

**QUEENSLAND FLOODS
COMMISSION OF INQUIRY**

STATEMENT OF BRENDAN JOHN NELSON

I, **BRENDAN JOHN NELSON** of c/- Level 9, 119 Charlotte Street, Brisbane in the State of Queensland solemnly and sincerely affirm and declare:

1. I am the General Manager, Land Use Planning in the Queensland Reconstruction Authority. Prior to commencing this role in January 2011, I was the Executive Director, Planning Services in the Office of Growth Management Queensland, in the former Department of Infrastructure and Planning where I was responsible for delivering on both regional and statutory planning for Queensland, planning reform implementation and the delivery of Smart eDA, the State Government's commitment to electronic development assessment.
2. I have been a private consultant, worked internationally and have held various planning positions with Queensland local governments during almost 18 years in planning. I hold a Bachelor of Environmental Science (Griffith) and Graduate Diploma of Urban and Regional Planning (with Distinction) from QUT. I am a Corporate Member and Certified Practicing Planner with the Planning Institute of Australia.

Requirement from Queensland Floods Commission of Inquiry

3. I have seen a copy of a letter dated 19 August 2011, which is attachment BJN-01, from the Commissioner, Queensland Floods Commission of Inquiry to me requiring a written statement under oath or affirmation, and which details the topics my statement should cover.

Item 1: The roles of the Queensland Reconstruction Authority, the Lockyer Valley Regional Council and any other relevant entity in creating the Grantham Development Scheme ('the Scheme');

4. The Queensland Reconstruction Authority (the Authority) has worked closely with the Lockyer Valley Regional Council (the Council) since its establishment, to determine the level of support necessary for the efficient and timely recovery of Grantham. The creation of the Development Scheme was a collaborative effort from both the Authority and the Council. Prior to the creation of the Development Scheme, key deliverables, including the master planning led by the Council and the declaration of a reconstruction area led by the Authority were required to be progressed. Both of these deliverables were crucial in the preparation of the Development Scheme for the Grantham Reconstruction Area. An outline of the roles of each entity in creating the Development Scheme is outlined as follows:

QFCI

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Date: 19/09/11

Exhibit Number: 538



Master Planning

Lockyer Valley Regional Council

5. The Council commenced one on one consultation sessions with members of the Grantham community in February 2011. The Authority understands that the consultation sessions resulted in residents being differentiated by those wanting to leave Grantham; those wanting to stay within Grantham and relocate to higher ground; and those wanting to rebuild in their current location.
6. Council advised that the overwhelming response was from residents who wanted to stay within Grantham and relocate to higher ground. Based on these consultation sessions, and to ensure that the future of Grantham was not just about the relocation of residents but also to strengthen the community, the Council led a master planning exercise that would shape the future of the Grantham Township.
7. To support community input into the master planning process, the Council engaged the services of Jude Munro & Associates and Diecke Richards (Urban Designers) to commence the visionary workshops and to run the community consultation sessions. At each session, members of the Council and the Authority were present and helped facilitate the sessions.
8. Workshop sessions were held on 19, 23 and 26 March 2011. Each workshop had its own theme:
 - 19 March 2011 – Visionary Workshop
 - 23 March 2011 – Reaffirm priorities
 - 26 March 2011 – Presentation of Master Plan
9. As the Authority was an observer during these sessions, the following are observations that were made:
10. The session on 19 March 2011 asked community members three key questions:
 - What do you like about Grantham?
 - What don't you like about Grantham?
 - What would you like to see in Grantham?
11. Some of the answers to these questions included the community wanting to feel safe, wanting alternate access routes, wanting to relocate to higher ground and wanting the convenience centre to be reopened as soon as possible.
12. The session held on 23 March 2011 was very similar to that held on 19 March 2011, however it was held to ensure that as many community members as possible were able to participate in the workshop and to ensure that community views on the priorities for Grantham were identified and recorded.

13. Having received and heard all of the feedback from the community, the session on 26 March 2011 was convened by Council to present both a 2 year master plan and a 20 year master plan to the community.
14. As a result of the community consultation and the Council led master planning exercise, the need to support the timely and voluntary relocation of residents to higher ground within Grantham was considered essential. On 23 March 2011, the Council formally sought via Council resolution that the Premier and Minister for Reconstruction declare Grantham as a Reconstruction Area under s43 of the *Queensland Reconstruction Authority Act 2011* (the QldRA Act).
15. At or about the same time, the Council commenced negotiations to acquire parcels of land on higher ground to the north of the existing township. On 25 March 2011, Council entered into a contract to purchase 18 parcels of freehold land containing an area of approximately 378 hectares to support the voluntary relocation of displaced residents.
16. On 8 April 2011, the Council settled on the purchase of this land which is attachment BJN-02A.
17. On 4 May 2011, the Council formally endorsed the proposed Master Plan for Grantham which included the proposed future development of the site purchased by the Council. A copy of this resolution is included at attachment BJN-02B.
18. The parcels of land purchased by the Council were zoned Rural General under the Gatton Planning Scheme 2007 and were located outside the urban footprint of the *South East Queensland Regional Plan 2009-2031* (SEQRP). The regulatory provisions of the SEQRP would normally restrict residential development outside of the Urban Footprint, other than where it is being proposed as part of a new *Sustainable Planning Act 2009* (SPA) Planning Scheme.

Declaration of the Reconstruction Area

Queensland Reconstruction Authority

19. As outlined above, the Authority worked closely with the Council during the community consultation sessions and was aware of the need to ensure that no regulatory hurdles would impact upon the objective of relocating residents to higher ground. As noted above, on 23 March 2011 the Council formally requested that the Premier and Minister for Reconstruction to declare Grantham a Reconstruction Area under s43 of the QldRA Act.
20. Based on the request of the Council and in meeting the requirements under s43 of the QldRA Act, the Authority sought endorsement from the Authority's Board to recommend to the Premier and Minister for Reconstruction that in accordance with s43 of the QldRA Act, that a declaration regulation be made to declare a Reconstruction Area at Grantham.

21. The Authority has vested powers under the QldRA Act that can be exercised to support efficient recovery and reconstruction efforts. Specifically, s43(1) of the QldRA Act allows that a regulation may declare a part of the State to be a reconstruction area. Section 43(2) of the QldRA Act requires that *"the Minister must not recommend to the Governor in Council the making of a regulation under subsection (1) unless the Minister is satisfied:*
- a) the part of the State has been directly or indirectly affected by a disaster event; and*
 - b) the declaration is necessary to facilitate flood mitigation for affected communities, or the protection, rebuilding and recovery of affected communities."*
22. In this regard, the Lockyer Valley Regional Council was disaster activated for all Natural Disaster and Recovery Relief Arrangements (NDRRA) on 6 December 2010. More specifically, it is noted that Grantham was severely impacted by devastating flash flooding and torrential rain on 10 January 2011 which resulted in 10 houses being completely destroyed, 19 houses being beyond repair and 119 houses sustaining significant damage. The Authority considered that the declaration of Grantham as a Reconstruction Area met the requirements of s43(2)(a) of the QldRA Act.
23. The Authority did however undertake an assessment of options available to support the delivery of the Council Master Plan. These options included:
- a) Lodgement of a Master Plan through a normal development application process in accordance with SPA;
 - b) Use of a Temporary Local Planning Instrument in accordance with SPA;
 - c) Preparation of a State Regulatory Planning Provision in accordance with SPA; and
 - d) Declaration of a Reconstruction Area under the *QldRA Act*.
24. Options a), b) and c), were discounted for reasons including conflict with the SEQRP regulatory provisions, and likely timeframes. Option d) was determined to be the only available option that would ensure the quickest means of delivery of the reconstruction process for the Grantham community and importantly enabling some residents to be back in their homes by Christmas 2011.
25. Section 43(3) of the QldRA Act requires that *"Before recommending to the Governor in Council the making of a declaration regulation, the Minister must have regard to the responsibilities of the relevant local government for matters about land use, and the giving of development approvals, for the local government's area."*
26. Following the request of the Council on 23 March 2011, the Authority's Board endorsed the recommendation to declare Grantham as a Reconstruction Area, the Premier and Minister for Reconstruction approved the recommendation, and on 8 April 2011, the Governor in Council declared Grantham a reconstruction area through the *Queensland Reconstruction Authority Regulation 2011*. A copy of the regulation is included at attachment BJN-03.

