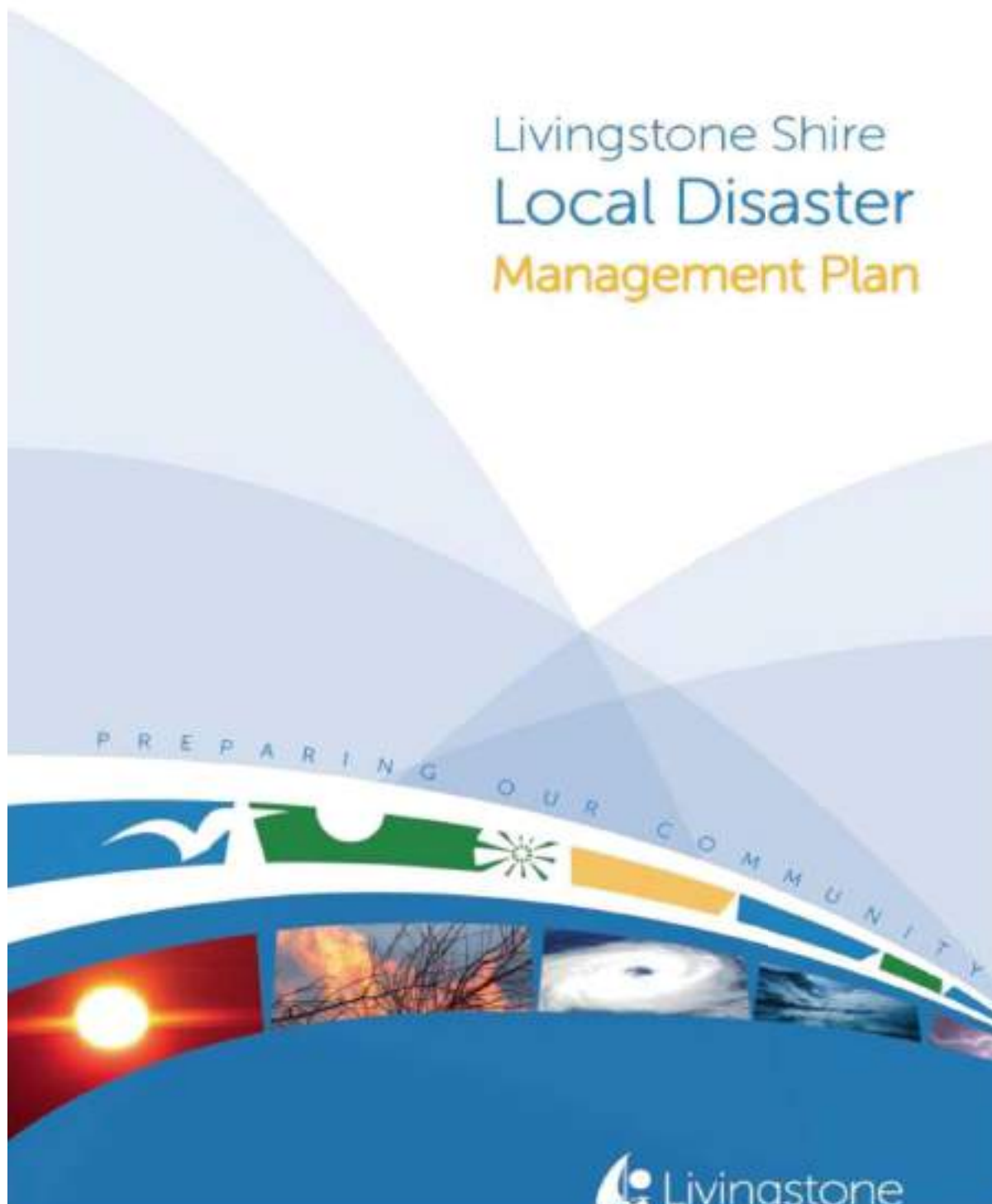
That Council review and adopt the updated Livingstone Shire Local Disaster Management Plan as per the recommendations above.

12.7 - LIVINGSTONE SHIRE LOCAL DISASTER MANAGEMENT PLAN 2019

Livingstone Shire Local Disaster Management Plan 2019

Meeting Date: 8 October 2019

Attachment No: 1





FOREWORD

Foreword by the Chair, Cr Bill Ludwig of the Livingstone Shire Local Disaster Management Group.

The Livingstone Shire Local Disaster Management Plan (LDMP) has been prepared to ensure there is a consistent approach to Disaster Management in the Livingstone Shire. This plan is an important tool for managing potential disasters and is a demonstrated commitment towards enhancing the safety of the Livingstone Shire community.

The plan identifies potential hazards and risks in the area, identifies steps to mitigate these risks and includes strategies to enact should a hazard impact and cause a disaster.

This plan has been developed to be consistent with the Disaster Management Standards and Guidelines and importantly to intergrate into the Queensland Disaster Management Arrangements (QDMA). The primary focus is to help reduce the potential adverse effect of an event by conducting activities before, during or after to help reduce loss of human life, illness or injury to humans, property loss or damage, or damage to the environment.

I am confident the LDMP provides a comprehensive framework for our community, and all residents and visitors to our region can feel secure that all agencies involved in the Livingstone Shire LDMP are dedicated and capable with a shared responsibility in disaster management.

On behalf of the Livingstone Shire Local Disaster Management Group, I would like to thank you for taking the time to read this important plan.

Livingstone Shire Council Mayor Bill Ludwig
Chair, Local Disaster Management Group

Date: 22 August 2019

**ENDORSEMENT**

This Local Disaster Management Plan (LDMP) has been prepared by the Livingstone Shire Local Disaster Management Group for the Livingstone Shire Council as required under section 57 of the *Disaster Management Act 2003* (the Act).

David Mazzaferri
Local Disaster Co-ordinator
Livingstone Shire Council
Local Disaster Management Group

Dated: 22 August 2019

Cr Bill Ludwig
Chair
Livingstone Shire Council
Local Disaster Management Group

Dated: 22 August 2019

Endorsed by the Livingstone Shire Council:

Cr Bill Ludwig
Mayor
Livingstone Shire Council
Local Disaster Management Group

Dated:

Chris Murdoch
Chief Executive Officer
Livingstone Shire Council

Dated:

Endorsed by District Disaster Management Group:

Superintendent Ron Van Saane
District Disaster Co-ordinator
Queensland Police Service

Dated:

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PART 1. DOCUMENT CONTROL

The Local Disaster Management Plan (LDMP) is a controlled document. The controller of the document is the Livingstone Shire Council Local Disaster Co-ordinator (LDC). Any proposed amendments to this LDMP should be forwarded in writing to:

Mr David Mazzaferri
Local Disaster Co-ordinator
Livingstone Shire Council
PO Box 2292
Yeppoon QLD 4703

This document is not to be altered, amended or changed in any way other than those amendments authorised by the Livingstone Shire Local Disaster Management Group (LDMG). However, the LDMP is intended to be a "live" document to be regularly reviewed, assessed and amended where necessary. As such, Livingstone Shire Council (LSC) welcomes feedback from the region's residents, visitors and others regarding this plan.

A copy of each amendment is to be forwarded to those identified in the distribution list. On receipt, the amendment is to be inserted into the document and the Amendment Register updated and signed.

1.1 Amendment Register

Version No/Ref	Issue Date	Comments	Plan Updated	
			Amended by	Date
2		Minor review based on planning workshop conducted in March 2017. Review for IGEM Assurance Framework and lessons learnt from Fitzroy River Flood and Tropical Cyclone Debbie.	David Mazzaferri	25 July 2017
3		Indepth review based on updated census data conducted in March 2018.	Melissa Minter on behalf of David Mazzaferri	10 April 2018
4		LDMG member review – LSC, CQHHS, SLSQ, NBN, Dept. of Education, QFES & Red Cross.	David Mazzaferri	08 August 2018
5		LDMG member review – LSC, CQHHS, DCDSS, MSQ, SLSQ and CHRS.	David Mazzaferri	22 August 2019

1.2 Distribution

This LDMP will be distributed to the representatives of nominated agencies as detailed in *Annexure A – Distribution List*. There will be two versions of this plan, one will contain all contact details and other sensitive information for members of the LDMG, with the second version having the personal details removed ensuring it complies with the *Information Privacy Act 2009*. Core members of the LDMG will receive a controlled copy of the entire version and the modified version will be provided to advisory members. A copy of the modified version will be available on the public website for the community to access.



PART 2. ADMINISTRATION AND GOVERNANCE

2.1 Authority to Plan

This plan has been prepared by the Livingstone Shire Local Disaster Management Group (LDMG) for the Livingstone Shire Council under the provisions of section 57(1) of the Act.

2.2 Purpose

This plan details the arrangements within the Livingstone Shire area to plan and co-ordinate capability in disaster management and disaster operations, and to ensure and maintain safety in the Livingstone Shire community prior to, during and after a disaster by adopting a comprehensive and all agency shared responsibility approach.

In short, this disaster management plan adopts a comprehensive all agencies approach to disaster management.

The LDMG will review and update the community's disaster management arrangements outlined in this plan and will investigate new initiatives to meet the changing needs of the area.

PART 3. THE DISASTER MANAGEMENT SYSTEM IN QUEENSLAND

Queensland's disaster management arrangements are guided by;

1. the *Disaster Management Act 2003*;
2. the Queensland Disaster Management Strategic Policy
3. the Queensland State Disaster Management Plan; and
4. the Queensland Strategy for Disaster Resilience 2017.

The Queensland Government remains focussed on harnessing agency capabilities through informed partnerships with local government, communities and individuals. The overall aim is to continue to build Queensland's resilience against hazards.

<http://qldreconstruction.org.au/u/lib/cms2/Queensland%20Strategy%20for%20Disaster%20Resilience%202017.pdf>

Disaster has a sophisticated network for management in Australia with clear responsibilities and collaborative plans for national, state and local government, together with local business, key non-government stakeholders and the broader community. The various planning, implementation, monitoring and evaluation tools ensure the ongoing safety of residents and visitors.





3.2 Objectives

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

1. The development, review and assessment of effective disaster management for the local government area including arrangements for mitigating, preventing, preparing for, responding to and recovering from a disaster
2. Compliance with the Queensland Disaster Management Strategic Policy Framework; the State Disaster Management Plan; the Local Disaster Management Guidelines; and any other Guidelines relevant to local level disaster management and disaster operations
3. The development, implementation and monitoring of priorities for disaster management for the local government area.

The all-encompassing objective of applying a disaster management framework is to ensure the safety of the region. Individual objectives to support the aforementioned are:

1. Prevention
 - a. Increase adherence to and introduction of systems and regulations that reduce disaster risks
 - b. Investigate and implement (where appropriate) strategies/initiatives to eliminate or reduce the impact of the effects of hazards on the community through the use of the Emergency Risk Management process.
2. Preparedness
 - a. Increase community safety through public awareness, information and education
 - b. Encourage an all agencies, all hazards ethos through the workings of the Local Disaster Management Group
 - c. Identify resources to maximise response
 - d. Develop contingency plans to address response and recovery issues
 - e. Establish and maintain working relationships with other agencies to increase disaster management capability.
3. Response
 - a. Efficiently and effectively co-ordinate the response to an event in conjunction with other emergency response agencies (commitment to an all-agencies approach)
 - b. Minimise the impact on the community from a disaster event.
4. Recovery
 - a. Adequately provide welfare post event
 - b. Ensure the recovery priorities of the community are met in collaboration with other member agencies of the Livingstone Shire Recovery and Resilience Taskforces, Queensland Reconstruction Authority and the State Recovery Co-ordinator
 - c. Recovery should include lessons learnt and the focus on resilience building for the Livingstone Shire.



The four objectives and framework are designed to work in unison and manage risks associated with community safety. Application of the framework is the shared responsibility of the community, local business and government.

3.3 Strategic Policy Statement

Disaster management and operations in the Livingstone Shire are consistent with the *Disaster Management Strategic Policy Statement*. This is achieved by:

1. Ensuring a comprehensive, all hazards, all agency approach by achieving the right balance of prevention, preparedness, response and recovery
2. Supporting the mainstreaming of disaster preparedness and mitigation into relevant areas of activity of government, non-government, small business and corporations
3. Aligning disaster risk reduction, disaster mitigation, disaster resilience and climate change adaptation policy and actions with international and national reforms
4. Promoting a transparent, systematic and consistent approach to disaster risk assessment and management, based on the Australian/New Zealand Standard AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines
5. Recognising the commitment of stakeholders and the need for collaboration across all levels of government, community, industry, commerce, government owned corporations, private and volunteer organisations, and local communities in all aspects of disaster management
6. Emphasising building and maintaining sincere relationships, trust, teamwork, consultative decision-making and shared responsibilities among stakeholders
7. Promoting community resilience and economic sustainability through disaster risk reduction.

<http://www.disaster.qld.gov.au/dmp/Documents/Strategic-Policy-Statement.pdf#search=strategic%20policy%20statement>

3.4 Disaster Management Priorities

The priorities for the LDMG are to:

1. Develop and maintain a LDMG membership who are appropriately qualified, and able to contribute to meeting the functions of the LDMG
2. Develop and maintain an effective recovery and resilience framework to build resilience in all environments



3. Review and implement local sub committees to meet identified hazards
4. Write, review and exercise local plans to ensure effective disaster management
5. Develop and maintain effective local community communication strategies
6. Evaluate the relevance of, and where necessary implement State recommendations including Inspector General Emergency Management (IGEM), and Commission of Inquiry recommendations
7. Identify resilience activities that will help safeguard Livingstone Shire for long term well being (Queensland Strategy for Disaster Resilience 2017).

3.5 Review and Renew Plan

This plan is to be reviewed at least once annually as per section 59 of the Act . The review is to examine the effectiveness of the plan based on activation, exercise or recommendations from interested parties. Reviews are to be conducted by the District Disaster Management Group (DDMG), IGEM and LDMG.

When a review identifies a need to amend the plan such amendments are to be developed by the LDMG and submitted to the Livingstone Shire Council for adoption as soon as possible after the need for amendment has been identified.

The Livingstone Shire LDMG, LDC is to ensure that the contact lists in this plan, sub-plans, and Standard Operating Procedures (SOP) are checked for accuracy and updated appropriately each six months.

3.6 Inspector-General Emergency Management (IGEM)

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

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

Key accountabilities for the Office of the IGEM include:

1. Reviewing and assessing the effectiveness of disaster management arrangements within Queensland
2. Reviewing and assessing cooperation between entities responsible for disaster management in the State, including whether disaster management systems and procedures employed by those entities are compatible and consistent
3. Establishing standards for disaster management, reviewing and assessing performance against these standards and regularly reviewing the standards
4. Monitoring compliance by Queensland government departments with their disaster management responsibilities
5. Identifying and improving disaster and emergency management capabilities, including volunteer capabilities and opportunities for cooperative partnerships
6. Reporting to and advising the Minister of Police, Fire and Emergency Services about issues relating to these function



3.7 Emergency Management Assurance Framework

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

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

The framework, the first of its kind in Queensland, promotes an end-to-end approach to the continual improvement of disaster management effectiveness and will enable a statement of confidence in Queensland's disaster management arrangements. Developed in collaboration with disaster management practitioners, the framework provides a standard that can be applied by all Queensland disaster management stakeholders to ensure their legislative responsibilities are met and that disaster management programs are effective, aligned with good practice, encourage the best use of resources and meet the needs of Queensland communities.

3.8 Queensland Reconstruction Authority

In response to the disaster events, the Queensland Government established the Queensland Reconstruction Authority (QRA) under the *Queensland Reconstruction Act 2011*. The QRA's role was later expanded to include the administration of prior and subsequent events and it was made a permanent part of the Queensland Government in June 2015. The QRA's vision is to build a more disaster-resilient Queensland.

The QRA manages and co-ordinates the Government's program of infrastructure reconstruction within disaster-affected communities. The QRA focuses on working with state and local government partners to deliver value for money and best practice expenditure and acquittal of public reconstruction funds. The QRA is also the lead agency responsible for disaster recovery, resilience and mitigation policy.

<http://qldreconstruction.org.au/>

3.9 Acronyms and Abbreviations

ABC	Australian Broadcasting Corporation
AEMI	Australian Emergency Management Institute
AIIMS	Australian Inter-service Incident Management System
AHD	Australian Height Datum
ARI	Average Recurrence Interval
BoM	Bureau of Meteorology
CALD	Culturally and Linguistically Diverse Community Organisations
CEO	Chief Executive Officer of Livingstone Shire Council
DACC	Defence Aid to Civil Community
DDC	District Disaster Co-ordinator



DDCC	District Disaster Co-ordination Centre
DDMG	District Disaster Management Group
DDMP	District Disaster Management Plan
DM	Disaster Management
DMG	Disaster Management Group
DNRME	Department of Natural Resources, Mines and Energy
DCDSS	Department of Communities, Disability Services and Seniors
DRFA	Disaster Recovery Funding Arrangements
DSITI	Department of Science, Information Technology and Innovation
DTMR	Department Transport and Main Roads
EMA	Emergency Management Australia
HAT	Highest Astronomical Tide
ICC	Incident Co-ordination Centre
IGEM	Inspector General Emergency Management
IMT	Incident Management Team
GIS	Geographical Information System
Guardian	Incident Management System for the co-ordination of an event at Livingstone Shire Council
LDC	Local Disaster Co-ordinator
LDCC	Local Disaster Co-ordination Centre
LDMG	Local Disaster Management Group
LDMP	Local Disaster Management Plan
LS	Livingstone Shire
LSC	Livingstone Shire Council
MSQ	Maritime Safety Queensland
NDRRA	Natural Disaster Relief and Recovery Arrangements
NPRSR	National Parks, Recreation, Sport and Racing
PPRR	Prevention, Preparedness, Response and Recovery
PSPA	Public Safety Preservation Act 1986
QAS	Queensland Ambulance Service



QDMA	Queensland Disaster Management Arrangements
QDMC	Queensland Disaster Management Committee
QDRR	Queensland Disaster Relief and Recovery
QFES	Queensland Fire and Emergency Services
QPS	Queensland Police Service
DAF	Department of Agriculture and Fisheries
QPWS	Queensland Parks and Wildlife Service
QR	Queensland Rail
QRA	Queensland Reconstruction Authority
RFB	Rural Fire Brigade
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SDCC	State Disaster Co-ordination Centre
SDMP	State Disaster Management Plan
SDRA	State Disaster Relief Arrangements
SES	State Emergency Service
SEWS	Standard Emergency Warning System
SLSQ	Surf Life Saving Queensland
SOP	Standard Operating Procedure
TC	Tropical Cyclone
The Act	Disaster Management Act 2003
The Regulation	Disaster Management Regulation 2014
YPCS	Yeppoon Public Cyclone Shelter

3.10 Definitions and Glossary of Terms

AHD	The Australian Height Datum is a geodetic datum for altitude measurement in Australia.
All Hazards Approach	The all hazards approach concerns arrangements for managing the variety of possible effects of risks and emergencies. This concept is useful to the extent that a large range of risks can cause similar problems and such measures as warning; evacuation; medical services and community recovery will be required during and following emergencies. (Source EMA, 2009)

All Agencies Approach	All agencies should be involved to some extent in emergency management. The context of emergency management for specific agencies varies and may include: (a) ensuring the continuity of their business or service (b) protecting their own interests and personnel (c) protecting the community and environment from risks arising from the activities of the organisation. (d) protecting the community and environment from credible risks. (Source EMA, 2009)
Community	A group of people with a commonality of association and generally defined by location, shared experience, or function. (Australian Emergency Management Glossary, 1998)
Consequence	The outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage, or gain. (Australian Emergency Management Glossary, 1998)
Co-ordination	Co-ordination refers to the bringing together of organisations to ensure effective disaster management before, during and after an event. It is primarily concerned with the systematic acquisition and application of resources (people, material, equipment etc.) in accordance with priorities set by Disaster Management Groups. Co-ordination operates horizontally across organisations and agencies.
Co-ordination Centre	A centre established as a centre of communication and co-ordination during disaster operations.
Council	In this plan Council means the Livingstone Shire Council.
Declaration of Disaster Situation	A District Disaster Co-ordinator for a Disaster District may, with the approval of the Minister, declare a Disaster Situation for the District or part of it, if satisfied of a number of conditions as set out in Part 4 – section 64 Declaration - Provisions for Declaration of a Disaster Situation. (<i>Disaster Management Act 2003</i>)
Disaster	A serious disruption in a community, caused by the impact of an event, that requires a significant co-ordinated response by the State and other entities to help the community recover from the disruption. (s13(1) <i>Disaster Management Act 2003</i>)
Disaster Management	Arrangements to manage the potential adverse effects of an event, including, for example, arrangements for mitigating, preventing, preparing for, responding to and recovering from a disaster. (s14 <i>Disaster Management Act 2003</i>).
Disaster Management Act 2003	Queensland Government legislation to provide for matters relating to disaster management in the State, and for other purposes.
Disaster Management (DM) Portal	The Queensland Disaster Management Portal provides a mechanism to allow the sharing of information on disaster management and is an information service for the disaster management community.

Disaster Management Regulation 2014	Enhance the efficiency of disaster management governance by allowing membership, meeting requirements and appointments of chairpersons of these groups to be described by regulation known as the Disaster Management Regulation 2014 (Regulation).
Disaster Operations	Activities undertaken before, during or after an event happens to help reduce loss of human life, illness or injury to humans, property loss or damage, or damage to the environment, including, for example, activities to mitigate the adverse effects of the event. (Disaster Management Act 2003, S15)
Disaster Recovery Funding Arrangements (DRFA)	Joint Commonwealth and State government arrangements that provide a diverse range of funding relief measures following an eligible disaster (effective 1 November 2018)
Disaster Response Capability (Local Government)	The ability to use Local Government resources, to effectively deal with, or help another entity to deal with, within the capacity of the Local Government an emergency situation or a disaster in the local government's area. (s80(2) Disaster Management Act 2003)
District Disaster Co-ordinator - (DDC)	The role of the District Disaster Co-ordinator, in addition to other duties, is the responsibility for co-ordinating support in the Disaster District for the DMG. The role of the DDC is specified in s26 Disaster Management Act 2003.
Emergency Management Assurance Framework	Developed by the Office of the Inspector-General Emergency Management in accordance with section 16C Disaster Management Act 2003 to provide the foundation for guiding and supporting the continuous improvement of entities disaster management programs. It also provides the structure and mechanism for reviewing and assessing the effectiveness of Queensland's disaster management arrangements.
Emergency Situation	Under section 5 <i>Public Safety Preservation Act</i> , if at any time a commissioned officer of the Queensland Police Service (the emergency commander) is satisfied on reasonable grounds that an emergency situation has arisen or is likely to arise, the commissioned officer may declare that an emergency situation exists in respect of an area specified by the commissioned officer.
Event	An event means any of the following: <ul style="list-style-type: none"> a) A cyclone, earthquake, flood, storm, storm tide, tornado, tsunami, volcanic eruption or other natural happening; b) Bushfire, an explosion or fire, a chemical, fuel or oil spill, or a gas leak; c) An infestation, plague, or epidemic; d) An attack against the State; or e) Another event similar to the above events. An event may be natural or caused by human acts or omissions (s16 (1) and (2) Disaster Management Act 2003).

Flooding	<p>Flash flood - Flash floods occur when soil absorption, runoff or drainage cannot adequately disperse intense rainfall. The most frequent cause of flash flooding is from slow-moving thunderstorms. These systems can deposit extraordinary amounts of water over a small area in a very short time. Flash floods are extremely dangerous weather events as water in creeks, drains and natural watercourses can rise very rapidly.</p> <p>Local flooding - an intense burst of rainfall over a short period of time may cause excessive run-off that builds up in a relatively small area and causes localised flooding. Inundation is expected to last only for a limited period of time, around one to two hours.</p> <p>Regional flooding - continuous heavy rainfall across a number of large catchments within the region's flood plains. It may take between one and two days for these floodwaters to subside.</p> <p>Riverine flooding - similar to regional flooding but on a larger scale.</p>
Hazard	A source of potential harm, or a situation with a potential to cause loss. (<i>Emergency Management Australia 2004</i>)
Incident	Day to day occurrences, being an emergency or sudden event accidentally or deliberately caused which requires a response from one or more emergency response agencies by itself or in cooperation with other response agencies.
Incident Co-ordination Centre / Field Co-ordination centre	Location or room from which response operations are managed for emergency incidents or situations.
Mitigation	Measures taken in advance of a disaster aimed at decreasing or eliminating its impact on society and environment. (<i>Australian Emergency Management Glossary, 1998</i>)
Natural Disaster Relief & Recovery Arrangements (NDRRA)	Prior to 1 November 2018 NDRRA provided a cost sharing formula between the State and Commonwealth Governments as well as a package of pre-agreed relief and recovery measures that may be activated by the Queensland Government on a needs basis.
NDRRA Activation	<p>Prior to 1 November 2018 The QRA was responsible for administering Counter Disaster Operations and Restoration of essential public assets. Relief measures which can be applied for by Local Government Authorities and State Government agencies.</p> <p>https://www.disasterassist.gov.au/Documents/Natural-Disaster-Relief-and-Recovery-Arrangements/NDRRA-determination-2017.PDF</p>
Planning	Development of systems for co-ordinating disaster response and establishing priorities, duties, roles and responsibilities of different individuals and organisations, including actual state of preparedness.

Preparedness	Measures to ensure that, should an emergency occur, communities, resources, and services are capable of coping with the effects. (Australian Emergency Management Glossary, 1998).
Prevention	Measures to eliminate or reduce the incidence or severity of emergencies. (Australian Emergency Management Glossary, 1998)
Public Safety Preservation Act 1986	An Act to provide protection for members of the public in terrorist, chemical, biological, radiological or other emergencies that create or may create danger of death, injury or distress to any person, loss of or damage to any property or pollution of the environment and for related purposes.
Queensland Disaster Relief and Recovery Guidelines (QDRR)	Details the activation, eligibility and other requirements for both Disaster Recovery Funding Arrangements (DRFA) and State Disaster Recovery Arrangements (SDRA) in Queensland
Reconstruction	Actions taken to re-establish a community after a period of rehabilitation subsequent to a disaster. Actions would include construction of permanent housing, restoration of all services, and complete resumption of the pre-disaster state. (Australian Emergency Management Glossary, 1998)
Recovery	The co-ordinated process of supporting emergency affected communities in reconstruction of the physical infrastructure and restoration of emotional, social, economic, and physical wellbeing. (Australian Emergency Management Glossary, 1998)
Rehabilitation	The operations and decisions taken after a disaster with a view to restoring a stricken community to its former living conditions, whilst encouraging and facilitating the necessary adjustments to the changes caused by the disaster. (Australian Emergency Management Glossary, 1998)
Relief	The provision of immediate shelter, life support and human needs of persons affected by, or responding to, an emergency. It includes the establishment, management and provision of services to emergency relief centres. (Australian Emergency Management Glossary, 1998)
Residual Risk	The level of risk remaining after implementation of a risk treatment. (AS/NZS 4360:2004)
Resilience	A measure of how quickly a system recovers from failures. (EMA Thesaurus accessed August 2009)
Response	Measures taken in anticipation of, during and immediately after an emergency to ensure its effects are minimised. (Australian Emergency Management Glossary, 1998)
Resources	Includes people, personnel or staffing, food, any animal, vehicle, vessel, aircraft, plant apparatus, implement, earthmoving equipment,

	construction equipment, or other equipment of any kind or any means of supplying want or need.
Risk	The chance of something happening that may have an impact on the safety and wellbeing of your community. It includes risk as an opportunity as well as a threat and is measured in terms of consequences and likelihood. (Adapted from AS/NZS ISO 31000:2009)
Risk Identification	The process of identifying what can happen, why, and how. (Australian Emergency Management Glossary, 1998)
Risk Management	The culture, processes, and structures that are directed towards realising potential opportunities whilst managing adverse effects. (AS/NZS ISO 31000:2009)
Risk Reduction	Actions taken to lessen the likelihood, negative consequences, or both, associated with a risk. (AS/NZS ISO 31000:2009)
Risk Treatment	Process of selection and implementation of measures to modify risk. (AS/NZS ISO 31000:2009)
Serious Disruption	Serious disruption means: (a) Loss of human life, or injury or illness (b) Widespread or severe property loss or damage (c) Widespread or severe damage to the environment (s13 (2) <i>Disaster Management Act 2003</i>)
State Disaster Relief Arrangements	The SDRA is an all hazards relief program that is 100% State funded and covers natural and non-natural disaster
Vulnerability	Degree of loss which could result from a potentially damaging phenomenon, or the extent to which a country, area, community, or structure risks being damaged by a disaster. The susceptibility and resilience of the community and environment to hazards.

PART 4. ROLE OF LOCAL GOVERNMENT

The *Disaster Management Act 2003* details a range of functions and responsibilities for local government to ensure that it meets its statutory obligations. Section 80 of the Act requires local government to undertake the following functions:

1. To ensure it has a disaster response capability
2. To approve its local disaster management plan prepared under part 3 of the Act
3. To ensure information about an event or a disaster in its area is promptly given to the district disaster co-ordinator for the district in which its area is situated
4. To perform other functions given to the local government under the Act.

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



PART 5. LOCAL DISASTER MANAGEMENT GROUP (LDMG)

5.1 Establishment

The Livingstone Shire LDMG is established in accordance with s29 of the Act.

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

5.2 Functions of a Local group

Section 30 of the Act, prescribes a range of functions to be performed by the local group. These functions are to:

1. Ensure disaster management and disaster operations in the area are consistent with the state group's strategic policy framework for disaster management for the state
2. Develop effective disaster management, and regularly review and assess the disaster management
3. Help the local government for its area to prepare a local disaster management plan
4. 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
5. 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
6. Manage disaster operations in the area under policies and procedures decided by the State Disaster Management Group
7. Provide reports and make recommendations to the relevant district group about matters relating to disaster operations
8. Identify and co-ordinate the use of resources that may be used for disaster operations in the area
9. 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
10. Ensure information about a disaster in the area is promptly given to the district group
11. Perform other functions given to the group under the Act
12. Perform a function incidental to a function mentioned in paragraphs above.

5.3 Membership

Section 33 of the *Disaster Management Act 2003* states a local group consists of the persons prescribed by regulation to be members of the group. Members of the LDMG have been appointed by the LSC in accordance with s9 of the *Disaster Management Regulation 2014 (the Regulation)*.

In appointing people to the Local Group, Livingstone Shire Council (LSC) has sought to select representatives from those agencies and organisations representing Livingstone Shire who:

1. Have a key role in responding to disaster or emergency situations
2. The qualifications and experience required
3. Manage key assets
4. Provide essential community services
5. Be able to provide deputies and liaison officers to ensure succession planning.



Membership of the Group will be reviewed annually by the Local Disaster Co-ordinator (LDC) in consultation with the Chair of the Group. The Chief Executive of the Department and the Rockhampton District Disaster Co-ordinator (DDC) will be advised of the membership of the Group as per the requirements of s37 of the Act.

In addition to its members, the Local Group may seek the assistance of individuals or organisations as circumstances require. These persons sit as advisors to the group. They will receive copies of the agendas and minutes and can attend and participate in meetings and discussions as required but do not have voting rights on decisions.

5.4 Chair and Deputy Chair

Under s34 of the Act and s10 of the Regulation the LSC appoints a councillor of the LSC as chair of the LDMG. Council has appointed Cr Bill Ludwig, who is the Mayor of the LSC as the chair of the LDMG.

Under the same legislation Council also has to appoint a deputy chair and has appointed Cr Nigel Hutton as the Deputy Chair of the Livingstone Shire LDMG.

5.4.1 Functions of Chair of Local Group

Section 34A of the Act identifies that the chairperson of a local group has the following functions—

- a) To manage and co-ordinate the business of the group;
- b) To ensure, as far as practicable, that the group performs its functions;
- c) To report regularly to the relevant district group, and the chief executive of the department, about the performance by the local group and its functions.

5.5 Local Disaster Co-ordinator

In accordance with section 35 of the Act, the Chair of the LDMG must, after consultation with the Commissioner, Queensland Fire and Emergency Services (QFES), appoint a LDC for the group. A person may only be appointed as a LDC if the Chair is satisfied that the person has the necessary experience or expertise to perform the functions of the LDC.

The LDC is supported by the Deputy Local Disaster Co-ordinator. The Chairperson has appointed the Manager, Community Wellbeing as the Local Disaster Co-ordinator and the Director, Liveability and Wellbeing as the Deputy Local Disaster Co-ordinator.

Section 143(8) states that the LDC may delegate the co-ordinator's functions under s36 to an appropriately qualified person.

Section 143(9) notes appropriately qualified includes having the qualifications, experience or standing appropriate to exercise the power.

5.6 Functions of Local Disaster Co-ordinator

Section 36 of the Act states that the LDC has the following functions:

- a) To co-ordinate disaster operations for the local group;
- b) To report regularly to the local group about disaster operations;
- c) To ensure, as far as practicable, that any strategic decisions of the local group about disaster operations are implemented.



5.7 Members of the Local Group

In undertaking their normal LDMG responsibilities, members should ensure they:

1. Attend LDMG activities with a full knowledge of their agency resources and services and the expectations of their agency
2. Are available and appropriately briefed to actively participate in LDMG activities to ensure that plans, projects and operations use the full potential of their agency or function, while recognising any limitations
3. Are appropriately positioned within their agency to be able to commit agency resources to LDMG normal business activities
4. Have a deputy who is appropriately trained to take on their responsibilities should they be unavailable, or, to provide additional support during extended operations
5. Members must be nominated by their agency on the LDMG membership appointment form
6. Contribute to Disaster Management Planning and reviews of Local Disaster Management Plan, Sub Plans and SOPs
7. Understand the LDMG is made of agencies that share the responsibility
8. Members of the LDMG are to ensure succession planning and nominate a deputy and liaison officer
9. Contribute to the community engagement and operational plan of the LDMG.

LDMG Group members should maintain a state of readiness for activations by:

1. Maintaining current contact registers for LDMG members
2. Maintaining copies of the LDMP and supporting documentation, as appropriate
3. Ensuring resources are available to participate in disaster operations; i.e. access to a laptop, information management templates, operational checklists, telecommunications and human resource provisions
4. Being appropriately positioned within each agency to be able to commit agency resources to LDMG operational activities
5. Participating in disaster management exercises and training opportunities.

In order to be effective during operations, LDMG member administration and activation processes should include:

1. Immediately informing their agency of the LDMG's activation and reinforcing their role as the designated single point of contact between the LDCC and their agency
2. Maintaining a close liaison with all members of the LDMG including participating in briefings/meetings of the LDMG and operating from the LDCC as required
3. When possible, assessing the likelihood of extended operations and the possible need to implement LDMG member relief arrangements
4. Ensuring appropriate agency specific disaster cost management arrangements are established quickly and utilised effectively, including the collation of financial documentation to ensure costs are captured for reimbursement, where eligible.

All members must have undertaken the required training as identified in the Queensland Disaster Management Training Framework.



5.8 Deputy Members of the Local Group

Members of the LDMG are to identify a Deputy who is able to attend local group meetings or take on the duties of the member in their absence or unavailability. A person who is a deputy member should have the necessary expertise and experience to fulfil the role of member of the local group if required.

Deputy Members must be nominated by their agency on the Authorisation to Appoint a Deputy Form. Section 14 of the Regulation identifies that:

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

5.8.1 Members of the Livingstone Local Disaster Management Group

The Livingstone Shire LDMG has recognised that all members have agreed roles and responsibilities.

Membership of the group shall mean and include any person acting in the capacity of an appointed member. As at the time of publication, the Livingstone Shire LDMG members include, but are not limited to the following:

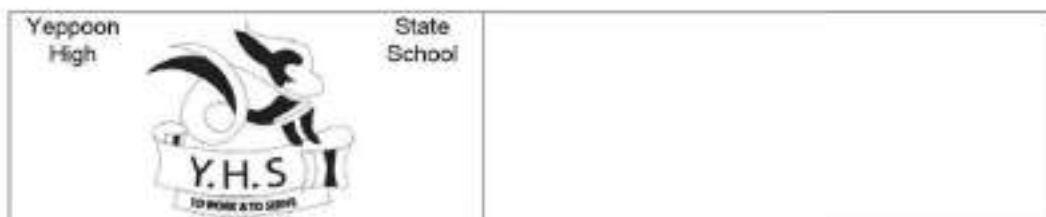
Agency	Responsibility
 LDMG Executive Positions	Chair: Mayor, Livingstone Shire Council Deputy Chair: Deputy Mayor, Livingstone Shire Council Local Disaster Co-ordinator: Manager, Community Wellbeing, Livingstone Shire Council Deputy Local Disaster Co-ordinator: Director, Liveability and Wellbeing, Livingstone Shire Council
	Chief Executive Officer Director Infrastructure Services
 Queensland Police Service	Officer in Charge, Yeppoon Station

	<p>Area Commander - Rural Fire Service</p> <p>Local Controller – SES</p> <p>Capricornia Area Controller – SES</p> <p>Emergency Management Co-ordinator - QFES</p>
 Queensland Ambulance Service	<p>Officer in Charge, Yeppoon Station</p>
 Queensland Health	<p>Emergency Preparedness Manager, Rockhampton Hospital</p>
 Department of Communities, Disability Services and Seniors	<p>Contract and Service Development Officer</p>

 Queensland Government Department of Education and Training	Manager, Infrastructure Services
 Queensland Government Department of Transport and Main Roads	Engineer
	Project Manager - Project Services
 Queensland Government Maritime Safety Queensland	Regional Harbour Master, Gladstone Manager, Port Operations and Projects
 MERCY HEALTH and AGED CARE Central Queensland Limited	Corporate Safety Risk & Compliance Officer
 RACQ CAPRICORN HELICOPTER RESCUE	Executive Director



	TBA
	Deputy Squadron Commodore, Yeppoon
	Regional Operations Manager
	Account Executive
 Department of Agriculture and Fisheries	Manager Strategic Projects and Planning
	Chief of Staff Capricornia
	Business Services Manager



5.9 Sub Committees

Sub committees are responsible for assisting the LDMG to discharge its responsibilities, especially with regard to the preparation or implementation of specific plans. The Chairs of the Sub Committees are advisory members of the LDMG (unless previously identified as a core member) and are required to submit updates of their planning and activities to the LDMG during meetings. The process of the specific threat and/or task can be planned for ahead of the season, limiting the potential for disruptions in the decision making process and to allow for community awareness around the plans to be implemented.