Creation of the Development Scheme

Queensland Reconstruction Authority

27. In accordance with s62 of the QldRA Act, the Authority may make a development scheme for a declared project, a reconstruction area or part of a reconstruction area. The Development Scheme for the Grantham Reconstruction Area was prepared by the Authority in accordance with s62 to s74 of the QldRA Act. The following consultants assisted the Authority in the preparation of the Proposed Development Scheme:

- Buckley Vann Town Planning - Town Planners
- PLACE Design Group - Urban Designers, Master Planners, 3D Visualisation specialists and Environmental Consultants
- MWH – Civil Engineers

28. In accordance with s63 of the QldRA Act, the Authority can make a Proposed Development Scheme which applies to all proposed development within the boundaries of the Reconstruction Area.

29. Section 63(2) of the QldRA Act outlines the content that must be included within the Proposed Development Scheme which includes:

- a land use plan regulating development in the area;
- a plan for infrastructure in the area;
- an implementation strategy to achieve the reconstruction function of the authority for the project or in the area, to the extent it is not achieved by the land use plan or the plan for infrastructure.

30. The Authority used the Master Plan endorsed by the Council on 4 May 2011 as the basis for the preparation of the land use plan. The Authority translated this plan into a regulatory framework known as the Proposed Development Scheme in accordance with the requirements outlined in s63(2) of the QldRA Act in addition to consultation with the Local Government as per s65 of the QldRA Act. The Authority also held numerous meetings with state agencies to discuss the Proposed Development Scheme and incorporated relevant state agency interests.

31. The relevant agencies consulted during the preparation of the Proposed Development Scheme included:

- Department of Local Government and Planning
- Department of Environment and Resource Management
- Department of Communities
- Department of Community Safety
- Department of Employment, Economic Development and Innovation
- Department of Premier and Cabinet

- Department of Transport and Main Roads
 - Education Queensland
 - Energex Ltd
 - Queensland Health
 - Queensland Rail
 - Board for Urban Places
32. On 11 May 2011, the Authority in accordance with s66 of the QldRA Act released for public notification the Proposed Development Scheme. In doing so, the Authority met the requirements under s66 including placing the Proposed Development Scheme on the Authority website, publishing a gazette notice and publishing an ad in the Gatton Star. A copy of the Proposed Development Scheme is included as attachment BJN-04.
33. The Proposed Development Scheme was placed on public notification for 30 business days commencing 11 May 2011 and closing on 23 June 2011. Upon the commencement of the public notification, the Authority hosted two community meetings at the Grantham State School. The first session was held on Wednesday, 11 May 2011 at 6pm where around 90 residents attended. The second was held on Saturday, 14 May 2011 at 10am where 12 residents attended.
34. During this public notification period, any member of the public was invited to provide a submission on the Proposed Development Scheme. The Authority created a number of avenues for submissions to be lodged including:
- Lodgement of feedback forms at the community consultation sessions;
 - Lodgement of feedback forms in submissions boxes provided at the Lucky 7 Shop Grantham and at Lockyer Valley Regional Council chambers, Gatton;
 - Via email to info@qldra.org.au;
 - In person at either Lockyer Valley Regional Council, Gatton or the Authority, Charlotte Street, Brisbane; and
 - The Authority also advised that if any member of the community wanted to discuss the Proposed Development Scheme then members of the Authority were happy to meet and discuss.
35. Consultation on the Proposed Development Scheme resulted in six (6) submissions being received. Of these six (6), four (4) were from *affected owners* as defined by the QldRA Act. One (1) affected owner submission was received from Lockyer Valley Regional Council.
36. In accordance with s68 – s70 of the QldRA Act, the Authority considered the submissions received within the submissions period and after doing so, amended the Proposed Development Scheme where appropriate. The amended Proposed Development Scheme is known as the Submitted Scheme.
37. On 30 June 2011 and in accordance with s70 of the QldRA Act, the Authority provided to the Premier and Minister for Reconstruction, a Submissions Report which summarised the

submissions and a copy of the Submitted Scheme. A copy of the Submissions Report is included as attachment BJN-05 and the Submitted Scheme is included as attachment BJN-06.

38. At the same time as providing a copy of the Submissions Report and Submitted Scheme to the Premier and Minister for Reconstruction, the Authority carried out its obligations in accordance with s71 of the QldRA Act whereby each submitter, including those not identified as an *affected owner*, being provided with a copy of the Submissions Report and the Submitted Scheme. Those identified as an *affected owner* (a person who owns land in, or that adjoins the reconstruction area) were then provided in accordance with s71(c) of the QldRA Act, 20 business days to make representations to the Premier and Minister for Reconstruction in relation to the submitted scheme. This period closed on 29 July 2011.
39. As no representations were made, it was recommended to the Premier and Minister for Reconstruction that the submitted scheme become the Development Scheme for the Grantham Reconstruction Area. In accordance with s74 of the QldRA Act, the Development Scheme can only take effect via approval under a regulation.
40. On 4 August 2011, the Governor in Council approved the *Queensland Reconstruction Authority Amendment Regulation 2011* which gave effect to the Development Scheme for the Grantham Reconstruction Area. The Development Scheme is a statutory instrument under the *Statutory Instruments Act 1992* and has the force of law. A copy of the Development Scheme is included in attachment BJN-07.

Item 2: The roles of the Queensland Reconstruction Authority, the Lockyer Valley Regional Council and any other relevant entity in administering the Scheme;

Queensland Reconstruction Authority

41. The Authority prepared the Development Scheme for the Grantham Reconstruction Area. The Authority has no ongoing responsibility in the administering of the Scheme, other than to undertake amendments in accordance with s76 of the QldRA Act. No proposals currently exist for amendments to the Development Scheme.

Lockyer Valley Regional Council

42. The administration of the Development Scheme and any applications lodged within the Reconstruction Area remains the responsibility of the Assessment Manager, Lockyer Valley Regional Council.

Referral Agencies

43. In accordance with s64 of the QldRA Act, a Development Scheme may provide that an entity that would otherwise be a referral agency for a development application for the Reconstruction Area is not a referral agency for the development application.

44. In accordance with s64 of the QldRA Act, under this Development Scheme, the referral triggers under schedule 7, table 2, item 39 (relating to reconfiguring a lot to which division 3 of the state planning regulatory provisions for the SEQRP applies) and schedule 7, table 3, item 12 (relating to a material change of use to which division 2 of the state planning regulatory provisions for the SEQRP applies) of the *Sustainable Planning Regulation 2009*, do not apply to development within the Reconstruction Area.
45. All other Referral Agency jurisdictions continue to apply for assessable development within the Development Scheme.

Item 3: The application and effect of the Scheme;

46. In accordance with s78(2) of the QldRA Act, the Development Scheme suspends that part of the current Gatton Planning Scheme which regulates development within the Reconstruction Area, save for the provisions expressly referred to in the Development Scheme. In accordance with s78(1) of the QldRA Act, if a conflict exists between the Development Scheme and any other planning instrument, policy or code, the Development Scheme prevails.
47. The Development Scheme for the Grantham Reconstruction Area will continue to apply until the new SPA compliant planning scheme for the Lockyer Valley Regional Council takes effect. If at the time the QldRA Act expires (s139 of the QldRA Act) and Council's new SPA compliant planning scheme is not in effect, powers under s112 of the QldRA Act may be required to be exercised to ensure that the Development Scheme continues to have effect.
48. For the Development Scheme, the process for determining a level of assessment is:
- 1) Identify the type of development proposed by referring to the relevant definitions;
 - 2) Identify the Land Use Plan zone and applicable precinct the site is located in by referring to Map 2 - Land Use Plan, Map 3 - Land Use Plan Inset and Map 4 - Precinct Plan;
 - 3) Determine the level of assessment by referring to the Table of Assessment in the relevant zone/ precinct of the Land Use Plan.
49. The Development Scheme states the category of development for all development in the Reconstruction Area. The categories of development are:

Exempt development

If development is exempt in the Development Scheme through reference to a plan or map contained in the Development Scheme, the Minister has discretion to decide if a proposal is consistent with that plan or map if there are minor variations involved.

Some exempt development in the land use plan is subject to certain criteria for exemption. If development does not comply with the identified criteria, the development becomes code assessable unless an alternative level of assessment is specifically identified in the table of

assessment. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, including identified codes of the Gatton Planning Scheme.

Self assessable development

Self assessable development complies with the land use plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable precinct code. If development does not comply with these performance outcomes or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, including identified codes of the Gatton Planning Scheme.

Compliance assessable development

Compliance assessable development complies with the land use plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable zone code. If development does not comply with these performance outcomes or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, identified codes of the Gatton Planning Scheme.

Code assessable development

Code assessable development complies with the land use plan if it complies with:

- the intent or purpose of the zone and / or precinct in which it is located;
- the probable solutions of the identified codes of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable zone code under the Development Scheme.

If a development meets all the acceptable outcomes / probable solutions of the relevant codes, then the development is taken to comply with the intent or purpose of the zone / precinct, as well as with the performance / specific outcomes of the relevant codes. If a development does not meet all of the acceptable outcomes / probable solutions of the relevant codes the development is Impact assessable.

Impact assessable development

Impact assessable development complies with the land use plan if it complies with:

- the intent or purpose of the zone and /or precinct in which it is located;
- the probable solutions of the relevant code of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable zone code under the Development Scheme.

If a development meets all the acceptable outcomes / probable solutions of the relevant codes, then the development is taken to comply with the intent or purpose of the precinct, as well as with the performance / specific outcomes of the relevant codes. If a development does not meet all of the acceptable outcomes/ probable solutions of the relevant codes, then it will be assessed on its individual merits.

50. Definitions

Terms used in this land use plan have the same meaning as set out in the Queensland Planning Provisions (v2.0) or the SPA. However, where:

- (a) a use which is mentioned in a Gatton Planning Scheme code referred to in the land use plan; or
- (b) a term referred to in the land use plan;

is not defined in the Queensland Planning Provisions (v2.0), the Gatton Planning Scheme definition applies.

If they are not defined therein, they have their plain English meaning.

51. Relationship to Gatton Planning Scheme

The land use plan refers to, or relies upon various provisions of the Gatton Planning Scheme. To the extent there is any inconsistency between the land use plan and those provisions, the land use plan prevails.

For the purpose of the land use plan, any reference in an identified code of the Gatton Planning Scheme to:

- (a) a zone, means a zone or precinct of the land use plan;
- (b) the Urban residential zone, means the Residential living 1 precinct of the land use plan;
- (c) the Park residential Zone, means the Residential living 2 precinct and Rural residential 1 precinct;
- (d) the Rural residential Zone, means the Rural residential 2 precinct;
- (e) the Commercial Zone, means the Local Centre Zone of the land use plan;
- (f) the Industry Zone, means the Low Impact Industry Zone of the land use plan;
- (g) the Open Space and Recreation Zone, means the Recreation and Open Space Zone of the land use plan;
- (h) the Community Facilities Zone, means the Community purposes zone of the land use plan; and
- (i) a Rural general or Rural agriculture zone, means the Rural Agricultural precinct or the Rural general precinct of the land use plan.

52. Building work

Building work as defined in the SPA is not regulated by the land use plan.

53. Plumbing and Drainage Work

Plumbing and Drainage Work as defined in the SPA is not regulated by the land use plan.

54. Gatton Planning Scheme

References in the Development Scheme to the Gatton Planning Scheme refer to the Planning Scheme for the former Gatton Shire commencing on 1 July 2007 and any subsequent amendments.

Item 4: The Scheme's use of development controls to encourage or discourage development, including by reference to the following, with examples where possible:

- a) levels of assessment;**
- b) the land swap arrangement;**
- c) the existing town centre;**

a) *Levels of Assessment*

- 55. The principle driver in the preparation of the Development Scheme was the development of a strategic vision for the Reconstruction Area. This strategic vision was critical in the determination of how the regulatory framework would be calibrated through levels of assessment. The overwhelming outcome of the vision is to see displaced residents participating in Council's land swap programme to be relocated to the higher ground.
- 56. Fundamentally, the development controls within the Development Scheme are calibrated to meet community expectations for future development within the Development Scheme area, expressed through the Development Scheme's Vision.
- 57. The Development Scheme uses levels of assessment and forms of development criteria (such as building height or lot size) to encourage or discourage certain development in accordance with the Vision.
- 58. This approach also has the effect of reducing planning scheme complexity for development consistent with the Vision, and discouraging development that is inconsistent. Many forms of development in the Reconstruction Area are either exempt or self-assessable, with simple assessment criteria for these types of development. For example:
 - Reconfiguring a Lot (Subdivision) to facilitate relocation of residents to the proposed new settlement area in Grantham is exempt development where it complies with certain lot size and frontage widths – subdivision is generally code assessable in other local government planning schemes;
 - Operational works not associated with a material change of use are self assessable – this type of development is commonly code assessable in other local government planning schemes; and
 - Material Change of Use for establishment of new facilities within the township have a reduced level of assessment where they are consistent with the vision.