Currently, the Livingstone Shire LDMG has the following sub committees:

1. Bushfire Sub Committee (Fire Management Group)
2. Evacuation Sub Committee
3. Evacuation Centre Management Sub Committee
4. Public Cyclone Shelter Sub Committee
5. Recovery and Resilience Sub Committee including:
 - a. Regional and Economic Development Taskforce
 - b. Environment and Regulatory Taskforce
 - c. Built Environment Taskforce
 - d. Community Development Taskforce.

5.10 Roles and Responsibilities

State government agencies and organisations have designated responsibilities in disasters which reflect their legislated and/or technical capability and authority with respect to hazards, functions and/or activities of disaster management.



This list is not exhaustive; it focuses on the roles and responsibilities. Importantly, this list aims to ensure, from a whole-of-government perspective, that all accountabilities of the State government with respect to disaster management have been addressed.

Note: Roles and Responsibilities are to be regarded as indicative only

Agency	Roles & Responsibilities
 <p>LDMG</p>	<ul style="list-style-type: none"> functions as allocated to the group under s30 of the Act; development of comprehensive local disaster management planning strategies; the development and maintenance of disaster management plans and sub plans; design and maintenance of a public education/awareness program, which is delivered through member agency resources; co-ordination of support to response agencies; reconnaissance and impact assessment; provision of public information prior to, during and following disaster events; recommended areas/locations to be considered for authorised evacuation; public advice regarding voluntary evacuation; identification, resourcing, staffing, management and operation of evacuation centres; provision of locally based community support services; and design, maintenance and operation of the LDCC, including the training of sufficient personnel to operate the centre.
 	<ul style="list-style-type: none"> management, support, policy advice and co-ordination of the business of the Livingstone Shire LDMG and its subgroups; ensure it has a disaster response capability; approve its Local Disaster Management Plan (LDMP); ensure information about an event or a disaster in its area is promptly given to the District Disaster Co-ordinator (DDC); provide Council resources necessary to meet statutory obligations; manage damage assessment on behalf of the LDMG; provide and manage resources to support evacuation centres; ensure business continuity of all Council services during and following event; support the SES in partnership with QFES ; identification, development, maintenance and operation of a LDCC at a primary location and maintenance of alternative locations; identification and delivery of training and staffing required to operate the LDCC; co-ordination of disaster operations by the Local Disaster Co-ordinator (LDC) through the LDCC for the Livingstone Shire LDMG, ensuring that strategic decisions of the Local Group are implemented; co-ordination of immediate community support and recovery needs in conjunction with DCCSDS, including the management and operation of evacuation or temporary relocation centres; assist the community to prepare for, respond to and recover from an event or disaster; issue of public information or warning about disaster situations in accordance with LDMP; provide advice and support to the DDC; development and maintenance of prevention and mitigation strategies such as land use planning and capital works programs; development and maintenance of a co-ordinated disaster response capability; maintenance of Council essential services to the community including: <ul style="list-style-type: none"> animal control; civic leadership; community contact and information provision;

Agency	Roles & Responsibilities
	<ul style="list-style-type: none"> o disaster and emergency management; o environmental protection; o maintenance (including debris clearance) of local roads and bridges; and o public health.
 <p>Queensland Police Service</p>	<ul style="list-style-type: none"> • primary agency for counter-terrorism; • provide management at district level within the Queensland Disaster Management Framework (QDMF); • evacuation co-ordination (including off shore islands) ; • responsible for the evacuation sub plan; • manage the register of evacuated persons in association with the Australian Red Cross; • assist in the management of the Yeppoon Public Cyclone Shelter; • provide information, advice and updates to LDMG as required; • provide liaison officers to the LDCC; • assisting the community to prepare for, respond to and recover from an event or disaster; • preservation of peace and good order; • investigation of criminal activities; • undertake coronial investigations; • prevention of crime; • crowd control/public safety; • traffic control, including assistance with road closures and maintenance of road blocks in consultation with other agencies; • co-ordination of search and rescue; • security of evacuated areas/premises; • issue of "mandatory" evacuation orders; • traffic incidents; • control of incident/impact site/s; • co-ordinate rescue of trapped/stranded persons; • security of specific areas; • control of disaster victim identification and emergency mortuary facilities where required; • tracing of persons; • augmenting emergency communication; • stock control movement; • assistance, on request, with stock and infected material tracing; • assistance with stock destruction; • mass incident response unit; • special emergency response team; • negotiators; • public safety response team; • explosive ordinance response team; • dog squad; • state crime operations command; • security intelligence branch; and • co-ordinate and control search operations.
	<p>QFES - Fire</p> <ul style="list-style-type: none"> • primary agency for bushfire; • primary agency for chemical/hazardous materials related incidents; • assisting the community to prepare for, respond to and recover from an event or disaster;






Agency	Roles & Responsibilities
 <p>Queensland Fire and Emergency Services</p>	<ul style="list-style-type: none"> • fire control and prevention; • specialist urban search and rescue; • specialist rescue – confined space, high angle and swift water rescue; • assist in the management of the Yeppoon Public Cyclone Shelter; • provide information, advice and updates to LDMG as required; • provide liaison officers to the LDCC; • provide impact assessment and intelligence gathering capabilities; • provide logistical and communication support to disasters within capabilities; • provision of advice and communication with the LDC and DDC about the operations of the Incident Command Centre (ICC) and Regional Operations Centre (ROC); • request and provide assistance through the LDCC as required during disaster operations; • rapid damage assessment capabilities; • management of hazardous material situations; • provision of expert advisory services on chemicals and hazardous materials through the Scientific Unit; • development of fire prevention and mitigation strategies and response plans; • provide control, management and pre-incident planning of fires (structural, landscape and transportation); • safety of persons in relation to fire prevention, suppression, response and recovery operations; • advice and directions on public safety/evacuation from fire danger zones; • assisting the community to prepare for, respond to and recover from an event or disaster e.g. public education and awareness programs; • provide rescue capability for persons trapped in any vehicle, vessel, by height or in a confined space; • provide rescue of person/s isolated or entrapped in swift water/flood water events; • assist in pumping out and clean-up of flooded buildings; and • provide mass and technical decontamination capabilities under State Biological Disaster and State Radiological Disaster Response. <p>QFES – Emergency Management</p> <ul style="list-style-type: none"> • assist in the management of the Yeppoon Public Cyclone Shelter; • provide information, advice and updates to LDMG as required; • provide liaison officers to the LDCC; • assist the community to prepare for, respond to and recover from an event or disaster; • development and maintenance of LDCC plans and capacity which is able to be activated for events where QFES is the lead agency including training in AIMS and staffing with sufficient trained personnel to operate the centre; • review, assess and report on the effectiveness of disaster management by the State at all levels, including local plans; • provision of emergency management officers of co-ordination, policy and operational advice, at all levels of the State's disaster management system, including at the local group; • co-ordination of State and Federal assistance for disaster management and operations;

Agency	Roles & Responsibilities
 <p>Queensland Fire and Emergency Services</p>	<ul style="list-style-type: none"> • facilitation of a comprehensive (prevention/preparedness/response/recovery) - all hazards - all agencies approach to disaster management; • perform the following roles and responsibilities in support of disaster operations: <ul style="list-style-type: none"> ◦ operation and maintenance of the State Disaster Co-ordination Centre (SDCC) ◦ manage resupply operations ◦ co-ordinate and manage the deployment of SES across the State ◦ support the deployment of Queensland Corrective Services resources ◦ provision of public information during disaster and emergency situations. <p>SES</p> <ul style="list-style-type: none"> • provide management system for SES volunteers; • assist in the management of the Yeppoon Public Cyclone Shelter; • provide information, advice and updates to LDMG as required; • provide liaison officers to the LDCC; • assist the community to prepare for, respond to and recover from an event or disaster; • search operations for missing persons (QPS to co-ordinate); • provision of emergency lighting; • flood boat operations – search and rescue (QPS to co-ordinate); • tarping damaged roofs; • sandbagging; • chainsaw operations (cutting and removing fallen trees or trees at risk of falling); • support to agencies/services as required; • assistance in community information services; • augment emergency communication; • assistance in traffic control; • perform activities to raise the profile of the SES.
 <p>Queensland Ambulance Service</p>	<ul style="list-style-type: none"> • assist in the management of the Yeppoon Public Cyclone Shelter; • provide information, advice and updates to LDMG as required; • provide liaison officers to the LDCC; • collaborate with Queensland Clinical Co-ordination 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; • collaborate with Queensland Health in mass casualty management systems; • provide disaster, Urban Search and Rescue (USAR), chemical hazard (Hazmat), biological and radiological operations support with specialist logistics and specialist paramedics; • emergency pre-hospital patient care assessment, treatment and transportation of ill and/or injured persons, selection of triage and treatment areas; • co-ordination of all other volunteer first aid groups including QAS first responder groups; • the establishment of an on-site triage/treatment area, casualty clearing and vehicle marshalling areas;

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Agency	Roles & Responsibilities
 <p>Queensland Government</p> <p>Department of Housing and Public Works</p>	<ul style="list-style-type: none"> functional lead agency for Building and Engineering Services; maintain contact registers for: <ul style="list-style-type: none"> professional service providers e.g. engineers (geotechnical, structural, civil) heritage architects, other professional officers and consultants; specialist building contractors, service providers, and suppliers; and building services and trade personnel to support regional based disaster response or recovery operations; co-ordinate 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; co-ordinate 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; co-ordinate temporary leased accommodation for State government agencies and departments; co-ordinate 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 a DDCC or the SDCC within the scope of the Building and Engineering Services function; co-ordinate emergency fleet vehicles; functional lead agency of the Building Recovery Group; the Building Recovery Group co-ordinates the efficient and effective information exchange, issue 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; and provide information, advice and updates to LDMG as required.
 <p>Queensland Government</p> <p>Department of Transport and Main Roads</p>	<ul style="list-style-type: none"> 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; provide information and advice in relation to waterways management; enable an accessible transport system through reinstating road, rail and maritime infrastructure; assist with the safe movement of people as a result of mass evacuation of a disaster affected community; ensure the capability of logistics related industries are appropriately applied to disaster response and recovery activities; advice to road users through 13 19 40 or visit qldtraffic.qld.gov.au; and provide information, advice and updates to LDMG as required.

Agency	Roles & Responsibilities
 Department of Communities, Disability Services and Seniors	<ul style="list-style-type: none"> functional lead agency for the Human and Social Recovery Group; co-ordinate provision of human and social recovery services in partnership with Local, State, Federal and non-government agencies that support locally led recovery operations; work with affected individuals and communities to support their own recovery activities; maintain linkages with Local, State, Federal and non-government agencies and committees; maintain a register of State government officers available to assist in human and social recovery when required; administer relevant human and social recovery SDRA and DRFA relief measures; manage and direct offers of volunteering through Volunteering Queensland; disaster relief assistance funding; and provide information, advice and updates to LDMG as required.
 Energy Queensland	<ul style="list-style-type: none"> maintenance of electrical power supply; advice in relation to electrical power; restoration of power supply; safety advice for consumers; clearance of debris from power lines; power isolation where necessary; provide information, advice and updates to LDMG as required; and provide liaison officers to the LDCC.
 Telstra	<ul style="list-style-type: none"> restoration of Telstra services; advice regarding Telstra infrastructure damage; provision of emergency telecommunication equipment; and provide information, advice and updates to LDMG as required.
 Department of Agriculture and Fisheries	<ul style="list-style-type: none"> co-ordination of resources in exotic animal disease outbreaks; detect source of infection; slaughter and disposal of animals and infective agents; evaluation and compensation; control of movement of animals, animal products, vehicles; disinfection/disinfestation; public advice and information; co-ordination of resupply of livestock feed during events; and provide information, advice and updates to LDMG as required.
 St John Ambulance	<ul style="list-style-type: none"> first aid; assist QAS as required with treatment and transport of injured persons; and provide information, advice and updates to LDMG as required.
 Australian Red Cross	<ul style="list-style-type: none"> support the daily operations and management of evacuation centres; Undertake registration of evacuees in support of QPS utilising Register, Find, Reunite. Provide Psychological first aid and recovery supports and referrals to disaster affected people provide information, advice and updates to LDMG as required.

Agency	Roles & Responsibilities
 Department of Environment and Science	National Parks Management <ul style="list-style-type: none"> all issues within parks camping grounds/facilities (including certain off shore islands); and provide information, advice and updates to LDMG as required.
 Australian Volunteer Coast Guard Association	<ul style="list-style-type: none"> continuation of core business; provide guidance on safe harboring practices; emergency marine radio broadcasting as requested by LDMG; provide information, advice and updates to LDMG as required; prior to severe weather, conduct patrols to warn anchored yachts and campers; after severe weather, compile a list of missing or drifting vessels; following tsunami, conduct offshore patrols; receive land-based emergency calls on VHF radio and forward to LDCC; and maintain coast watch list.
 Department of Education	<ul style="list-style-type: none"> liaison between agency and LDMG regarding school closures, available facilities if identified as needed for evacuation, recovery or sheltering options; support of the operations of the Yeppoon Cyclone Public Shelter; and provide information, advice and updates to LDMG as required.
 Great Barrier Reef Marine Park Authority	<ul style="list-style-type: none"> provision of advice specific to the marine environment; provide information, advice and updates to LDMG as required.
 Queensland Surf Life Saving Queensland	<ul style="list-style-type: none"> provision of additional resources if required and suitable; public notification and advice on beach/sea condition; provide information, advice and updates to LDMG as required; assist in dissemination of warnings; providing of support that enhances capabilities to the local community, specifically in the areas of: <ul style="list-style-type: none"> tsunami response – preparedness, warnings, response and recovery; cyclone and severe storm response – preparedness, warnings, response and recovery; flood response – preparedness, warnings, response and recovery; and other disasters where the LDMG requires assistance – preparedness, warnings, response and recovery; close and evacuate beaches on receipt of warnings in consultation with LDMG; assist in search and rescue from surf zone following impact of tsunami; provision of specialised equipment and personnel if required; and use of facilities if required.



PART 6. LDMG BUSINESS AND MEETINGS

In accordance with s38 of the *Disaster Management Act 2003*, the LDMG must conduct its business, including its meetings, in the way prescribed by regulation. Subject to this regulation, a LDMG may conduct its business, including meetings, in the way it considers appropriate.

Section 12 of the *Disaster Management Regulation 2014* (the Regulation) requires the LDMG to meet at least once in every six (6) months. The Livingstone Shire LDMG has resolved to meet four (4) times per year.

6.1 Meeting Types

Ordinary Meeting – a meeting which is scheduled and convened on a regular basis at an agreed time (set by the Chairperson). Ordinary meetings are used to address the general business of the group.

Extraordinary Meeting – a special meeting convened by the Chairperson in response to an operational event. An event would generate its own meeting file for audit purposes. Meeting minutes, attendance sheets and resolution statements must be included in the event file.

6.2 Conduct of LDMG Meetings

Location: The Hub, 7-9 James Street, Yeppoon
 Duration: typically 2 to 3 hours (normal business)
 Chaired by: Mayor Bill Ludwig, in his absence Deputy Chair Cr Nigel Hutton

A date claimer is sent via email to core, advisory and deputy LDMG members well ahead of the next meeting. If any members intend to propose an agenda item, they email the Secretariat who will confirm its inclusion in consultation with the LDC and Chair. The agenda is drafted and forwarded to the LDC and Chair for approval. It is forwarded with the previous meeting's minutes to LDMG members two weeks before the upcoming meeting.

Minutes of such meetings are maintained in accordance with the requirement of the Act. Copies of the minutes are available on request for members and advisors by contacting the Secretariat of the LDMG.

6.3 Quorum

A quorum is required in order for meeting resolutions to be officiated. LDMG members are required to achieve quorum, which, in accordance with s13 of the Regulation, is equal to one-half of its members holding office plus one, or when one-half of its members is not a whole number, the next highest whole number. For example, if the LDMG comprises Ten (10) members, a meeting is deemed to have achieved quorum if six (6) LDMG members are present.

An attendance sheet is to be completed at the commencement of each LDMG meeting to record member attendance and ensure the meeting has a quorum. This attendance sheet also forms part of the meeting minutes.

If it is anticipated that a scheduled meeting will not achieve quorum, the Chairperson may:

- proceed with the meeting - allow members to participate remotely using technology (see member attendance at meetings below);
- proceed with the meeting - endorse any proposed resolutions via a flying minute (see section 'Flying minute');



- reschedule the meeting - preferred if there are proposed agenda items requiring discussion or endorsement;
- cancel the meeting – whilst not the preferred option, subject to legislative requirements regarding minimum annual meetings the Chairperson may cancel a meeting if the proposed agenda items can be held over until the next scheduled meeting; or
- if the meeting is cancelled or rescheduled, progress the business via a flying minute – this option allows progression of any urgent agenda items whilst not requiring a physical meeting of the LDMG.

6.4 Member attendance at meetings

LDMG's are encouraged under s17 of the Regulation to hold meetings, or allow members of the group to take part in its meetings, by using any technology that reasonably allows members to hear and take part in discussions as they happen. Accordingly, members may attend meetings via teleconference or video conference if appropriate. A member who takes part in a LDMG meeting via teleconference or video conference is taken to be present at the meeting and should be marked on the attendance sheet.

6.5 Member non-attendance at meetings

If a member continually does not attend LDMG meetings it is suggested that the LDMG Executive Team meet with the member to discuss the ongoing non-attendance at LDMG meetings. A formal record of LDMG member attendance should be maintained and this can be used to monitor member attendance across meetings.

A template to monitor progressive meeting attendance is available in *Annexure H - Local Disaster Management Group Forms*.

6.6 Deputy appointment

Section 14 of the Regulation allows a member of a disaster management group, with the approval of the Chairperson, to appoint by signed notice another person or position as their deputy. A template for a member of a LDMG to appoint a person as their deputy is available in *Annexure H – Authorisation to appoint a deputy*.

The deputy may attend a group meeting in the member's absence and exercise the member's functions and powers under the Act at the meeting. A deputy attending a group meeting is to be counted in deciding if there is a quorum for the meeting.

6.7 Flying Minute

Section 16 of the Disaster Management Regulation allows for resolutions to be made by the LDMG, even if not passed at a LDMG meeting, if the majority of members provide written agreement to the resolution and if notice of the resolution is given under procedures approved by the LDMG. A flying minute may be used to progress business of an urgent nature in the instance where convening a meeting of the LDMG is not practicable.

Some guidelines for the use of flying minutes are:

- a flying minute should detail necessary background on the matters being raised and should clearly articulate recommendations for LDMG members' consideration;
- the flying minute should contain a section for members to complete and indicate whether they agree or disagree with the proposed resolution;



- a LDMG Briefing Paper on the issue should accompany the flying minute endorsement schedule, as it provides in-depth information on the matter which is being considered;
- a LDMG Agenda listing the item/s should also be attached;
- as flying minutes are only used for urgent business, they may be conducted via email; and
- proposed resolutions passed by members via a flying minute are to be included for ratification on the next ordinary LDMG meeting agenda.

Templates for LDMG flying minute, LDMG briefing paper and LDMG agenda are available in *Annexure H – Local Disaster Management Group Forms*.

6.8 Reporting

6.8.1 Member Status Reports

Written member status reports on behalf of the member agency are used to update LDMG members on the status of the member agency's disaster management initiatives. This report aligns with the shared responsibility of the IGEM Assurance Framework and includes mitigation, planning and community awareness/education activities, capacity and capability development, projects, disaster management plans, operations and contact information. This information assists the LDMG to evaluate the status of the disaster management and disaster operations for the local government area. Verbal member status reports would be provided at LDMG meetings by exception.

6.8.2 Meeting Minutes

It is a requirement under s18 of the Regulation that a disaster management group keeps minutes of its meetings.

The LDMG meeting minutes should provide a summary of key discussion points and resolutions. It is important to remember that the minutes may be subject to public scrutiny under the *Right to Information Act 2009*.

It should be noted in the meeting minutes whether or not a quorum was established at the meeting. The meeting attendance sheet should then be attached to the back, as it forms part of the meeting minutes as an accurate account of who attended the meeting and whether the meeting had a quorum, thus making any resolutions or decisions valid.

An example of a LDMG meeting Minutes template which could be used for both ordinary and extraordinary meetings is available in *Annexure H – Local Disaster Management Group Forms*.

6.8.3 Resolutions

In order for LDMG meeting resolutions to be validated, it is a requirement under s16 of the Regulation that a majority of members provide written agreement to the resolution. This can occur even if the resolution is not passed at the meeting, i.e. via a flying minute.

In order to ensure that resolution requirements are met, the LDMG can conduct its business in numerous ways:

1. via a meeting where a quorum is achieved
2. meeting resolutions are passed by a majority of members at the meeting
3. resolutions are communicated to members via meeting minutes
4. members are asked to endorse the meeting minutes in writing via email to the LDMG Secretariat (email must be received from the appointed member's email address to be counted towards quorum)
5. via meeting where a quorum is not achieved



6. proposed resolutions are identified at the meeting
7. proposed resolutions are communicated to members via a flying minute
8. members are requested to endorse the flying minute via signature and return to the LDMG Secretariat.

6.8.4 Actions Register

In addition to meeting minutes, the LDMG Secretariat should produce an actions register. The purpose of this document is to provide a running log of actions undertaken and an audit trail through to the acquittal of those actions.

Prior to each ordinary meeting of the LDMG, members will be requested to:

1. review the current actions register (distributed with meeting papers);
2. provide (where applicable) a status update advising of any actions undertaken with regard to the action;
3. capture any actions as a result of discussion outcomes. An action register should be documented. Refer to examples below:
 - a. the LDMG decision in relation to <XYZ> is to <<insert the action required and the responsible position/person/s>>; and
 - b. the LDMG decision is that this matter will be dealt with out-of-session and the LDMG member/s <<XYZ>> will <<insert what the members are required to do>>. The outcome of this action will be reported back to the LDMG at the next meeting.

The action will remain active on the register until such time that it has been acquitted (e.g. all required actions have been undertaken), when completed it will be recorded as completed in the register.

An example of a LDMG Action Register is available in *Annexure H – Local Disaster Management Group Forms*.

6.8.5 Resolutions Register

For governance purposes, a register detailing each resolution passed by the LDMG including necessary details of actions undertaken to acquit the resolution should be kept. This provides an easy reference document and a historical record of LDMG resolution statements.

An example of a LDMG Resolutions Register is available in *Annexure H – Local Disaster Management Group Forms*.

6.8.6 Correspondence Register

In order to assist with tracking of inward and outward LDMG correspondence, it is suggested that a LDMG Correspondence Register is kept. This allows for all members to be aware of any correspondence that concerns the LDMG, and will assist with the information flow and decision making of the LDMG.

6.8.7 Annual Reporting

LDMG's play an integral part in the disaster management of the State and it is important that they have input into the QDMC annual reporting process. LDMGs are required to complete a status report at the end of each financial year and provide the completed report to the relevant DDC. LDMGs may contact the QFES Emergency Management member in the group for advice and assistance in the completion of the status report.

A template for LDMGs to develop a disaster management status report is available in *Annexure H – Local Disaster Management Group Forms*.



The DDMG will compile the DDMG Annual Report by incorporating information provided in the LDMG status reports. The Queensland Disaster Management Committee (QDMC) receives the DDMG Annual Reports at the end of July each year. The reports are then reviewed to ensure disaster management groups are meeting their legislative requirements, and incorporated into the QDMC annual reporting process. The QDMC is required under s44 of the *Disaster Management Act 2003* to prepare an annual report about disaster management in the State following each financial year.

QDMC Annual Reports are publicly available at www.disaster.qld.gov.au and in *Annexure H – Local Disaster Management Group Forms*.

6.8.8 Records Maintenance

Records management is an activity targeting preservation of evidence of actions, decisions and important communications by creating, keeping and maintaining records of these actions, decisions and communications. Public records are protected by the *Public Records Act 2002* and maybe subjected to public scrutiny under the *Right to Information Act 2009*.

A public record is a file providing evidence of actions, decisions, activities and functions of a disaster management group. This can include internal or external correspondence including letters, emails, memos, reports, minutes, agendas, complaints, contact with the community, other agencies etcetera. LDMGs must ensure that these records are complete, authentic, reliable, inviolate and usable.

The LDMG must comply with the legal, evidentiary and financial requirements (including lawful and accountable disposal of records) when managing LDMG records. The Queensland State Archives General Retention and Disposal Schedule for Administrative Records outlines the requirements for retaining documents in accordance with the *Public Records Act 2002*.

The schedule and further information for LDMGs, including managing records during disaster events, can be obtained at www.archives.qld.gov.au in the section "Services to Government".

6.8.9 Letterhead

As LDMG business is conducted on behalf of the relevant local government or combined local governments, the relevant local government letterhead and logos should be used for all LDMG business.

The typical reporting requirements for the LDMG are:

1. contact details and membership information;
2. meeting minutes and their distribution to LDMG members;
3. status reports LDMG to DDMG;
4. annual submission of membership of the LDMG to the DDMG; and
5. maintenance of training and exercise registers.

The LDC is responsible for the administrative responsibilities of the LDMG.



PART 7. DISASTER RISK ASSESSMENT

7.1 Community Context

The Livingstone Shire Council is situated in the Central Queensland region and has an area of 11,780 square kilometres. The Shire is bordered by Isaac Regional Council to the north, Central Highlands to the west, and Rockhampton Regional Council to the south-west.

The region consists of diverse topographical areas including significant rural, coastal and inland plains to natural and cultivated forests and offshore islands (some of which are populated). There are two main urban centres including Yeppoon and Emu Park.



Figure 1: Livingstone Shire Council

7.2 Terrain

The topography of Livingstone Shire is clearly marked by the islands of Keppel Bay and the Keppel Group of islands to the east, plus small inshore islands south of Bluff Point. Coastal headlands and associated hills of Spring Head, Coast Range, Wreck Point, Wave Point, Double Head, Bluff Point, Tanby Point, Ritamada Point, Emu Point, and a group of small headlands (Rocky Point, Arthurs Point, Zilzie Point and Coconut Point). Mangrove lined creeks and wetlands are prevalent at Corio Bay, Fishing Creek, Yeppoon, Shoalwater Bay, Cawarral Creek, and major mountain peaks of Gai-i, Constitution Hill, Baga, Mt Chalmers and the Berserker Range to the south west. The Ross Range behind Keppel Sands, the Tanby Range behind Lammemoor to Kinka Beach, and the Coast Range extending north east from the coastline at Yeppoon. Mt Barmoya, Grays Hill and Mt Lizard to the north-west, and a series of isolated peaks west of Yeppoon, in the Limestone Creek Valley.



7.3 Climate

Livingstone Shire is situated in close proximity to the Tropic of Capricorn and experiences two seasons – wet and dry with the wet season spanning from December to February.

The regions climate may be classified as subtropical. Average annual rainfall is approximately 630mm per year.

Table 1: Average daily temperature range varies depending on the season

	Summer/wet Season		Winter/dry Season	
	Min	Max	Min	Max
Inland	22	32	9	23
Coastal	23	30	12	27

7.4 Population and Settlement

7.4.1 Main Centres

Yeppoon (23.08S – 150.44E) – is a well known beachside town on the Capricorn Coast bounded by the Pacific Ocean, approximately 40 km north east of Rockhampton and is accessible via Yeppoon Road (east-west) and the Scenic Highway to Emu Park (north-south). It is a modern town which provides service facilities and all tourist requirements. The coastline is protected by the Great Barrier Reef and the Keppel Bay Islands. The Capricorn Coast has some of the most picturesque and safe swimming beaches in Australia.

It is the primary urban centre for coastal communities. Once a small centre for pineapple growers and sugar cane farmers, Yeppoon has developed into a popular tourist destination surrounded by attractive beaches and is within easy reach of the Keppel Isles including Great Keppel Island.

Emu Park (23.16S – 150.50E) – is a seaside town approximately 20km south of Yeppoon and 45km north east of Rockhampton. It is a popular tourist destination usually visited by travellers passing through on the circular scenic route from Rockhampton to Yeppoon. It is accessible via Emu Park Road (east to west) and the Scenic Highway to Yeppoon (north to south).

7.4.2 Community Snapshots

The community snapshots provide an overview of the localities, of Livingstone Shire Council, from a human social, disaster management perspective. The initiative's primary purpose is to gain a greater understanding of the communities, their perception of the relevant hazards, and their recovery and preparedness statuses. This insight is then translated into identified strengths, vulnerabilities and potential opportunities for further activities, to assist the communities build their resilience and to prepare, respond and recover from future events. The snapshots have asked, through proactive community engagement activities, members from within those localities for information and a description of their community. The snapshots identify:

- and connect with community champions (key contacts)
- and connect with key networks and groups (community and sporting, formal and informal, and services)
- the population's demographics (industry, employment, age etc)
- key community assets of significance to the community (parks, halls, emergency service facilities, showgrounds, schools, aged care facilities etc)



- key infrastructure – road networks, utilities, communication networks
- how the community communicates and receives information
- what and where the community accesses services
- natural and non-natural vulnerabilities
- local trends, issues and barriers

Key contacts, individuals connected to/within their communities, with a good community network and understanding of their community, have been identified through this process. Their contact details are maintained within the snapshots, and these individuals are able to provide or ground truth information to the Local Disaster Co-ordination Centre/ Local Disaster Management Group on what is happening within that community.

The snapshots can be referred to when carrying out the natural hazard risk assessment, and in identifying actions that are appropriate to each locality. The snapshots will assist to tailor preparedness messaging and education, while this initial mapping work can inform the development of a Community Plan.

7.4.3 Demography

The following statistics are based on the Queensland Regional Profiles: Resident Profile for Livingstone Shire, Government Statistician, Queensland Treasury and Trade using the latest demographic, social and economic data available from the 2016 Census.

7.4.3.1 Population

The estimated resident population of Livingstone is 37,055 persons as at 30 June 2016 (Table 2) with an average annual growth rate of 2.4 % over 15 years compared to Queensland's 2.1%. The estimated projected population of Livingstone Shire by 2036 is 57 042 indicating an average annual growth rate of 2.2% compared to Queensland's 1.6% Population growth will have implications for disaster risk management for the Livingstone Shire. The Disaster Management unit will monitor population change and consider associated risks and required responses as part of its overall approach to the safety of the region.

Table 2: Estimated resident population, Livingstone Shire LGA and Queensland

LGA / State	As at 30 June				Average annual growth rate	
	2001	2006	2011	2016pr	2001-2016pr	2011-2016pr
	— number —				— % —	
Livingstone (S)	25,883	29,543	33,364	37,055	2.4	2.1
Queensland	3,571,469	4,007,992	4,476,778	4,848,677	2.1	1.6

Source: ABS 3218.0, Regional Population Growth, Australia, various editions

7.4.3.2 Age

The median age of the population of Livingstone Shire Council is 41.9 years old. This is almost a 3 year increase over 10 years (Table 3) which could be attributed to the largest group of residents being within the 45-64 year old age group or a decrease in the number of 15-24 and 25-44 year olds remaining in the region. The 2016 census data highlights a significant increase in those residents aged 65 and over most likely due to retirees choosing to move to the coast. Looking at the region by locality, Zillie Bay and Emu Park have the oldest populations which supports this assumption.



Table 3: Estimated resident population by age, Livingstone Shire LGA and Queensland, 30 June 2016

Age group	As at 30 June								Average annual growth rate 2001 to 2016pr
	2001		2006		2011		2016pr		
	number	%	number	%	number	%	number	%	
Livingstone (B)									
0-14 years	5,744	22.2	6,214	21.0	6,595	19.7	7,162	19.3	1.5
15-24 years	3,268	12.6	3,875	12.1	4,101	12.3	4,366	11.8	1.8
25-44 years	6,991	26.9	7,335	24.8	7,825	23.4	8,690	23.2	1.4
45-64 years	6,741	26.1	8,491	28.7	9,958	29.8	10,662	28.7	3.1
65 years and over	3,140	12.2	3,932	13.3	4,919	14.7	6,306	17.0	4.7
Total	25,863	100.0	29,543	100.0	33,394	100.0	37,035	100.0	2.4
Queensland									
0-14 years	750,692	21.3	817,979	20.4	891,838	19.9	954,598	19.7	1.5
15-24 years	500,770	14.0	564,584	14.1	624,631	14.0	640,335	13.4	1.7
25-44 years	1,063,529	28.8	1,145,736	28.6	1,265,565	28.3	1,334,804	27.5	1.5
45-64 years	830,762	23.3	994,777	24.5	1,114,988	24.9	1,186,387	24.7	2.5
65 years and over	415,805	11.6	495,016	12.1	579,758	13.0	713,653	14.7	3.7
Total	3,571,469	100.0	4,007,992	100.0	4,476,779	100.0	4,848,677	100.0	2.1

Source: ABS 3235.0, Population by Age and Sex, Regions of Australia

7.4.3.3 Migration Rates

Within the last year 14.7% of the community (Table 4) were living somewhere else, whether still within Queensland, Australia or overseas. Five years ago, 39.6% of the population participating in the 2016 census were living outside of the LSC region (Table 5). Therefore there is a risk of new residents not being aware of the hazards posed in the region and how to prepare. This is further exacerbated if residents have previously lived in a different climate and environment for example the United Kingdom.

Table 4: Place of usual residence one year ago^(a), Livingstone Shire LGA and Queensland, 2016

LGA / State	Same address	Different address				Proportion with different address	Total persons ^(b)
		Within Queensland	Rest of Australia	Overseas	Total ^(c)		
	number	number	number	number	number	%	number
Livingstone (B)	26,865	4,881	368	147	5,294	14.7	35,918
Queensland	3,423,999	655,524	77,129	86,975	813,045	17.5	4,848,722

(a) Based on persons aged one year and over.

(b) Includes persons who stated that they were usually resident at a different address 1 year ago but did not state that address.

(c) Includes persons who did not state whether they were usually resident at a different address 1 year ago.

Source: ABS, Census of Population and Housing, 2016, General Community Profile - G41

Table 5: Place of usual residence five years ago^(a), Livingstone Shire LGA and Queensland, 2016

LGA / State	Same address	Different address				Proportion with different address	Total persons ^(c)
		Within Queensland	Rest of Australia	Overseas	Total ^(b)		
	number	— number —				%	number
Livingstone (S)	16,996	11,588	1,260	557	13,574	39.6	34,236
Queensland	2,118,153	1,455,714	220,316	228,095	1,942,625	44.1	4,406,728

(a) Based on persons aged five years and over.

(b) Includes persons who stated that they were usually resident at a different address 5 years ago but did not state that address.

(c) Includes persons who did not state whether they were usually resident at a different address 5 years ago.

Source: ABS, Census of Population and Housing, 2016, General Community Profile - G42

7.4.3.4 Cultural Characteristics

Livingstone Shire is a multicultural community. According to the 2016 Census 4.4% of the population are of Aboriginal and/or Torres Strait Islander descent (Table 6). Furthermore 10.1% of residents were born overseas (Table 7). This creates potential issues with communicating warnings and notifications due to language barriers. The top non-English speaking backgrounds and the percentage of the population they represent in Livingstone Shire are:

1. Germany 0.4%
2. Philippines 0.4%
3. Netherlands 0.2%
4. Thailand 0.2%
5. Papua New Guinea 0.1%

Additionally, 1.9% of the population speaks another language at home and speaks English not well or not at all, again adding to the difficulties of disseminating public information (Table 8).

Table 6: Indigenous status, Livingstone Shire LGA and Queensland, 2006-2016

Indigenous status	Census year						Total change	
	2006		2011		2016		2006-2016	
	number	%	number	%	number	%	number	%
Livingstone (S)								
Aboriginal and/or Torres Strait Islander ^(a)	672	3.4	1,109	3.4	1,657	4.4	985	65.3
Non-Indigenous	26,249	93.9	29,513	90.6	31,690	87.4	5,441	20.7
Indigenous status not stated	1,645	5.7	1,941	6.0	2,977	8.2	1,332	81.0
Total	28,666	100.0	32,563	100.0	36,272	100.0	7,404	25.6
Queensland								
Aboriginal and/or Torres Strait Islander ^(a)	127,581	3.3	193,826	3.6	186,482	4.0	58,901	46.2
Non-Indigenous	3,652,046	94.0	5,952,704	91.2	4,211,030	89.5	659,076	18.6
Indigenous status not stated	224,509	5.8	224,205	5.2	305,685	6.5	80,776	35.9
Total	3,904,137	100.0	4,332,737	100.0	4,703,193	100.0	794,662	20.5

(a) Comprises persons who identified themselves as being of 'Aboriginal', 'Torres Strait Islander' or 'Both Aboriginal and Torres Strait Islander' origin.

Source: ABS, Census of Population and Housing, 2016, Time Series Profile - T06



Table 7: Country of birth, Livingstone Shire LGA and Queensland, 2016

LGA / State	Born in Australia ^(a)		Born overseas						Total persons ^(d)
			Born in ESD countries ^(b)		Born in NESD countries ^(c)		Total ^(e)		
	number	%	number	%	number	%	number	%	
Livingstone (S)	29,404	81.1	2,513	6.9	1,138	3.1	3,651	10.1	36,272
Queensland	3,343,819	71.1	499,098	10.5	522,810	11.1	1,015,675	21.6	4,703,193

Refer to explanatory notes for additional information.