59. In the area that was significantly impacted by the flash flood event on 10 January 2011, the Development Scheme sought to designate and zone this land as Limited Development (Constrained Land). It was acknowledged that some residents affected by the 10 January 2011 event wanted to stay and rebuild on the same land. The Development Scheme allows for this where residents elevate their habitable floor levels above the defined flood level. Any new residential development in this area is discouraged and this is reflected in the intent of the zone. Any proposed new residential development would be subject to an Impact Assessable application and therefore require public notification and would be discouraged.
60. A similar approach has been applied to the Harris Street Precinct within the Open Space and Recreation Zone.

b) The Land Swap Arrangement

61. The Development Scheme facilitates the implementation of Council's land swap program by facilitating the designation of land suitable for residential use and the removal of red tape to allow the land required for the land swap to be delivered in the most timely and efficient manner. Part 3 – Implementation Strategy of the Development Scheme outlines the importance and relationship of Council's Land Swap Program to the Development Scheme, noting the intention of delivering a land swap program over an extended period of time through the removal of regulatory hurdles and providing flexibility in the final development form.

c) The Existing Town Centre

62. The Development Scheme maintains the viability of the Grantham town centre by maintaining existing use rights in the Local centre zone. The existing centre is designated within the Local centre zone within the Development Scheme and encourages a range of township uses including the establishment of Markets.
63. The overall suggested outcome for the zone as per the Development Scheme is:

The Local centre zone is the heart of Grantham - a vibrant market place featuring a mix of uses and activities that provide day-to-day services for the town, its broader community and visitors. It is focused on Anzac Avenue, and includes shops, cafes, arts and crafts, an art gallery, a museum and a hotel.

On weekends, the local centre is transformed into a significant local produce and industry market with temporary and permanent stall facilities under covered shade structures. The whole main street of Anzac Avenue has a rural town character and builds on the amenity of the nearby parks. Landmark entry structures mark "Fruit Stall" corner where William Street and Anzac Avenue meet.

William Street provides the ideal setting for cafes and a pleasant walk up to the Butter Factory Community Centre from the Local centre.

New residential development is not preferred in the Local centre zone. However it is acknowledged that some residents may wish to remain and therefore, if a dwelling house existed on the subject land on 10 January 2011, a new dwelling house or rebuilding of a dwelling house will require habitable floor levels are to be at least 300mm above the defined flood level.

Where achievable and practical, commercial, business and retail uses are encouraged to rebuild having regard to the defined flood level, noting requirement to maintain equitable access.

64. A new area to create employment opportunities was nominated in the Low impact industry zone. Approximately 2.5Ha of land has been identified between the Local centre zone and the new grade separated flyover to be built by the Department of Transport and Main Roads. The area proposed for employment opportunities will provide additional jobs for local residents.

Item 5: How the Scheme differs from other planning schemes;

65. The Development Scheme was developed from a community led Master Planning process initiated by the Council. The role of the Authority in drafting the Development Scheme was to translate the Council Master Plan into a regulatory framework.
66. It is a local planning instrument prepared in accordance with s66 of the QldRA Act that suspends those parts of the existing Gatton Planning Scheme which regulate development within the Reconstruction Area, save for the provisions expressly referred to in the Development Scheme, and replaces them with provisions that more appropriately reflect the community expectations for development in the Reconstruction Area.
67. The Development Scheme is the first SPA compliant local planning instrument in Queensland and has been prepared using Queensland Planning Provisions – version 2.0 (QPP). Currently, every planning scheme in Queensland has been prepared in accordance with the superseded *Integrated Planning Act 1997* (IPA).
68. Planning schemes prepared in accordance with the IPA do not have a statutory strategic plan or vision. Utilising the QPP and the approach underpinned by SPA, the Grantham Development Scheme was prepared with a development assessment framework that could be calibrated against the community vision.
69. By using this technique, the levels of assessment allowed the removal of extensive and unnecessary red tape. More specifically and by reference to the Development Scheme, reference should be made to the extent of exempt, self assessable, compliance and code assessable development provided for in the land use plan.

70. One such example of the removal of red tape is for the Reconfiguring a lot in the Residential Living zone which is identified as exempt development (ie no approvals required) if the lots comply with the Residential Living zone code, are owned by Council and in accordance with a lot layout master plan determined by Council. No such level of exemption applies for this form of development in any other planning scheme in Queensland.

Item 6: Whether and why the Scheme is an appropriate instrument for long term use;

71. The Development Scheme was primarily created to guide development within the Grantham Reconstruction Area for the purposes of expediting the rebuilding effort required for the relocation of displaced Lockyer Valley residents.
72. The Scheme is an appropriate instrument to guide the future of the Grantham Township beyond the life of the Authority. Specifically the Development Scheme supports the future growth and strengthening of the community including the establishment of a Showgrounds Precinct, employment areas and expansion capacity whilst limiting the potential for future redevelopment in areas affected by the January 2011 flooding event.
73. The Development Scheme for the Grantham Reconstruction Area will continue to apply until the new planning scheme for the Lockyer Valley Regional Council takes effect. If at the time the QldRA Act expires (s139 of the QldRA Act) and Council's new SPA compliant planning scheme is not in effect, powers under s112 of the QldRA Act may be exercised to ensure that the Development Scheme continues to have effect. The Development Scheme for the Grantham Reconstruction Area has been drafted to facilitate the streamlined adoption and its incorporation into the new SPA compliant planning scheme at some future time.

Item 7: The relationship between the Scheme and State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (SPP1/03);

74. As noted in Point 5 above, the Development Scheme for the Grantham Reconstruction Area was prepared under the QldRA Act and not under the SPA. In making the Development Scheme under s63(4) of the QldRA Act, the Authority must consider, but is not bound by, a requirement under any of the following relevant to the project or area:
- (a) a planning instrument;
 - (b) a plan, policy or code made under the SPA or another Act.

This includes State Planning Policies.

75. In preparing the Development Scheme, consideration was given to SPP1/03. The principles of SPP1/03 are reflected throughout the Development Scheme. Specific details of this include:

- Any proposed development identified in the Gatton Planning Scheme's Potential Bushfire Risk Area Overlay and the Steep and Unstable Land Overlay will continue to require assessment against the Overlay Codes in the Development Scheme;
 - The land use plan within the Development Scheme has been prepared with direct consideration of the extent of the 10 January 2011 flooding events:
 - Provisions in the Low impact industry zone, Local centre zone, Limited development (Constrained land) zone codes reflect that where practical, essential services are elevated above the defined flood level;
 - The nomination of a defined flood level as assessment criteria for uses proposed within the affected area; and
 - Designation of new residential land outside of the area impacted by the 10 January 2011 flooding event, which is acknowledged as being an extreme event.
76. The Lockyer Valley Regional Council is currently preparing its SPA compliant planning scheme which will require consideration of SPP1/03 in the preparation and making process as required under SPA. To help inform this process, the Council is also undertaking a flood study which will be one of the studies used to inform the new SPA planning scheme and to also identify final defined flood levels particularly in areas impacted by the 10 January 2011 flooding event.
77. The Development Scheme requires the 'defined flood level' for the land use plan to be determined by Lockyer Valley Regional Council having regard to the flooding on 10 January 2011. Council may initially adopt an interim level and final level following further studies.
78. The existing Gatton Planning Scheme has been identified as appropriately reflecting bushfire and landslide matters from SPP1/03. The reliance by the Development Scheme on these existing provisions of the Gatton Planning Scheme ensures that with respect to bushfire and landslide, the Development Scheme appropriately reflects the SPP1/03. In relation to flooding, it is noted that the existing Gatton Planning Scheme does not appropriately reflect SPP1/03. Given the flood studies currently being prepared by Council, the Development Scheme provides for Council to adopt a 'defined flood level'. The allocation of land uses in the Development Scheme was undertaken to ensure that all new residential lots were located above the 10 January 2011 event which is acknowledged as being an extreme event.

Item 8: The Queensland Reconstruction Authority's role in respect of, and process for creating, its Rebuilding Guidelines and toolkits;

79. The Authority's relevant functions as outlined in s10 of the QldRA Act provide specifically for the following:
- (b) *to work closely with affected communities to ensure each community's needs are recognised in the rebuilding and recovery of the communities;*
 - (g) *to facilitate flood mitigation for affected communities and to ensure the protection, rebuilding and recovery of affected communities is:*

- (i) *effectively and efficiently carried out; and*
- (ii) *appropriate, having regard to the nature of the disaster event.*

80. Given the events of Summer 2010/2011, the Authority initiated the preparation of a number of guidelines and toolkits to assist each community in the rebuilding and recovery efforts. In the case of Lockyer Valley (Grantham), this was through the preparation of the *Rebuilding Grantham Together – Development Scheme for the Grantham Reconstruction Area*. In the case of Severe Tropical Cyclone Yasi (Cyclone Yasi) affected communities; this was through the preparation of a series of guidelines – *Planning for a stronger, more resilient North Queensland* including *Part 1 – Rebuilding in storm tide prone areas - Tully Heads/ Hull Heads*. In addition to this, the Authority has also prepared guidelines for floodplain management (*Planning for stronger, more resilient floodplains*) and electrical infrastructure (*Planning for stronger, more resilient electrical infrastructure in flooding and cyclones*). Detail on each of these guidelines and toolkits are outlined below:

Rebuilding Grantham Together – Development Scheme for the Grantham Reconstruction Area

81. In accordance with 2 above.

Planning for stronger, more resilient North Queensland

82. The significant damage and devastation seen in North Queensland (Tully Heads and Hull Heads) was largely as a result of the storm tide associated with Cyclone Yasi. In contrast, houses outside of the storm tide zones, built to the current wind load standards performed well.

83. During consultation with Cassowary Coast Regional Council and the local community, the Authority identified that the majority of residents in Tully Heads and Hull Heads were seeking to rebuild their homes on their current properties. The Authority identified an opportunity to work with the community to improve the level of resilience for future storm tide events. The Authority commenced work on a series of guidelines to be delivered in four parts:-

- Part 1 - Rebuilding in storm tide prone areas – Tully Heads and Hull Heads included as attachment BJN-08;
- Part 2 - Wind Resistant Housing (in DRAFT) included as attachment BJN-09;
- Part 3 - Preparing for a Cyclone (underway); and
- Part 4 - Building in low lying coastal areas (yet to be commenced).

84. The Authority partnered with leading cyclone and design experts including James Cook University's Cyclone Testing Station, CSIRO, the Office of the Government Architect, Australian Institute of Architects, GHD and Cassowary Coast Regional Council in the preparation of Part 1 of these Guidelines.

85. Part 1 of the guideline was developed to support a “building back better” campaign specifically in the areas of Tully Heads and Hull Heads as a result of Cyclone Yasi. This guideline is intended to:
- assist home owners and occupiers of key issues associated with rebuilding in a storm tide prone area including reinforcing design for wind loads;
 - provide guidance to assist in the design of dwellings to improve their resilience in the event of a storm tide inundation;
 - provide guidance to assist in ensuring design outcomes are compatible with the character of the local area; and
 - understand the approvals process including building certification and selection of contractors.
86. The main objectives of the guideline are to:
- improve the resilience of residential dwellings to the impact of a storm tide event caused predominantly by a Cyclone;
 - assist to safeguard property in a storm surge event; and
 - improve the broader long term sustainability of dwellings and their local context.
87. The Authority launched Part 1 of these guidelines at the Tully Heads community hall on 20 April 2011. Over 100 residents attended the release where experts provided an overview of what happened during Cyclone Yasi including wind speeds and storm tide levels and architects presented the key design considerations to help improve the impact of storm tide damage.
88. Following this session, the Authority hosted a ‘Meet the Experts’ session on Saturday, 7 May 2011 where residents were able to discuss the rebuilding proposals with engineers, architects, builders and members of the Cyclone Testing Station. Over 35 groups took part in the expert sessions.
89. Comment was invited from the industry, state agencies and the community on the draft guideline. These submissions were considered and where appropriate were reflected in the final Part 1 Guideline which was released on 15 July 2011 at the Cyclone Testing Station in Townsville.
90. Part 2 – *Wind Resistant Housing* was prepared with input from the Cyclone Testing Station and the Bureau of Meteorology. Part 2 draws from the significant information available on Wind Resistant Housing. Part 2 commenced public consultation on 15 July 2011 and concluded on 26 August 2011. No submissions were received on the draft Part 2 guidelines. The draft Part 2 Guideline – Wind Resistant Housing is currently being finalised. A copy of the draft guideline is included at attachment BJN-09.
91. Part 3 and 4 Guidelines are yet to be released.

92. The Authority has been recently approached by the Northern Territory Government who are preparing a design document for communities in storm tide prone areas. The Northern Territory Government has acknowledged that the content and recommendations of the Part 1 guideline is transferrable to their communities and has sought permission from the Authority to use Part 1 as a guide to the development of their own document. Appropriate acknowledgement and reference in the Northern Territory document will be provided and the Authority will review and comment on the draft which is expected by the end of October 2011.

Planning for stronger, more resilient floodplains

93. To ensure that Queensland learns from the recent natural disasters, the Authority has partnered with the Department of Local Government and Planning (DLGP), the Department of Environment and Resource Management (DERM) and the Department of Community Safety (DCS) to deliver a two part guideline supporting greater resilience and understanding of our floodplains and to better inform and influence the land use planning process, entitled – *Planning for stronger, more resilient floodplains*.
94. The purpose of the project is to identify both interim and long term planning solutions, including a mapping product, to promote a greater correlation between land use planning and floodplain management at a river sub-basin level. A copy of the draft Part 1 guideline is included at attachment BJN-10. Part 2 (not yet prepared) proposes to build on this work and provide detailed guidance to Council's in the preparation of new SPA compliant planning schemes and a flood study template.
95. Part 1 of the guideline is a voluntary toolkit including mapping which identifies an interim floodplain assessment overlay area (floodplain maps) and interim floodplain development assessment controls (model planning scheme code).
96. In delivering the Part 1 guideline, the Authority has worked collaboratively with Geoscience Australia, Banana Shire Council and the Fitzroy Basin Association. More than 10 other Council's and the Local Government Association of Queensland have been consulted in the preparation of this Guideline. The CSIRO and the Bureau of Meteorology have expressed interest in a particular partnership supporting the delivery of *Part 2 – Flood Study Template and Standard Planning Scheme Provisions*.
97. In recognition of the time and cost involved in the preparation of detailed flood mapping and studies by Councils, the Authority, with the support of DERM, commenced a mapping exercise in June 2011 to establish interim mapping of all of Queensland's floodplains to support Councils' existing planning schemes.
98. The dataset to inform the interim mapping product is identified as an Interim Floodplain Assessment Overlay (floodplain maps) and was developed using the following overall principles:
- suitability for a Statewide approach;

- a consistent approach;
- repeatable if more accurate data is available in the future; and
- evidential and justifiable.