(a) Includes 'Australia, (includes External Territories), nfr, Norfolk Island' and 'Australian External Territories, nfr' responses.

(b) Based on the main English speaking countries of UK, Ireland, Canada, USA, South Africa and New Zealand.

(c) Includes countries not identified individually, 'Inadequately described' and 'At sea' responses.

(d) Includes not stated responses.

Source: ABS, Census of Population and Housing, 2016, General Community Profile - G01 and G09

Table 8: Proficiency in spoken English or overseas-born persons, Livingstone Shire LGA and Queensland, 2016

LGA / State	Speaks English only		Speaks other language at home and speaks English				Total		Persons ^(a)
	number	%	number	%	number	%	number	%	
Livingstone (S)	31,925	88.0	906	2.5	89	0.2	995	2.7	36,272
Queensland	3,820,632	81.2	480,526	10.2	83,676	1.8	564,196	12.0	4,703,193

Refer to explanatory notes for additional information.

(a) Includes the categories 'Proficiency in English not stated' and 'Language and proficiency in English not stated'.

Source: ABS, Census of Population and Housing, 2016, General Community Profile - G13

7.4.3.5 Economy

The median income for Livingstone Shire residents is \$32,136 (Table 9) with a majority of the residents (29.2%) earning less than \$20,800 per year. Furthermore, December 2017 quarter figures reveal a total 5.8% of the residents are unemployed. Limited access to resources can have impacts on a household's ability to prepare and recover from a disaster. This could mean greater reliance on local government and not-for-profit organisations for support in an event.

Table 9 Total personal income, Livingstone Shire LGA and Queensland, 2016

LGA / State	Less than \$20,800 per year		\$20,800 to \$51,999 per year		\$52,000 to \$103,999 per year		\$104,000 or more per year		Total ^(a)	Median (\$/year)
	number	%	number	%	number	%	number	%		
Livingstone (S)	8,560	23.2	8,913	23.3	5,323	10.1	2,295	7.2	25,418	32,136
Queensland	1,074,583	25.4	1,249,382	33.0	841,717	22.2	269,288	7.1	3,790,497	34,320

Refer to explanatory notes for additional information.

(a) Includes personal income not stated.

Source: ABS, Census of Population and Housing, 2016, General Community Profile - G02 and G17



Table 10: Employment by industry, Livingstone Shire LGA and Queensland, Livingstone Shire LGA and Queensland, 2016

Industry	Livingstone (S) LGA		Queensland		Specialisation ratio
	number	%	number	%	number
Agriculture, forestry and fishing	627	4.1	80,808	2.8	1.43
Mining	1,483	9.5	49,997	2.3	4.05
Manufacturing	571	3.7	128,787	6.0	0.61
Electricity, gas, water and waste services	309	2.0	23,883	1.1	1.79
Construction	1,499	9.7	191,338	9.0	1.09
Wholesale trade	361	2.3	55,370	2.6	0.89
Retail trade	1,500	9.7	211,776	9.9	0.98
Accommodation and food services	1,125	7.3	156,670	7.3	0.99
Transport, postal and warehousing	613	4.0	108,083	5.1	0.79
Information media and telecommunications	92	0.6	25,285	1.2	0.50
Financial and insurance services	203	1.3	54,296	2.5	0.52
Rental, hiring and real estate services	252	1.6	42,500	2.0	0.82
Professional, scientific and technical services	562	3.6	133,682	6.3	0.57
Administrative and support services	479	3.1	75,336	3.5	0.88
Public administration and safety	888	5.4	140,164	6.6	0.97
Education and training	1,676	10.9	192,143	9.0	1.21
Health care and social assistance	1,757	11.4	276,945	13.0	0.88
Arts and recreation services	170	1.1	33,667	1.6	0.70
Other services	555	4.2	83,470	3.9	1.09
Total ^(a)	15,425	100.0	2,136,455	100.0	1.00

Refer to explanatory notes for additional information.

(a) Includes inadequately described and not stated responses.

Source: ABS, Census of Population and Housing, 2016, General Community Profile - Q51 and unpublished data

PART 8. COMMUNITY CAPACITY

8.1 LDMG Capacity

During disaster events the Livingstone Shire Local Disaster Management Group has a response and recovery capability, which includes:

- Livingstone Shire Council, which employs approximately 369 personnel including:
 - A Disaster Management Unit.
- Emergency services, which maintain stations within the region:
 - Queensland Police Service;
 - Queensland Ambulance Service; and
 - Queensland Fire and Emergency Services.
- Emergency services volunteers, including:
 - Rural Fire Service brigades.
 - State Emergency Service, with seven operational groups located across the region
 - Emu Park;
 - Great Keppel Island;



- Keppel Sands;
- Marlborough;
- Stanage Bay;
- Yaamba; and
- Yeppoon.
- Coast Guard, with three operational groups including:
 - Yeppoon (QF 11);
 - Keppel Sands (QF 20); and
 - Stanage Bay - Thirsty Sound (QF 24).
- Surf Life Saving Queensland
 - Yeppoon SLSC
 - Emu Park SLSC
- Queensland Government departments:
 - Department of Transport and Main Roads
 - Department of Communities, Disability Services and Seniors
 - Queensland Parks and Wildlife Service.
- Other agencies that contribute to the regions disaster management arrangements, including:
 - Livingstone Shire Council;
 - Optus;
 - Telstra;
 - Central Queensland University; and
 - Energy Queensland.
- Numerous community service organisations that contribute to the city's disaster management arrangements, including:
 - Australian Red Cross;
 - Lifeline;
 - ADRA – Adventist Disaster and Relief Agency;
 - Salvation Army;
 - St Vincent de Paul Society;
 - Service clubs;
 - Culturally and linguistically diverse community organisations;
 - Centacare;
 - Blue Care;
 - Home Support; and
 - Meals on Wheels.

8.1.1 Critical Lifelines/Infrastructure

8.1.1.1 Road Network

The main roads in Livingstone Shire are the Bruce Highway from Glenlee to the north boundary, Yeppoon Road and Emu Park Road which are the main access routes to Yeppoon and Emu Park from Rockhampton. Secondary roads are:

- Stanage Bay Road
- Byfield Road
- Keppel Sands Road
- Scenic Highway
- Cawarral Road



- Tanby Road
- Cooroman Creek Road
- Panorama Drive

These roads link smaller catchment communities to the main centres of Yeppoon and Emu Park. The predominant threats to the roads in LS are large or multi-vehicle accidents and high rainfall events causing flash flooding.

8.1.1.2 Water

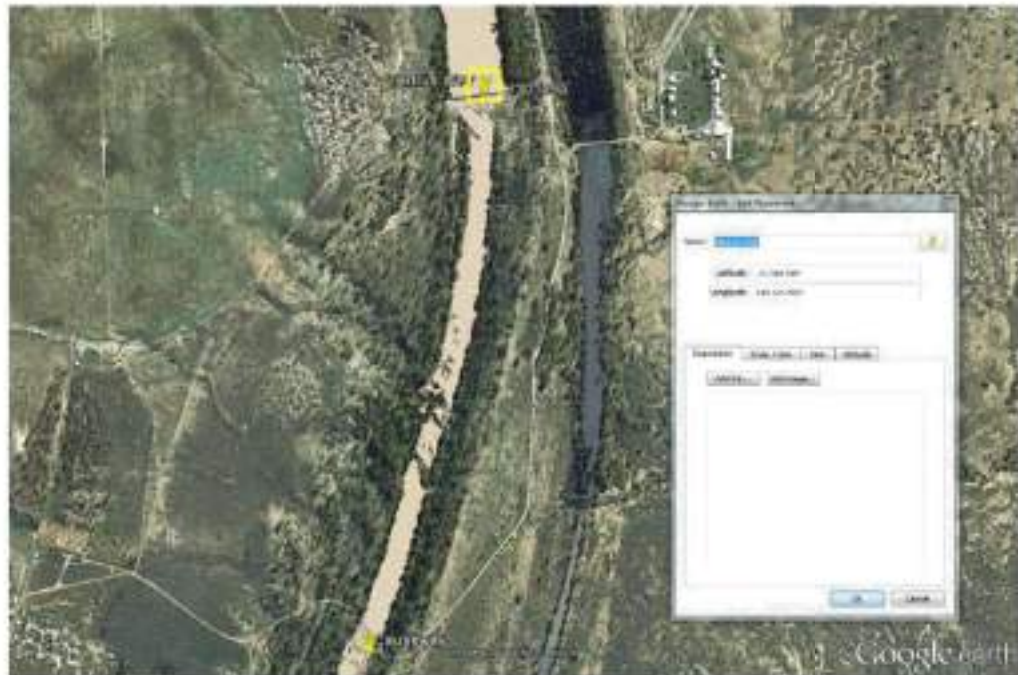
In the Livingstone Shire, the primary water supply is sourced from Waterpark Creek. A network of interconnecting pipes carries water from the source to the reservoirs for treatment before being pumped to homes and businesses. Properties outside of the water network rely on rain water tanks or carters. The secondary, contingency supply is from the Boundary Reservoir located on the the Rockhampton Yeppoon Road. A contract exists between LSC and Fitzroy River Water regarding the conditions of supply. Fitzroy River Water (FRW) is responsible to ensure the reservoir is full and supplying a minimum of 3ML a day. LSC is responsible for the pipelines and connections from the reservoir. In a situation that disrupted the supply from the primary source, there is the ability to increase the amount sourced from the secondary.

8.1.1.3 Controlled Dams and Weirs

One controlled dam exists in the Livingstone Shire, Kelly's Offstream Storage. This dam has a separate Emergency Action Plan.

Tartus Dam is located downstream of the convergence of the Upper Mackenzie River and the Isaac River. It is an ogee-crested mass concrete weir that stores 12,000ML at full supply level 81.75 ML. It's outlet works consist of a 1200mm diameter reinforced concrete pipe controlled by a circular penstock gate. This river section covers the ponded area of the storage formed by the Tartus Weir on the Mackenzie River downstream to the junction of Springton Creek.

BoM's peak height is 18.29m local datum (76.08m offset). The major flood level is 15m.



8.1.1.4 Sewerage

LSC provides sewerage treatment to a majority of residents. During a disaster event involving high rainfall, the sewerage treatment plants can experience higher levels of effluent than normal. Additionally there is the risk of power outages during any type of event. The sewerage treatment plants can be without power for 12-24 hours before there is a major issue. Residents not within the sewerage network have septic tanks which they are responsible for maintaining.

8.1.1.5 Power

The electricity is supplied by Energy Queensland via their infrastructure of above and below ground lines. Historically there have been power outages during events to up to 5000 customers but these were resolved within 12 hours as an Energy Queensland depot is located 40km away in Rockhampton, which allows for a quick response time.

8.1.1.6 Supplies

The transportation of supplies in LS is mainly via road. In a disaster, there is a chance this mode of transport could be disrupted for an extended period of time. This could be due to an event within LSC boundaries or one in another region, for example, 2010 - 11 floods in Rockhampton that cut the Bruce Highway for almost three weeks. In the event that something similar occurs again, supplies could be sourced from the north if the Bruce Highway is not cut at Alligator Creek, by sea through Gladstone Port to Rosslyn Bay or by air.



8.1.1.7 Fuel Storage, Ice and Gas Supplies

Yeppoon

- BP – 7 Fairfax Court, Hidden Valley;
- Lammermoor Convenience Service Station – 150 Scenic Highway, Lammermoor;
- Puma – 21A-23A Park Street, Yeppoon;
- Shell – 6 Burnett Street, Yeppoon; and
- Caltex Woolworths Yeppoon, 2 Hosklyn Drive, Hidden Valley

Rosslyn Bay

- Caltex – Vin E Jones Memorial Drive, Rosslyn.

Yeppoon Road

- Caltex (The Oaks) – 2050 Yeppoon Road, Bondoola.

Marlborough

- Puma Marlborough – 71209 Bruce Highway, Marlborough; and
- Caltex – 12 Perkins Road, Marlborough.

Byfield

- Byfield Store – 2234 Byfield Road, Byfield.

Emu Park

- Puma – Corner Connor and Hartley Street, Emu Park; and
- Caltex – 38 Patterson Street, Emu Park.

8.1.1.8 Queensland Police Service

The QPS maintain an operational presence throughout the Shire including:

- Yeppoon Police Station - located at 17-23 Normanby Street, Yeppoon.
 - This police station's front counter operates from 8am to 4pm and is a 24 Hour Patrol station meaning that there is a car crew to attend jobs 24 hours a day. Yeppoon Police station also house Yeppoon Criminal Investigation Branch;
- Emu Park station is located in Pattison Street, Emu Park.
 - a 4 officer station with officers working on an 'on-call' basis outside of roster times;
- Yeppoon Water Police is located at John Howes Drive, Rosslyn Bay with
 - 4 officers allocated to Yeppoon Water Police work on an 'on call' basis outside of roster times; and
- Marlborough Station is located at Milman Street, Marlborough.
 - a 1 officer station with this officer working on an 'on-Call' basis outside of roster times.

8.1.1.9 Queensland Fire and Emergency Services

Rural Fire Brigades within Livingstone Shire Council consist of:

Brigade	Total members	Slip-ons and Trailers	Total Appliances
Adelaide Park	39	2	1
Barmoya	15	5	
Belmont	42	1	2
Bondoola	31	2	2



Bungundarra	31	1	1
Byfield	59	5	1
Cawarral	60	7	3
Cooberie	17		2
Coowonga	37	2	1
Hidden Valley	29	3	1
Keppel Sands	25		2
Maryvale	59	2	1
Nankin	66	3	2
Nerimbera	31	1	1
Stockyard Point	31	1	1
Tanby	39	2	2
The Caves	57		4
Woodbury	21		2

8.1.1.10 Queensland Ambulance Service

The QAS have three stations in the Livingstone Shire. These stations are located at:

- Yeppoon – Located at a joint complex with QFES and SES at 16 McBean St, Yeppoon.
 - manned 24 hours with 3 shifts. The station services area is Byfield in the north, the causeway in the south, Cawarral in the west and the island groups to the East. Paramedics response capabilities also include crew of the Coast Guard and Police vessels when requested;
- Emu Park – Located in Hartley St, Emu Park.
 - capability of 24 hours a day 7 days a week with back up from Rockhampton or Yeppoon when required. Response is to The Causeway in the north to Keppel Sands in the west; and
- Marlborough – Located at 25 Milman Street, Marlborough.
 - capability of 24 hours a day 7 days a week with back up from Carmila in the north and North Rockhampton to the south. Response area is to St. Lawrence in the north to Stanage Bay in the east, to Princhester in the south and the old Sarina highway in the east.

8.1.1.11 RACQ Capricorn Helicopter Rescue Service

Support for medical evacuations is provided by RACQ Capricorn helicopter which is a Bell 412EP. This helicopter is an American enhanced twin engine machine equipped with a dual digital automatic flight control system. The Bell 412EP can be configured to have five seats and one stretcher position or three seats and two stretcher positions in the cabin.

The helicopter is equipped with:

- 2 person hoist enabling removal of injured or isolated persons or the insertion of other personnel into difficult to get to areas;
- trakka searchlight consisting of a variable width beam (4-13 degrees), 22,500 lumens (approx. 30M candlepower). Will light up a 76M diameter area at 1km distance at 40% of peak illuminance;
- sling capability of around 800kg payload – all pilots are sling endorsed. Ability to deliver relief supplies or equipment into areas where accessibility is difficult. Normal sling rigging as if for crane lift is all that is required for load; and
- night vision goggle equipped for night/low visibility use – eg dark nights, searches etcetera
- fixed and hand held homing devices for locating distress beacons.



8.1.1.12 Hospitals

The Capricorn Coast Hospital and Health Service is based in Yeppoon at 8 Hoskins Drive. The public hospital serves a region that spans 150 kilometres from end to end, which is approximately 25,000 people. Its services include:

- capacity for 28 beds;
- 24 hour emergency medical services;
- acute inpatient services;
- rehabilitation inpatient services;
- palliative inpatient services;
- women and family health programs;
- midwifery services; including antenatal clinics and classes, postnatal home visiting, breast feeding and parenting support, neonatal and hearing screening;
- obstetric clinics;
- child health services; including child development clinics, home visiting and parenting programs;
- paediatric clinics;
- school services; immunisation programs;
- hospital avoidance and subacute care in the community; including nursing assessments and care management, medical aids provision, carer support, hospital discharge planning and ongoing support groups;
- cardiac rehabilitation programs;
- social work support and counselling services;
- indigenous health services; including health assessment and care support, immunisation and hearing screening programs and health promotion;
- allied health programs; including speech, occupational therapy, physiotherapy, podiatry, psychology and dietetic services;
- mental health programs; including adult community and child and youth mental health services;
- alcohol, tobacco and other drugs service; including prevention, early identification and intervention harm minimisation and opiate treatment programs;
- general practitioner clinic; and
- radiological services including USS and CT scanning.

8.1.1.13 Medical Centres

- Yeppoon Medical Centre – 19 Hill Street, Yeppoon;
- Yeppoon Family Practice – 48 Normanby Street, Yeppoon;
- Total Health Medical Centre – Shop 11-1 Swordfish Avenue Taranganba and Capricorn Coast Hospital and Health Service – 8 Hoskins Drive;
- James Street Medical Centre – 21 James Street, Yeppoon;
- The Family Practice – 28 Coconut Point Dr, Zilzie; and
- The Family Practice Emu Park – Corner of Hill and William Street, Emu Park.

Note: Some doctors practice out of more than 1 medical centre in the region.

8.1.1.14 Support Agencies

- Centacare – 5/15 James Street, Yeppoon
- Blue Care – 30 Rockhampton Road, Yeppoon
- Home Support – 728 Queens Street, Yeppoon
- Meals on Wheels – Corner of Arthur and John Street, Yeppoon.



8.1.1.15 Aged Care Facilities

- Blue Care Capricorn Gardens Aged Care Facility – 26 Magpie Avenue, Yeppoon
- Capricorn Adventist Retirements Village – 150 Rockhampton Road, Yeppoon
- Sunset Ridge Retirement Village (RSL Care) – 44 Svendsen Road, Zilzie
- Oak Tree Retirement Village – 31 Barnaryee Road, Yeppoon.

8.1.1.16 Pharmacies

Yeppoon has 4 pharmacies;

- Yeppoon Day & Night – 4 James Street, Yeppoon;
- LiveLife Pharmacy – Yeppoon Central – 42 Park Street, Yeppoon;
- LiveLife Pharmacy – Keppel Bay Plaza – 25-64 James Street, Yeppoon; and
- Coeee Bay Pharmacy – Cedar Park Shops - 1 Sword Fish Avenue, Yeppoon.

Emu Park has 2 pharmacies;

- Star Discount Chemist – 4/5, 16 Emu Street, Emu Park.
- Zilzie Guardian Pharmacy – 28 coconut Point Drive, Zilzie.

8.1.1.17 Airfields

There is no commercial airport within the Region. A small airstrip is located at Emu Park and has capability of taking only small light aircrafts.

Name	Emu Park ALA YEMP
GPS location	23 15.3 S 150 48.9 E
Elevation	44ft (13m) AMSL
Runway	16/34
Length	673m
Variation	10E
Runway Type	Natural Grass
Runway Slope	1% slope to S
Runway markings	Cone markers at 30m. Gable markers at 60m
Aircraft suitability	Aircraft not exceeding 2000kg AUW
Windsock	E of Runway approx centre
Facilities	Toilet and water tank
Night Ops	Nil
Hazards	Caution Unfenced - occasional kangaroos or birds. Often crosswind landing/take-off Powerline well S of runway on salt flats. Drain W of runway

8.1.1.18 Sensitive Environments

Within the LS there is 756km squared of protected land made up of National Parks and State Forests. This land contains environmentally significant ecosystems and is popular with residents and visitors to the region.

PART 9. HAZARDS



Building resilience, Business Continuity Planning, community engagement, national disaster resilience strategy.

9.1 Hazard Identification

The hazard descriptions have been taken from the *Natural Hazard Risk Assessment Study 2012* and amended to be LS specific.

9.1.1 Wildfire

Bush and grass fires are uncontrolled fires burning in forest, scrub or grassland vegetation that occur where there is a fuel path of sufficient dryness to be flammable. Landscape features such as aspect, slope, wind strength and vegetation type and concentration along with climatic influences such as wind speed, rainfall, relative humidity and air temperature are contributing factors determining the severity of the hazard.

The wildfire season typically extends from mid-winter to early summer. The greatest danger occurs in the period late winter to mid-spring particularly if there has been a good summer wet season that has produced good grass growth and other fuel followed by a winter of low rainfall and lengthy periods of dry westerly winds.

The main areas of wildfire risk in the region are the urban areas that fringe the bushland areas around the major urban centre of Yeppoon and Emu Park. In the remaining areas, due to its predominately rural nature, there is a threat of wildfires across most of the region.

Bushfires cause damage, injury or loss through the action of one or more of their harm-producing components.

Flames

Exposure to flames is typically only a threat where vegetation or other fuel is allowed to accumulate under, against, or on the exposed building. Similarly, with infrastructure elements, fuel must be present close to the pole, bridge timbers and so on, for it to be affected directly by flames.

Embers

Buildings are at risk from wind-blown sparks and embers that can be carried significant distances from the fire front. Embers can also be propelled at great speed by the strong winds generated by the fire and be of a size large enough to smash unprotected windows.

Sparks and embers can enter buildings through gaps such as open or broken windows, or unlined eaves, thus introducing a source of ignition to the interior of the building. Sparks can start small fires in curtains, carpets and other interior furnishings. These develop rapidly and if not combated, can destroy the building from the inside. Similarly, sparks can lodge in combustible material close to, on the roof of, or even under the building, thus causing exterior fires that can quickly envelop the structure.

Radiant heat

Temperatures close to the fire front can be extreme and are capable of progressively causing heat stress, severe injury and fatalities. Radiant heat can cause the more volatile fuels such as synthetic fabrics, rubber and paper, to ignite at considerable distances from the fire front. It can cause glass to shatter; gas bottles to vent; plastics and fibre-glass to melt; metal to lose its strength; and painted surfaces to blister. Radiant heat is also a significant threat to heat-sensitive power supply and other electronic equipment such as computers and telephone equipment.

Strong winds



Wind speeds in excess of 42 metres per second (m/s) (150 km/h) can be experienced in bushfires. Such winds can cause direct damage, such as un-roofing buildings; it can cause impact damage by propelling debris, including burning debris at a considerable velocity; and can cause trees and power poles to be toppled, especially if the fire has already weakened them.

Proximity to the hazard

It is clear that in measuring the risks posed by bushfire it must be recognised that structures that are some distance from the fire front will be at risk in addition to those that are directly exposed. Ember attack, radiant heat and strong winds, in particular, extend the risk well beyond the fire front.

Smoke

Fire smoke can produce direct physical effects on people, especially those with respiratory illnesses such as asthma or emphysema, as well as psychological effects. It contains high levels of harmful chemicals such as carbon monoxide and dioxin. Stress and anxiety levels in many people can be raised simply by the smell of fire smoke in the air.

Smoke can also reduce visibility to the extent that roads may need to be closed temporarily to prevent accidents. Dense smoke is also capable of acting as an electrical conductor, with the result that high voltage power lines can arc to the ground through the smoke. This can present a significant hazard to people on the ground and as a further source of ignition remote from the fire front. Dense smoke can also reduce the effectiveness of line-of-sight telecommunications, especially UHF and VHF radio.

Prevention

- Livingstone Shire Fire Management Group;
- targeted awareness and education programs;
- reduce bushfire risk in areas subject to ember attack, radiant heat and flame contact through appropriate town planning, design and construction, and monitoring bushfire protection measures in bushfire prone zones;
- utilising statutory powers (e.g. the provisions of the *Queensland Fire and Rescue Act 1990*) in relation to total fire bans, notices, permits and the use of fire risk reduction notices;
- planning developments to be independently safer locations through more rigorous bushfire planning and assessment procedure within the revised planning scheme;
- providing for bushfire risk reduction adjacent to vulnerable assets through fire breaks and other measures that assist in reducing the consequence of bushfire; and
- active prevention via back burning.

Preparedness

- community education and engagement to prepare the community in line with the Go Early policy;
- establish and maintain fire breaks;
- maintenance of fire tanks and fittings;
- maintain current database of location of Council plant and equipment;
- maintain communication interoperability between agencies;
- training of rural fire brigade (to training standard established by QFES);
- reduce fuel hazards;
- hazard reduction (e.g. controlled burns);
- regular clean-up of yards and gardens;
- Livingstone Fire Management Group;
- Livingstone Bushfire Sub Committee;
- Bushfire Sub Plan (reviewed annually); and
- Bushfire hazard mapping.

Response

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- Bushfires responded to as quickly as possible by QFES;
- LSC deploy fire fighting support resources when required;
- issue warnings;
- LDCC and dedicated resources for larger incidents, multi-agency response; and
- LSC Communication Sub Plan.

Recovery

- Community Recovery Plan;
- Recovery Committee (LDMG sub committee);
- Insurance Council of Australia; and
- Local/State/Federal – essential infrastructure restoration.

Past Major Fires

- 2018 Mt Chalmers Fire
- 2018 The Caves Fire
- 2017 Shoalwater Byfield
- 2016 Shoalwater Byfield
- 2016 Mount Chalmers
- 2015 Byfield
- 2009 Across Cawarral, Emu Park, Yeppoon, Keppel Sands
- 2003 Cawarral area.

Areas Affected

The areas most affected are generally the heavily timbered areas, rural residential areas and urban infrastructure.

Recurrence

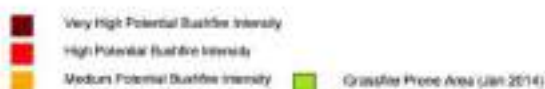
Bushfires may be considered an annual event.

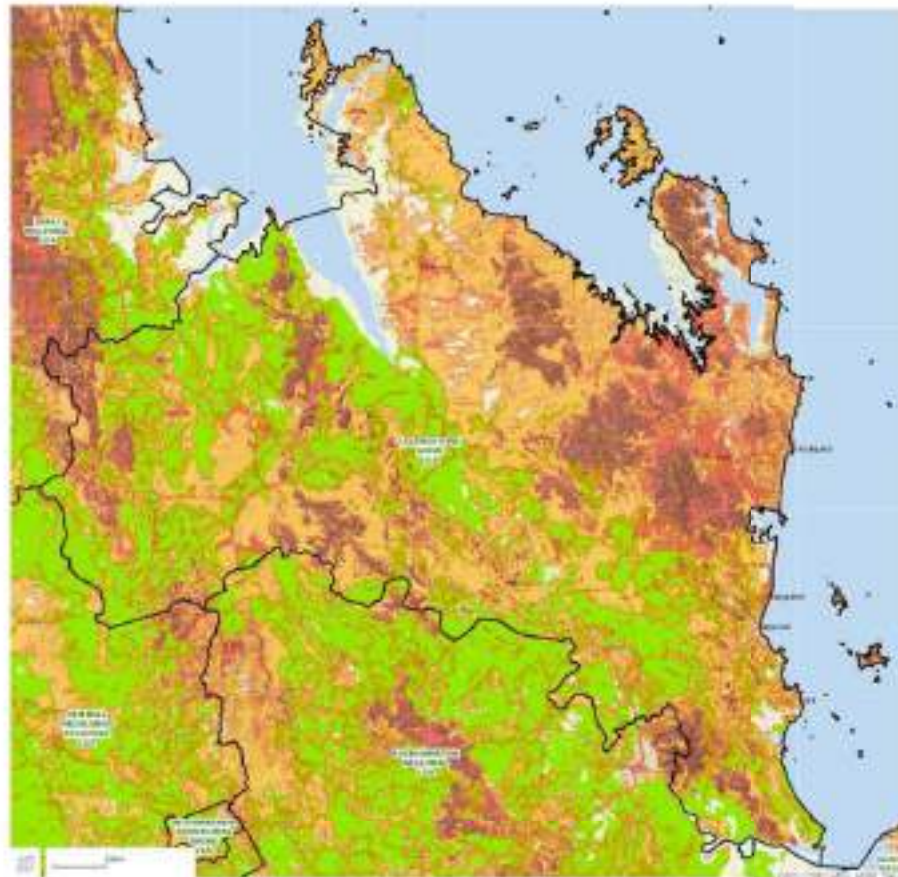
Risk Level

Medium to High – This will vary each season dependent on weather conditions and available fuel. Each year the Livingstone Fire Management Group will produce a Bushfire Mitigation Plan, based on risks due to fuel load.

Mapping

The bushfire threat is greatest in those areas that border high hazard areas and least where the hazard rating is low.





9.1.2 Tropical Cyclones

Tropical cyclones generally occur in Australia between latitude 15° S and 20° S and occur from November to April, with December to March having the greatest incidence. Tropical cyclones generally track down the east coast in a south-easterly direction south of Cooktown. The El Nino and La Nina periods have an effect on the tracks of the tropical cyclones. During La Nina years the systems move closer to the coast and move further south. Tropical cyclones are defined by the World Meteorological Organisation (WMO, 1997) as;

"A non-frontal cyclone of synoptic scale developing over tropical waters and having a definite organised wind circulation with average wind of 34 knots (63 km/h) or more surrounding the centre."

These are very large-scale and intense tropical low-pressure weather systems that form over warm tropical seas, generally during the warmer months between November and April. Typically, they degenerate rapidly into large rain depressions once they cross the coast.

Their destructive capacity is defined by the strength of the winds generated. In Australia there are two measures used – sustained wind (averaged over a ten minute period) and gust (wind speed averaged over three seconds). The Bureau of Meteorology (BoM) web site (www.bom.gov.au/weather/cyclone) contains the following observation relating to cyclone wind speeds:

"Typically gusts over open land will be about 40% greater than the mean wind and gusts over the ocean will be 25 - 30% greater than the mean wind. It is often the stronger gusts that cause the most significant damage to buildings."

While cyclone advice may refer to a certain maximum sustained wind or gust, there will be localised points where the winds will exceed this value, particularly in gullies, about ridges and between buildings where winds can be funnelled by the landscape.

Threshold wind speed velocities are used to define the five-point cyclone intensity scale. This scale, and the wind thresholds employed by the BoM in Australia

CATEGORY	WIND GUSTS	TYPICAL EFFECTS
1	Less Than 125 km/hr	Negligible house damage. Damage to some crops, trees and caravans. Small craft may drag moorings.
2	125 km/hr TO 169 km/hr	Minor house damage. Significant damage to signs, trees, caravans. Heavy damage to crops. Risk of power failure. Small craft may break moorings.
3	170 km/hr TO 224 km/hr	Some roof and structural damage. Some caravan destruction. Power failure likely.
4	225 km/hr TO 279 km/hr	Significant roof loss and structural damage. Caravans destroyed and blown away. Dangerous airborne debris, widespread power failure.
5	More Than 280 km/hr	Extremely dangerous with widespread destruction.

Cyclones of Category three and above are termed 'severe cyclones'.

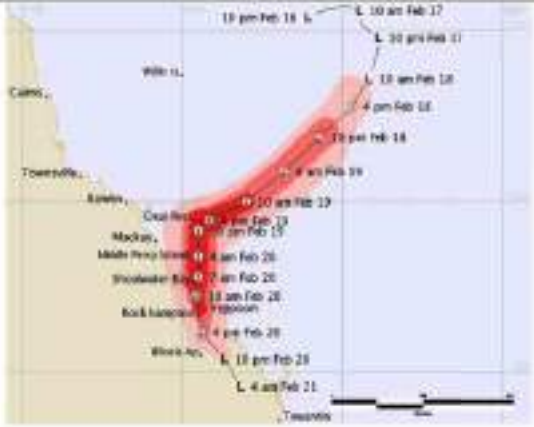
The risk of severe damage in the area is high on the Capricorn Coast, as very strong and destructive winds and flooding arising from associated rainfall can occur. The entire coastal area is at risk including Great Keppel, North Keppel and Pumpkin Islands which are popular tourist destinations. Other smaller islands, offering limited protection, have camping grounds on them that may need evacuation, including Middle, Miall, Conical, Divided, Pelican and Humpy Islands. These destinations may have several thousand tourists between them to be considered as part of the emergency response to cyclonic events.

Cyclonic Event	Impact
Tropical Cyclone David (13 – 19 January 1976)	Tropical Cyclone David crossed the Queensland coast just north of St Lawrence (south of Mackay) on 19 January 1976. It passed over Gannet Cay Automatic Weather Station where a central pressure of 970 hPa was recorded. It was intensifying right up to the time of landfall. A feature was its huge size with gales extending from Papua New Guinea down to Lord Howe Island. It generated huge swells and these combined with large tides caused extensive damage to Heron Island as it passed to the north. Fortunately, it crossed the coast in a sparsely populated area, however winds unroofed 30 buildings in Yeppoon and several in Mt Morgan. Wind gusts reached 95 knots at Pine Islet and 84 knots at Gladstone. Large seas combined with high tides caused

	considerable damage to breakwaters in the Livingstone area, notably the retaining walls and other structures at Rosslyn Bay Harbour in Yeppoon where the Breakwater was destroyed along with yachts and trawlers. Storm tides flooded houses and shops at Urangan, Noosa and Kirra. At wave recording stations the significant wave (peak) height reached 5.8m at Double Island Point and 3.8m at Yeppoon. Tides were up to one metre above predicted levels.
Tropical Cyclone Simon (February 1980)	Tropical Cyclone Simon had a well organised spiralling inflow pattern on both Mackay and Gladstone weather radars as it approached the coast. The central pressure was estimated at 970hPa as it made landfall about 50 km north of Yeppoon on the afternoon of 24 February 1980. However, with the eye half over land the cyclone altered direction and moved back out to sea. For the next two and a half days the cyclone moved southeast about 100 km off the Queensland coast. Simon caused shoreline erosion from Yeppoon to Bundaberg and some minor property damage from Byfield to Gladstone.
Severe Tropical Cyclone Larry (17 – 20 March 2006)	Severe Tropical Cyclone Larry crossed the tropical north Queensland coast near Innisfail during the morning of Monday 20 March 2006. Fortunately, no lives were lost and no serious injuries were reported. However, between Babinda and Tully, damage to infrastructure and crops was extensive with the total estimated loss upwards of \$1.5 billion dollars. At the time, this made Larry the costliest tropical cyclone to ever impact Australia. The region's banana industry, which employs up to 6,000 people suffered extreme losses of crops, accounting for more than 80% of Australia's total banana crop.
Severe Tropical Cyclone Hamish (March 2009)	<p>Severe Tropical Cyclone Hamish threatened to track near a number of offshore Islands, with associated damaging winds, large waves and elevated sea levels off the east coast of Queensland. It followed a steady south-easterly track but did not make landfall. Evacuations of the Whitsunday group of islands, Heron, Lady Elliott and Fraser Island were organised prior to the potential impact of the system. A 4.5 m tide flooded parts of Yeppoon. Damage was estimated to reach \$46 million.</p> <p>The most notable damage caused was environmental. Along the cyclone's 500 km track parallel to the Queensland coastline, the eye passed over a substantial portion of the Great Barrier Reef, resulting in some of the worst damage to the area in recent history. Unlike most cyclones which travel from east to west in the region, impacting only a small area of the reef, Hamish moved along the reef for nearly its entire existence. The BoM estimated that about a quarter of the reef was impacted.</p> <p>According to post-cyclone surveys of the reef, the damage done to the coral was extensive, with upwards of 70% losses in the hardest hit spots. Nearly all of the exposed coral was destroyed by turbulent waters. Some areas were completely stripped of all living tissues, leaving only bare limestone. According to preliminary estimates, it would take the reef between eight and fifteen years to recover from Hamish if nothing hampers growth (Trenerry and Ellery, 2009).</p> <p>The Swain sector of the Great Barrier Reef, once considered one of the most densely coral-populated regions of the reef, was nearly completely destroyed by the storm.</p>

Cyclonic Event	Impact
Severe Tropical Cyclone Yasi (30 January – 3 February 2011)	<p>Severe Tropical Cyclone Yasi began developing as a tropical low north-west of Fiji on 29 January 2011 and started tracking on a general westward track. The system quickly intensified to a cyclone category and on 1 February it was upgraded to a Category 4 cyclone, taking a more west-southwest movement and began to accelerate towards the tropical Queensland coast. Yasi showed signs of further intensification and at 4am on 2 February was upgraded to a marginal Category 5 system. Yasi maintained this intensity and its west-south-west movement, making landfall on the southern tropical coast near Mission Beach after midnight on Thursday 3 February. Being such a strong and large system, Yasi maintained a strong core with damaging winds and heavy rain, tracking westward across northern Queensland and finally weakened to a tropical low near Mount Isa around 10pm on 3 February. Significant wind damage was reported between Innisfail and Townsville where the destructive core of the cyclone crossed the coast. Tully and Cardwell suffered major damage to structures and vegetation with the eye of the cyclone passing over Dunk Island and Tully around midnight on 2 February.</p> <p>The largest rainfall totals were near and to the south of the cyclone and were generally in the order of 200 to 300 mm in the 24 hours to 9am Thursday.</p>
Severe Tropical Cyclone Marcia (15 February to 21 February 2015)	<p>Severe Tropical Cyclone Marcia crossed the coast at Shoalwater Bay (north-northwest of Yeppoon) during the morning of 20th February 2015. Marcia crossed the coast at category 5 intensity in a largely uninhabited area, although significant damage was recorded at Yeppoon and Rockhampton as the system weakened after making landfall.</p> <p>The tropical low that eventually became severe tropical cyclone Marcia was first identified in the Coral Sea on Sunday, February 15th 2015. Marcia was tracked over the next few days as it drifted eastward with little change in intensity.</p> <p>During the afternoon of Wednesday February 18th, the low pressure system reached tropical cyclone intensity and was named Marcia, before beginning to move towards the southwest. Tropical cyclone Marcia continued to intensify during February 18th and was estimated to have reached category 2 intensity by that evening.</p> <p>Thursday, February 19th, saw tropical cyclone Marcia continue on a south-westerly track and undergo a period of extremely rapid intensification, increasing by two categories to a category 4 severe tropical cyclone in approximately 12 hours. This increase in intensity is well above the average rate of intensification for tropical cyclones anywhere in the world.</p> <p>Late on February 19th, Marcia made a sharp turn towards the south and intensified even further, and was estimated to have reached category 5 intensity at 4am on Friday 20th February.</p>

	<p>Prior to landfall in the early hours of February 20th, the automatic weather station on Middle Percy Island recorded a maximum sustained (10 minute average) wind speed of 84 knots (156 km/h) and a maximum wind gust of 112 knots (208 km/h), or the equivalent of a strong category 3 system. This weather station was located to the west of tropical cyclone Marcia's core and would not have experienced the cyclone's maximum winds in its eye-wall.</p>
Cyclonic Event	Impact
Severe Tropical Cyclone Marcia 15 February to 21 February 2015 continued.	<p>At that time, intensity estimates inferred from satellite imagery indicated Marcia was a category 5 system at its core. High resolution radar imagery shows that Middle Percy Island was located just outside the eye wall of Marcia (represented by the strong reflectivity returns near the centre of the system). Based on all the evidence collected and detailed reanalysis of satellite imagery, severe tropical cyclone Marcia crossed the coast at Shoalwater Bay (north northwest of Yeppoon) as a category 5 system at around 8am AEST on February 20th. Severe tropical cyclone Marcia was a relatively compact system compared to other severe tropical cyclones such as severe tropical cyclone Yasi and weakened quickly as it moved over land during the day. It is believed that only a small part of the coastline within about 15km of the cyclone centre would have experienced category 5 strength winds.</p> <p>As Marcia moved over land, the township of Byfield sustained major damage as did the surrounding pine forest plantations. Yeppoon also received significant damage with the automatic weather station recording a maximum sustained wind speed (10 minute average) of 65 knots (120 km/h), or the equivalent of a category 3 system, as the category 4 centre of Marcia passed to the west.</p> <p>The eye of Marcia passed over the city of Rockhampton where a maximum wind speed (10 minute average) of 40 knots (75 km/h) was recorded at the automatic weather station at Rockhampton Airport. Analysis of radar imagery indicated that the strongest part of the eye wall missed the automatic weather station and it is concluded that parts of Rockhampton experienced winds of high-end category 2 strength. Marcia then turned to the south-southeast and impacted the town of Biloela early that evening, where wind gusts to 85 km/h were recorded. Marcia was downgraded to a tropical low at 2 am Saturday 21 February, located to the south of Monto. The low tracked further southeast during 21 February and crossed the Sunshine Coast back out to sea at 3 pm 21 February.</p>

	 <p>Track of severe tropical cyclone Marcia, showing estimated areas affected by winds associated with categories of cyclone intensity.</p> <p>■ >= Category 3 Winds ■ Category 2 Winds ■ Category 1 Winds</p>
<p>Tropical Cyclone Debbie March 2017</p>	<p>March and April 2017 was a significant period of time in Livingstone Shire with three (3) events impacting the region. Commencing on 14 March 2017 information from the Bureau of Meteorology (BoM) was that the possibility of significant rainfall was forecast to affect the area. This manifested over the weekend of 19 and 20 March and continued significant rainfall caused a serious disruption to the community, multiple road closures and the isolation of communities with Byfield receiving 156mm and Yeppoon 128mm on 22 March. This rainfall continued as well as an awareness of a Monsoonal trough becoming evident on 23 March with a 50% chance of forming a Tropical Cyclone over the weekend of 25 and 26 March. On Saturday 25 March Tropical Cyclone Debbie was named. Severe Tropical Cyclone Debbie, a category 4 system made landfall near Airlie Beach on the north Queensland coast at midday on Tuesday, 28 March 2017. TC Debbie was downgraded to a tropical low in the early morning of Wednesday, 29 March when the impact was felt all over the Livingstone Shire with gale force winds recorded on the coast of 116km p/h, rainfall causing localised flooding and dangerous swells. The effects of Ex Tropical Cyclone Debbie continued to be felt the remaining part of the week with significant rainfall recorded in the northern parts of our Shire and on Thursday 30 March with severe weather conditions still effecting the coast a flood warning was issued for Fitzroy River. On Sunday 01 April 2017 due to the likelihood of an event impacting the Livingstone Shire the LDMG activated and began preparing the community for flooding. Inundation did occur with a peak at Yamba on Thursday 08 April at 16.1m. The LDMG continued to be activated until the transition into recovery on 10 April with deactivation of the LDMG on 18 April.</p>



Prevention

- development control including Planning schemes;
- building Codes;
- all hazard protection plans for high risk communities; and
- anchorage of caravans.