99. The floodplain maps were derived from overlaying available state-wide information sources, including best available:

- Drainage location information;
- Contour information (typically 10 metre contours);
- Satellite imagery (typically Landsat 5);
- Interpreted or actual flood information from 2010/2011 events;
- DERM gauging station information; and
- Pre-clear Vegetation Mapping of Landzone 3 (Alluvium) and Landzone 1 (Estuarine) and SALI Soil Flooding Limitation Mapping.

100. Individual maps have been designed for display with the cadastre at 1:50,000 scale to allow for all properties to be located in respect to the interim floodplain area.

101. Hard copy mapbooks have currently been prepared for 39 river sub-basins covering an area greater than the size of Victoria, and this mapping will also be made available on the Authority's website for public viewing. By the end of October 2011, the Authority utilising resources from DERM will have mapped approximately 40 per cent of the State's area, which when combined with existing Council flood mapping represents coverage for approximately 90 per cent of the State's population. By mid 2012, floodplain maps for all relevant areas of the State are intended to be available. Included in the Part 1 Guideline is a model planning scheme code which is intended for inclusion in existing Local Government IPA compliant planning schemes.

102. The Authority's web site displaying this floodplain mapping is www.qld.gov.au/floodcheck

103. The Model Interim Floodplain Assessment Code (the model code) provides interim development controls for development within the floodplain areas identified by the floodplain mapping. The floodplain mapping and model code are intended to work in partnership (to be known as an 'Interim Floodplain Assessment Overlay') within existing planning schemes as a regulatory mechanism to manage development in floodplain areas.

104. The purpose of the model code is to manage development outcomes in the floodplain so that risk to life, property, community and the environment during future flood events is minimised, and to ensure that development does not increase the potential for flood damage on site or to other property. The key development outcomes sought by the model code relate to:

- building design and site layout for material changes of use and lot reconfigurations;
- extent of filling in both urban and rural contexts;
- management of and design requirements for dangerous or hazardous materials on site; and

- design and siting requirements for community infrastructure.
105. The model code draws from the provisions of the SPP1/03 and provides a streamlined adoption process by Council's with DLGP. The model code applies to any development that is deemed assessable under the local government planning scheme on land wholly or partially within the area show on the floodplain maps.
106. It is not intended that the interim controls set a level of assessment for particular development. The application of the model code in development assessment relies on other components of the planning scheme to trigger development as assessable. Therefore, the model code only applies where the planning scheme already deems a particular development type as requiring assessment under the scheme. This minimises the regulatory impact of the model code and streamlines its integration into existing planning schemes. It also allows for the adoption of the model code and mapping to be subject to a minor planning scheme amendment process. A minor scheme amendment can be made quickly via a Council resolution and approval by the Planning Minister.
107. To support the adoption of the mapping, the Authority has prepared a Temporary State Planning Policy (TSPP) - *Planning for stronger more resilient floodplains*. The TSPP is proposed to be made by the Planning Minister in accordance with s47 of the SPA. A copy of the draft TSPP is included at attachment BJN-11.
108. The TSPP temporarily suspends Annex 3 clauses 3.1 and 3.2 of the existing SPP1/03 which outlines the process for the designation of the Natural Hazard Management Area (Flood) (NHMA).
109. The TSPP will allow that in addition to clauses 3.1 & 3.2, the floodplain maps provided by the Authority, or as amended by the relevant local government, can be designated as a NHMA (Flood) for the local government area. The TSPP will also provide for the implementation of the proposed amendments to the Queensland Development Code as these building provisions are triggered where flood mapping is available and adopted by a local government. The TSPP gives effect to options for how a local government may choose to designate a NHMA (Flood). The TSPP effectively streamlines the adoption process for the floodplain mapping prepared by the Authority.
110. The Part 1 guideline prepared by the Authority is the supporting guideline for the TSPP and therefore a public consultation period for the guideline (40 business days) is expected to commence on 17 September 2011 and run through to 11 November 2011. This consultation period will front load the public consultation period to support the proposed minor amendment to planning scheme process. This is to ensure that each local government choosing to adopt the floodplain mapping and scheme provisions does not have to undertake further consultation individually as the Authority has undertaken this process on their behalf.
111. The implementation of the guideline will principally focus on local governments in regional

Queensland who may require assistance with integrating floodplain management into their existing planning schemes. Not all local governments will benefit from the Part 1 guideline. It is a fit for purpose and voluntary solution, intended as an interim measure for inclusion in existing planning schemes particularly in circumstances where there is no current flood mapping. Local governments may also choose to use the Part 1 Guideline and floodplain mapping as one form of reflecting SPP1/03 in their existing planning scheme.

112. Local governments may also choose to use the mapping and the Part 1 guideline to inform the preparation of their new SPA-compliant planning schemes including their new strategic plans. In addition, Part 2 of the Guideline (under preparation) will build on the work completed to date to provide further specific guidance to local governments on how they may choose to integrate floodplain management matters into their new SPA compliant planning schemes.

113. The reintroduction of strategic plans and the QPP framework under SPA provides an excellent opportunity for state-wide consistency and front loading of floodplain management matters into new SPA compliant planning schemes.

Planning for stronger, more resilient electrical infrastructure in flooding and cyclones

114. The Authority has partnered with Ergon Energy, ENERGEX Limited (ENERGEX) and Powerlink to produce an all encompassing guideline, *Planning for stronger, more resilient electrical infrastructure – Improving the resilience of electrical infrastructure in flooding and cyclones* (Draft Guideline). A copy of the draft guideline is included as attachment BJN-12.

115. The main objectives of the draft guideline are to:

- assist Queenslanders in understanding the electricity network;
- promote a greater understanding of the impacts that natural disasters can have on electricity supply;
- identify lessons learnt from the recent natural disasters;
- improve the resilience of electrical infrastructure across Queensland to the impacts of floods and cyclones;
- ensure Queenslanders are aware of the importance of being adequately prepared for the potential loss of power in future disaster events; and
- to provide recommendations for electricity distribution, land use planning, emergency planning and management, building and design and the homeowner.

116. Whilst not yet released, it is intended that this guideline will be an advisory document that raises awareness of the issues that relate to the resilience of electrical infrastructure.

Item 9: The Queensland Reconstruction Authority's findings about the implementation of *State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* in local planning schemes and in particular, any challenges or difficulties identified;

117. The Authority's consideration of flood issues within local government planning schemes has been undertaken within the scope of the Authority's functions as defined in the QldRA Act.
118. The Authority has therefore considered the issue of flooding broadly in the context of the reconstruction of affected communities and seeking to build resilience against future events.
119. In the course of researching current flood resilience techniques and strategies in Queensland, the Authority, in partnership with the DLGP, conducted a review of all Planning Schemes currently in force in Queensland (a total of 127 schemes) to understand how floodplains and flooding is mapped in these Planning Schemes by reference to the SPP1/03. An earlier report on the review of the initial 77 schemes was provided to the Commission on 29 August 2011. A full review (in draft) of all 127 schemes has been provided to the Authority on 15 September and is included as attachment BJN-13.
120. Many of Queensland's existing Planning Schemes are still in effect from pre-Council amalgamations. Therefore, many local government areas have more than one planning scheme in operation within its boundaries.
121. The draft review included as attachment BJN-13 identified that there is no standard or consistent methods employed through planning schemes to manage development within floodplains throughout Queensland. Indeed, it is generally treated differently in every planning scheme.
122. The draft review also identified that whilst the majority of planning schemes included some level of floodplain management provisions, the majority of planning schemes did not contain flood mapping.
123. The Authority has utilised the interim findings of the initial draft review to inform its approach to the preparation of the two part Guideline *Planning for Stronger, More Resilient Floodplains* (refer to Item 8 above). The floodplain mapping supporting this Guideline has been prepared as an interim solution in direct response to the lack of mapping in existing Planning Schemes.
124. In order to understand the potential reasons as to why planning schemes treat floodplain management differently, the Authority sought to gain a greater understanding of Australia's river systems. This was seen by the Authority as integral to developing an appropriate interim land use planning and mapping solution that would support a greater correlation between floodplain management and land use planning.
125. Some of the findings of the Authority through this information gathering on Australia's river systems were:
- In Australia, there are 12 drainage divisions nationally;
 - Queensland hosts 5 (40%) of these drainage divisions either in part or full. These include:
 - Northeast Coast (1)

- Gulf of Carpentaria (9)
- Murray Darling Division (4)
- Bulloo – Bancannia Division (10)
- Lake Eyre Division (11)
- Each drainage division contains a number of river basins. Within Queensland, there are 75 river basins;
- Each river basin is then divided into a number of sub-basins or more commonly known as catchments. In Queensland there are 128 sub-basins (or catchments);

Importantly, this exercise demonstrated that not one drainage division, river basin or sub-basin correlated with any administrative boundary whether it be a State or local government area.

126. Having gained the understanding that local government boundaries do not correlate with the hierarchy of our river systems, it became apparent to the Authority that the way in which we manage our floodplains needed to be wider than the jurisdiction of a local government area and therefore a planning scheme.

127. The process to adopt flood mapping would normally require a flood study. A flood study traditionally has two core components:

- *Hydrologic analysis* or estimation of flood discharges for floods of various magnitudes; and
- *Hydraulic analysis* or determination of the extent, depths and velocities of flooding.

128. Based on the understanding of the river systems, the Authority acknowledged that there would be a level of difficulty for some Council's particularly in low-growth areas to be able to fund such studies.

129. In recognition of the time and cost to prepare detailed flood mapping and studies by Council's, the Authority, with the support of DERM, commenced a mapping exercise in June 2011 to establish interim mapping of Queensland's floodplains to support Councils' existing planning schemes in order to address the lack of mapping and lack of consistency in approach across the State.

Item 10: Opinion about the implementation of *State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* in local government planning schemes and in particular, any challenges or difficulties identified;

130. Based on the analysis and research undertaken as part of the *Planning for stronger, more resilient floodplains* project being undertaken by the Authority, I have identified 8 main challenges associated with the implementation of SPP1/03 in local government planning schemes with particular reference to flooding. These main challenges are identified below:

Cost

131. The development of a comprehensive floodplain management plan envisaged in most circumstances by SPP1/03 is likely to cost more than \$100,000 and may exceed \$500,000 depending on the level of data available. This cost is prohibitive for the majority of local governments with low population bases.

Timing

132. The preparation of flood studies and floodplain management plans envisaged by SPP1/03 usually occurs following a successful grant application, given the costs outlined above. Grant funding cycles usually occur on a financial year basis and rarely correspond with the timing associated with the preparation of planning schemes.
133. Section 91 of SPA requires local governments to review their planning scheme every 10 years. Local governments in low or no growth areas are unlikely to review their planning schemes prior to this. This means that the integration of flood studies and floodplain management plans into planning schemes may not always be aligned and can often be disconnected.

Fit for Purpose

134. A one size fits all approach to floodplain mapping and flood studies is not considered appropriate in Queensland given the variability of the landscape and the expanse between population centres. Instead, a maturity model which recognises basic provisions and mapping for low growth / rural local governments, scalable upwards for moderate and higher growth local governments is considered appropriate.

Boundary Disconnect

135. The reliance on local governments to implement SPP1/03 is constrained by the fact that local government boundaries do not correlate with catchments or sub basins. Indeed, there are no local government boundaries in Queensland that correspond to a catchment boundary.

Scope

136. Flood studies are often undertaken in isolation of other flood studies and the scope is often limited to part of a catchment only, having regard to the boundary disconnect and cost issues outlined above.
137. Given the introduction of SPA, an opportunity exists to develop a consistent methodology and approach to the undertaking of flood studies and the manner in which they are incorporated into land use plans and planning schemes.

Resources

138. There are a limited number of specialist consultants available to undertake the detailed flood studies envisaged by SPP1/03. The capacity for the majority of local governments, particularly in rural centres to maintain flood models once developed and to assess development proposals against detailed engineering models is limited.

Data

139. The availability of data across Queensland to support the provision of detailed floodplain mapping and flood studies is limited in some locations. The acquisition of this data (ie Digital Elevation Models [DEM], Contours, etc) is often expensive and captured in isolated segments.
140. Access to previous flood studies often has limited visibility and sharing of data is often limited.

Legislation

141. The legislative framework existing at the time of the development of SPP1/03 was the IPA. Under the IPA, there was a strong focus on planning process.
142. This changed following the introduction of the SPA in December 2009 with a focus around delivering sustainable outcomes. With the introduction of SPA, there was also an increased focus on standardisation and a reduction in complexity. The intent of the changes under SPA was to 'front load' planning systems with greater emphasis on planning strategically and collaboratively between state, local government and the community.
143. There are no SPA planning instruments that are currently operational in Queensland apart from the Development Scheme for the Grantham Reconstruction Area. For the majority of the reasons outlined above, the front loading and full implementation of SPP1/03 into local government planning schemes has been relatively limited, instead relying on the deferral of SPP1/03 matters until the development assessment process which is not ideal. This approach creates the potential for inconsistency and doesn't allow a catchment (basin/sub basin view) to be formed.
144. An innovation in SPA is the creation of the QPP, which is a standard approach to planning schemes to improve community engagement and the understanding of planning. Part 2 of the *Planning for stronger, more resilient floodplains* guidelines proposed by the Authority will rely on developing a standardised approach in managing Queensland floodplains and undertaking flood studies. To date, there has been little or no consistency in this approach across Queensland.

Item 11: The Queensland Reconstruction Authority's findings about the challenges for local government of flood mapping and the relationship between these challenges and the capacity of local governments to implement *State Planning Policy 1/03*:

Mitigating the Adverse Impacts of Flood, Bushfire and Landslide through their local planning scheme;

145. In the course of researching current flood resilience techniques and strategies in Queensland, the Authority found that drainage divisions, river basins and river sub basins do not follow local government administrative boundaries. The responsibility for floodplain management in one catchment area can therefore lie with multiple local governments, who each may administer a section of the catchment within their jurisdiction in a different manner. The draft review of Queensland's Planning Schemes undertaken by the Authority in conjunction with DLGP found that the control of development within catchments is generally administered differently in each local government area (refer to response to Item 9 above).
146. Further, the draft review included at attachment BJN-13 found that 63% of local government planning schemes did not contain flood mapping.
147. The draft review did not draw conclusions or identify challenges for local government in relation to the reasons why flood mapping is not included in these planning schemes, nor the capacity of local government to implement SPP1/03. The Authority's review simply analysed whether SPP1/03 was appropriately reflected in the planning scheme or not, noting that planning schemes which do not appropriately reflect the flooding component of SPP1/03 can still apply the relevant provisions of SPP 1/03 through the development assessment process, even though it is not ideal for the reasons outlined in Item 10 above.