Preparedness

- community education and engagement to prepare the community including identification of risk, safety and evacuations;
- ensure effective LDMP with buy in by all agencies;
- effective exercise management, including lessons learnt are implemented and the LDMP is updated;
- emergency alerts saved on the Disaster Management Portal and tested;
- maintain communication interoperability between agencies;
- trained Local Disaster Management members as required by QFES Training Matrix;
- trained staff working in the LDCC including agency liaison officers;
- regular clean-up of yards and gardens;
- develop local community co-ordination groups to empower the community;
- new residence packs;
- natural hazards DVD;
- review LDMP and membership;
- Public Cyclone Shelter Sub Committee; and
- Public Cyclone Shelter exercise and train staff including fly in teams.

Response

- events responded to as quickly as possible by all agencies;
- maintain functional SES;
- issue warnings;
- LDCC and dedicated resources for larger incidents, multi-agency response;
- all agencies workable and functional Business Continuity Plan to ensure capacity to provide resources in the Queensland Disaster Management Arrangements (QDMA);
- activate Public Cyclone Shelter; and
- LSC Communication Sub Plan.

Recovery

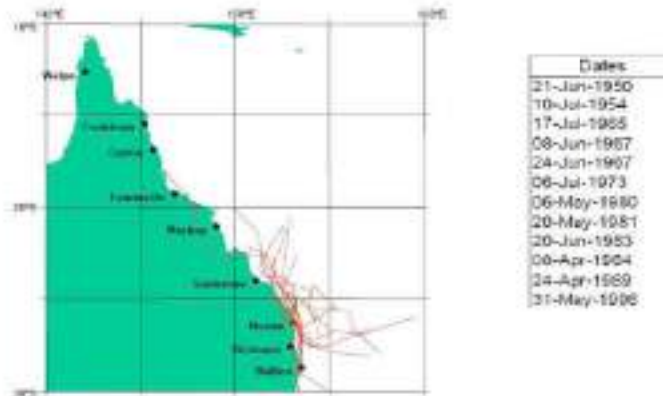
- Community Recovery Plan;
- Recovery Committee (LDMG subcommittee);
- Insurance Council of Australia; and
- Local/State/Federal – essential infrastructure restoration.

9.1.3 East Coast Low

East Coast Lows, also known as east coast cyclones, winter cyclones or easterly trough lows, are one of a family of low pressure systems which most often develop during the winter months along the east coast of Australia between 25°S and 40°S. These large-scale storm systems often develop rapidly and can become quite intense, with storm force winds extending over wide areas.

East coast lows typically form after a low or deep trough intensifies in the upper atmosphere over eastern Australia. A low pressure system then develops at sea level near the coast to the east of the upper level system, often intensifying rapidly. Like cyclones, effects of these events include flooding, wind damage, storm surge and coastal erosion. East coast lows occur more frequently than cyclones

however the potential impacts on the LS region are expected to be less than those of cyclones. East coast lows generally have much shorter lifetimes than tropical cyclones and last only a few days. They develop over the Tasman Sea close to the coast and can intensify rapidly overnight. Unlike tropical cyclones, where the warm seas provide the energy source, east coast lows are driven by the temperature gradient between the Tasman Sea air and cold air in the high levels of the atmosphere over the continent. They can produce gale to storm-force winds, very heavy rainfall and in some cases coastal inundation. The effects of these storms on coastal and nearby coastal areas can be severe, with loss of life and property from flooding. BoM estimates the loss of life due to east coast lows at 35 between 1973 and 1999.



Selected tracks of East Coast Lows affecting SE Queensland (Harper & Granger 2009).

Prevention

- development control including planning schemes;
- building codes;
- all hazard protection plans for high risk communities; and
- anchorage of caravans.

Preparedness

- community education and engagement to prepare the community including identification of risk, safety and evacuations;
- ensure effective Disaster Management Plan with buy in by all agencies;
- effective exercise management, including lessons learnt are implemented and the LDMP is updated;
- emergency alerts saved on the Disaster Management Portal and tested;
- maintain communication interoperability between agencies;
- trained Local Disaster Management members as required by QFES Training Matrix;
- trained staff working in the LDCC including agency liaison officers;
- regular clean-up of yards and gardens;
- develop local community co-ordination groups to empower the community;
- new residence packs;
- natural hazards DVD;
- review LDMP and membership;
- Public Cyclone Shelter Sub Committee; and
- Public Cyclone Shelter exercise and train staff including fly in teams.



Response

- events responded to as quickly as possible by all agencies;
- maintain functional SES;
- issue warnings;
- LDCC and dedicated resources for larger incidents, multi-agency response;
- All agencies workable and functional Business Continuity Plan to ensure capacity to provide resources in the QDMA;
- Activate Public Cyclone Shelter; and
- LSC Communication Sub Plan.

Recovery

- Community Recovery Plan;
- Recovery Committee (LDMG subcommittee);
- Insurance Council of Australia; and
- Local/State/Federal – essential infrastructure restoration.

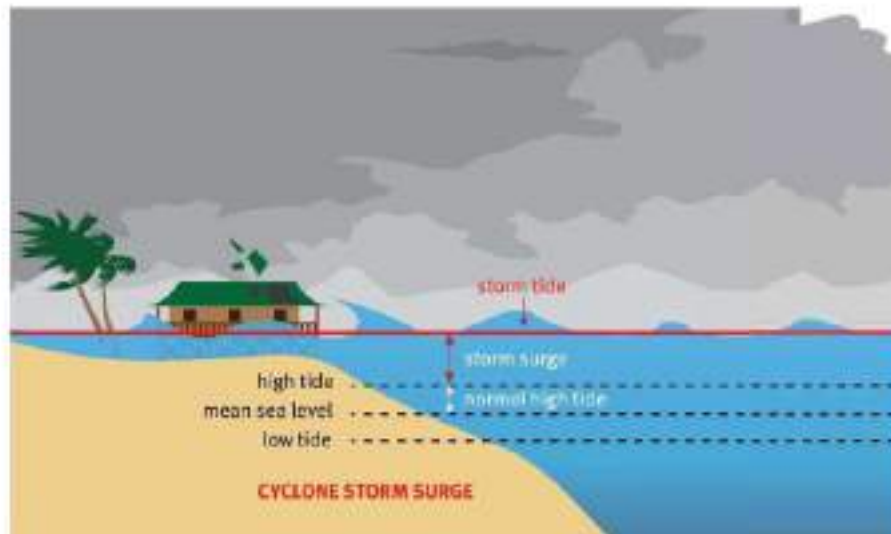
9.1.4 Storm Surge

All tropical cyclones on or near the coast are capable of producing a storm surge, which can increase coastal water levels for periods of several hours and simultaneously affect over 100 km of the coastline. The combination of the storm surge with the daily tidal variation produces a combined water level that is called the storm tide.

Storm surge heights are difficult to predict accurately in advance because they are dependent on central pressures and the approach direction of the cyclone at landing. The effect of this surge is dependent on the phase of the tide at which the surge occurs.

Individual storm surges are measured relative to mean sea level while storm tides are measured as a height above Australian Height Datum (AHD), therefore only the storm tide level can be referenced to ground levels. Relatively high water levels result when storm surges are combined with high daily tide levels which could cause inundation of relatively low lying coastal properties.

The following figure shows the various components that make up a storm tide. Storm surge is created by the action of the winds circulating around the eye of the cyclone generating currents in combination with the lower atmospheric pressure that allows the water level to rise. The storm surge adds to the expected tide level at the time the cyclone makes landfall. Wave set up is that component attributable to the swell caused by the wind driven waves. Waves will run up the foreshore and when combined with the rise in sea level will cause the frontal dunes and near shore structures considerable damage. The shape of the coastline, slope of the local bathymetry contribute to the magnitude of the surge. The narrow continental shelf offers some protection against storm surge but places the foreshore to attack from wave set up and high sea levels.



The Department of Emergency Services Report, Local Government Disaster Mitigation Project 2000 suggests that a wave height of 1m is capable of completely destroying a low set domestic structure unless it has been built of reinforced blockwork with suitable roof load transfer provisions. High set buildings without significant 'built-in' under the living platform could be expected to perform better provided that pier bracing is effective and the foundations survive the saturation and/or scouring.

Further information regarding storm surge can be sourced from Tropical Cyclone Storm Tide Warning Response System Handbook.

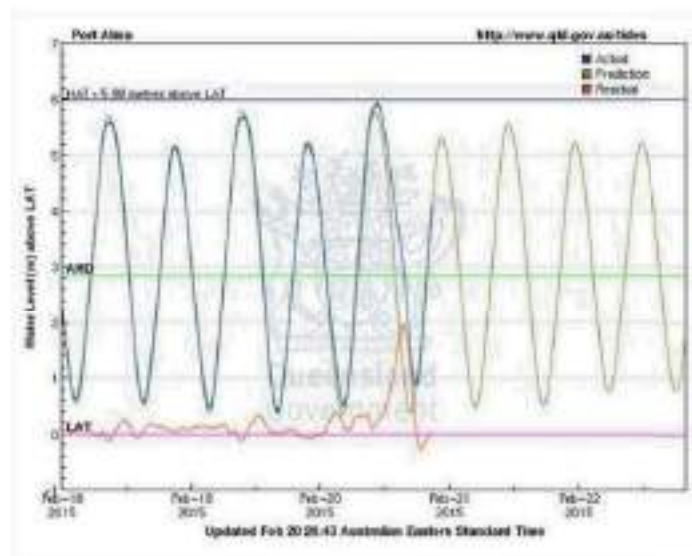
Storm Surge Tropical Cyclone Marcia

A large storm surge was recorded across the Capricorn coastline, with significant beach erosion and structural damage impacting Great Keppel Island in particular. Fortunately, the storm surge from Marcia along the coast and to the south of Yeppoon coincided with a falling tide and did not produce significant inundation or damage. The DSITI storm tide gauge at Rosslyn Bay recorded a storm surge of 0.6m producing a storm tide height of only 0.06m above highest astronomical tide (HAT). There was however evidence of significant erosion and large deposits of pumice stone indicative of much higher water levels being reached on beaches to the north of Yeppoon between One Mile Beach and Farnborough Beach, and particularly at 9 Mile Beach.

The DSITI storm tide gauge at Port Alma observed a storm surge of 2.0m while the wave rider buoy at Emu Park registered a significant wave height of 4.1m and peak height of 7.0 metres with waves coming from the northeast and a peak period of 9 to 10 seconds. The storm tide gauge at Port Alma recorded water levels close to but not exceeding HAT as the surge coincided with low tide. It is believed that the storm surge at Port Alma is likely to have been enhanced by the shape of the coastline relative to the track of the cyclone.



Great Keppel Island holiday cabins toppled onto the beach from severe tropical cyclone Marcia. (Source: ABC News)

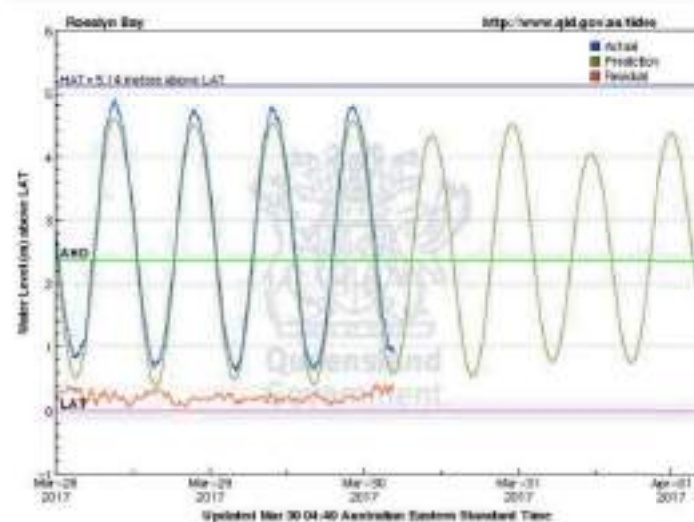


Sea level measurements from the Queensland state government (DSIT) storm tide gauge at Rosslyn Bay (Source: DSIT Coastal Impacts Unit fact sheet 'Severe tropical cyclone Marcia : storm tide and wave monitoring data').



Significant wave height and direction measurements from the Queensland state government (DSIT) wave rider buoy at Emu Park. (Source: www.qld.gov.au/waves)

Storm Surge Tropical Cyclone Debbie



Sea level measurements from the Queensland state government (DSIT) storm tide gauge at Rosslyn Bay. (Source: DSIT).



Wave interaction was recorded at Rosslyn Bay due to Tropical Cyclone Debbie. The DSITl storm tide gauge at Rosslyn Bay recorded a storm surge of 0.4m producing a storm tide height 4.9m, still below the highest astronomical tide (HAT) of 5.14m.

Prevention

- development control including planning schemes;
- building codes; and
- all hazard protection plans for high risk communities.

Preparedness

- community engagement and education of at risk areas and understanding evacuation routes;
- ensure effective LDMP with buy in by all agencies;
- effective exercise management, including lessons learnt are implemented and the LDMP is updated;
- emergency alerts saved on the Disaster Management Portal and tested;
- maintain communication interoperability between agencies;
- trained Local Disaster Management members as required by QFES Training Matrix;
- trained staff working in the LDCC including agency liaison officers;
- develop local community co-ordination groups to empower the community;
- new residence packs;
- natural Hazards DVD;
- review LDMP and membership;
- public cyclone shelter sub committee; and
- public cyclone shelter exercise and trained staff including fly in teams.

Response

- events responded to as quickly as possible by all agencies;
- activate public cyclone shelters and places of refuge;
- issue warnings;
- LDCC and dedicated resources for larger incidents, multi-agency response;
- all agencies workable and functional business continuity plan to ensure capacity to provide resources in the QDMA;
- activate evacuation sub plan; and;
- LSC communication sub plan.

Recovery

- community recovery plan;
- recovery committee (LDMG subcommittee);
- Insurance Council of Australia and;
- Local/State/Federal – essential infrastructure restoration.

9.1.5 Severe Storm

The term 'thunderstorm' is a generic description of a relatively small scale convective process which can occur when the atmosphere is moist and unstable. Cumulo-nimbus clouds then rapidly develop, potentially reaching heights of up to 20km, with associated lightning, thunder, severe wind gusts from downdrafts, heavy rain and large hail. Many thunderstorms are typically short-lived (up to an hour) and limited in size (up to 10km in diameter) but can traverse large distances during that time and are capable of inflicting significant damage (Kessler, 1983). Individual storm impacts can vary significantly both in space and time. In Australia, a severe thunderstorm is defined as a thunderstorm which causes one or more of the following phenomena (BoM, 1995a):

- a tornado;



- wind gusts of 90km/h or more at 10m above the ground;
- hail with diameter of 20mm or more at the ground;
- an hourly rainfall intensity in excess of the 10 year average recurrence interval (ARI) for a region (about 70mm/h or greater, dependent on the location and previous rainfall).

The LS area is subject to severe weather, notably severe storms which are not classified as tropical cyclones. Severe storms are localised events, usually affecting smaller areas than tropical cyclones, so their devastating impact is often under-estimated. These storms are more common than any other natural hazard. Each year, on average, severe storms are responsible for more damage and cost to the insurance industry than tropical cyclones, earthquakes, floods or bushfires. Severe storms also kill people. Most deaths are caused by lightning strikes, falling tree limbs, windblown debris, flash flooding and the capsizing of small boats in open water. Nationwide, between 5 and 10 deaths and over 100 injuries are caused by lightning strikes alone each year.

Severe storms occur on average 1 to 2 times per summer for the Livingstone Shire area. Although thunderstorms are a valuable source of rainfall they can cause considerable damage due to the short sharp nature of the event that usually involves high winds, hail and flash flooding. Flash flooding from these events can be quite damaging with the following recorded events being equivalent to 100 year to 150 year ARI events:

- June 2002 – 400 mm/hour recorded in Yeppoon
- 1994 – 600 mm in 56 hours recorded at Yaamba.

Harm-Producing Elements

Destructive Wind

Most of the damage done by severe thunderstorms are caused by their strong winds. The most severe winds, however, are associated with the tornadoes that may be spawned super-cell thunderstorms. Peak wind speeds in these storms are estimated to approach 450km/h in the largest tornadoes, although actual measurements are sparse. Their spatial extent, however, is small, ranging from just a few tens of metres up to a few hundred metres. Track lengths typically vary from as little as 1km but can extend for over 100km, if conditions are 'favourable'.

Wind damage tends to increase disproportionately to the wind speed. According to Meyer (1997), winds of 70m/sec (250km/h) cause, on average, 70 times the damage of winds of 35m/sec (125 km/h). Damage tends to start where sustained wind speeds begin to exceed 20 m/sec (about 75 km/h). In addition to the high wind speeds, the turbulence of the winds caused by terrain features and large buildings is also a decisive factor.

Thankfully, the strength of destructive winds from thunderstorms is inversely related to the area they impact. For example, very severe downdrafts (or microbursts) can attain speeds of more than 200km/h and affect areas up to 1km wide, while severe tornadoes might have winds in excess of 400km/h but are typically restricted to widths of less than 100m (Fujita, 1981).

Severe winds can destroy buildings, topple trees, flatten standing crops, bring down from wind driven projectiles such as roofing iron and tree branches. No part of Livingstone Shire is immune from severe wind damage.



Hail

BoM records suggest that approximately 30% of all severe thunderstorms produce damaging hail, with actual sizes varying depending on the strength of the recirculating updrafts in the storm system. Hail is thought to grow by the accumulation of super-cooled water droplets as the hail nucleus is supported by the strong updrafts. Eventually, the mass of ice particles cannot be maintained and the hailstones typically fall in intermittent 'shafts', which form damage swaths at ground level due to the forward movement of the storm. These swaths vary in size, but are commonly a few kilometres in width and up to 10 kilometres in length.

Lightning

Almost all storms produce some lightning and associated thunder. An average thunderstorm produces a few lightning flashes each minute and generates several hundred megawatts of electrical power during its lifetime.

According to the BoM (www.bom.gov.au/info/thunder), in Australia lightning accounts for 5 to 10 deaths and well over 100 injuries annually. These figures are likely to increase with the growing number of retired people engaged in outdoor recreational activities such as walking, cycling, golf, fishing, boating etcetera. Of the many lightning strike injuries each year, about 80 result from people using fixed telephones during thunderstorms when the phone system may become highly charged near where lightning is striking. Related injuries may include hearing damage, burns, or even electrocution. No area of Livingstone Shire is immune from lightning strike.

The Severe Storm Threat

Severe storms and severe thunderstorms pose a risk to the whole of the Livingstone Shire area. The most widespread threat is from destructive winds that have the potential to cause injuries and fatalities, destroy buildings, dislocate infrastructure and do significant environmental damage. The areas that are most exposed to destructive winds are those along the coastline and those on exposed ridges.

Short duration storms that occur during high activity periods (daylight, end of school day, shopping day etc) offer the greatest chance of damage to life and property. While accurate records are unavailable, damage as a result of such events may extend to personal injury, roof damage, rainwater penetration, power failure losses, consequential flooding losses, infrastructure damage and damage from flying objects.

Damage in rural areas will be localised to the area covered by the storm event and may include personal injury and property damage. Flash flooding again is a consequence and may cause damage to property and Council infrastructure. Fires have been associated with electrical storms in rural and remote areas of the Shire. Severe storms are likely to bring down power and communication lines.

Event Date	Description
7 December 1969	4cm hail at Etna Creek
12 February 1992	3.8cm hail reported at Yeppoon at about 10:20 pm
22 November 1992	70 knot wind gust recorded from a thunderstorm at Great Keppel Island at about 8:30pm
18 December 1995	60 knot wind gust recorded by Keppel Sands Coast Guard. The storm struck shortly after 5:30pm
21 September 1996	Estimated wind gust of 54 knots at Great Keppel Island. The storm struck shortly after 2pm
1 January 1997	92mm was recorded in an hour at The Caves (estimated ARI between 50 and 100 years) between 3:30pm and 4:30pm.
28 August 1999	Marble to golf ball sized (4.4cm) hail fell at The Caves at about 4 pm
11 December 2001	Widespread thunderstorms occurred over the Capricornia district. 20 cent piece sized (approximately 2.6cm) hail was reported from Yeppoon at

	about 2pm. Wind gusts were estimated at 80km per hour (approximately 45 knots). Some trees were blown down onto cars in the town
October – December 2006	In Queensland this was the most active thunderstorm season on record. During this three-month period, severe storms with flash flooding, violent winds and sometimes damaging hail, were almost a daily occurrence across eastern Australia. In the Brisbane area alone there were twenty severe thunderstorms; the average is four.

Prevention and Preparedness Strategies

Prevention

- development control including planning schemes;
- building codes; and
- adequate private insurance.

Preparedness

- community education and engagement including periodical clean-up of yards/gardens;
- ensure effective Disaster Management Plan with buy in by all agencies;
- effective exercise management, including lessons learnt are implemented and the LDMP is updated;
- maintain an effective SES Unit;
- emergency alerts saved on the Disaster Management Portal and tested;
- maintain communication interoperability between agencies;
- trained Local Disaster Management members as required by QFES training matrix;
- trained staff working in the LDCC including agency liaison officers;
- develop local community co-ordination groups to empower the community;
- new residence packs;
- natural hazards DVD;
- review LDMP and membership;
- public cyclone shelter sub committee; and
- public cyclone shelter exercise and trained staff including fly in teams.

Response

- events responded to as quickly as possible by all agencies;
- issue warnings;
- LDCC and dedicated resources for larger incidents, multi-agency response;
- all agencies workable and functional business continuity plan to ensure capacity to provide resources in the QDMA; and
- LSC communication sub plan.

Recovery

- community recovery plan;
- recovery committee (LDMG subcommittee);
- Insurance Council of Australia; and
- Local/State/Federal – essential infrastructure restoration.

9.1.6 Tornado

The Livingstone Shire area can be subject to severe weather other than that associated with tropical cyclones including severe thunderstorms and tornados. Tornados are the rarest and most violent of thunderstorm phenomena, formed from rapidly rotating columns of air that descend in the well-known



funnel shape from the base of a storm cloud. A tornado vortex, which can range in width from a few metres to hundreds of metres, usually rotates clockwise in the southern hemisphere (viewed from above) and contains very damaging winds that may reach more than 450 km/h. Damage associated with tornadoes is predominately due to the high wind speeds which lift large objects, vehicles and destroy structures. Injuries and death are caused by violent winds and debris slamming into buildings, falling trees and projectiles.

Tornadoes form from rapidly rising air currents inside a cloud. As it rises higher up in the atmosphere, often to the base of the stratosphere, the air cools and condenses to form classic cumulus and cumulonimbus clouds. Windshear within the clouds occurs due to the difference between wind speed along the ground and higher up in the atmosphere. A thunderstorm super-cell forms when wind shear reaches 30 to 40km/hour between the surface and about 3,000m up in the air. The wind shear causes air to spin in tube-like rolls along a horizontal axis. The convective updraft of the thunderstorm then sucks this rolling air upwards around a vertical axis to form a tornado. A tornado vortex can be between two and ten kilometres across, gradually narrowing and spinning more fiercely through the super-cell. Only about half of super-cells intensify enough to become tornadoes on the ground.

The most intense tornado recorded in Australia occurred at Bucca, west of Bundaberg approximately 280 km south-east of Rockhampton, on 29 November 1992. The intensity of the winds created freak effects, such as embedding a picture frame in the wall of a room. Hail the size of cricket balls accompanied the storm.

29 November 1992	A freak storm in Bucca approximately 200km south-east of Rockhampton reported as a mini tornado, ripped through the 40-year-old fire station and left a pile of rubble in its wake.
22 December 1995	A tornado was reported at Mulgildie (QLD), approximately 150km south-east of Rockhampton; twelve homes were partially or completely unroofed, farm sheds demolished and a piggery flattened.
10 July 2000	Unseasonal thunderstorms across central and southeast Queensland. A gust to 96km/h and a blanket of hail to pea size was observed at Emerald. Hail was also reported at Gin Gin, Kingaroy, Tungamull near Emu Park, Kinka Beach and Nanango, but the only significantly large hail, twice the size of golf balls was reported at Woodford.
2 November 2000	Severe storm tore a path of destruction through North Rockhampton suburbs, with reports of up to five tornadoes (evidence of at least one confirmed by the Bureau). Estimated damage bill of \$200,000, with widespread tree damage and roofing damage to some houses. Golf ball sized hail was reported in the outer suburbs with wind estimates to about 150km/h, but only 78km/h was actually measured at Rockhampton airport. A large truck was lifted and thrown approximately 50m.
7 November 2000	Raglan station near Rockhampton reported 20 cent sized hail with major damage to the homestead and property. The homestead roof had been lifted and dumped to the side of the house. There was extensive damage to a nearby farm residence and a machinery shed was destroyed.
19 March 2001	A line of thunderstorms extended from Rockhampton to Tin Can Bay with several thunderstorms reaching severe intensity during the afternoon. Severe wind damage and pea sized hail was reported from a property near Calliope and flash flooding was reported along the Hervey Bay esplanade.
24-26 April 2001	Golf ball sized hail and 70mm of rain was reported from Apis Creek (west of Rockhampton) on the 24th. On the 26th a suspected tornado was reported from Jambin (near Biloela). Damage was confined to a one km track which caused tree damage and 56mm of rain was recorded in 35 minutes.

6 May 2001	Tornado with estimated wind gusts of 75 to 90 km/h occurred in north Yeppoon. Multiple water spouts were also observed in Keppel Bay.
19 November 2001	Strong storms occurred in the Capricornia district which affected the Rockhampton and Gladstone areas. Trees were uprooted, power lines brought down, and minor building damage was sustained in Rockhampton, Gracemere and Gladstone.
12 January 2002	A thunderstorm in the Mount Morgan/Rockhampton area closed the Burnett Highway and other roads for more than 4 hours between 7pm and 12am. Damage included fallen trees, fallen rocks, mudslides and rising creeks.
25 November 2005	A tornado was reported at Mulgildie (Qld), approximately 150km south-east of Rockhampton; twelve homes were partially or completely unroofed, farm sheds demolished and a piggery flattened.
7 February 2010	A tornado struck a farm just south of the town of Atherton in Queensland causing damage to corn fields and farm equipment.
20 March 2012	A tornado caused major structural and tree damage in the suburb of Vincent. Windspeed estimated at 160–200km/h from damage analysis. Other suburbs affected were Garbutt, Gulliver, Aitkenvale, and Annandale.
26–27 January 2013	Several tornadoes struck the Bundaberg region of Central Queensland on 26 January, associated with the remnants of Cyclone Oswald. The first struck Bargara at 1.00pm (AEST), tearing roofs from buildings, and injuring at least six people. Burnett Heads was struck by three separate tornadoes, at 3.15pm and 6.05pm, and again at 6.30pm. Another tornado crossed the coast at Coonar and a sixth tornado occurring at Burrum Heads on 27 January, whilst there were unconfirmed reports of a tornado at Bribie Island.

Prevention and Preparedness Strategies

Prevention

- development control including planning schemes;
- building codes; and
- adequate private insurance.

Preparedness

- community education and engagement including periodical clean-up of yards/gardens;
- ensure effective Disaster Management Plan with buy in by all agencies;
- effective exercise management, including lessons learnt are implemented and the LDMP is updated;
- maintain an effective SES Unit;
- emergency alerts saved on the Disaster Management Portal and tested;
- maintain communication interoperability between agencies;
- trained Local Disaster Management members as required by QFES Training Matrix;
- trained staff working in the LDCC including agency liaison officers;
- develop local community co-ordination groups to empower the community;
- new residence packs;
- natural hazards DVD;
- review LDMP and membership;
- public cyclone shelter sub committee; and
- public cyclone shelter exercise and trained staff including fly in teams.

Response

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Version 2



- events responded to as quickly as possible by all agencies;
- issue warnings;
- LDCC and dedicated resources for larger incidents, multi-agency response;
- all agencies workable and functional business continuity plan to ensure capacity to provide resources in the QDMA; and
- LSC Communication Sub Plan.

Recovery

- community recovery plan;
- recovery committee (LDMG subcommittee);
- Insurance Council of Australia; and
- Local/State/Federal – essential infrastructure restoration.

9.1.7 Flooding

The BoM uses a three tiered classification scheme that defines flooding as minor, moderate or major at key river height stations. Each classification is defined by the water level that causes certain impacts upstream and downstream of the station. These levels have been determined based on standard descriptions of flood effects (see below), historical data and relevant local information. The classifications are revised from time to time by the Bureau's partner agencies and affected communities.

Minor flooding

Causes inconvenience. Low-lying areas next to water courses are inundated. Minor roads may be closed and low-level bridges submerged. In urban areas inundation may affect some backyards and buildings below the floor level as well as bicycle and pedestrian paths. In rural areas removal of stock and equipment may be required.

Moderate flooding

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. In rural areas removal of stock is required.

Major flooding

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 rail and traffic routes closed. Evacuation of flood affected areas may be required. Utility services may be impacted.

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.

There are a large number of creeks throughout the region that could cause localised flooding. Some of these creeks are in residential areas, such as: Ross Creek and Fig Tree Creek in Yeppoon. Flooding in these areas is likely to impact upon houses and business. There are also a large number of creeks in rural areas which may impact upon fewer people but still have widespread impacts. Flooding occurs regularly in rural areas such as Byfield, Stony Creek and Stanage Bay - Stanage Bay Road is regularly impassable.



The short duration of local catchment events makes them harder to predict and more difficult to provide warnings about. Flash flooding is the most dangerous form of flooding and is the most likely to cause loss of life.

Prevention and Preparedness Strategies

Prevention

- development control including planning schemes;
- building codes; and
- adequate private insurance.

Preparedness

- community education and engagement including periodical clean-up of yards/gardens;
- ensure effective Disaster Management Plan with buy in by all agencies;
- effective exercise management, including lessons learnt are implemented and the LDMP is updated;
- maintain an effective SES Unit;
- emergency alerts saved on the Disaster Management Portal and tested;
- maintain communication interoperability between agencies;
- trained Local Disaster Management members as required by QFES Training Matrix;
- trained staff working in the LDCC including agency liaison officers;
- develop local community co-ordination groups to empower the community;
- new residence packs;
- natural hazards DVD;
- review LDMP and membership;
- public cyclone shelter sub committee; and
- public cyclone shelter exercise and trained staff including fly in teams.

Response

- events responded to as quickly as possible by all agencies;
- issue warnings;
- LDCC and dedicated resources for larger incidents, multi-agency response;
- all agencies workable and functional business continuity plan to ensure capacity to provide resources in the QDMA; and
- LSC Communication Sub Plan.

Recovery

- community recovery plan;
- recovery committee (LDMG subcommittee);
- Insurance Council of Australia; and
- Local/State/Federal – essential infrastructure restoration.

9.1.7.1 Fitzroy River Flood

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. Areas affected include Yaamba, Belmont and Nerimbera within the Livingstone Shire. Flood inundation maps for these locations can be found on Council's website.



Conclusions

Localised flooding is an annual problem which can occur in any month of the year, but flooding is most likely to occur in the months from December through to March.

Prevention and Preparedness Strategies

Short

- maintain an effective SES Unit;
- public education;
- public access to the LDMP; and
- staff who are conversant with resupply policy and procedure.

Medium

- town planning; and
- adequate private insurance.

Long

- town planning; and
- upgrade flood affected roads and bridges.

Areas of Significant Risk

- low lying.

Fitzroy River has a history of floods previous to deamalgamation, since deamalgamation 1 major flood has been recorded.



Past Major Floods

- 2017 Fitzroy River Flood – peaking at 16.1m Yaamba and 8.8m Rockhampton.

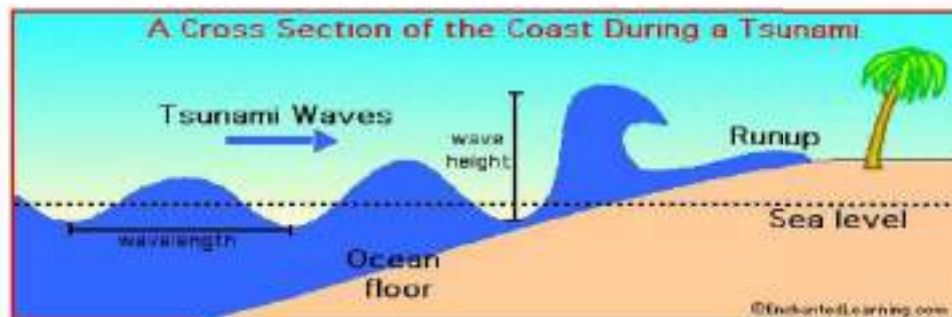
9.1.8 Tsunami

A tsunami is a series of water waves caused by the displacement of a large volume of a body of water. Due to the large volumes of water and energy involved, tsunamis can devastate coastal regions. Events which have the potential to generate a tsunami are, but not limited to:

- earthquakes;
- volcanic eruptions;
- underwater explosions;
- landslides and other mass movements;
- meteorite ocean impacts; and
- any large disturbance above or below water level.

The entire Livingstone Shire coastal area is at risk from tsunami including Great Keppel, North Keppel and Pumpkin Islands which are popular tourist destinations. Other smaller islands, offering limited protection, have camping groups on them that may need evacuation, including Middle, Miall, Conical, Divided, Pelican and Humpy Islands. These destinations may have several thousand tourists between them that need to be considered as part of the emergency response to tsunami events.

Tsunami waves can inundate low lying coastal areas. Tsunami inundation is the horizontal, inland penetration of waves from the shoreline. Flooding can extend inland by kilometres, covering large areas of land with water and debris. When the tsunami reaches the coast and moves inland, the water level can rise many metres. The first wave may not be the largest in the series of waves. Tsunamis may reach a maximum vertical height onshore above sea level, often called a run-up height, of tens of metres. The fast-moving water associated with the inundating tsunami can crush homes and other coastal structures. Regular ocean waves move in the water from the surface down to around 150m deep, but a tsunami moves in the water all the way to the seafloor. Therefore, the volume of water that is moved by a tsunami is significantly more than the amount moved by regular ocean waves. Tsunami heights are unpredictable and depend on the severity of the event (earthquake, explosion etc.) which triggers the tsunami. Severe tsunamis cause extensive damage and devastation.



9.1.9 Pacific Tsunami Warning Centre (PTWS)

In the deep ocean, a tsunami has a small amplitude (less than 1m) but very long wavelength (hundreds of kilometres). This means that the slope, or steepness of the wave is very small, so it is practically



undetectable to the human eye. However, there are ocean observing instruments that are able to detect tsunamis.

Tide gauges measure the height of the sea-surface and are primarily used for measuring tide levels. Most of the tide gauges operated by the Bureau of Meteorology's National Tidal Centre are SEAFRAME stations (Sea Level Fine Resolution Acoustic Measuring Equipment). These consist of an acoustic sensor connected to a vertical tube open at the lower end which is in the water. The acoustic sensor emits a sound pulse which travels from the top of the tube down to the water surface, and is then reflected back up the tube. The distance to the water level can then be calculated using the travel time of the pulse. This system filters out small-scale effects like wind-waves and has the capacity to measure sea level changes within 1mm accuracy.

The DART System

In 1995 the National Oceanic and Atmospheric Administration (NOAA) began developing the Deep Ocean Assessment and Reporting of Tsunamis (DART) system. An array of stations are currently deployed in the Pacific Ocean. These stations give detailed information about tsunamis while they are still offshore. Each station consists of a sea-bed bottom pressure recorder which detects the passage of a tsunami (the pressure of the water column is related to the height of the sea-surface). The data is then transmitted to a surface buoy via sonar. The surface buoy then radios the information to the Pacific Tsunami Warning Centre (PTWC) via satellite. The bottom pressure recorder lasts for two years while the surface buoy is replaced every year. The system has considerably improved the forecasting and warning of tsunamis in the Pacific Ocean.

Due to the limited warning time for a tsunami (30min, a few hours at the most), it is very important for people to plan and prepare their family or household for a tsunami in advance.

In a broad sense seismic hazard relates to the damage caused by earthquakes, which can pose a threat to infrastructure, buildings, services and ultimately, life. The nature of the seismic hazards can be categorised into:

- fault rupture;
- ground shaking;
- liquefaction of soils including flow slides;
- induced slope failures; and
- tsunami and seiche (occurring at sea).

Australian Tsunami History

Large tsunami are rare and have been triggered by volcanic eruptions or earthquakes. The table below shows the last 30 years of tsunami recorded.

Date	State	Location	Details
May 8, 1955	NSW	Aleutian Islands	
May 23, 1959	NSW, TAS	Macquarie Island	
October 19, 1989	NSW	California, USA	
June 3, 1994	WA	Java	Fish, rocks and coral carried two to three



			hundred metres inland along parts of the coastline near the Northwest Cape.
May 15, 1995	NSW	New Caledonia	
December 26, 2004	NSW, QLD, SA, TAS, VIC, WA	Sumatra	Major Indian Ocean tsunami. 35 people rescued from rip currents, boats damaged in marinas (especially in WA, but also including as far as Tasmania), some limited and localised inundation of immediate foreshores in a small number of WA coastal towns.
May 3, 2006	NSW, QLD, TAS, VIC	Tonga	
July 17, 2006	SA, WA	Java	Affected parts of the WA coast particularly Sheep Point (WA). Widespread erosion, extensive vegetation damage and several campsites destroyed. Evidence of inundation up to 200 metres inland.
April 2, 2007	NSW	Solomon Islands	Dangerous rips and currents reported at Coffs Harbour
July 15, 2009	NSW, TAS	New Zealand	
February 28, 2010	NSW, QLD, TAS	Chile	50cm wave at Norfolk Island, 42cm wave at Gold Coast QLD, 28cm wave at Port Kembla NSW, and a 28cm wave at Southport TAS
March 11, 2011	NSW, TAS	Japan	56cm wave at Norfolk Island, 35cm wave at Port Kembla NSW, and a 23cm wave at Spring Bay TAS. Unusual currents noted at Port Kembla and Sydney Harbour. Several swimmers washed into a lagoon at Merimbula NSW



Prevention

- development control including planning schemes;
- building codes; and
- all hazard protection plans for high risk communities.

Preparedness

- community education and engagement of at risk areas and understanding evacuation routes;
- ensure effective Disaster Management Plan with buy in by all agencies;
- effective exercise management, including lessons learnt are implemented and the LDMP is updated;
- emergency alerts saved on the Disaster Management Portal and tested;
- maintain communication interoperability between agencies;
- trained Local Disaster Management members as required by QFES Training Matrix;
- trained staff working in the LDCC including agency liaison officers;
- develop local community co-ordination groups to empower the community;
- new residence packs;
- natural Hazards DVD; and
- review LDMP and membership.

Response

- events responded to as quickly as possible by all agencies;
- activate public cyclone shelters and places of refuge;
- issue warnings including EA;
- LDCC Centre and dedicated resources for larger incidents, multi-agency response;
- all agencies workable and functional business continuity plan to ensure capacity to provide and resources in the QDMA.

9.1.10 Earthquake

Geo Science Australia states that earthquakes are the vibrations caused by rocks breaking under stress. The underground surface along which the rock breaks and moves is called a fault plane. Earthquakes in Australia are usually caused by movements along faults as a result of compression in the earth's crust.

The size or magnitude of earthquakes is determined by measuring the amplitude of the seismic waves recorded on a seismograph and the distance of the seismograph from the earthquake. These are put into a formula which converts them to a magnitude, which is a measure of the energy released by the earthquake. For every unit increase in magnitude, there is roughly a thirty-fold increase in the energy released. For instance, a magnitude 6.0 earthquake releases approximately 30 times more energy than a magnitude 5.0 earthquake, while a magnitude 7.0 earthquake releases approximately 900 times (30x30) more energy than a magnitude 5.0.

A magnitude 8.6 earthquake releases energy equivalent to about 10 000 atomic bombs of the type developed in World War II. Fortunately, smaller earthquakes occur much more frequently than large ones and most cause little or no damage.

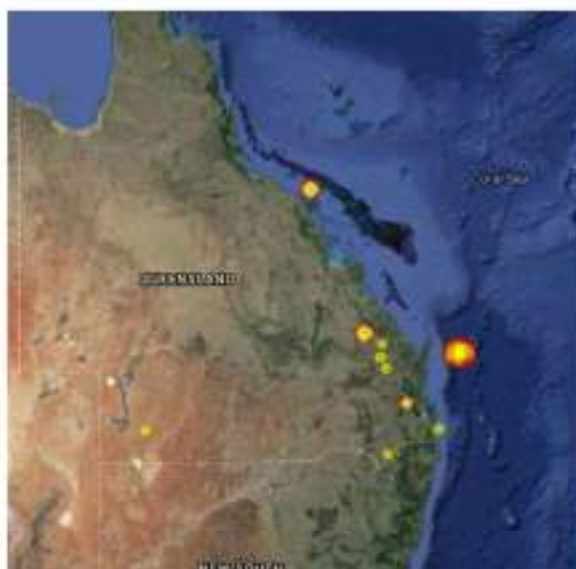
Earthquake magnitude was traditionally measured on the Richter scale. It is often now calculated from seismic moment, which is proportional to the fault area multiplied by the average displacement on the fault.



The focus of an earthquake is the point where it originated within the Earth. The earthquake epicentre is the point on the Earth's surface directly above the focus.

The amplitude of the shaking caused by an earthquake depends on many factors, such as the magnitude, distance from the epicentre, depth of focus, topography, and the local ground conditions. Earthquake effects, as noted by people, are rated using the [Modified Mercalli \(MM\) intensity scale](#), which ranges from I (imperceptible) up to XII (total destruction).

Geoscience Australia lists 375 earthquakes in Queensland since January 2000. Below is the list of the 20 most highest magnitude.



Magnitude	Date	Time	Location
5.8	18 August 2016	4:30:07	Offshore NE of Bowen, QLD
5.4	30 July 2015	09:41:43	Offshore E of Fraser Island, QLD (GA revised 3D corrections).
5.3	16 April 2011	15:31:18	Near Bowen, QLD.
5.3	01 August 2015	13:38:45	Offshore E of Fraser Island, QLD (GA revised 3D corrections).
5.2	16 February 2015	02:57:09	Near Eidsvold, QLD.
5.1	01 August 2015	14:46:26	Offshore E of Fraser Island, QLD.
4.8	11 August 2003	17:04:29	E of Ingham QLD. Nearest station. Felt in Ingham, Cairns and Townsville, QLD.
4.8	19 November 2007	20:01:01	SE of Cape York.
4.5	18 August 2019	11:38:41	Offshore E of Mackay QLD
4.4	13 August 2016	15:31:13	Offshore NE of Bundaberg QLD
4.4	17 January 2004	02:05:56	SE of Monto QLD. Nearest station RMQ.
4.2	14 February 2008	08:57:27	112 km NE of Cunnamulla QLD. Nearest station RMQ.
4.1	16 April 2011	17:06:52	Near Bowen, QLD.
4.1	29 December 2005	07:54:52	W of St George QLD. Nearest station QLP.
4.0	12 October 2001	10:05:53	N of Fraser Island QLD. Felt at Lady Elliot Island.



4.0	16 February 2015	18:56:49	Near Eidsvold, QLD.
4.0	14 August 2015	11:06:55	Offshore E of Fraser Island, QLD.
4.0	23 October 2015	07:45:14	Offshore E of Fraser Island, QLD.
4.0	18 September 2011	02:28:27	SW of Bowen, QLD.
3.9	25 October 2000	16:42:02	Tasman Sea; 200 km E of Brisbane QLD.

Warnings

It is not possible to predict the occurrence of earthquakes and provide warnings other than broad, regional assessments of the likelihood of occurrence over time somewhere within that region.

Prevention and Preparedness Strategies

Long

- public awareness.

9.1.11 Landslip

There has not been a landslide assessment study of the area and the Australian Geological Survey Organisations' database indicates that there have been no reported landslides in the area.

Whilst landslides in the area are not expected to be a significant problem it should be noted that in Australia, 52 landslides are known to have caused injury or death during the period 1842 to 2000. At least 84 people have been killed and 87 injured. The events which caused death varied from the topple or fall of a single rock, to a spectacular debris flow. Some were the result of human activity, while others were naturally occurring events. Because of the scarcity of readily available data, it is not possible to estimate the total economic loss due to landslides.

Most of the loss has resulted from damage to infrastructure such as roads, railways and water and sewerage systems. Fifty-eight landslides throughout Australia are known to have caused damage to a total of over 200 buildings, many of which were destroyed.

Livingstone Shire has had landslips in the past including:

- Gus Moore Street, Yeppoon (2008) – earth movements from underneath a driveway;
- Statue Bay (2008 and previous) – Scenic Highway was closed;
- Statue Bay (2015) – As a result of TC Marcia; and
- 'Bluff' (2018)



(Statue Bay 2015, The Morning Bulletin 2015.)



("Bluff, Farnborough Road 2018, The Morning Bulletin 2018.)

Warnings

There are no systems or procedures designed to provide warnings of landslide in Australia. Since 2001, however, the BoM Queensland Regional Office has included statements relating to the possibility of landslide in their severe weather warnings when they anticipate intense rainfall. Such warnings are non-specific.

9.1.12 Heatwave

A heatwave can be defined as a prolonged period of excessive heat which remains within or above the upper temperature values for a prolonged period of time. There is no universal definition of a heatwave because local acclimatisation and adaptation influence the impact of extreme heat. Even at a local level there can be multiple heatwave definitions, based on varying temperature levels or time periods. It is important to identify an appropriate definition of heatwave locally and to understand its health effects



in order to develop appropriate public health intervention strategies to prevent and mitigate the impact of heatwaves.

In Queensland, maximum temperatures typically occur between November and February, but days of excessive heat can occur between October and March. Using the threshold for temperature within the top 5% of daily maximum temperatures for a continuous three-day period, at least 18 heat wave events have been identified since 1889 giving an average recurrence interval (ARI) of 5 to 6 years. January is the most common month in which to experience a heat wave episode.

The impact of heatwaves extends further than mortality rates. High temperatures are linked to:

- increased hospital admissions relating to heat stress, dehydration, or as a result of heat exacerbating existing conditions;
- increased rates of certain crimes particularly those related to aggressive behaviour such as homicide;
- increased number of work-related accidents and reduced work productivity; and
- decreased sports performance.

Prevention and Preparedness Strategies

Short

- public awareness.

Medium

- data base of air-conditioned facilities.

Areas Affected

- no area within Livingstone Shire is immune from heatwave conditions.

Effects

The combined effect of high temperatures and humidity on human health has already been described. Extended periods of high temperature can also have a damaging effect on most infrastructure elements. Railway tracks can buckle causing trains to either derail or to travel at slow speeds. Road surfaces can become damaged by traffic over softened bitumen.

Most significantly, power supplies can be threatened because of high peak demand for air conditioning and other cooling devices. The loss of power supply will greatly exacerbate the health impact. Similarly, the demand for water will also be greatly increased and the loss of power supply may also compromise the water supply.

9.1.13 Climate Change

It is now widely accepted that the natural atmospheric greenhouse effect has been enhanced by anthropogenic activities including the burning of fossil fuels. Climate change scientists from the Intergovernmental Panel on Climate Change believe that "the projected rate of warming is very likely to be without precedent during at least the last 10,000 years, based on paleoclimate data" (IPCC 2001).

In August 2010, the Australian Academy of Sciences outlined changes in Australian climate including:

- an increase of about 0.7°C in average surface temperature since 1960, with some areas having warmed faster and others showing little evidence of warming;
- an increase in the frequency of extremely hot days;
- a decrease in the frequency of cold days;
- significant increase in rainfall over north-western Australia;
- decrease in rainfall over south-eastern Australia;



- sea level rise of about 1.2mm per year since 1920;
- future impacts of climate change on Australia are likely to include:
 - projected increases in average surface temperature of 0.6 to 1.5°C by 2030 and 2.2 to 5.0°C by 2070
 - decreased average annual rainfall over much of Australia
 - more intense rainfall on days with heavy rainfall over many areas
 - an increase in the proportion of severe tropical cyclones, with a possible decrease in the total number of cyclones
 - more frequent heatwaves
 - more frequent droughts.

9.2 Hazard Identification – Non Natural Hazards

Non natural hazards are typically due to human involvement and not the environment. The planning and control of these types of incidents is the responsibility of some LDMG member agencies until the impact escalates to a high level therefore requiring the activation of the LDMG and LDCC in support of the lead agency. The plans covering these incidents are developed by the lead agency and interfaced with the LDMP where possible.

9.2.1 Civil Riot

A civil riot is a violent disturbance to public peace by three or more people. With the potential for public demonstrations to be held for varying reasons in Livingstone there is the risk of escalation to a riot. The level of impact would be dependent on the extent and numbers involved. Typically there would be disruptions to traffic within the area, security risks for any significant visitors and/or residents, community disconnectedness through lower attendance to events and damage to the infrastructure if targeted. LS has a level of political focus due to environmental significant areas and the presence of the Australian Defence Force in Shoalwater Bay.

9.2.2 Terrorist Attack

World events in recent times demonstrate that terrorism is a credible and serious threat for Australia. Specifically, the Australian Government's current security context acknowledges the interest and intent of terrorists to target mass gatherings and events.

The 2002 and 2005 Bali bombings and the attack on the Australian embassy in Jakarta in 2004 demonstrated the threat of terrorism in our region. The terrorist attacks in London and Madrid highlighted the possibility of a similar attack in Australia.

Prevention and Preparedness Strategies

Prevention

- individual agency procedures;
- review and practice of emergency response plans;
- Crimes Prevention Through Environmental Design (CPTED) including, Closed Circuit Television (CCTV) network, building design, design of public areas, lighting;
- physical security measures including, protective security measures, access controls, security plans;
- well-designed communication plans and the provision of information;
- provision of threat information and protection by QPS; and
- regular review of the counter terrorism Plans
- educate the public on the Police Link web site that describes suspicious activity by calling 131 444 or visit <https://www.police.qld.gov.au/apps/reports/suspiciousActivities>.



Preparedness

- intelligence (via network police);
- community awareness (State government program);
- identification of risks;
- QPS (and other Agency) training;
- liaison with Federal Government for protection arrangements; and
- Disaster Management Communication Plan.

Response

- emergency services response;
- scientific – QFES;
- QPS – specialists bomb squad;
- QAS multi-casualty plan;
- Queensland Health multi-casualty plan;
- preservation of evidence; and
- provision of information to the public (in accordance with Government policy).

Recovery

- welfare response;
- support business' assist with business continuity;
- Chemical Biological and Radiological (CBR) Contamination to be managed by restrictions/quarantine of the immediate vicinity; and
- Investigation

Areas Affected

- government facilities;
- places of mass gathering; and
- transport sector.

9.2.3 Major Transport Incident

Road

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

With Great Keppel Island and the tourism to the islands, many tourist coaches traverse the roads from Rockhampton to the Coast as well as along the Bruce Highway. In addition to these coaches, large semi-trailers traverse the highway and cattle floats and timber jinkers are prevalent on most Shire roads. Traffic counts reveal that approximately 20-25% of the Shire traffic is in the heavy category.

Prevention and Preparedness Strategies

Short

- maintain effective Emergency Services;
- driver awareness; and
- visible police presence on major roadways.

Medium

- driver education; and
- medical and evacuation plan.

**Long**

- reduction of blackspots;
- regular review of emergency procedures; and
- improvements to the road network.

Rail

The main northern railway traverses the Shire for most of the length of its area. Passenger trains and heavily laden goods trains travel this line many times a day.

Air

Whilst LS has only one airfield under its control (Emu Park), many private airstrips exist on rural holdings throughout the Shire, as well as the bitumen surfaced private airstrip on Great Keppel Island. In addition to these strips, there are several air strips within the Shoalwater Bay Army Training Area.

Commercial flights fly over the Shire on the approach and departure from Rockhampton Airport. With these commercial flights, military and private flights etcetera, the possibility of an incident is always present.

Prevention and Preparedness Strategies**Short**

- maintain the aerodromes;
- public awareness.

Medium

- provision of adequate fire and rescue equipment.

Long

- long term strategies are the responsibility of other authorities.

Areas Affected

All townships as aircrafts fly the whole of the Region on manoeuvres at various times.

Recurrence

Air accident is considered to be a random event.

Mitigation

Aviation authorities conduct air safety programs.

Marine

Several thousand small boats are registered in the Central Queensland area. Most of these vessels are outbound on fishing trips and sightseeing expeditions to offshore islands and reefs. Adverse weather conditions and the inexperience of operators could contribute to accidents of varying magnitude.

In addition to boats travelling to the reefs, many small boats traverse inland and along sheltered coastal waters to fish, water ski and boat race and, therefore have the potential to develop unforeseen problems.

Passenger ferries operate on regular daily trips to Great Keppel Island and other offshore destinations from Rosslyn Bay. Whilst these vessels are "in survey" and regularly maintained, accidents can still occur in these types of vessels from time to time.

Large bulk carriers, navy vessels and trawler fleets also ply the coastal waters of the Shire.



Reference should be made to the Extreme Weather Event Contingency Plan Gladstone Region – 2018/2019 document published by Maritime Safety Queensland and available at www.msq.qld.gov.au. The plan outlines a coloured tier alert status for the Gladstone region. The Regional Harbour Master will issue alerts in the event of an extreme weather event.

- **Blue** Alert: 48 to 72 hours before event
- **Yellow** Alert: 24 hours before event
- **Red** Alert: 6 hours before event
- **Orange** Alert: All clear with caution
- **Green** Alert: All clear

9.2.4 Hazardous Material Incident

The Bruce Highway and the main northern railway line both traverse the majority of the Shire both north and south. Many hazardous materials of varying types are transported by these methods. For this reason the potential for an incident of this type is ever present. Queensland Rail includes this risk in their operational plans.

Prevention and Preparedness Strategies

Short

- public education;
- periodical emergency service training;
- prohibition of parking of hazardous material transports in town areas; and
- provision of containment equipment.

Medium

- knowledge of evacuation plan;
- updated emergency contact lists; and
- knowledge of chemicals and markings.

Long

- designated safe parking areas.

This risk can be assessed in 3 categories:-

1) HAZCHEM ROAD

As in any populated area, movement of hazardous chemical agents by road occurs. The potential therefore exists for accidents involving large quantities of Hazchem, with resultant explosion, fire and other public safety threats.

Areas Affected

Any area within the Shire may be affected. However, it is most likely areas abutting the Bruce Highway.



2) HAZCHEM RAIL

As the main northern rail link runs through the region, movement of large quantities of Hazchem by rail also occurs. However due to the nature of the transport agency, with more isolated storage and decreased risk of vehicular collision, this threat is not as significant as road transport.

Areas Affected

Areas abutting the northern rail link.

3) HAZCHEM OTHER

Hazchem may also be stored in commercial and industrial sites within the Shire. However, due to the absence of major Hazchem storage facilities in the Shire, and the relatively small quantities stored, this threat is not significant.

Recurrence

There is no pattern to Hazchem accidents, however in the case of road and rail, the accident site is confined to defined areas.

Effects

The entry of hazardous material into dams, waterways and aquifers could have serious consequences on the community and all effort should be directed towards the prevention of such an occurrence.

Similarly, all measures should be taken to prevent inhalation of the materials in a chemical cloud.

Mitigation

The transportation of designated chemicals is regulated under State legislation. The responsible authority conducts training courses in handling hazardous materials. The Region actively supports these activities and provides a Workplace Health and Safety Officer within the Council workforce.

9.2.5 Exotic Diseases (Animals and Plants)

Whilst various types of animals are in existence in the Shire, cattle and horses are in the largest numbers. For this reason it is anticipated that these are the most likely in which widespread disease would occur.

Other types of diseases carried into the area by migratory species such as birds or pests are most likely to introduce from the north, e.g. Papua New Guinea. Should this be the case and if the disease is recognised early enough, quarantine of the area may occur.

The impacts on local agricultural industry (livestock and produce) would be widespread due to quarantines and additional clearances and checks to move their products. It would also impact on the recreational activities such as horse events.

This differs from the medical epidemics. Whilst there are some diseases that impact only animals or plants, there are some that can infect humans also such as Hendra. There would need to be joint involvement between Biosecurity and Queensland Health with a situation like this. These are covered in the Medical Epidemic section.



9.2.6 Medical Epidemic and Infectious Disease (Including Influenza Pandemic)

With the possibility of large numbers of overseas tourists visiting the Shire, either in residence, at resorts or in transit to other locations, the likelihood of the introduction of an infectious disease is a distinct possibility. This probability is further increased by the overseas troops visiting the Shoalwater Bay Army Training Area. An epidemic would impact the localised Livingstone Shire and disrupt the community. Additionally there is the risk from other diseases that would reach pandemic scale, which is a risk of worldwide infection.

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

An influenza pandemic is a disease outbreak that occurs when:

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

In the absence of immunity, a new influenza strain could rapidly spread across the globe, causing epidemics or pandemics, infecting large numbers of people.

Yeppoon has a State-owned hospital, but in the event of an epidemic/pandemic it is more likely that patients would be treated in Rockhampton hospitals where specialist care would be more readily available.

Given the high standards of human health and hygiene and good veterinary and farming practices in Australia, it is not expected that a virus would originate and develop into a pandemic form in Australia. However, governments are preparing for an emerging pandemic overseas and subsequent arrival in Australia by applying a combination of strategies:

1. **Alert** to the risk of a pandemic and preparing for a pandemic by increasing Australia's readiness and supporting overseas responses;
2. **Delay** the entry of the pandemic virus to Australia by applying border measures, supporting the overseas response and increasing surveillance;
3. **Contain** or slow the early spread of a pandemic virus once it emerges in Australia, including by strategic deployment of the National Medical Stockpile and strengthening public information campaigns to promote individual hygiene practices and community level measures such as social distancing;
4. **Sustain** the response while a customised vaccine is developed, including by supporting maintenance of essential infrastructure and services and strengthening community social distancing measures;
5. **Control** the pandemic with a customised pandemic vaccine when it becomes widely available; and
6. **Recover** providing the necessary support and stimulus to help the Australian community return to normal living as quickly as possible following a pandemic.

Prevention and Preparedness Strategies

Short

- public awareness.

**Medium**

- pandemic sub plan and Queensland Health pandemic plan.

Long

- evacuation plan.

Areas Affected

Any part or the entire region may be affected.

9.2.7 Marine Oil Spill

Roslyn Bay small boat harbour and marina are the only constructed boat facilities in the Shire. Most of the vessels moored in, or visiting the harbour would be diesel powered and less than 30-40 metres in overall length.

Large bulk carriers and freighters traverse the waters between Mackay and Gladstone and use the Capricorn Channel and the Fitzroy River mouth to Port Alma.

Should a vessel have problems in these areas and therefore cause a loss of a large quantity of oil or similar material, the LDMG may be required to be notified and take action e.g. Shen Neng One grounding in 2010.

9.2.8 Critical Infrastructure Failure

A critical infrastructure failure within the Livingstone Shire would involve any of the following:

- information technology;
- telecommunications;
- water supply;
- sewerage treatment; and
- power supply.

A failure of one or more of these areas would impact on the Shire depending on how long the failure is for, the degree of the failure and if there is more than one area failing. A recent event of this occurring is during the Ex Tropical Cyclone Oswald event on Saturday 26th January 2013 when Telstra's two fibre optic cables were impacted and the areas telecommunications failed. This meant no landline, mobile or internet services for the entire Shire on the Telstra network and several other providers due to congestion. This impacted on Emergency Services, Local Government and all residents. As this coincided with a large amount of rainfall in a short time it was fortunate nothing worse occurred as the community would not have been able to be warned by the typical avenues.

9.2.9 Space Debris Re-Entry

There is an increasing chance of space debris falling to earth due to the number of older satellites and decaying orbits. The National Plan sets out contingency arrangements to cover these events. Australian Contingency Plan for Radioactive Space Re-entry Debris (AUSCONPLAN-SPRED) details the arrangements for the Australian Government to inform States and Territories of any risk posed to Australian interests by the re-entry of space debris. The plan outlines how the Australian Government will support states and territories in the event that space debris should impact within their jurisdictions. The plan identifies roles and responsibilities for key Australian Government agencies and committees in supporting the response to space debris re-entry. It also details how support should be requested and how it would be managed.



Prevention and Preparedness Strategies

Short

- public awareness.

Medium

- early notification of atmospheric entry and landing sites.

Long

- evacuation plan.

Areas Affected

Any part or the entire region may be affected.

Effects

In addition to the possibility of impact damage of varying degrees, some satellites carry nuclear powered generators and other nuclear devices. Adequate warning, including details of the payload when known, is provided by Emergency Management Australia (EMA), which conducts the operation. Local agencies may be called upon to assist.

PART 10. QUEENSLAND EMERGENCY RISK ASSESSMENT

The Queensland Emergency Risk Management Framework (the Framework) is a set of components that aim to support risk based planning within the emergency management context in Queensland. The Framework is based on International Standards Organisation (ISO) 31000:2009, Risk management – Principles and guidelines and the National Emergency Risk Assessment Guidelines (NERAG) and is consistent with the Queensland Emergency Management Assurance Framework (EMAF) which includes the Standard for Disaster Management in Queensland.

Purpose

The aim of the Framework is to provide a consistent approach to assessing risk that can be operationalised and directly supports risk based planning for all levels of QDMA. It is designed to allow local, district and state levels to focus on risk assessment from the perspective of their roles and responsibilities under the QDMA and to then mutually support each other where appropriate.

Methodology

Whilst the Framework is based on ISO 31000, NERAG and EMAF, there are some differences in the Framework methodology to NERAG including:

- the Framework's assessment of likelihood, proposes the assessment of probability based on the historical likelihood. The aim of this approach is the assessment can be operationalised and directly support risk based planning;
- the addition of vulnerability into the assessment of risk will provide a consistent approach to assessing how vulnerable a community/site/area is prior to a disaster season based on key components that compose and sustain a community; and
- finally consequence is assessed.

The LDMG recognises that the risk assessment process is a shared responsibility and all agencies, should assist the risk assessment process including the management of residual risk (risk remaining after the risk treatment has been applied) beyond the capacity and capability of local arrangements. This includes by integrating the outcomes of disaster risk assessment into the disaster,



business continuity, strategic and corporate plans and ensuring an improved understanding, co-ordination and resource allocation of disaster risk management at all levels through informed evidenced based research and education.

The LDMG supports the communication of residual risk outside normal Local and State Government departmental boundaries to ensure Whole of Government consideration and planning towards these risks.

PART 11. CAPACITY BUILDING

11.1 Community Awareness

Section 30e of the Act requires the LDMG "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".

The members and organisations that make up the LDMG currently provide public information and education programs to improve community awareness. These include:

- the Council's website and Facebook pages;
- LS Disaster Dashboard
- disaster and emergency community awareness brochures displayed and available in Council Offices and Libraries;
- preparedness articles in local papers and council newsletters;
- QLD State Government advertising, presentations, and website material;
- QFES advertising, presentations and website material;
- EMA Community Awareness Publications and Emergency Management for Schools Website;
- lectures to various organisations e.g. by Council Disaster Management and SES group leaders;
- development of a "disaster information pack" for distribution to new residents to the region;
- community information sessions, as required;
- presentations to local community groups and schools in regards to local disaster management arrangements and mitigation actions that may be taken by the community to prepare for and cope with hazards;
- Get ready week: and business continuity workshops for local businesses;
- QFES fire and bushfire awareness program;
- BoM weather warnings and website material; and
- targeted engagement based on community vulnerabilities.

The Local Group recognises that providing information on how to look after yourself, your family, your home, business and community in the event of a natural or a man-made disaster is an effective way to build community resilience and help communities recover in the aftermath of an event. One of the key long term objectives of the Local Group is to provide this information in a timely, co-ordinated and accessible fashion.

Through the life of this plan the LDMG in association with QFES, and its media, business and community partners will undertake development, and promote the following key educational and awareness tools for distribution across the Livingstone Shire:

- household emergency plans;
- household emergency checklists;
- business emergency plans; and
- business emergency checklists.



The aim of these plans will be to:

- encourage people and businesses to prepare themselves, their properties and their clients for disasters such as flooding, severe storm and high wind events;
- improve target audiences' safety awareness levels and safety behaviours during a disaster or emergency; and
- encourage people to be aware of, and care for their neighbours in the immediate aftermath of a disaster.

Public education programmes are undertaken to ensure community awareness and preparedness. This builds the community's capacity to withstand the impacts from a disaster and recover following one. Targeted programs will be conducted based on community vulnerabilities. An annual community engagement strategy is developed by input of all agencies in particular the lead agency provides information on their responsibility. This information is to be shared at an LDMG meeting and incorporated into the annual operational plan of the LDMG.

11.2 Community Vulnerabilities

The Inspector-General Emergency Management (IGEM) Review of cyclone and storm tide sheltering arrangements Report 3: 2014-15 highlights the need to improve the way we work with vulnerable people in emergencies.

Everyone faces a degree of risk when a community is challenged by a natural disaster or emergency. Protective factors enable many people in a community to be better prepared and able to adapt to the impact of a disaster, for example, strong family and social connections. However, such factors may be limited in an individual or a community's daily life, resulting in vulnerability to higher levels of risk, injury or loss, or severe or longer term impacts than others.

Individuals, families and specific population groups susceptible to vulnerability factors and low levels of resilience, often require more targeted support to remain safe and to prepare for, respond to, and recover from, disaster events.

The Red Cross states; to determine people's vulnerability, two questions need to be asked:

- 1) To what threat or hazard are they vulnerable?
- 2) What makes them vulnerable to that threat or hazard?

Counteracting vulnerability requires:

- a) reducing the impact of the hazard itself where possible (through mitigation, prediction, warning and preparedness);
- b) building capacities to withstand and cope with hazards; and
- c) tackling the root causes of vulnerability, such as poverty, poor governance, discrimination, inequality and inadequate access to resources and livelihoods.

Within the LSC region there are populations that are more vulnerable in the event of a disaster. These groups include the cultural and linguistically diverse mentioned in 4.1.2.4, and those that have a need for assistance who make up 5% (total of 1 819 residents) of the region's population. People with a need for assistance are those needing help or assistance in one or more of the three core activities of self-care, mobility and communication due to a health condition, disability or old age.

It is unknown how the National Disability Insurance Scheme will impact these individuals so this identified potential 'risk' is being monitored by the LSC Disaster Management Unit and the LS Human and Social Services Taskforce.

Table 6: Need for assistance with a profound or severe disability, Livingstone (S) LGA and Queensland, 2016

LGA / State	Need for assistance		No need for assistance		Total ^(a)
	number	%	number	%	number
Livingstone (S)	1,819	5.0	30,764	84.8	38,272
Queensland	243,267	5.2	4,103,669	87.3	4,703,193

(a) Includes need of assistance not stated.

Source: ABS, Census of Population and Housing, 2016, General Community Profile - G/18

11.2.1 Wildfire

The Livingstone Shire has significant areas of native vegetation, and while this is an important asset for ecosystem services and amenity, under certain weather conditions there is a risk of uncontrolled wildfire. Currently QFES have compiled a wildfire plan due to the increased fuel load as a result of Tropical Cyclone Marcia.

In areas of significant native vegetation, the primary refuge for people is within their homes, and in the absence of catastrophic fire danger conditions, most residents can be expected to stay and defend their homes. QFES have adopted a policy/programme Prepare Act Survive. This includes information for people about deciding to leave early.

Vulnerability of Lifelines

By far the most vulnerable lifeline is power due to its roll-on effect if overhead transmission lines are either disconnected or destroyed by fire. It is a standard practice to disconnect powerlines in fire affected areas, as the powerlines themselves can become a source of additional ignitions, on top of the obvious hazard to fire fighters if lines come down. Less well known is the potential for flame to conduct electricity. In the event that fire-fighters attempt to douse flames under live powerlines, the flame sheets have the potential to conduct electricity into the water streams, introducing an electrocution risk to an already serious situation.

Overhead communication lines would also be vulnerable at the same time. Due to the low factor loading of the bush areas and the clearing along the main transmission line routes the vulnerability of the power system is not particularly high. The main risk of overload comes from overuse of the facilities, as these services can experience significant demand spikes, exacerbated by the trend towards video and other large files from smart phones being transmitted.

Other lifelines including transport corridors have a low level of vulnerability in a wildfire scenario, however they may be closed temporarily due to fallen trees, branches or smoke.

Vulnerability of Critical Facilities

As mentioned above the loss of power would cause some degree of hardship due to its flow on effect to other lifelines (such as loss of reticulated water supply) and also critical facilities. However, critical facilities such as the hospitals should already have back-up emergency power capacity which would be sufficient.



Vulnerability of gas pipeline connections can also be an issue within urban areas due to exposure of nylon lines to high radiant heat fluxes. The exposure of these lines can lead to melting of the pipe causing a secondary fire against the exterior of the house as was found to be an additional issue within the 2003 Canberra fires.

Vulnerability of Local Economic Production and Employment

A minor fire through the bush areas in the Livingstone Shire will only be of nuisance value to a local community if it can be controlled and no buildings or lives are lost. However, issues in some areas have the potential loss of significant numbers of livestock in the event of a major wildfire.

11.2.2 Cyclones

A significant vulnerability of the Livingstone Shire are areas developed pre-1980. This means that in the event of a severe cyclone or East Coast low, there is a high probability of significant damage from the cyclone and the secondary hazard of wind borne debris.

Vulnerability of People

Due to the high probability of significant damage, most people in the area will be vulnerable in the event of a severe cyclone.

The residents with dwellings close to the coastline or the adjacent islands will be vulnerable to the effects of a severe cyclone or East Coast low. The most typical damage will be from wind, wind borne debris and inundation from localised flooding and/or storm tide events.

The islands and resorts may have in place informal Emergency Management Plans for cyclonic events, the logistics of moving or evacuating a large number of tourists and staff to safe shelters needs to be well documented and rehearsed.

Stanage Bay is a key concern during the summer months, due to its popularity with transient family groups and its isolation. It is understood that there is a high level of preparedness amongst the local residents for possible isolation arising from the access roads being cut by flood waters. Although these residents understand the risks involved, Council has an underlying responsibility to support and carry out evacuations if required. This will not be an easy exercise to undertake should there be a cyclone in the area at the time. It is therefore recommended that specific evacuation procedures be prepared for Stanage Bay.

For the overall area, of particular concern, will be the vulnerable groups that have been identified above.

Vulnerability of Social Structures

The Livingstone Shire is well served with community groups which would help to decrease the level of vulnerability. However, a severe cyclone would undoubtedly stretch the capability of these groups. This vulnerability needs to be monitored closely as the age of the community increases.

The composition of the vulnerable groups also needs to be considered, however significant effort is required to maintain current information detailing numbers and locations.



Vulnerability of Buildings

Due to the significant proportion of building stock that is pre-1980, the vulnerability of residential buildings is relatively high for a severe cyclone. Additionally, a significant proportion of these buildings are also in the more exposed areas and due to their exposure will be subjected to greater wind loadings than those buildings shielded by the local ranges.

A secondary hazard of wind borne debris is likely to occur as these buildings suffer damage which will then increase the vulnerability of more structurally adequate buildings in the area. This will be a major concern for critical buildings such as the hospital and buildings designated as shelters.

Public Cyclone Shelter and Place of Refuge

Livingstone has a Public Cyclone Shelter located at the Yeppoon State High School (Yeppoon Public Cyclone Shelter SOP). Other buildings have been reviewed and are being assessed for the use as a place of refuge including:

- Keppel Sands rural fire shed;
- Emu Park State School's new block; and
- St Brendan's music room.

Vulnerability of Lifelines

The critical lifelines likely to be the most affected by Cyclones and East Coast Lows are:

- electrical power loss (overhead power lines destroyed), due to its flow on effect to all other services;
- communications loss (phones, internet);
- fuel supply loss from Gladstone and other centres;
- food supply loss from outside the area; and
- road access loss.

The vulnerability of the lifelines will be a function of their location and structural adequacy and whether they experience wind borne debris damage.

Vulnerability of Critical Facilities

The loss of power would cause hardship due to the reliance of most lifelines on power, particularly the supply of drinking water and sewerage services. If bulk food storage facilities are not cyclone wind resistant buildings, they will become vulnerable in the event of a severe cyclone.

Minor fuel supplies are stored in the area. If roads from Gladstone become inaccessible, the region could experience a shortage of supply of fuel, which could be problematic.

If sufficient warning cannot be given to the critical facilities to allow evacuation, then contingency plans within the LDMP need to be formulated and developed.

Vulnerability of Local Economic Production and Employment

An event involving a severe cyclone or low, depending on the severity, could have a long term impact on the area economically and upon employment levels.



11.2.3 Earthquakes

As earthquakes are difficult to model and have the capability to effect all of the region all areas are vulnerable.

Vulnerability of people

A significant number of people in Livingstone Shire are at risk from an earthquake. The resilience of the community is impaired for the following reasons:

- buildings are not specifically designed to withstand earthquakes;
- due to the extreme rarity of earthquakes in this region it would come unannounced and cause panic and mayhem amongst the residents not used to such a phenomena (e.g. the Newcastle earthquake experience); and
- lifelines would be severely disrupted, impacting greatly on the community, especially given its reliance on outside sources for water, fuel and power.

Vulnerability of social structures

The Livingstone Shire is well served with community groups which would help to decrease the level of vulnerability. However, a severe earthquake has the potential to affect a significant proportion of the community and cause damage to hundreds of buildings including buildings and infrastructure used by community groups.

As with all these natural disaster risks, the community elements most at risk are the young, aged, uninformed, or those who have a special need due to their lack of mobility and specialist care.

For example:

- hospitals, aged homes;
- emergency services facilities;
- shopping centres;
- community shelters;
- fuel supply installations; and
- school, churches etc.

Typically, structures with a reinforced concrete frame and unreinforced masonry infill are a popular form of low to medium rise construction used in hospitals and public works related structures such as schools. Infill panels are often brick or block which provides some lateral resistance. Upon cracking of the infill masonry lateral loads are transferred to the concrete frame. Collapse can occur upon the disintegration of the infill or through shear failure of the frame.

Structures with reinforced masonry on concrete slab floors that comply with the current wind loading codes may perform well under moderate seismic activity. Older concrete block buildings not built to the wind or earthquake codes will be less earthquake resistant than the equivalent modern construction.

Due to the increased prevalence of cyclones buildings are often designed to perform adequately in high wind conditions. However, it was demonstrated in the major earthquake that hit Kobe in Japan, that older housing, which could withstand typhoons did not perform well in the seismic events.

Vulnerability of Lifelines

By far the most vulnerable lifelines are:

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- power and communications and their flow-on effect;
- underground services, e.g. water and sewerage services; and
- transport, e.g. bridges under certain circumstances may collapse.

All lifelines will be affected to varying degrees and emergency services will be similarly affected with members likely to be victims of the damage and disruption.

No structure is truly immune to earthquake damage. The emphasis is to maintain lifelines and key facilities to allow a speedy return to normality after the event.

Vulnerability of local economic production and employment

A severe earthquake would cause an impact on the local economy and employment in the retail and commercial sectors of the region.

11.2.4 Landslips

Vulnerability of People

Damage to roads and slopes are the main concerns for people within the Livingstone Shire.

Vulnerability of Social Structures

The social structure in the Livingstone Shire is unlikely to be significantly vulnerable in this event as the majority of events would be small and would impact on a small number of people. Should an event occur which results in numerous fatalities (such as a Thredbo type landslide with 18 deaths) then more widespread social impact would be felt.

Vulnerability of Buildings

Buildings can be impacted by land sliding by either being in the zone of earth movement itself or be in the impact zone from the slide runout. Based on the limited base information that has been provided it is considered that vulnerability would generally result from either steep terrain (as an example, greater than 15%) or from land development which has not been carried out in a controlled and engineered process.

The structural damage that a building can undergo when impacted on by a landslide event can range from individual boulder impact, through mass earth and rock movement, to distress and cracking due to loss of lateral restraint.

Vulnerability of Lifelines

The most critical lifelines affected are:

- loss of electricity due to damage to lines or substations. The loss of electricity can affect many other services;
- the loss of fixed line communications. Landslides can cut off trunk telecommunication lines;
- blockage to highways and other roads. While alternative routes would be available in most occasions, Byfield Road and its associated services, would be vulnerable should a landslide occur on the Bluff. This roadway provides a key linkage to the north of Yeppoon, including access to the Capricorn Resort; and



- water reservoirs and associated piping may be affected or damaged by landslides. Reservoirs are typically in steep terrain.

Vulnerability of Critical Facilities

This is considered similar to the issues laid out in vulnerability of lifelines.

Vulnerability of Local Economic Production and Employment

An event involving land sliding is likely to have an impact on a localised area of the community rather than an entire community. However, the Christchurch Earthquake in 2011 resulted in numerous deaths and widespread damage from land sliding. Therefore, in rare situations this significant impact can result.

11.2.5 Flooding

Communities on the floodplain are areas vulnerable to major flood events. In addition, areas close to local creeks/ivers and overland flow paths are also vulnerable to flooding, in particular flash flooding.

Vulnerability of People

Residents located in areas that are inundated or cut off by floodwaters and vehicles attempting to use flooded roadways are at risk from flood related problems. 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, are at risk of inundation and isolation.

Local catchment flooding is expected to be short lived whilst the Fitzroy River, and its tributaries such as Alligator Creek, influence a significant portion of the region and can cause inundation for prolonged periods. Those people in the immediate vicinity of the flood prone areas are at risk from flooding. There is also a significant risk of isolation in a number of areas, including Stockyard Point, Ogmoo and Byfield.

Vulnerability of Lifelines

Streets and some major access roads will be closed including the Bruce Highway. The airstrip at the Rockhampton Airport will be inundated when floods reach gauge level 8.7m. 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 would 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, fences and limited livestock losses.



11.2.6 Storm Tide

Cyclonic events besides being the source of destructive high winds also bring periods of high rainfall and storm surges which increase coastal water levels for periods of several hours. When these increased coastal water levels are combined with periods of heavy rainfall there is a significant flooding hazard.

This hazard is a concern for the coastal areas of the region. A Storm tide investigation has been completed, maps are available on the website for the community.

Vulnerability of People

It is expected that storm tide inundation will be an issue as there are a number of communities that may be flooded and/or isolated by storm tide inundation. The areas at risk are detailed below as part of the Lifeline Vulnerability assessment.

Vulnerability of Social Structures

The Livingstone Shire is well served with community groups which would help to decrease the level of vulnerability. The effect of a severe storm tide would be quite devastating to the community and the development of Evacuation Sub plans, Communication sub plans, and Community Engagement strategies assist to minimise the vulnerability.

Vulnerability of Buildings

Vulnerable buildings will suffer the impacts from inundation as well as any impact from strong winds and wind borne debris. The water inundation could also cause severe damage to these buildings. Some areas may suffer significant long-term damage to buildings and the supporting infrastructure.

Vulnerability of Lifelines

Keppel Sands and Joskeleigh may become completely isolated during a storm surge, due to inundation of the Keppel Sands Road. These communities could not expect external assistance during an event and would need to be evacuated before significant sea level rise occurred as all of Joskeleigh and much of Keppel Sands may become inundated, and southern part of Keppel Sands is at risk from Pumpkin Creek breaking out (and wave break in over the seawall).

The urban area along the coastline may become fragmented with storm surge sea level rise potentially (depending on height of rise) cutting the Scenic Highway along the Coast at the following locations:

- Ross Creek (also affects Tanby Road and Taranganba Road);
- Cooe Bay (extreme events only);
- Lammermoor Beach;
- Statue Bay;
- Causeway;
- Kinka Creek; and
- The Rockhampton-Emu Park Road (Hill Street) is likely to be affected by surge in Cawarral Creek.

As a result of coincident stormwater runoff severing alternative inland access (where this access exists) areas likely to be isolated include:

- Emu Park and Zilzie;
- Kinka Beach;



- Residential area north of the Causeway;
- Rosslyn Bay and part of Statue Bay;
- South end of Lammermoor Beach and northern end of Statue Bay;
- Taranganba, south end of Coote Bay, and north end of Lammermoor beach; and
- North End of Coote Bay.

Access to areas north of Yeppoon may become affected by storm surge and (particularly) wave action cutting the Yeppoon-Byfield Road near Farnborough Beach, and storm surge (in Probable Maximum Surge case) affecting bridges across Barwell's Creek.

Other access issues arise with the bottom end of Pinnacle Street, Causeway Lake being very low (currently street kerb and channel is affected by HAT), the only vehicular access path into this cul-de-sac. During a storm surge, this access would be rapidly blocked to conventional vehicles.

Roads

Inundation of roads is most likely to occur as a result of backflow of tidal water through the existing open and underground stormwater drainage networks. Flow velocities are expected to be minimal, possibly in the order of 0.5m/s, and scour of road pavements or footpaths is therefore unlikely to be a source of major road infrastructure damage. Long term inundation of roads and footpaths (approximately 12 hours) may allow the underlying road pavements and subgrade to become waterlogged, resulting in a softening of the pavement structure. The pavement should return to pre-inundation strengths when the underlying pavement and subgrade has sufficiently dried. This may take some time after the surface water has receded.

When the inundation has receded it is recommended that vehicular use on recently inundated roads be restricted to single axle vehicles and emergency vehicles. Heavy or commercial vehicles, not required for emergency access, should be prevented from travelling on the affected roads until the pavements have regained sufficient strength. This time can vary considerably and is particularly dependent on the type of subgrade material. It is therefore recommended that Council engineers be consulted before unrestricted access is permitted.

Sewer

During wet weather, sewerage inflows tend to increase dramatically due to illegal stormwater connections and groundwater ingress. It could be expected that this would also be the case during periods of surge inundation.

Some areas south of Rosslyn Bay and north of Emu Park and Keppel Sands are not sewered. Some damage to individual septic systems due to seawater ingress or flotation of septic tanks can be expected. Seawater ingress would stop or hinder treatment of sewage in the tank, and result in release of essentially untreated waste into absorption trenches in saturated ground. Septic systems are typically private infrastructure (except for public toilets) but release of sewage has major public health implications.

Water Supply

The water supply system is typically located on elevated ground and or sealed underground infrastructure. Some above ground creek crossings may be at risk.

Electrical and Communications

The electrical infrastructure in the areas includes overhead and underground reticulation owned by Energy Queensland to provide electricity supply and underground reticulation owned by Telstra to provide communications and phone services.

Communications



The Telstra infrastructure is all underground reticulation. The system is therefore designed and installed to be robust against the ingress of water. The pit and conduit system is regularly inundated with water as part of the natural storm water dissipation. The cables and cable joints used are grease filled which can be submerged in low level water with no adverse effects. The cable connection pillars, which are located above ground, are also sealed and positively pressurised to prevent the ingress of water, however are not submersible.

Electrical Supply

The Energy Queensland infrastructure is a combination of overhead and underground reticulation. 11kV and 415V services are reticulated to all areas. The overhead reticulation is suitably segregated from the rising water by virtue of being located well above ground level. The poles supporting the cables are able to withstand minor water flow around the base of the pole. Susceptible points in this system are locations where overhead and underground reticulation is joined at connection boxes.

The underground reticulation is robust against water due to the inherent resistance required for underground installations. The weak points are ground mounted and low level equipment, which is not water proof. These include house metre panels, distribution pillars, padmount transformers and 11kV Ring Main Units (RMU). Energy Queensland has a series of cascading protection, which includes metre panels protected at distribution pillars protected at the transformer protected at the RMU protected at the zone substation. As the protection trip proceeds from metre panel to substation a greater area is affected by a loss of power. Power will not be able to be returned until the water level lowers and new equipment is installed. In the case of transformers and RMU's this may take 2 to 3 weeks for supply and installation.

In the Yeppoon region, two underground high voltage padmount sites are at risk from Annual Exceedance Probability (AEP) 1 in 50, 1 in 100, 1 in 500 and 1 in 1,000 year surges. These are estimated to be up to and over 1.2m underwater.

One underground high voltage padmount site in the Emu Park region is also at risk from all estimated surges. The depth of these surges at the sites are also estimated to be up to and over 1.2m.

There are no essential Energy Queensland installations within the Keppel Sands region. There is potential loss of life situations if the electricity is not shut off prior to water levels rising. The speed at which water rises and warnings, which may be available, will play an important role in assisting Energy Queensland in the maintenance and safety of the network. However, the protection settings are generally set to provide power shutoff in less than 1 second.

Vulnerability of Critical Facilities

Public buildings at risk from inundation include

- a) Keppel Sands State School,
- b) Emu Park Library
- c) Emu Park Community Hall
- d) Cedar Park Shopping Centre.

Vulnerability of Local Economic Production and Employment

An event involving a severe cyclone or low, depending on the severity in combination with a significant storm surge, could have a long term impact on the area economically and upon employment levels should significant damage occur – this is however considered to be an unlikely event.

11.2.7 Severe Storms

In this section wind, hail and lightning hazard vulnerability are considered. The associated flooding hazard vulnerability is covered under the Flooding section.



Vulnerability of People

People at most risk to severe storms are:

- the elderly, very young, and the physically or mentally impaired;
- people in mobile homes;
- people living or working in remote rural or isolated areas;
- people who may not understand the warning due to a language barrier; and
- people in homes within flood-prone low lying areas.

Anyone who is caught outdoors with imminent arrival of a severe storm is vulnerable to lightning strike. While this may apply to any person within the Livingstone Shire, it is more likely farm and forestry workers, fishermen, miners and construction workers. Employers need to communicate the necessary evasive and precautionary actions which should be taken. Safety measures should be communicated widely throughout the Livingstone Shire in order to raise awareness of the steps which can be taken to improve the safety of anyone who is unable to find shelter under these conditions including:

- the safest place is inside a building or a vehicle;
- inside a home, avoid using the telephone landline, except for emergencies;
- do not use computers, electrical appliances or plumbing;
- lightning can strike without rain;
- lightning risk remains for up to 30 minutes after the last observed lightning or thunder;
- lightning can affect the brainstem, which controls breathing. If a victim appears lifeless, it is important to begin resuscitation immediately to prevent death by suffocation;
- avoid sheltering under tall trees;
- get out and away from open water;
- get away from tractors and other metal farm equipment;
- get off and away from motorcycles, scooters, golf carts and bicycles;
- put down fishing rods, golf clubs, metal tools and implements such as shovels, axes, pitchforks etc.;
- stay away from wire fences, clotheslines, metal pipes, rails and other metallic paths which could carry lightning from some distance away;
- avoid standing in small isolated sheds or other small structures in open areas;
- in a forest, seek shelter in a low area under a thick growth of small trees;
- in open areas, go to a low place such as a ravine or a valley, be alert for flash floods;
- keep ears covered and eyes closed to protect against hearing damage and blindness due to close lightning strikes; and
- remove jewellery, watches and other metal items as these might cause severe burns if struck by lightning.

Vulnerability of Social Structures

The Livingstone Shire is well served with community groups which would help to decrease the level of vulnerability to severe storm impacts. However, a severe storm would stretch the capability of these groups.

Every school, hospital, clinic and aged care facility should have a severe weather action plan and have frequent drills. People should remain indoors if threatening weather is expected, in particular away from windows and metal piping which can serve as a conductor of electricity in the event of a lightning strike. Larger disaster kits should be prepared to cater for the anticipated numbers of people seeking shelter, and regular inspections should be carried out, drinking water replaced, batteries checked etcetera.



Vulnerability of Buildings

In the event of a severe storm there is a high probability of significant damage to houses built pre 1980, and people living in caravans, cabins or houseboats. This means that the majority of people are in buildings which offer relatively safer shelter in the event of a severe thunderstorm. Residents in the mobile home type of structure should be notified of public shelters for early evacuation during times of severe weather.

Vulnerability of Lifelines

The most critical lifelines affected by Severe Storms are:

- the loss of electrical power, due to its flow on effect to all other services;
- the loss of communications;
- blockages to streets and access routes for emergency and rescue vehicles due to fallen trees and other debris; and
- over-burdening of public shelters, supplies and services in the event of prolonged or widespread damage.

Vulnerability of Critical Facilities

The loss of power would cause hardship due to the reliance of most lifelines on power, particularly the supply of drinking water and sewerage services. Loss of power to hospitals and clinics would place the entire population at risk and may require evacuations of patients. The blockage of access routes may prevent essential services such as fire-fighting, ambulance and police from gaining access to affected people and property.

Vulnerability of Local Economic Production and Employment

An event involving a severe storm is likely to have an impact on a localised area of the community rather than the whole community. Due to its more localised affect the impact from a single severe storm is not expected to have a long term impact on the community. However, it must be noted that the frequency of severe storms is far greater than that of cyclones, so the net combined economic impact of severe storms and the associated damage from hail, high winds and intense rainfall is much greater than cyclones.

11.2.8 Tsunami

This hazard is a concern for the coastal communities such as Yeppoon, Emu Park, Keppel Sands, Joskeleigh, Kinka Beach, Rosslyn Bay, Bangalee and Stanage Bay. It is also a concern for Great Keppel, North Keppel and Pumpkin Islands which are popular tourist destinations. Other smaller islands, offering limited protection have camping groups on them that may need evacuation, including Middle, Miall, Conical, Divided, Pelican and Humpy Islands. These destinations may have several thousand tourists between them that need to be considered as part of the emergency response to a tsunami event.

Vulnerability of People

Tsunami warnings will be issued and it is expected that people will have some time to evacuate all coastal areas. However, the LDMG should endeavour to make sure that people living in exposed areas are aware of the risk and of the emergency procedures in case of a tsunami. In case of a short time for evacuation, tsunami will be an issue for communities on the coast. Everyone will be vulnerable. People



should evacuate inland or, if evacuation time is short, should evacuate to higher grounds such as near water reservoirs which are generally placed on elevated locations. They should then be in a safe area in case of a tsunami (Keppel Sands water reservoir, Emu Park water reservoir, Rosslyn water reservoir). Also Double Head/Bluff Point Lookout would be a safe area in case of a tsunami. Even though it is near the ocean, it is quite high. People who are in the islands should evacuate to the elevated areas of the islands. It would be recommended to evacuate to high grounds (run-up can exceed 30 m above mean Sea Level as has been experienced in recent global events).

Tsunami Evacuation maps are located in *Annexure G – Tsunami Evacuation Maps*.

Vulnerability of Social Structures

The Livingstone Shire is well served with community groups which would help to decrease the level of vulnerability. The effect of a tsunami would be quite devastating to the community and sub plans including Evacuation, and Communication will cover Tsunami warnings.

Vulnerability of Buildings

Vulnerable buildings along the coastline from Keppel Sands to Stanage will suffer the impacts from tsunami inundation. The coastal area could experience significant long-term damage to buildings and supporting infrastructure.

Based on Bureau of Meteorology advice, people should evacuate to areas at least 10 m above sea level or at least 1 km from beaches, harbours, rivers, coastal areas etcetera. Following this advice, Council has developed maps for coastal localities from Yeppoon to Keppel Sands depicting high ground areas.

Based on these maps public buildings at risk include:

- Council offices - Anzac Parade, John Street (Community Development Centre);
- Emu Park – Library, QPS, SES, QFES, QAS, Airstrip, and
- Keppel Sands – township is at risk of inundation.

Vulnerability of Lifelines

Keppel Sands and Joskeleigh may become completely isolated during a tsunami, due to inundation of the Keppel Sands Road. These communities could not expect external assistance during an event and would need to be evacuated before significant sea level rise occurred as all of Keppel Sands and much of Joskeleigh may become inundated.

The urban areas along the coast may become fragmented with tsunami sea level rise potentially (depending on height of rise) cutting the Scenic Highway along the Coast at following locations:

- Ross Creek (also affects Tanby Road and Taranganba Road);
- Cooes Bay;
- Lammermoor Beach;
- Statue Bay;
- Causeway; and
- Kinka Creek.

The Rockhampton-Emu Park Road (Hill Street) is likely to be affected by tsunami in Cawarral Creek. Alternative inland access (where this access exists) areas likely to be inundated and isolated include:

- Emu Park and Zilzie;



- Kinka Beach;
- residential area north of the Causeway;
- Rosslyn Bay and part of Statue Bay;
- south end of Lammermoor Beach and northern end of Statue Bay;
- Taranganba, south end of Cooee Bay, and north end of Lammermoor beach;
- north end of Cooee Bay;
- parts of Yeppoon;
- Bangalee; and
- Stanage Bay

Access to areas north of Yeppoon may become affected by tsunami cutting the Yeppoon-Byfield Road near Farnborough Beach, affecting bridges across Barwell's Creek, on the private access road to Capricorn Resort.

Other access issues arise with the bottom end of Pinnacle Street, Causeway Lake being very low (currently street kerb and channel is affected by HAT), the only vehicular access path into this cul-de-sac.

During a tsunami this access would be rapidly blocked to conventional vehicles.

Roads

Inundation of roads on the coast will occur in the event of a tsunami. Flow velocities are expected to be extremely high, causing scour of road pavements/footpaths and major road infrastructure damage. Long term inundation of roads and footpaths (approximately 12 hours) may allow the underlying road pavements and subgrade to become waterlogged, resulting in a softening of the pavement structure. When the inundation has receded it is recommended that vehicular use on recently inundated roads be restricted to single axle vehicles and emergency vehicles. Heavy or commercial vehicles, not required for emergency access, should be prevented from travelling on the affected roads until the pavements have regained sufficient strength. This time can vary considerably and is particularly dependent on the type of subgrade material. It is therefore recommended that Council engineers be consulted before unrestricted access is permitted.

Sewer

During inundation, sewerage inflows tend to increase dramatically due to illegal stormwater connections and groundwater ingress. It could be expected that this could also be the case during periods of tsunami inundation.

Areas south of Rosslyn Bay and north of Emu Park and Keppel Sands are not sewered. Some damage to individual septic systems due to seawater ingress or flotation of septic tanks can be expected. Seawater ingress would stop or hinder treatment of sewage in the tank, and result in release of essentially untreated waste into absorption trenches in saturated ground. Septic systems are typically private infrastructure (except for public toilets) but release of sewage has major public health implications.

Electrical and Communications

The electrical infrastructure in the areas includes overhead and underground reticulation owned by Energy Queensland to provide electricity supply and underground reticulation owned by Telstra to provide communications and phone services.

Communications

The Telstra infrastructure is all underground reticulation. The system is therefore designed and installed to be robust against the ingress of water. The pit and conduit system is regularly inundated with water as part of the natural storm water dissipation. The cables and cable joints used are grease



filled which can be submerged in low level water with no adverse effects. The cable connection pillars, which are located above ground, are also sealed and positively pressurised to prevent the ingress of water, however are not submersible.

Vulnerability of Critical Facilities

Based on the Council tsunami inundation maps public buildings at risk include:

- Council offices Anzac Parade, John Street (Community Development Centre, Strengthening Family Connections and Yeppoon Library);
- Emu Park – Library, QPS, SES, QERS, QAS, Airstrip, and
- Keppel Sands – the whole area is at risk of inundation.

Vulnerability of Local Economic Production and Employment

An event involving a severe tsunami, depending on the severity, could have a long term impact on the area economically and upon employment levels should significant damage occur – this is however considered to be a very unlikely event.

11.2.9 Tornadoes

In this section, wind hail and lightning hazard vulnerability are considered. The associated flooding hazard vulnerability is covered under Floods.

Vulnerability of People

People at most risk to tornadoes are:

- people in vehicles;
- the elderly, very young, and the physically or mentally impaired;
- people in mobile homes; and
- people who may not understand the warning due to a language barrier.

Vulnerability of Social Structures

The Livingstone Shire area is well served with community groups which would help to decrease the level of vulnerability. However, a tornado strike would undoubtedly stretch the capability of these groups, particularly as there may be little or no advance warning within which to mobilise groups.

Every school, hospital, clinic and aged care facility should have a severe weather action plan and have frequent drills. People should remain at school, hospitals or places of business beyond regular hours if threatening weather is expected. In the event of a tornado, people are safer in buildings than in a train, bus or car.

All premises should maintain a disaster kit for use during and in the aftermath of a tornado.

Suggested disaster kits would include:

- 3-day supply of drinking water (two litres per person per day) and food that won't spoil;
- one change of clothing and footwear per person;
- one blanket or sleeping bag per person;
- a first-aid kit, including prescription medicines;
- emergency tools, flashlight, and extra batteries;
- battery-powered radio, mobile phone and a portable radio;



- extra sets of car/house keys and cash;
- special items for infant, elderly, or disabled family members; and
- fire extinguisher.

Vulnerability of Buildings

Pre-1980 buildings are vulnerable to a tornado with a high probability of significant damage from wind and secondary hazards associated with wind borne debris due to the building materials and methods in use. Damage can occur from high winds with rain, hail and lightning strikes to buildings. Tornadoes are site specific so the number of houses/people that are affected will vary significantly from location to location.

Vulnerability of Lifelines

The most critical lifelines affected by Tornadoes are:

- the loss of electrical power, due to its flow on effect to all other services;
- the loss of communications; and
- blockages to streets and access routes for emergency and rescue vehicles due to fallen trees and other debris.

Vulnerability of Critical Facilities

The loss of power would cause hardship due to the reliance of most lifelines on power, particularly the supply of drinking water and sewerage services.

The blockage of access routes may prevent essential services such as fire-fighting, ambulance and police from gaining access to affected people and property.

Vulnerability of Local Economic Production and Employment

An event involving a tornado is likely to have an impact on a localised area of the community rather than the whole community which is the likely scenario in a severe cyclone. This impact may be locally devastating, with costs running into the millions of dollars. As tornadoes are relatively localised in effect, it is not expected to have a long term impact on the community unless significant damage is caused to key industries.

11.2.10 Heatwave

Vulnerability of People

Improved public awareness has led to a significant decrease in the vulnerability of the population to heatwaves. Implications for improved safety are communicated through widespread media coverage and information released through health care institutions. Other measures which have improved resistance of communities to heatwave risk include the use of air-conditioners, better housing design, better clothing, a trend towards more people working indoors, education, behavioural adaptations and extended temperature forecasts to seven days.



People's vulnerability to heat depends on:

- climatic factors (such as the frequency of heatwaves);
- age;
- gender;
- pre-existing disease;
- use of certain medications;
- level of hydration;
- living alone;
- housing condition (building type or living on a higher floor);
- presence and use of air-conditioning in the home or residential institution; and
- physiological adaptation exposure to heat wave (density and duration).

The Human and Social Services Taskforce provided insight across 2017 / 2018 season. Currently, babies, outside workers and the elderly were presenting most at the local hospital and general practitioners.

Consideration has been given to education and awareness of new parents who are an emerging risk. The Queensland health heatwave response plan considers vulnerable people.

https://www.health.qld.gov.au/_data/assets/pdf_file/0032/628268/heatwave-response-plan.pdf

Vulnerability of Social Structures

The Livingstone Shire is well served with community groups which would help to decrease the level of vulnerability.

Every school, hospital, clinic and aged care facility should have a heatwave Action Plan and have the necessary equipment and supplies available during the high risk period from November to March.

Vulnerability of Buildings

Pre-1980 dwellings may have been retrofitted with air conditioners and most householders have fans. The possibility of energy demand overload during heatwaves may lead to power failure. Overheating of electrical and/or mechanical equipment due to inadequate air-conditioning may lead to malfunction and fires.

Vulnerability of Lifelines

The most critical lifelines affected by heatwaves are:

- the loss of electrical power, due to its flow on effect to all other services
- inability to maintain air-conditioned living spaces leading to heat stress in vulnerable individuals.

Vulnerability of Critical Facilities

The loss of power would cause hardship due to the reliance of most lifelines on power, particularly the supply of drinking water and sewerage services.

Vulnerability of Local Economic Production and Employment



Heatwaves may cause damage to crops and loss of livestock. The heatwave impacts upon the local agricultural sector will depend upon the severity and extent of the heatwave, and the potential impacts upon crops and livestock. It may result in the total or partial loss of crops.

Vulnerability of the environment

Biome distributions are determined largely by temperature and precipitation patterns. Ecosystems with lower organism diversity are more likely to be affected by changes in climate. Short term heatwave conditions may exacerbate the longer term effects of global climate change, and are expected to occur more frequently and with longer durations in the century ahead.

PART 12. CAPACITY BUILDING DISASTER MANAGEMENT

12.1 Training

The provision of and attendance at education and training for those involved in disaster and emergency management work is a key preparedness and capability building activity. QFES has a responsibility identified in the Act and State Plan to ensure that persons performing functions under the Act in relation to disaster operations are appropriately trained. QFES-Emergency Management has developed a DM Training Framework identifying courses that are to be undertaken by those persons. Disaster management training is important to ensure that all agencies can seamlessly integrate within the regions disaster management arrangements and contribute to an effective and co-ordinated response.

Each member agency is responsible for ensuring that staff undertaking disaster and emergency management work have or plan to have received appropriate training for their roles, in particular those courses identified in the Training Framework.

The LDC is responsible for identifying and supporting attendance at relevant training for LDMG members and the LDCC team.

12.1.1 Accredited Training

This Plan identifies a preference for vocational education and training that is accredited or is a qualification or individual units of competency under the Australian Qualifications Framework (AQF). The AQF is the system that identifies the various levels of educational qualifications in Australia. Disaster and emergency management specific training is contained within the "Public Safety Training Package".

Training available for members of the Livingstone Shire LDMG and Co-ordination Centre staff includes:

- QFES-EMC provided courses from the Training Framework;
- courses from the Public Safety Training Package provided for example by QFES or SES trainers or other training providers; and
- accredited programs such as courses from the Public Safety Training Package can involve assessment which will include a Desktop Discussion or Co-ordination Centre exercise. The assessment task involves an emergency situation scenario enacted to train and test staff on their ability to apply their knowledge to procedures, processes and systems.



12.1.2 Training for work in Disaster Co-ordination Centres

Each lead agency is to have an appropriate number of staff trained or planned to be trained at the appropriate skill and competency level to work in a Disaster Co-ordination Centre. This will greatly assist with the effective co-ordination of disaster operations.

Appropriate courses for working in a disaster co-ordination centre include:

- Australasian Inter-service Incident Management System (AIIIMS) course. AIIIMS courses are 2 days (theory program with some scenario work). QFES and Council have some capacity to provide this course to staff that may be required to work in a Co-ordination Centre;
- public Safety Training including: co-ordinate resources within a multi-agency emergency response. This course examines a range of issues that impact emergency co-ordination, culminating in a major co-ordination centre exercise where participants will have a chance to experience the management of a major emergency in a realistic, simulated environment;
- QFES-EM Disaster Co-ordination Centre courses form the Training Framework. Three courses have been developed.

12.2 Exercise

The Standard for Disaster Management in Queensland (the Standard) supports the broad role that exercises play in improving disaster management. The accountability for "capability" is characterised as 'how the entity is using training and exercising to help embed the necessary culture change and improve performance to meet disaster management outcomes'.

Exercises are a mechanism to review the effectiveness of disaster management plans in Queensland, maintain readiness for events and improve practice. Entities have a range of responsibilities to review plans, and participate in exercise management (the design, planning, conduct, and evaluation of exercises).

Prior to participating in Disaster and Emergency Exercises it is preferred that participants have received training as outlined in this Plan. This is so that participants have a basic understanding of the policies and procedures that apply to working in a disaster management environment and that the experience and learning's from the exercise can be maximised.

12.2.1 Exercise Program and Type

Each year one or more of the following exercises shall be held:

- an exercise determined by the lead agency designed to test the lead agency's response co-ordination capability;
- a table top discussion exercise, with the focus of the exercise to be determined by the District or Local Group;
- an LDCC exercise with the focus of the exercise to be determined by the LDC or Local Group;
- a small scale exercise involving the testing of a single element of the capacity of the LDCC;
- a small scale exercise involving the testing of the Evacuation Centre Support Operational Plan;
- a joint LDCC/DDCC Livingstone Shire Local Disaster Management Exercise with the focus of the exercise to be determined by the LDMG and DDMG.

Exercises can be small scale one-two hour activities through to a three day event. More frequent smaller exercises can be an effective alternative to a single large scale activity.



12.2.2 Exercise Evaluation

An exercise is to be followed by a debrief process. A hot debrief is to be conducted immediately following the conclusion of the exercise and a cold debrief conducted not longer than a month following the exercise. The cold debrief allows participants time to provide a more considered view of the exercise outcomes.

The learning's from the exercise are to be consolidated into a plan for action.

12.3 Post-Disaster Assessment

The review of operational activities undertaken during a disaster is a key component of developing capacity and the improvement of disaster management arrangements.

Post-disaster assessments (also known as After Action Reviews) are conducted to:

- Assess disaster operations undertaken for a given disaster including actions, decisions or processes;
- Document those processes that worked well and identify a course of action to ensure that they are captured and updated in relevant plans for use in the next operation; and
- Assess capability and consider where additional planning, training and/or exercises may enhance capability.

The review of operations is conducted through two forms of debrief:

Hot debrief

Undertaken immediately after operations are complete, giving participants the opportunity to share learning points while the experience is still very fresh in their minds. Multiple hot debriefs during protracted operations may be appropriate to identify significant issues and provide prompt solutions for immediate implementation.

Post event debrief

Held days or weeks after an operation, when participants have had an opportunity to take a considered view of the effectiveness of the operation. A Post Disaster Assessment Report is to be completed in partnership with QFES-Emergency Management to provide an overview of the lessons identified following an event and importantly recommendations for improving disaster management.

Following a Post Disaster Assessment the Local Group may need to consider issues for resolution or may need to refer an issue to the District Group for advice or resolution.

PART 13. PREVENTION STRATEGY

The Disaster Management Act defines prevention as the taking of preventative measures to reduce the likelihood of an event occurring or, if an event occurs, to reduce the severity of the event.

13.1 Disaster Mitigation

Disaster Mitigation is the means taken in advance of or after a disaster aimed at decreasing or eliminating its impact on communities, the economy, infrastructure and the environment. The objective of prevention and disaster mitigation activities is reduced risk and vulnerability through initiatives to enhance community resilience and sustainability.



Prevention and disaster mitigation can be, in part, achieved through application of building codes, planning policies and legislation.

Building Codes, Building Use Regulations, Planning Policies, that are relevant and apply include:

- Building Code Australia;
- Building Act 1975;
- Building Standards Regulation 1993;
- Building Regulations 1991;
- Queensland Development Code;
- Building Fire Safety Regulation;
- Body Corporate and Community Management Act;
- Building Units and Group Titles Act;
- Building and Other Legislation Amendment Act;
- Building Services Authority Act;
- Local Government Finance Standard 2005;
- Queensland Coastal Plan; and
- State Planning Policy 1/03 guideline: mitigating the adverse impacts of flood, bushfire and landslide.
- Livingstone Shire Planning Scheme 2016.

13.2 Legislation

In addition to the Disaster Management Act 2003 legislation relevant to disaster management includes:

- Agricultural Chemicals Distribution Control Act 1966;
- Ambulance Service Act 1991;
- Local and Subordinate Local Laws;
- Chemical Usage (Agricultural and Veterinary) Control Act 1988;
- Coastal Protection and Management Act 1995;
- Dangerous Goods Safety Management Act 2001;
- Environmental Protection Act 1994;
- Exotic Diseases in Animals Act 1981;
- Explosives Act 1999;
- Fire and Emergency Service Act 1990;
- Gas Supply Act 2003;
- Information Privacy Act 2009;
- Land Act 1994;
- Liquid Fuel Supply Act 1984;
- Local Government Act 2009;
- Major Sports Facilities Act 2001;
- Marine Parks Act 2004;
- Native Title (Queensland) Act 1993;
- Nature Conservation Act 1992;
- Queensland Reconstruction Authority Act 2011;
- Petroleum Act 1923;
- Police Powers and Responsibilities Act 2000;
- Public Health Act 2005;
- Public Safety Preservation Act 1986;
- Right to Information Act 2009;
- Sustainable Planning Act 2009;



- Terrorism (Commonwealth Powers) Act 2002;
- Water Act 2000;
- Water Supply (Safety and Reliability) Act 2008; and
- Work Health and Safety Act 2011.

13.2.1 Insurance

In a disaster there is significant impact on the whole community caused by under insured and non-insured properties. It is considered that this is an issue for the insurance industry and the State Government with input from the Local Group through its members.

13.2.2 Land Use Management Initiatives

The *Livingstone Planning Scheme 2018* was adopted by Council on 5 April 2018 and commenced on 1 May 2018. On 19 June 2018, Council adopted Version 2 of the planning scheme. Version 2 of the *Livingstone Planning Scheme 2018* commences on 25 June 2018 and it includes a Local Government Infrastructure Plan (LGIP).

PART 14. RESPONSE STRATEGY

14.1 Response Capability

The principle purpose of emergency response is the preservation of life, property and the environment. Response is defined as the "actions taken in anticipation of, during and immediately after an emergency to ensure its effects are minimised and that people affected are given immediate relief and support" (Australian Emergency Management – National Emergency Risk Assessment Guidelines October 2010).

The LDMG recognises that the response to a disaster event:

- needs to incorporate all those actions that help reduce loss of human life, illness or injury to humans, property loss or damage, or environmental damage to a particular and specific disaster event;
- may commence prior to the impact of an event, if advance warning is given and known; and
- concludes once the risks of loss of human life, illness or injury, property loss or damage, or environmental damage are reduced to an acceptable level.

The LDMG has a strong response capability in that it is well equipped, well staffed and has a reliable assembly of resources including access to:

- Livingstone Shire Council response and equipment resources;
- Queensland Ambulance Service response and equipment resources;
- Queensland Fire and Emergency Services response and equipment resources;
- Queensland Police Service response and equipment resources;
- State Emergency Service response and equipment resources;
- access to equipment (including heavy equipment) and plant within Council and through commercial providers, which is accessible through the LDCC Logistics Team;
- Personal Protective Equipment held by lead agencies; and
- volunteers of the many community organisations within the region.

Agencies listed have appropriate resources to deliver their agreed roles and responsibilities.

14.2 Warning Notification and Dissemination



For natural disasters, the majority of warnings are received from the BoM via email, text message or if the risk is substantial and imminent, by telephone. These warnings are received by the LDMG members and relevant LSC officers.

If a weather forecast shows the potential for a hazard to develop e.g. a Tropical Cyclone, the situation is monitored closely by the nominated LDMG members. Dependent on the risk (likelihood of the event impacting the community and consequence if it does), the LDMG may activate and the details of the forecast or warning will be disseminated to all the LDMG members.

Additionally all media outlets will be notified according to the Communication Sub plan to distribute the information to the community.

14.2.1 Standard Emergency Warning Signal (SEWS)

In 1999, an agreement was reached between all States and Territories on the need for a Standard Emergency Warning Signal (SEWS) to be used in assisting the delivery of public warnings and messages for major emergency events. The signal used for the SEWS is the existing BoM Tropical Cyclone warning signal.

SEWS is intended for use as an alert signal to be played on public media to draw listener's attention to a following emergency warning. It is meant to attract listener's attention to the fact that they should take notice of the emergency message.

Responsibility for the management of the SEWS in Queensland rests with the Commissioner Queensland Fire and Emergency Services in conjunction with the Queensland Regional Director of the BoM for meteorological purposes.

14.2.2 The National Emergency Alert SMS system

This system will also be in operation but only instigated in the local area after consultation with the LDC and the DDC and authorised by the Chairperson of the LDMG where it is the Principle Control Authority and in accordance with the Emergency Alert Guidelines. Emergency Alert templates and campaigns are saved on the Disaster Management Portal.

All messaging needs to be cohesive and accurate. Within the LDCC, once activated, all media and communications will be managed by the Public Information officer/team.

14.2.3 Local warnings/information

LDMG members will receive warning products via a number of means:

- the DDC will receive notification directly from the State Disaster Co-ordination Centre (SDCC) and internally through Queensland Police Service Communication Centres and will ensure the dissemination of warnings to vulnerable LDMGs within the district;
- the LDMG will be notified by email and may also receive notification from internal agency central offices; and
- a number of agencies will also receive warnings directly from the BoM.

Details regarding responsibility for notification processes within LDMG member agencies are detailed in respective agency plans. Agency plans will include detailed contact registers to achieve dissemination of warnings.



The release of information to the community regarding the emergency, and associated threats, is the responsibility of the Chairperson of the LDMG or his/her delegate upon recommendation of the Principle Control Authority for the particular event. Warnings of naturally occurring events are forwarded to the LDC who in turn collates all necessary warnings, advice and information for distribution to the community through radio, television and social media networks.

14.2.4 Types of warnings

- media warnings – internet sites, radio, television and local newspapers
- Whispr – a messaging service that targets residents on Council's database
- telephone warnings via Emergency Alert system (when activated)
- door-knocking by police and other emergency service agencies
- warning devices – horns; sirens; loud-hailers.

Should a mandatory evacuation be ordered, along with media broadcasts, the SES, Police and other authorised emergency agencies may do street by street broadcasting using hailers.

14.3 Activation

14.3.1 Activation of LDMG

The Chairperson of the LDMG has responsibility for activating the LDMG and the LDCC and determining the stage of activation required.

Activation will normally occur:

- as a response to a worsening situation and is thus responsive to an alert warning system;
- because of other circumstances, where no warning is possible;
- at the request of the responsible lead agency/control authority;
- at the direction or request of the DDC; and
- at the discretion of the LDMG Chairperson upon becoming aware of a threat or potential threat to the communities of the Livingstone Shire.

14.3.1.1 Activation

The LDC is responsible for activating the LDMG. This would generally occur following consultation with the Chair of the LDMG and the DDC.

The four levels of activation are:

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

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



Stand up The operational state following 'lean forward' whereby resources are mobilised, personnel are activated and operational activities commence. Disaster co-ordination centres are activated.

Stand down Transition from responding to an event back to normal core business and/or recovery operations. There is no longer a requirement to respond to the event and the threat is no longer present. Meetings may still occur targeting recovery operations.

The local levels of response activation are outlined at *Annexure E – Stages of Activation – Response Operations*.

14.3.1.2 Local Disaster Co-ordination Centre

Livingstone Shire Local Disaster Co-ordination Centre is located at the Centre of Excellence for Disaster Management, Innovation and Community Resilience (7-9 James Street, Yeppoon QLD). A Sub Plan has been developed with full details of the LDCC operations.

14.3.2 Activation of Sub Committee

Chairpersons of Sub Committees also have the discretion to activate the relevant group as deemed necessary. However, the decision to activate a Sub Committee should be done, where possible, after consultation with the LDC and/or Chairperson of the LDMG.

14.4 Concept of Operations for Response

14.4.1 Operational Reporting

For the Queensland Disaster Management system to function effectively, reporting lines must be strictly adhered to.

The demand for information increases substantially during times of activation, and this can be driven by political or media demands. Whilst the LDMG accepts these demands and will facilitate requests for information it must not allow the reporting system to be circumvented.

The LDMG's are to report to the District Disaster Management Group (DDMG). In turn the District Group will report to the State Group. The Local Group should not report directly to the State group and all requests for information must go through the District Group. Individual agencies have two reporting obligations:

1. Each agency must report all activities to the Chair and LDC of the group. Without this information full situational awareness cannot be achieved. Reporting must be in writing surmising the activities of the agency.
2. Each supporting agency has a responsibility to keep their normal command structure informed of their actions and activities. The structure and nature of this reporting is by individual arrangement.

In turn, the LDCC has a responsibility to keep all the members of the LDMG informed of the situation. It is unusual that all agencies will be required to support activation. The LDC is responsible to ensure that all members of the LDMG receive situation reports and up to date information.

14.5 Financial Management



Disaster related finances are not normally included in the budgetary process of the Council or other responding agencies. However, disaster events happen and may require the allocation of substantial funds as a consequence.

Due to the nature of many disaster situations, finance operations will often be carried out within compressed time frames and other pressures, necessitating the use of non-routine procedures; this in no way lessens the requirement for sound financial management and accountability.

It is important to remember that a Declaration of a Disaster Situation is not a pre-requisite for the reimbursement of expended funding.

The LDCC and the Livingstone Shire Council must maintain proper financial records during a disaster. In the event of a disaster situation the Council's normal procedure for expenditure should be followed. A purchase order is raised and all expenses captured in that Pub number.

Expenses should be recorded in the following three categories; Labour, Plant Hire, Materials and Services.

14.5.1 Support Agencies

Each support agency is responsible for providing its own financial services and support to its response operations in the field.

14.5.2 Authority/Delegation to Expend Funds

The LDC is able to authorise financial expenditure if required. The LDC undertakes consultation with the relevant Council's senior management, the DDC and QFES-EM before any major outlay.

14.5.3 Authorised Expenditure

Individual authorised limits shall be as per normal delegation. The determination of the limit of expenditure permitted without further reference to senior management by the LDC shall be decided by the CEO.

14.5.4 Recording of Expenses

When an event occurs, Council should immediately begin accounting for labour, plant hire, materials and services relating to the disaster response. All disaster-related expenditure should be recorded in a purchase order specifically raised to deal with the event/disaster. The purchase order should have separate provision for capturing expenses incurred on Council land and those on private land. Provided all expenditure is directed through Councils existing financial program and uses current work practices any claim for reimbursement can be supported.

Whilst innovative and expeditious means of procurement are called for during times of disaster events, it is still mandatory that all expenses are directed to the purchase order/job number to safeguard the use of public funds from the potential of fraud, waste or abuse.

14.5.5 Recouping of Funds

Provided the Minister for Emergency Services has approved the activation of the Commonwealth/State Natural Disaster Relief and Recovery Arrangements (NDRRA) the Local Governments can submit a



claim for costs incurred to recover from a disaster event. Where costs have been incurred on Council land the local government can claim 75% of the cost incurred to remove, dispose and restore public assets provided those assets are not covered by insurance. For instance, the removal and disposal of damaged vegetation from roads, parks, foreshores and reserves is covered under this area.

Where costs have been incurred on private land the local government can either undertake the work or reimburse the property owner for the costs incurred to remove and dispose of vegetation blocking driveway access or posing an ongoing hazard to buildings or people on the property. The local government can claim 100% of the cost incurred.

14.5.6 Natural Disaster Relief and Recovery Arrangements

The NDRRA trigger point for Livingstone Shire is determined annually by the relevant State Government Department (usually the one responsible for Local Government) and is published in the NDRRA Booklet. This is usually available in November each year. Refer to the booklet: "Natural Disaster Relief and Recovery Arrangements" which deals with claimable expenditure.

14.6 Media Management

The activation of the Public Information Cell, aligns with activation of the LDMG. The LDMG Chair or his/her delegate has authority to activate the LDMG on receipt of:

- a warning or an impending threat, which in the opinion of the Chairperson or their delegate, requires a co-ordinated community response;
- a request from a Control Authority for assistance under the LDMP; and
- a direction or request by the District Disaster Co-ordinator (DDC).

14.7 Accessing Support and Allocation of Resources

Incidents, events, emergencies and disasters of local or regional scope which can be managed using regional resources are to be co-ordinated and managed by ICC's and the LDCC.

14.7.1 Requests from the Lead Agency ICC to the LDCC

Upon the activation of the lead agency's ICC the Local Disaster Co-ordinator (LDC) shall determine the requirement for the activation of the LDCC. If the LDCC is activated then the LDC will deploy a LDCC Liaison Officer to the ICC. The Incident Controller at the ICC is to contact the LDCC when additional resources are required for the response, resources which are not available from the Lead or support agencies in attendance at the ICC for the response.

The ICC is able to make such requests through the LDCC Liaison Officer or that Agencies Liaison Officer at the LDCC. The LDCC is to be proactive in its planning for requests for additional resources for the region.

14.7.2 Requests to DDC for Assistance/Support

When the LDMG under the management or availability of the Local Group member agencies are exhausted or overwhelmed or a specific technical resource or capability is not able to be located or available, the LDC is to contact the DDC so that resources can be accessed or made available, by the SDCC using the process that has been advised by the DDC to the LDC. All requests for assistance to the DDC shall go through the LDC or delegate. The LDCC will be proactive in informing the DDCC if it is likely that requests for additional resources are to be so that in turn the DDCC can also be proactive in its planning for requests for additional resources for the region.



14.7.3 Requests to SDCC for Assistance/Support

When the DDCC is not able to action or fulfil requests for assistance the DDC will request assistance from the Operations Officer, SDCC.

14.7.4 Support from External Agencies (Public & Private)

Support may be sourced from:

- member agencies preferred suppliers as per the list of suppliers held by that agencies' Procurement Unit;
- all emergency service providers both Government and Non-Government agencies;
- support is requested through the agency Liaison Officers or via the usual member agency procedures; and
- the SDCC or the DDCC may allocate and push resources forward to the Region during an event even though resources have not been requested by the LDCC. The staging and reception of these resources will require planning and co-ordination by the LDCC.

Should support, as described above, be withdrawn for whatever reason, all agencies affected will receive advice from the LDCC.

14.8 Disaster Declaration

In accordance with s64 of the *Disaster Management Act 2003*, a DDC may, with the approval of the Minister of the State, declare a disaster situation for the district or one or more local government areas within the district in whole or in part, or by the Premier and the Minister for the State or a part of the State. As outlined in s75 and s77 of the Act, the declaration confers extra powers on particular groups to perform actions, give directions and control movements within the declared area.

A declaration may be made if the person/s responsible for making it are satisfied that a disaster has happened, is happening or is likely to happen and it will be necessary, or reasonably likely to be necessary, to exercise declared disaster powers to prevent or minimise the loss of human life, illness or injury to humans, property loss or damage, or damage to the environment.

Before declaring a disaster situation the person/s responsible for the declaration is to take reasonable steps to consult with local government in the proposed declared area.

In accordance with the Act, a declaration must be in the approved form, or can be made orally if necessary to exercise declared disaster powers before an approved form can be obtained and completed. An oral declaration cannot be made if the DDC is satisfied only that it is reasonably likely to be necessary to exercise declared disaster powers. If the declaration is made orally, it must be recorded in the approved form as soon as is reasonably practicable.

Part 4 of the Act outlines the provisions for declarations and disaster powers. Disaster management forms, including forms for disaster declaration, extension, request to end and for the authorisation of persons to exercise declared disaster powers etcetera are available at:

<http://www.disaster.qld.gov.au/Disaster-Resources/PGF.html>

A Declaration of a Disaster Situation may be requested, for example, where there is an identified need to undertake a managed evacuation, from the Chairperson or LDC to the DDC, using the agreed forms as referenced above that are available within the LDCC.



When a Declaration of a Disaster Situation is enacted, the Chairperson and LDC will continue to align local strategies and arrangements with the DDC to ensure the appropriate utilisation of the powers within the local disaster management arrangements. The declaration of a disaster situation does not impact the requirements of a local government under the Act to manage disaster operations in their area.

14.9 Resupply

When planning and conducting resupply operations, essential goods are to be provided. A Resupply Sub Plan has been developed. The supply of essential goods to individuals will fit within three distinctly different categories:

- **Isolated Community Resupply:**
This type of resupply operation is used when the persons residing in that community have ready access to retail outlets however the retail outlet is unable to maintain the level of essential goods required due to normal transport routes being inoperable as a result of a natural event or events;
- **Isolated Rural Properties Resupply:**
For the purposes of these guidelines isolated rural properties are groups of individuals that are isolated from retail facilities due to normal transport routes being inoperable as a result of a natural event or events. This may include primary producers, outstations or small communities that have no retail facilities;
- **Resupply of Stranded Persons:**
This type of resupply operation is undertaken to provide essential goods to individuals that are isolated from retail facilities and are not at their normal place of residence. This normally pertains to stranded travellers and campers.

14.10 Hazard Specific Arrangements

State departments or agencies have primary responsibility to address certain hazards as detailed in the State Disaster Management Plan.

Hazard specific planning is required across all aspects of Disaster Management (PPRR). Co-ordination and operational procedures for specific hazards may be different to those for disaster management.

Agency specific co-ordination centres may be established in addition to Local, District and State co-ordination centres and internal structures, including the passage of information and resources may be managed using different processes. Primary agencies also have a role to ensure hazard specific plans link to corresponding national hazard specific plans and arrangements and that appropriate communication and relationships with their counterparts at the national level are maintained.

The following table outlines the primary agencies responsible for each specific hazard and the respective state and national level plans, where appropriate.

Specific hazard	Primary Agency	State and National Plan
Animal and plant disease	Department of Agriculture, Fisheries and Forestry	Australian Veterinary Emergency Plan (AUSVETPLAN) Australian Aquatic Veterinary Emergency Plan (AQUAVETPLAN) Australian Emergency Plant Pest Response Plan (PLANTPLAN) Biosecurity Emergency Operations Manual (BEOM)

Biological (human related)	Queensland Health	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents
Bushfire	Queensland Fire and Emergency Services	Wildfire Mitigation and Readiness Plans (Regional)
Chemical	Queensland Fire and Rescue Service	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents
Influenza Pandemic	Queensland Health	Queensland Pandemic Influenza Plan National Action Plan for Human Influenza Pandemic
Ship-Sourced Pollution	Department of Transport and Main Roads	Queensland Coastal Contingency Action Plan, National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances
Radiological	Queensland Health	State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents
Terrorism	Queensland Police Service	Queensland Counter-Terrorism Plan National Counter-Terrorism Plan

PART 15. RECOVERY STRATEGY

Disaster recovery is the co-ordinated process of supporting affected individuals and communities in the reconstruction of the physical infrastructure, restoration of the economy and of the environment, and support for the emotional, social, and physical wellbeing of those affected.

Recovering from an event includes the following:

- providing relief measures to assist persons affected by the event who do not have resources to provide for their own personal wellbeing;
- restoring essential infrastructure in the area or areas affected by the event;
- restoring the environment in areas affected by the event;
- providing personal support to individuals affected by the event, including temporary hospital accommodation, emergency medical supplies, material assistance and counselling services; and
- supporting community development activities to restore capacity and resilience.

A community that is prepared for disasters by having necessary arrangements in place to deal with disasters will be a more resilient community and one that will return to the pre-disaster state more quickly than a community that is not prepared.

As part of Queensland's disaster management arrangements, disaster management groups are responsible for disaster recovery operations in collaboration with identified functional lead agencies. Recovery arrangements need to be flexible to best suit local needs, and to use resources effectively.

Recovery arrangements also need to:

- acknowledge that recovery is a complex social and developmental process rather than just remedial in nature;
- recognise that recovery should be consequence-driven and presents an opportunity to support the communities improve beyond what existed pre-disaster; and
- support community self-determination and participation in the recovery process.

An event that requires significant recovery also provides the opportunity to make a community more resilient for future events. For example in an event that causes significant damage to community



infrastructure, the reconstruction phase could consider integrating improved mitigation measures (e.g. flood risk reduction measures) to reduce the risk of a future event damaging the infrastructure.

15.1 Recovery & Resilience Sub Plan

Livingstone Shire Recovery and Resilience Sub Plan involves the following six key elements of recovery.

- **Recovery Co-ordination and Management:**
recovery will need to be properly organised, resourced and funded. Some of the ordinary business of Council will need to be re-prioritised. Life in the community and Council goes on and will need to be resourced. Council has an expectation that the lion's share of resourcing community recovery will come from Federal and State Government resources;
- **Human-Social Recovery:**
includes personal support, psychological services, temporary accommodation (not evacuation centres), financial assistance and repairs to dwellings. The Department of Communities, Disability Services and Seniors is the functional lead agency for community recovery in a disaster event;
- **Economic Recovery:**
includes recovery as it relates to business impact, industry impact and worker impact. The Department of State Development, is the functional lead agency for economic recovery;
- **Built Recovery:**
includes government structures, essential services and communications. A number of separate State Government departments and non-government organisations will have key functional responsibilities for their respective element of infrastructure recovery in a disaster event;
- **Roads and Transport Recovery:**
includes the response, recovery and reconstruction of the State's road and transport assets. Department of Transport and Main Roads will respond to the disaster by providing safe access and re-connecting communities;
- **Environmental Recovery:**
includes recovery as it relates to parks, waterways and wildlife. A number of State Government departments and non-government organisations will have key functional responsibilities for elements of environmental recovery in a disaster event.

Experience has demonstrated that effective recovery management following a disaster depends on planned procedures, trained staff, identified resources and planned distribution processes.

The Recovery and Resilience Sub Plan provides the strategic framework for recovery planning, outlining roles and responsibilities of government and non-government partners for the co-ordinated delivery of recovery services following a disaster.

Disaster recovery is the co-ordinated process of supporting affected individuals and communities in the reconstruction of the physical infrastructure, restoration of the economy and of the environment, and support for the emotional, social, and physical wellbeing of those affected.



PART 16. LOCAL DISASTER MANAGEMENT SUB PLANS

Sub Plans have been developed for specific hazards with some or all of the sub plans being implemented depending on the event.

The following sub plans have been developed:

- 1) Evacuation Sub Plan
- 2) Recovery and Resilience Sub Plan
- 3) Communication Sub Plan
- 4) Co-ordination Centre Sub Plan
- 5) Financial Management Sub Plan
- 6) Resupply Sub Plan
- 7) State Emergency Service Concept of Operations
- 8) Evacuation Centre Management SOP
- 9) Yeppoon Public Cyclone Shelter SOP

PART 17. Annexure List

- A Distribution List
- B LDMG Contact List
- C Risk Register
- D Risk Treatment Plan
- E Stages of Activation for Response Arrangements
- F Stages of Activation for Recovery Arrangements
- G Tsunami Evacuation Maps
- H Local Disaster Management Group Forms



ANNEXURE C – Hazards Risk Register

The LDMG is committed to building knowledge, capability and capacity within the local area through a robust hazard identification and risk treatment methodology that includes:

- effective planning;
- building a flexible, agile structure;
- seeking continuous improvement;
- establishing effective information management systems; and
- timely actions and distribution of information.

Some of the risk identified will be beyond the capacity of the LDMG to manage. Through this process the DDMG will accept transfer of some risks. This method acknowledges the DDMG commitment to building capacity to treat those risks if and when they arise.

Risks outlined in the Risk Register are analysed by members of the LDMG with a view to identifying strategies for risk treatment. The allocation of responsibility for the implementation of risk treatment strategies, monitoring and reporting shall be determined by members of the LDMG under the guidance of the LDC. These strategies are contained in the *Risk Treatment Plan - Annexure D*. Along with these strategies the Risk Treatment Plan contains preferred treatment options, responsibilities and timeframes for implementation.

A review of the risk treatment plan shall be conducted in conjunction with any risk assessment review process.

Hazard	Category	Consequence	Likelihood	Risk
Cyclone and East Coast Low	People	Major	Likely	High
	Buildings	Major	Likely	High
	Environment	Major	Likely	High
	Business	Major	Likely	High
	Lifelines	Major	Likely	High
	Critical Facilities	Major	Possible	High
Storm Surge	People	Moderate	Possible	Medium
	Buildings	Major	Possible	High
	Environment	Major	Possible	High
	Business	Major	Possible	High
	Lifelines	Major	Possible	High
	Critical Facilities	Major	Possible	High
Severe Storm	People	Major	Likely	High
	Buildings	Moderate	Possible	Medium
	Environment	Moderate	Possible	Medium
	Business	Moderate	Possible	Medium
	Lifelines	Moderate	Possible	Medium
	Critical Facilities	Moderate	Possible	Medium
Tornado	People	Major	Possible	High
	Buildings	Major	Possible	High
	Environment	Major	Possible	High
	Business	Major	Possible	High
	Lifelines	Major	Possible	High

Hazard	Category	Consequence	Likelihood	Risk
Tornado	Critical Facilities	Major	Possible	High
	People	Major	Likely	High
	Buildings	Moderate	Likely	High
	Environment	Minor	Likely	Medium
	Business	Minor	Possible	Low
	Lifelines	Moderate	Likely	High
	Critical Facilities	Moderate	Likely	High
Flooding - Local	People	Minor	Likely	Medium
	Buildings	Minor	Likely	Medium
	Environment	Moderate	Likely	High
	Business	Moderate	Likely	High
	Lifelines	Moderate	Likely	High
	Critical Facilities	Moderate	Likely	High
	Critical Facilities	Moderate	Likely	High
Flooding - Fitzroy River	People	Minor	Likely	Medium
	Buildings	Minor	Likely	Medium
	Environment	Moderate	Likely	High
	Business	Moderate	Likely	High
	Lifelines	Moderate	Likely	High
	Critical Facilities	Moderate	Likely	High
	Critical Facilities	Moderate	Likely	High
Tsunami	People	Catastrophic	Possible	High
	Buildings	Catastrophic	Possible	High
	Environment	Major	Possible	High
	Business	Major	Possible	High
	Lifelines	Major	Possible	High
	Critical Facilities	Major	Possible	High
	Critical Facilities	Major	Possible	High
Earthquake	People	Moderate	Possible	Medium
	Buildings	Moderate	Possible	Medium
	Environment	Moderate	Possible	Medium
	Business	Moderate	Possible	Medium
	Lifelines	Major	Possible	High
	Critical Facilities	Major	Possible	High
	Critical Facilities	Major	Possible	High
Landslip	People	Minor	Likely	Medium
	Buildings	Minor	Likely	Medium
	Environment	Minor	Likely	Medium
	Business	Minor	Likely	Medium
	Lifelines	Minor	Likely	Medium
	Critical Facilities	Minor	Likely	Medium
	Critical Facilities	Minor	Likely	Medium
Heatwave	People	Moderate	Likely	High
	Buildings	Minor	Possible	Low
	Environment	Minor	Likely	Medium
	Business	Minor	Likely	Medium
	Lifelines	Minor	Likely	Medium
	Critical Facilities	Minor	Likely	Medium
	Critical Facilities	Minor	Likely	Medium
Wildfire	People	Moderate	Almost Certain	High
	Buildings	Moderate	Almost Certain	High
	Environment	Moderate	Almost Certain	High
	Business	Moderate	Likely	High
	Lifelines	Minor	Likely	Medium
	Critical Facilities	Minor	Likely	Medium
	Critical Facilities	Minor	Likely	Medium



Table 13: Non Natural Risk Register

Hazard	Category	Consequence	Likelihood	Risk
Civil Riot	People	Minor	Unlikely	Low
	Buildings	Minor	Unlikely	Low
	Environment			
	Business	Minor	Unlikely	Low
	Lifelines	Minor	Unlikely	Low
	Critical Facilities	Minor	Unlikely	Low
Terrorist Attack	People	Major	Possible	High
	Buildings	Major	Possible	High
	Environment	Major	Possible	High
	Business	Major	Possible	High
	Lifelines	Major	Possible	High
	Critical Facilities	Major	Possible	High
Arson	People	Moderate	Possible	Medium
	Buildings	Moderate	Possible	Medium
	Environment	Minor	Possible	Low
	Business	Moderate	Possible	Medium
	Lifelines	Moderate	Possible	Medium
	Critical Facilities	Moderate	Possible	Medium
Major Transport Incident	People	Major	Possible	High
	Buildings	Moderate	Unlikely	Medium
	Environment	Major	Possible	High
	Business	Major	Possible	High
	Lifelines	Major	Possible	High
	Critical Facilities	Major	Very Rare	Low
Hazardous Material Incident	People	Major	Possible	High
	Buildings	Moderate	Unlikely	Medium
	Environment	Major	Possible	High
	Business	Major	Possible	High
	Lifelines	Major	Possible	High
	Critical Facilities	Major	Possible	High
Exotic Disease (Animals and Plants)	People	Major	Likely	High
	Buildings			
	Environment	Major	Likely	High
	Business	Major	Likely	High
	Lifelines			
	Critical Facilities			
Medical Epidemic and Infectious Disease (Including Influenza Pandemic)	People	Catastrophic	Possible	High
	Buildings	Catastrophic	Possible	High
	Environment			
	Business			
	Lifelines	Catastrophic	Possible	High



Hazard	Category	Consequence	Likelihood	Risk
Marine Oil Spill Tornado	Critical Facilities	Catastrophic	Possible	High
	People	Minor	Possible	Low
	Buildings			
	Environment	Major	Possible	High
	Business	Major	Possible	High
	Lifelines			
	Critical Facilities	Minor	Possible	Low
Critical Infrastructure Failure	People	Major	Possible	High
	Buildings	Minor	Possible	Low
	Environment	Major	Possible	High
	Business	Moderate	Possible	Medium
	Lifelines	Moderate	Possible	Medium
	Critical Facilities	Moderate	Possible	Medium



ANNEXURE D – Risk Treatment Plan

NOTE: This Risk Treatment Plan has been included in this document for feedback purposes only prior to endorsement by LDMG.

Plan	Risk Statement	Project Title	Estimated time of completion	Progress
1	Lack of public education and awareness concerning disasters and actions to take in preparation, response and recovery after an event	Public Education and Awareness Program		Progressing - development and implementation
2	'At Risk' Mapping - All Hazards	'At Risk' Mapping- All Hazards		Progressing - Storm Tide Hazard Mapping, Local Catchment Flooding, Road Inundations (historical), Evacuation Routes
3	Identification/update of places of refuge, safer places and evacuation centres	Identification/Update of Places of Refuge, Safer Places and Evacuation Centres		Progressing - Discussions with St Brendan's, they wish to enter into an MoU. Awaiting further advice
4	In depth review of Evacuation Sub Plan - including evacuation routes	In depth review of Evacuation Sub Plan - including Evacuation Routes		Emailed Chair of Evacuation Sub Committee - Bob Barclay
5	Mitigation measures fact sheet to be developed in consultation with harbours and marine authorities to assist boating community in the region and visitors	Co-ordination with Harbour Masters and Maritime Authorities		Draft Extreme Weather Contingency Plan (MSQ, Gladstone Region) received from Coast Guard
6	Businesses requiring assistance with business continuity planning (BCP) and emergency response planning (ERP) to build their resilience to disasters.	Business Continuity Planning/Emergency Planning Workshops		As part of Get Ready Week
7	Buildings constructed prior to 1985 were not built according to the building codes following amendments after TC Tracey hit Darwin. Therefore there is a risk these buildings would be unsafe during a cyclonic event.	Identification of Pre 1985 building stock		
8	Residents may not be aware of what a flood height warning translates to in terms of risk to them and their household.	Reinstate flood indicators		
9	Areas in Livingstone Shire are potentially at risk from a landslide.	Investigation of landslide risk areas		

Plan	Risk Statement	Project Title	Estimated time of completion	Progress
10	Main road transportation routes are at risk of being blocked and delivery of goods into and out of the LS area would be disrupted.	Alternate transport routes - air and marine		
11	Fitzroy River flooding may impact on homes and buildings and this will put lives and property at risk.	Building floor heights in flood risk areas		
12	Communities can face individualised issues during various disasters, including but not limited to isolation due to road closures and failure of services such as telephones.	Community Consultation and development of All Hazards Response Plans		
13	Culturally and Linguistically Diverse (CALD) and other vulnerable residents and visitors in LS may not understand or receive notifications or warnings transmitted before, during and after a disaster.	Vulnerable Persons Register - Bettering Communication to residents needing assistance		
14	Mitigation of risk to essential services and other critical infrastructure is the responsibility of organisations outside of the LDMP's control. The continuation of these services may be stopped or disrupted during an event and result in significantly greater impact to the community.	Co-ordination of interface between LDMP and service provider plans		
15	Primary communication relies on mobiles and the internet however these may fail in an event, e.g. Ex-TC Oswald in January 2013.	Communications Plan		
16	During an event such as heavy rainfall, roads can become unsafe due to flooding. Limit access for motorists. The dangers of crossing a flooded road are well advertised however many people still attempt to cross them putting their lives and their passengers lives at risk.	Community Education and Engagement		
17	The coastal areas of LS are at risk of damage from a disaster, including but not limited to, erosion, scarping and pollution. These impacts can result in knock on effects to the residential areas behind them and for the residents that use the beaches for recreational and business purposes.	Review of Planning for Coastal Protection		
18	The current location of the Local Disaster Co-ordination Centre can become isolated due to road inundation.	LDCC Access and Future Planning		
19	The Public Works and Engineering Sub Plan is out dated and does not accurately reflect the services available now.	Public Works and Engineering Sub Plan Update		

Plan	Risk Statement	Project Title	Estimated time of completion	Progress
20	Following a flash flooding event	Environment and Public Health Sub Plan - expand on flooding events		
21	Environment and Public Health sub plan - expansion of information on flooding events	Event Specific Communication- inclusion in Communications Sub Plan		
22	Review of Communications/Reporting between Local, District and State levels	Review of Communications/Reporting between Local, District and State levels		
23	Disasters can have a large impact on business and private property. Many people are unaware of how to begin in preparing for, withstanding and recovery from an event. Conversely there are groups/businesses in the community willing to provide assistance but are unsure what avenue is available for them to let those in need know.	Community Offers of Assistance Register		
24	Kelly's Off stream Storage Emergency Action Plan (EAP) is non-compliant with the State regulation for referable dams (i.e. downstream hazards and population at risk in a failure).	Review of EAPs for reservoirs and Kelly's Offstream for inclusion in LDMP		
25	Limits to the amount of historical information on impacts to properties that can be passed to a prospective buyer to pre warn them or motivate the current owners to resolve the problems.	Property notes pertaining to previous events/impacts to motivate mitigation works by the owners and protect future owners/occupiers		
26	Bushfire poses a risk to a large part of the LSC area. Mitigation needs to be a focus to ensure a co-ordinated approach between all stakeholders (e.g. LSC, QFES, DEPH)	Co-ordination of Bushfire Mitigation and Preparation in Livingstone Shire		
27	Homes and other properties have been and continue to be constructed in high bushfire risk areas. The management practices for mitigating the risks of bushfire for some of these developments are not enforced and there is some confusion over what is required by a landowner.	Clarification of requirements in development approval process for Bushfire mitigation		
28	Environmental impacts during a disaster can have limited attention and resources allocated due to the lack of legislation for its consideration and the priority placed on protecting life and property.	Development of Environmental Recovery Advisory Group for Environmental issues		



Residual Risks

Residual risk is possible for every event if it is beyond the capability of the Local group to respond. Such events are to be managed within the Queensland Disaster Management Arrangements and will be via a request for assistance to the Rockhampton District. Some of the events may include:

Hazard	Risk	Consequence	Likelihood	Residual Risk
Tsunami	<ul style="list-style-type: none"> There is a risk of injury or death to a large number of people The need to evacuate large numbers of people in a short timeframe Loss of critical infrastructure both Local and State owned There is a risk that emergency services will have limited capability to respond due to loss of critical infrastructure Lack of accommodation to support evacuees 	Catastrophic	Unlikely	<ul style="list-style-type: none"> Mass evacuation will require early warning to enable enough time to undertake the evacuation, suitable modes of transport and a safer location to establish evacuation centres - rapid onset events will provide challenges. A large scale coastal event will cause displacement of the community that will require State support Loss of essential services and critical infrastructure will require State support
Earthquake	<ul style="list-style-type: none"> Large scale earthquakes will cause damage to a high proportion of buildings and severe damage to critical infrastructure There is a risk that emergency services will have limited capability to respond due to loss of critical infrastructure Lack of accommodation to support displaced community 	Catastrophic	Unlikely	<ul style="list-style-type: none"> A large scale coastal event will cause displacement of the community that will require State support Loss of essential services and critical infrastructure will require State support A large scale earthquake will require State support to accommodate displaced community
Cat 4 and 5 Cyclone on HAT/Storm Surge	<ul style="list-style-type: none"> There is a risk of injury or death to large number of people The need to evacuate large numbers of people in a short timeframe Loss of critical infrastructure both Local and State owned There is a risk that emergency services will have limited capability to respond due to loss of critical infrastructure Lack of accommodation to support evacuees 	Catastrophic	Unlikely	A severe Cyclone may bring a storm surge and high rainfall, which may have major impacts that require assistance from District/State.
Terrorist Act	<ul style="list-style-type: none"> There is a risk that a terrorist attack on critical infrastructure will be beyond the LDMG capability 	Catastrophic	Unlikely	Loss of essential services and critical infrastructure will require State support
Prolonged Events	<ul style="list-style-type: none"> There is a risk that an event over 72 hours duration will exhaust the capability of local agencies to manage an event 	Moderate	Unlikely	A prolonged event will be beyond the capability of local entities to manage the event due to number of staff in area

ANNEXURE E – Stages of Activation - Response Operations

Activation Level	Threat/Trigger	Actions	Communication Method
1. Alert Stage	<p>Upon receipt of a warning or information that an emergency/disaster event may occur, organisations will be alerted to ensure readiness to act if called upon.</p> <p>Following consultation between the LDC and the LDMG Chair the LDMG should be activated to the "Alert Stage" regardless of the event or the identification of a lead agency.</p>	<p>During the "Alert Stage" the LDC will:</p> <ul style="list-style-type: none"> a) maintain a watching brief to monitor the situation; b) ensure the LDCC is in a basic state of readiness; c) establish contact with the DDC; d) provide initial advice to relevant stakeholders identified in <i>Annexure B – LDMG Members</i>; e) identify potential risks of imminent hazard and outline strategies and planning in anticipation of escalation. 	<p>LDC to contact with the DDC and SES Local Controller and warning agency by telephone or otherwise as determined.</p> <p>Identified stakeholders (<i>Annexure A</i>) will receive an email stating "LDMG/LDCC @ Alert Stage". The email will contain non sensitive information about the event.</p> <p>Chairpersons of the Sub Committees are responsible for advising members of their committees of activation to the 'Alert' Stage.</p>
2. Lean Forward Stage	<p>As the threat or the effects of an emergency/disaster becomes imminent, members of the relevant organisations or sections are placed on "Lean Forward" being ready to deploy resources and respond.</p> <p>The Chairperson LDMG will, in consultation with the LDC, make the decision to activate to the "Lean Forward" Stage.</p> <p>The likelihood of the emergency/disaster event impacting on the Local Government area has increased.</p>	<p>The LDC will:</p> <ul style="list-style-type: none"> a) notify the DDC; b) inform relevant stakeholders of "Lean Forward" stage; c) ensure the LDCC is fully established & set up ready for operation; d) maintain minimum staffing level within the LDCC (i.e. LDC or nominated person and Operations Officer), to monitor, record and if necessary establish communications with lead agency to ensure appropriate information flow; e) release public advice (via media officer) of any relevant public information and warnings, approved by the LDC; f) commence financial management processes; g) continue to monitor the situation; h) consult with the Chairperson LDMG & SES Local Controller regarding future planning and response strategies; i) call a meeting of the LDMG to brief core members and requested advisory agencies. 	<p>LDC to contact the DDC and SES Local Controller by telephone or otherwise as determined by the LDC and establish reporting timelines (refer SitRep procedure)</p> <p>Identified stakeholders (<i>Annexure A</i>) will receive an email stating "LDMG/LDCC –Lean Forward Stage – please acknowledge". All recipients must reply to the email to confirm receipt.</p> <p>Those that are unable to reply to the email will be contacted per listed telephone numbers.</p> <p>Chairpersons of the Sub Committees are responsible for advising members of their committees of activation to the 'Lean Forward' Stage.</p>

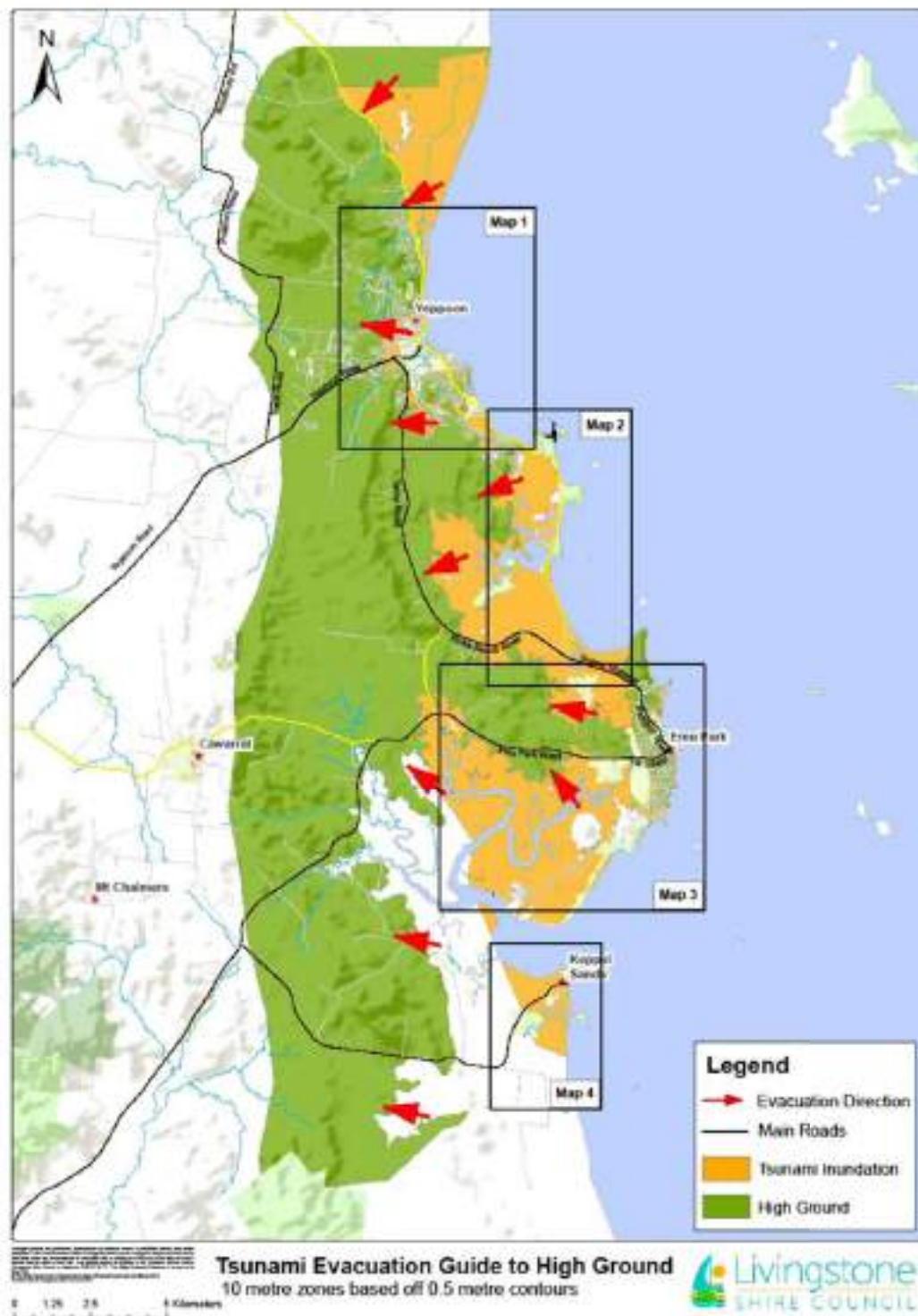
Activation Level	Threat/Trigger	Actions	Communication Method
3. Stand Up Stage	<p>The Chairperson and the LDC decide to activate to the "Stand Up" Stage to respond to the imminent emergency/disaster event.</p> <p>All required LDMG members are called to respond to fulfil their functions and role. Such roles may be pre-planned or as dictated by the emergency/disaster situation.</p> <p>The 'Alert' and 'Lean Forward' stages may not be possible if the emergency/disaster strikes without warning.</p> <p>In this stage the community will be or already have been impacted. Multi agency response will be co-ordinated through the LDCC.</p>	<p>The LDC will:</p> <ol style="list-style-type: none"> maintain contact with the DDC; scale LDCC staffing levels as required; call a LDMG meeting with the lead agency and all LDMG Members; request the relevant Sub Committees to meet, if they have not already done so; continue providing information to the public (via the Media Liaison Officer). 	<p>Maintain contact with DDC by telephone or otherwise as determined by the LDC. Advice of the LDMG and LDCC activating to 'Stand Up' stage will be sent as per Activation LDMG sub plan. All members must reply to email to confirm receipt.</p> <p>Those that do not reply to the email will be contacted per listed telephone numbers.</p> <p>LDCC operations will be escalated according to the event and requirements to respond. SitReps will be issued as per LDMG request.</p> <p>The public information team will maintain the flow of notifications and warnings to the public as approved by the LDC.</p>
4. Stand Down Stage	<p>The Chairperson and the LDC in consultation with the lead agency determine at what time the "Stand Down" phase will be initiated to conclude an operation.</p> <p>The 'Stand Down' stage is the point that the response to the emergency/disaster event is completed and the co-ordination of operations transitions to Recovery.</p>	<p>Upon being advised of the conclusion of an operation the LDC will:</p> <ol style="list-style-type: none"> co-ordinate recall of participating organisations; notify DDC; ensure completion and collation of all paperwork within LDCC; prepare post operational activities (i.e. debrief and reviews); Close LDCC – transition to Recovery. 	<p>Contact with the DDC will be by telephone or otherwise as determined by the LDC.</p> <p>LDMG and LDCC staff members will be sent an email stating "LDMG – Stand Down" and provide details of final meeting times and LDCC closure process as per Activation LDMG sub plan.</p> <p>Advice of response operations ceasing will be forwarded to identified stakeholders (Annexure A) with advice pertaining to required debriefs and post operation reporting.</p>

ANNEXURE F – Stages of Activation – Recovery

Levels of activation for recovery compared to those of the response phase.

	Triggers	Actions	Communications
Response Alert	<ul style="list-style-type: none"> Response phase at 'lean forward' level of activation 	<ul style="list-style-type: none"> Appointment of LRC as appropriate Potential actions and risks identified Information sharing commences LRC in contact with LDCC/LDC Initial advice to all recovery stakeholders 	<ul style="list-style-type: none"> LRC and LRG members on mobile remotely
Response Lean Forward	<ul style="list-style-type: none"> Response phase at 'stand up' level of activation Immediate relief arrangements are required during response phase 	<ul style="list-style-type: none"> Monitoring of response arrangements Analysis of hazard impact or potential impact Relief and recovery planning commences Deployments for immediate relief commenced by recovery functional agencies 	<ul style="list-style-type: none"> LRC and LRG members on mobile and monitoring email remotely Ad hoc reporting
Response Stand Up	<ul style="list-style-type: none"> Immediate relief arrangements continue 	<ul style="list-style-type: none"> LRG activated at LDCC or alternate location Recovery plan activated Deployments for immediate relief response Action plans for four functions of recovery activated as required Community information strategy employed 	<ul style="list-style-type: none"> LRC and LRG members present at LDCC or alternate location, on established land lines and/or mobiles, monitoring emails
Response Stand Down	<ul style="list-style-type: none"> Response phase moves to 'stand down' level of activation. Medium term recovery commences. LRG arrangements are finalised. Community returns to normal activities with ongoing support as required. 	<ul style="list-style-type: none"> Participate in response debrief Transition arrangements from 'response and recovery' to 'recovery' activated including handover from LDC to LRC Action plans for four functions of recovery continue Community information strategies continue Consolidate financial records Reporting requirements finalised Participate in recovery debrief Participate in post event debrief Post event review and evaluation Long term recovery arrangements transferred to functional lead agencies Return to core business 	<ul style="list-style-type: none"> LRC and LRG members involved in medium term recovery continue as required Regular reporting to LDCC/LDC LRC and LRG members resume standard business and after hours contact arrangements Functional lead agencies report to LRC/ LRG as required

ANNEXURE G – Tsunami Evacuation Maps










ANNEXURE H – Local Disaster Management Group Forms

Member Status Report

Livingstone Shire Local Disaster Management Group



Member Status Report

Organisation represented: _____

Meeting Date & Time: _____

The agencies of the Local Disaster Management Group have a shared responsibility of effective disaster management. The Emergency Management Assurance Framework (EMAF) supports accountability and builds consistency across all levels of disaster management arrangements. This framework establishes the Standard for Disaster Management in Queensland (the Standard). The Standard is founded on six (6) shared responsibilities. These responsibilities are reflected in the activities indicated in this Members Status Report.

The following activities have been undertaken or ~~are being undertaken~~ by the local government/agency/organisation: (delete sections or insert N/A as required depending on role and responsibilities)

Mitigation
May include items such as Studies (MARP), mitigation initiatives, planning or measures ~~being undertaken~~, review of hazards and risks.

Hazard Identification and Risk Assessment

Hazard Mitigation and Risk Reduction

Impediments to Implementation of Mitigation Measures
May include impediments such as funding, resourcing issues, responsibility.

Planning
Preparedness and planning include all activities undertaken prior to an event to mitigate the impact of the event on the community. Planning also occurs in response and recovery phases.

PDF Word 2016, Spreadsheet 10.10.16.100
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Add ECM reference date and version including page number

Emergency Communications

Emergency communications both within and across those agencies, groups and networks responding to and engaging with the wider community is paramount to effective operations.

Response

Disaster response operations are focused on stabilising the impact of a disaster in a community. This includes a range of life, property and environment-saving activities and life-dependant restoration activities. At a system level the effective management of disaster response operations is dependent on the performance of command, control, coordination and cooperation and operational information management systems.

Relief and Recovery

Relief is a transitional phase that occurs during both response and short-term recovery operations. Relief includes the immediate provision of basic human needs immediately following disaster events. It is mainly focused on reducing and stabilising current impacts to prevent the impact of secondary hazards.

Operational Issues

Readiness Status (General comment regarding status of operational readiness).

Staff Availability (Comment on staff availability for LDCC, response etc.)

LDCC (Comment on resourcing levels for LDCC and possible impacts on operations).

Operations Conducted

Date	Type of event	Brief summary of response activities (Include role and functions)

Remedial Action (Outline any proposed actions or improvements as a result of the operational activities).

1.
2.
3.

Capability Development

Training Conducted

Date	DM component or function	Name of course or training content	Conducted by	Participants

Identified Training Needs (insert details of any required training including suggested dates etc.)

Proposed Date	DM component or function	Name of course or training content	Conducted by	Participants

Exercises Conducted

Date	Name of exercise	Type of exercise e.g. tabletop / practical	Objectives of the exercise e.g. test communications plan	Agency coordinating the exercise	Local Govt. / Agencies involved

Remedial Action (insert details of any proposed actions or improvements as a result of lessons learned or recommendations)

1.
2.
3.

Proposed Exercises (insert details of any proposed exercises or exercises currently under development, including suggested dates etc.)

Date	Name of exercise	Type of exercise e.g. tabletop / practical	Objectives of the exercise e.g. test communications plan	Agency coordinating exercise	Local Govt. / Agencies involved

Community Awareness/Engagement/Education

Conducted Community Awareness/Engagement/Education (Insert details of any community awareness/engagement/education activities conducted)

Date	Name of Activity	Type of Activity	Objectives of the exercise Activity	Agency coordinating Activity	Local Govt / Agencies involved



Proposed Community Awareness/Engagement/Education (Insert details of any proposed community awareness/engagement/education activities proposed or currently under development, including suggested dates etc.)

Date	Name of Activity	Type of Activity	Objectives of the exercise Activity	Agency coordinating Activity	Local Govt / Agencies involved

Review of Local Disaster Management Plan

Review Date	Type of Review	Summary of amendments

General Business (Any other comments)

Sign-off and Approval

Sign:	
Report submitted by:	
Local Government / Agency Position:	
Date submitted:	

LSC Appointment to LDMG of Core Member



Livingstone Shire Local Disaster Management Group

PREPARING OUR COMMUNITY

Date

Insert Name
Organisation
Address

Our reference: ESD11
 Enquiries to: Disaster Management and Resilience
 Telephone: 07 4515 9997 or 1300 750 816
 Email: ecm@livingstone.qld.gov.au

Dear **insert name**

In accordance with s. 33 of the Disaster Management Act 2003 and in compliance with s. 9 the Disaster Management Regulation 2014 I hereby appoint you as a Core Member of the Livingstone Shire Local Disaster Management Group representing **the insert organisation name**.

I am satisfied that **you/this position have/have** the necessary experience or expertise to perform the functions of a core member of a Local Disaster Management Group.

Should you require any further information, please contact Karen Sandy, Secretariat Livingstone Shire LDMG, 4939 9997 and LSCDM@livingstone.qld.gov.au

Yours faithfully

Mayor Bill Ludwig
 Chair
 Livingstone Shire Local Disaster Management Group

PO Box 2292, Yeppoon QLD 4705
 E: LSCDM@livingstone.qld.gov.au / P: 07 4515 9997

LSC Appointment to LDMG of Advisory Member



Livingstone Shire Local Disaster Management Group

PREPARING OUR COMMUNITY

Insert date

Our reference: 2019-1-1
 Enquiries to: Disaster Management and Resilience
 Telephone: 07 4813 5005 or 1300 790 918
 Email: scdm@livingstone.qld.gov.au

Insert name and address

Dear **insert name**,

In accordance with s. 33 of the Disaster Management Act 2003 and in compliance with s. 9 the Disaster Management Regulation 2014 I hereby appoint you as an Advisory Member of the Livingstone Shire Local Disaster Management Group representing **the insert organisation name**.

I am satisfied that **you/this position have/has** the necessary experience or expertise to perform the functions of an advisory member of a Local Disaster Management Group.

Should you require any further information, please contact Karen Sandy, Secretariat Livingstone Shire LDMG, 4030 0007 and LSCDM@livingstone.qld.gov.au

Yours faithfully

Mayor Bill Ludwig
 Chair
 Livingstone Shire Local Disaster Management Group

PO Box 2292, Yeppoon QLD 4703
 E: LSCDM@livingstone.qld.gov.au | P: 07 4813 5005

LSC Appointment to LDMG of Deputy Member



Insert date

Doc reference: 888/1/1
 Emergency to Disaster Management and Response
 Emergency: 07 4601 9000 or 1300 790 018
 Email: lsdm@livingstone.qld.gov.au

Insert name and address

Dear **insert name**

In accordance with s. 33 of the *Disaster Management Act 2003* and in compliance with s. 14 the *Disaster Management Regulation 2014* I hereby appoint you as a Deputy Member of the Livingstone Shire Local Disaster Management Group representing **the insert organisation name**.

I am satisfied that **you/this position have/has** the necessary experience or expertise to perform the functions of a member of a Local Disaster Management Group.

Should you require any further information, please contact Karen Sandy, Secretariat Livingstone Shire LDMG, 4939 9997 and LSCDM@livingstone.qld.gov.au

Yours faithfully

Mayor Bill Ludwig
 Chair
 Livingstone Shire Local Disaster Management Group

PO Box 2292, Yeppoon, QLD 4703

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Nomination to LDMG - Letter from Agency to Chair of LDMG

1

NOTE: Please print onto your Organisation letterhead

(Insert today's date)

The Chair
Livingstone Shire Local Disaster Management Group
PO Box 2202
Yeppoon QLD 4703

Dear Sir,

I would like to nominate **(delete whichever paragraph is not used)**

(insert nominee name) who holds the position of **(insert position)** to represent **(insert organisation)** on the Livingstone Shire Local Disaster Management Group.

OR

(insert nominee position) to represent **(insert organisation)** on the Livingstone Shire Local Disaster Management Group.

This is a replacement for **(insert previous nominee name or position)** who was the previous member. **(Delete if not applicable)**

The nominee person or position has the necessary expertise and / or experience to perform the functions of a Local Disaster Management Group member in accordance with the Disaster Management Act 2003, on behalf of **(insert organisation)**.

The contact details for the nominee are:

Telephone:	
Mobile:	
Email:	
Postal Address:	

(insert nominee name or position) has been informed that personal contact information has been collected in accordance with the Information Privacy Regulation 2009 for the purposes of disaster management.

Should you require any further information, please contact **(insert contact name)** on **(insert telephone number)**.

Yours sincerely

(insert name)
(insert position)

Authorisation to appoint a Deputy



**Authorisation to appoint a Deputy to
Livingstone Shire Local Disaster Management Group**

SECTION ONE

To be completed by the member requesting appointment of his/her deputy, performing the member's functions on the Livingstone Shire Local Disaster Management Group (LDMG). The request is to be approved by the Chairperson of the LDMG.

LDMG MEMBER TO COMPLETE

I _____ (Name / Position) _____ (Title)
_____ (Agency/Organisation)

am a member of the Livingstone Shire LDMG.

In accordance with the Disaster Management Act 2003 approval is sought from the Chairperson of the Livingstone Shire Local Disaster Management Group to appoint the following person/position as my deputy to attend group meetings in my absence and exercise my functions and powers under s(14) Disaster Management Regulation 2014 at such meetings.

I am satisfied that this person/position has the necessary expertise or experience to act as my deputy to the Local Disaster Management Group.

The details for the Deputy are:

Name/Position:	
Telephone:	
Mobile:	
Email:	
Postal Address:	
Condition of the authorisation (if applicable): (Note 1)	

Please complete the applicable:

- The above person/position is replacing _____ who was the previous Deputy member.
- The above person/position is in addition to _____ who is the existing Deputy member.
- The above person/position is authorized to carry out all the roles and responsibilities for my position from the following date:
 ____ / ____ / ____ to the following date ____ / ____ / ____

Signature: _____

Date: ____ / ____ / ____

Return this form to:

Livingstone Shire Local Disaster Management Group
 PO Box 2292
 SEPPOON QLD 4703
 Or - LSCDM@livingstone.qld.gov.au

SECTION TWO

CHARPERSON TO COMPLETE

The authorisation to appoint the person/position named above as the member's deputy is approved.

Signature: _____ Print Name: _____

Date: ____ / ____ / ____

Guidelines for completion of authorisation to appoint a deputy

General

In accordance with the Disaster Management Act 2001 (DM Act), a member of the Local Disaster Management Group www.livingstone.qld.gov.au cannot authorise another person as his or her deputy. The deputy may attend a group meeting in the member's absence and exercise the member's functions and powers under the DM Act at the meeting. The deputy attending a group meeting is to be counted in deciding if there is a quorum for the meeting.

The chairperson of the group may authorise the nominated person as the member's deputy if satisfied on reasonable grounds that the member's deputy has the necessary expertise or experience to perform the functions of the member.

The authorisation cannot be given on condition and must be given in writing.

Note 1

You may place conditions on the authorisation.
Yes The appointment may only be exercised when the member or the first appointed deputy is unavailable.

LDMG Members - Letter Invitation to nominate a representative



Livingstone Shire Local Disaster Management Group

DATE

Address 1

Address 2

Address 3

Dear xxx

The Livingstone Shire Local Disaster Management Group (LDMG) would like your nomination as a representative to be as **Core/Advisory** Member of the group. As a **Core/Advisory** Member, your relevant experience or expertise will assist in carrying out the functions detailed in the *Disaster Management Act 2003*, s30.

A template for nomination is included with this letter and also a form for the nomination of a Deputy. The nomination of a Deputy is necessary should the primary representative be unavailable. The Deputy is required to attend meetings and has equivalent expertise and/or experience to the primary representative to enable them to support the LDMG as per normal arrangements.

Some agencies have indicated a preference to nominate a position from their organisation rather than a person (for example officer in charge rather than an individual). This nomination preference is to alleviate absences when a member is on leave or acting in another position. Please consider if the nomination of a position from your agency is appropriate, keeping in mind the contact phone and email you supply will be utilised by the LDMG as a point of contact. The position incumbent would have the equivalent expertise and/or experience to enable them to support the LDMG as per normal arrangements (s33 of the Disaster Management Act 2003).

Please complete both the template and the form and return by close of business **DATE (14 days)**. This can be returned either by post or electronic mail to the contacts below.

Should you require any further information, please contact Laura Bradford, Secretariat, Livingstone Shire LDMG on 4913 3885 or LSCDM@livingstone.qld.gov.au

Yours faithfully

Mayor Bill Ludwig
Chair
Livingstone Shire Local Disaster Management Group

PO Box 2249, Yepposin, QLD 4705
E: LSCDM@livingstone.qld.gov.au | P: 07 4932 9907



Correspondence Register

[illegible]

LDMG Meeting Minutes Template

LIVINGSTONE SHIRE LOCAL DISASTER MANAGEMENT GROUP MINUTESMeeting Notice

The Livingstone Shire Local Disaster Management Group meeting was held at the Centre of Excellence for Disaster Management, Innovation and Community Resilience (The Hub) at **SHAMAD** Park, Level 2, 7-9 James Street, Yeppoon on **Monday, 10 September 2018**.

Attendees

Cona:

Advisors:

Deputy:

Other Attendees:



The meeting commenced at XX am and was chaired by the Livingstone Shire Local Disaster Management Group Chair, Mayor Bill Ludwig.

Items for Discussion

Item 1 - Leave of Absence and Apologies

Leave of absence have been received from XXXX.

Apologies have been received from

Update to membership:

Item 2 - Confirmation of Meeting Minutes

Confirmation of minutes of the Livingstone Shire Local Disaster Management Group meeting held on XX XXXX 2017.

Recommendation:

That the minutes of Livingstone Shire Local Disaster Management Group meeting held on XX XXXX 2017 be confirmed.

Moved - XX

Seconded - XX

Item 3 - Actions from previous minutes

Recommendation:

Item 4 - Correspondence In/Out

Details: please see below list of correspondence during this quarter:

In	Out

Item 5 - Recovery and Resilience Taskforce Update

Details: An update will be provided on the four Recovery and Resilience taskforces; Built Environment, Environment & Regulatory, Community Development and Regional & Economic Development.

Responsible Officer: David Maczaferrri Local Disaster Coordinator - Livingstone Shire Council

Recommendation: For member's information

Item 6 - Operational Plan Update

Details: Third quarter progression of the LDMG Operational Plan 2017/2018. The Livingstone Shire LDMG Operational Plan outlines the strategic direction of the group for a 12 month period. It sets



out the LDMG's goals, strategies and performance indicators for each of those goals for 2017/18. The operational plan will also ensure the LDMG meets its legislative requirements under the Disaster Management Act 2005.

Responsible Officer: David Mazzaferrri; Local Disaster Coordinator – Livingstone Shire Council

Recommendation: For member's information and contribution

Item 7 – XX

Recommendation:

Item 8 – XX

ACTION:

Recommendation:

Item 9 – XX

Recommendation:

Item 10 – XX

Recommendation:

ACTION:

Item 11 – Agency Updates

We will endeavour to send the member status update reports to you a fortnight in advance. Thank you to those agencies that have sent them in, for those that have not, please send through in the next 4 or 5 days and we will send them with the minutes. Thanks to XX for sending in their reports. These are attached to the minutes along with the blank template.

Recommendation:

For member's information.

Item 12 – General Business

Recommendation:


Item 13 – Next Meeting

The next meeting of the Livingstone shire Local Disaster Management Group has been scheduled for XX XXXX 2017 commencing at 9:00am at Council Chambers, 70 Anzac Parade, Veppoon.

Item 14 – Meeting Closure

Meeting Closed XX XXXX

LDMG Meeting Agenda Template



The template features a header with the title "Livingstone Shire Local Disaster Management Group" and three images: a sunset, a cyclone, and a flooded street. Below the header is a section titled "LIVINGSTONE SHIRE LOCAL DISASTER MANAGEMENT GROUP AGENDA".

Meeting Notice

The next Livingstone Shire Local Disaster Management Group meeting will be held at the Centre of Excellence for Disaster Management, Innovation and Community Resilience (The Hub) at Seaman Park, 7-9 James Street, Yppoon on Wednesday, XX XXX 2018 commencing at 9:00am.

Invitees

Conc:

Advisors:

Deputy:

Other Attendees:

PO Box 2292, Yppoon QLD 4703
 E: L.S.D.M@livingstonecouncil.qld.gov.au | P: 07 4938 9957

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Mayer Bill Ludwig

Chair, Livingstone Shire Local Disaster Management Group

Items for Discussion

Item 1 - Leave of Absence and Apologies

As of XX XXXX 2018 leave of absences have been received from XXXX

Update to membership:

Item 2 - Confirmation of Meeting Minutes

Confirmation of minutes of the Livingstone Shire Local Disaster Management Group meeting held on XX XXXX 2017.

(Attachment 1 – LDWG committee meeting minutes of XX XXXX 2017)

Recommendation:

That the minutes of Livingstone Shire Local Disaster Management Group meeting held on XX XXXX 2017 be confirmed.

Item 3 – Actions from previous meetings

MONTH YEAR

Item	Action	Responsible Person	Details	Status
				Ongoing
				Completed
				Ongoing
				Completed

MONTH YEAR

Item	Action	Responsible Person	Details	Status
				Completed
				Completed

Item 4 – Correspondence In/Out

Details: Please see below list of correspondence during this quarter:

In	Out

Responsible Officer: David Mazzaferrì, Local Disaster Coordinator – Livingstone Shire Council

Recommendation: For member's information.

10 Box 2243, Yeppoon, Q.L.D. 4703

E:115CON@livingstonemunicipal.gov.au | P: 07 4930 9997

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Add ECM reference date and version including page number

Item 5 – Recovery and Resilience Taskforce Update

Details: An update will be provided on the four Recovery and Resilience taskforces; Built Environment, Environment & Regulatory, Community Development and Regional & Economic Development.

Responsible Officer: David Mazzaferrri, Local Disaster Coordinator – Livingstone Shire Council

Recommendation: For member's information

Item 6 – Operational Plan Update

Details: **Second** quarter progression of the LDMG Operational Plan 2017/2018. The Livingstone Shire LDMG Operational Plan outlines the strategic direction of the group for a 12 month period. It sets out the LDMG's goals, strategies and performance indicators for each of those goals for 2017-18. The operational plan will also ensure the LDMG meets its legislative requirements under the Disaster Management Act 2003.

Responsible Officer: David Mazzaferrri, Local Disaster Coordinator – Livingstone Shire Council

Recommendation: For member's information and contribution

Item 7 – XX

Details:

Responsible Officer:

Recommendation:

Item 8 – XX

Details:

Responsible Officer:

Recommendation:

Item 9 – XX

Details:

Responsible Officer:

Recommendation:

Item 10 – XX

Details:

Responsible Officer:

Recommendation:

Item 11 - Agency Updates

Details: Each disaster management agency is requested to provide an update to the group on current and upcoming activities prior to commencement of the meeting. This report can be emailed to LSCDM@livingstone.qld.gov.au by Day, XX XXXX 2018. Agency updates will be shared with the outgoing minutes.

Responsible Officer: Agency representatives

(Attachment X: LDMG Agency – Update)

Item 12 - General Business

Any items of general business required to be brought to the groups attention or for information.

Item 13 - Next Meeting

The next meeting of the Livingstone Shire Local Disaster Management Group has been scheduled for Day, XX XXXX 2018 commencing at 9:00am at the Community Engagement Hub, Beaman Park, Normanby Street, Yeppoon.



Flying Minute Template



Flying Minute Template

Livingstone Shire Local Disaster Management Group
Flying Minute/s for Member Endorsement
 <<Insert Date>>

Agenda No. & Title	Resolution	Action Officer	Endorsed (✓)	Not Endorsed (X)
Example; Agenda Item 1: 2010 Meeting Dates	1. That Members endorse the 2010 DCMG Meeting Dates and make a commitment to attend future meetings.	All Members		<input type="checkbox"/>
Agenda Item 2: <Insert Title>	<Insert what the required outcome is>	<Insert who the action officer is>		<input type="checkbox"/>
Agenda Item 3: <Insert Title>	<Insert what the required outcome is>	<Insert who the action officer is>		<input type="checkbox"/>
Agenda Item 4: <Insert Title>	<Insert what the required outcome is>	<Insert who the action officer is>		<input type="checkbox"/>
DCMG MEMBER ENDORSEMENT <i>(NB – must be endorsed by appointed Member to achieve quorum and validate resolution)</i> Signature: _____ Name: _____ Date: _____ Agency: _____				



LDMG Record of Attendance

Livingstone Shire Local Disaster Management Group

Progressive Record of Attendance

2019

Name	Agency – CORE	XXXX		XXXX		XXXX		XXXX	
		Invited	Attended	Invited	Attended	Invited	Attended	Invited	Attended
	Quorum Achieved? (Yes/No)								



Name	Agency – ADVISORY	XXXX		XXXX		XXXX		XXXX	
		Invited	Attended	Invited	Attended	Invited	Attended	Invited	Attended

Name	Agency – DEPUTY	XXXX		XXXX		XXXX		XXXX	
		Invited	Attended	Invited	Attended	Invited	Attended	Invited	Attended

Name	Agency – OTHER INVITEES	XXXX		XXXX		XXXX		XXXX	
		Invited	Attended	Invited	Attended	Invited	Attended	Invited	Attended



Resolutions Register

[illegible]

Actions Register

[illegible]



Livingstone Bushfire Sub Committee

Member Status Report

Organisation represented:

Meeting Date & Time

The following activities have been undertaken or are being undertaken by the local government/agency/organisation: (delete sections or insert N/A as required depending on role and responsibilities)

Mitigation

Risk Management / Mitigation May include items such as Studies (NDRP), mitigation initiatives, planning or measures being undertaken

Impediments to Implementation of Mitigation Measures
May include impediments such as funding, resourcing issues, responsibility

Planning

Integration with business planning
Summary of how disaster management is being integrated with the overall business of the organisation, including strategic and operational planning

Review of <Insert Plan Name> Plan

Review Date:	Type of Review	Summary of amendments

Community Education/Awareness

Community Education/Awareness
May include any engagement activities, events, workshops, programs

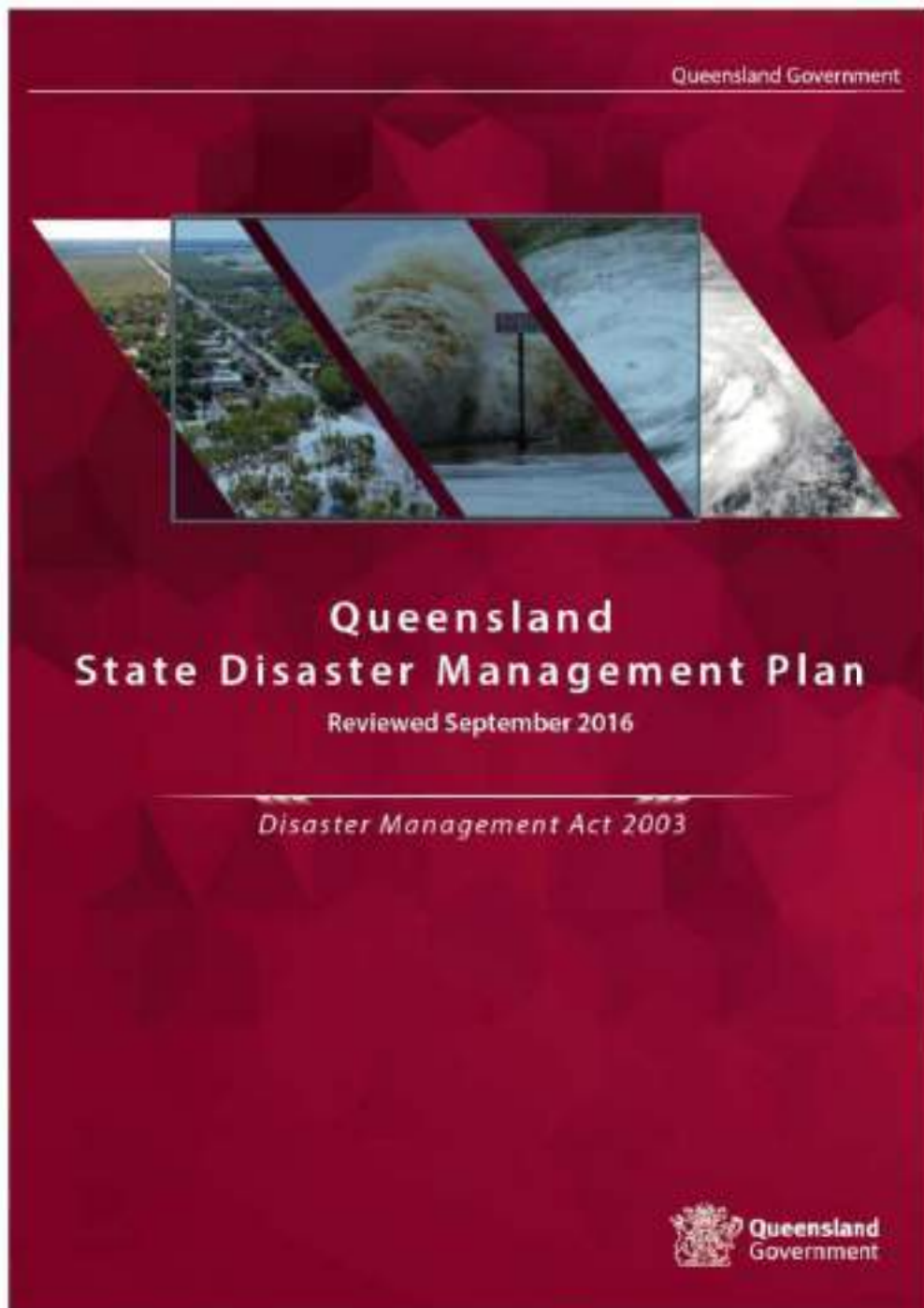
Operational Issues

Readiness Status (General comment regarding status of operational readiness)

Staff Availability (Comment on staff availability for LDCC, response etc.)

LDCC (Comment on resourcing levels for LDCC and possible impacts on operations)

ANNEXURE I – State Disaster Management Plan



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Add ECM reference date and version including page number

13 URGENT BUSINESS/QUESTIONS

Urgent Business is a provision in the Agenda for members to raise questions or matters of a genuinely urgent or emergent nature, that are not a change to Council Policy and can not be delayed until the next scheduled Council or Committee Meeting.

14 CLOSED SESSION

In accordance with the provisions of section 275 of the *Local Government Regulation 2012*, a local government may resolve to close a meeting to the public to discuss confidential items, such that its Councillors or members consider it necessary to close the meeting.

RECOMMENDATION

THAT the meeting be closed to the public to discuss the following items, which are considered confidential in accordance with section 275 of the *Local Government Regulation 2012*, for the reasons indicated.

15.1 Central Queensland Regional Organisation of Council's (CQROC) - Proposed Legal Structure

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

15.2 Recycled Water Fees and Charges

This report is considered confidential in accordance with section 275(1)(d), of the *Local Government Regulation 2012*, as it contains information relating to rating concessions.

15.3 Integrated Business Solution Procurement Process

This report is considered confidential in accordance with section 275(1)(e), of the *Local Government Regulation 2012*, as it contains information relating to contracts proposed to be made by Council.

15 CONFIDENTIAL REPORTS

15.1 CENTRAL QUEENSLAND REGIONAL ORGANISATION OF COUNCIL'S (CQROC) - PROPOSED LEGAL STRUCTURE

File No: CM4.12.1

Attachments:

1. Legal Structures Comparative Table
2. Draft Paper On Appropriate Legal Structure for CQROC

Responsible Officer: Dan Toon - Acting Chief Executive Officer

Author: Sonia Barber - Principal Economic Development and Innovation Officer

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

SUMMARY

This report provides an assessment of the alternative corporate legal structures available to the Central Queensland Organisation of Councils (CQROC) and a recommendation for adoption by Council.

15.2 RECYCLED WATER FEES AND CHARGES**File No:** WS32.8.5**Attachments:** 1. Recycled Water Agreements Data**Responsible Officer:** Dan Toon - Executive Director Infrastructure**Author:** Scott Casey - Manager Water & Waste Operations

This report is considered confidential in accordance with section 275(1)(d), of the *Local Government Regulation 2012*, as it contains information relating to rating concessions.

SUMMARY

Council has numerous users of recycled water at both Yeppoon and Emu Park. The existing recycled water agreements have all expired and are due for a review and re-negotiation with the users. Hence this report being presented to Council.

15.3 INTEGRATED BUSINESS SOLUTION PROCUREMENT PROCESS**File No:** 17.1.1**Attachments:** Nil**Responsible Officer:** Dan Toon - Acting Chief Executive Officer
Matthew Willcocks - Chief Technology Officer
Damien Cross - Acting Chief Financial Officer**Author:** Michael Green - Project Manager

This report is considered confidential in accordance with section 275(1)(e), of the *Local Government Regulation 2012*, as it contains information relating to contracts proposed to be made by Council.

SUMMARY

This report seeks Council approval to undertake a two-stage procurement process for the supply, implementation and support of the Councils Integrated Business Solution.

16 CLOSURE OF MEETING