Item 12: Opinion about the challenges for local government of flood mapping and the relationship between these challenges and the capacity of local governments to implement State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide through their local planning scheme;

148. Based on the analysis and research undertaken as part of the *Planning for stronger, more resilient floodplains* project being undertaken by the Authority, my opinions about the challenges for local government of flood mapping and the relationship between these challenges and the capacity of local governments to implement SPP1/03 through their local planning scheme is consistent with my views outlined in Item 10 above.

Item 13: Other matters of relevance;

149. In addition to the matters outlined above, the following additional matters are considered of relevance to the Commission:

Rebuilding Grantham Together - Grantham Businesses TLPI

150. The community of Grantham, through the community consultation sessions, identified as their highest priority (beyond supporting the relocation of residents most affected) was the re-establishment of the commercial centre and importantly the local shop.

151. The existing temporary community centre and recovery centre at the Grantham State School was providing the community with meals and was on a volunteer based, but didn't provide for the immediate convenience needs of local residents.
152. The Lucky 7 Convenience Store has been owned and operated by Mick and Sandy Halliday for approximately 8 years. They employ eight (8) fulltime and seven (7) casual juniors. Lucky 7 is a brand owned by Metcash Limited. IGA and Campbell's Wholesale are also owned by Metcash. The store serviced the district's grocery and newsagency needs. Fast foods were also a major element of the business. Canvassing of the region, indicates that the mix of business and the services provided saw this business develop into a community asset of significance.
153. The existing store sustained major damage during the January 2011 flood event. Whilst insured, the assessment of the claim was pending. The damaged premises were an area of approximately 15m x 15m plus a free standing house at rear of property.
154. The Authority secured through Nomad Building Solutions, the donation of a temporary demountable facility for the re-establishment of a temporary shop whilst the owners resolved insurance matters and undertook the rebuild of their damaged premises. A suitable location was identified, however the site was located partly in the Open space zone and partly on road reserve and would have required an impact assessable application therefore requiring public consultation. This type of application would normally take a minimum of three months until a decision was made.
155. The Authority together with the DLGP undertook an assessment of the options that could be implemented to support the establishment of temporary facilities. These options included a declared project under the QldRA Act; lodgement of a development application; or a state planning regulatory provisions. The latter two would both involve a level of public notification. This would therefore delay the process and delay the re-establishment of the temporary premises. A declared project under the QldRA Act was rejected as an option as it was agreed between the Authority and the Council that other businesses may also wish to re-establish in a temporary manner and a declared project would be limited to one application at a time.
156. Therefore it was determined that the most appropriate mechanism for a timely and streamlined approval process was to make a temporary local planning instrument in accordance with s105 of the SPA to override the existing planning scheme and allow the temporary re-establishment of businesses.
157. A TLPI was drafted by the Authority with support from the DLGP. The TLPI provided greater certainty to the community with respect to the establishment of temporary facilities whilst the community continued its recovery and entered into a reconstruction phase. The primary purpose of the TLPI was to designate that key business activities would be deemed self-assessable development thereby only requiring approval against the Building Code of Australia and not against the planning scheme.

158. On 29 March 2011, Lockyer Valley Regional Council formally resolved to prepare a TLPI and provided the TLPI to the Minister for Local Government and Planning for consideration. On 30 March 2011, the Minister for Local Government and Planning approved for adoption the TLPI. Upon receipt of the Minister's approval, the Lockyer Valley Regional Council formally adopted Temporary Local Planning Instrument 02/11 – Grantham Businesses.
159. The demountable shop arrived on the property on 5 April 2011. After other donations, the shop was stocked and was officially opened to the public on 30 April 2011.

Rebuilding Grantham Together - Earthworks Temporary Local Planning Instrument (TLPI)


160. To facilitate the early commencement of earthworks within the Grantham Reconstruction Area and to facilitate a streamlined approval process prior to the finalised Development Scheme taking effect, a TLPI was required to provide a reduced level of assessment for Operational Works within the Grantham Reconstruction Area in order to facilitate the outcome of having residents in their homes by Christmas, 2011.
161. In consideration of time and the urgency to see the earthworks commence within the Grantham Reconstruction Area, the most appropriate and effective tool was identified as a TLPI. Other avenues considered included lodgement of a development application, or a state planning regulatory provision. Both of these options were discounted as they would delay the process of reconstruction in the new areas of Grantham.
162. Under s105 of the SPA, a local government may make a TLPI for all or part of its planning scheme area only if the Minister is satisfied:
- (a) there is a significant risk of serious environmental harm, or serious adverse cultural, economic or social conditions happening in the planning scheme area; and
 - (b) the delay involved in using the process stated in the guideline mentioned in s117(1) of the SPA to amend the planning scheme would increase the risk; and
 - (c) State interests would not be adversely affected by the proposed temporary local planning instrument; and
 - (d) the proposed temporary local planning instrument appropriately reflects the standard planning scheme provisions.
163. It was considered that the TLPI would assist in preventing potential serious adverse cultural, economic and social conditions that would emerge if the Earthworks was not able to commence prior to finalisation of the Development Scheme. The TLPI provided greater certainty to the community with respect to the early commencement of Operational Works whilst the community continued its recovery and enters into a reconstruction phase.

164. The TLPI nominated that all Operational Works activities would be deemed self-assessable development thereby only requiring assessment against the self-assessable provisions of the *Gatton Planning Scheme 2007 – Earthworks Code*.
165. On 27 May 2011 the Lockyer Valley Regional Council adopted the Temporary Local Planning Instrument 03/11 - Grantham - Operational Works.
166. The official sod turning was held on 7 June 2011.

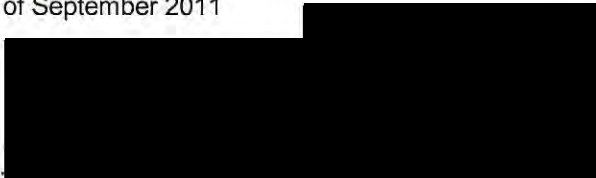
Rebuilding Grantham Together – Road Closure

167. Under s106 of the QldRA Act, the Authority may perform functions or exercise powers for a road in a Reconstruction Area that the Authority considers necessary or desirable to perform its other functions.
168. The Authority considered it necessary to exercise this power under s106 of the QldRA Act to permanently close part of a road representing an area of about 2.428 hectares of unnamed and unformed road to facilitate commencement of construction of the Stage 1 residential lots in the Grantham Reconstruction Area.
169. On 10 June 2011 the Authority exercised powers under s106 of the QldRA Act to permanently close part of a road within the Grantham Reconstruction Area.
170. Under s107(1) of the QldRA Act, the Authority may, by gazette notice, declare that any land that has been permanently closed under s106 of the QldRA Act in a reconstruction area to be vested, in fee simple, in the Authority. The Authority exercised this power on 21 July 2011.
171. Once the land was vested with the Authority, the Authority must under s107(2) of the QldRA Act provide a copy of the gazette notice and signed survey plan to the DERM and request that they register the vesting. On 22 July 2011, the Authority formally requested that the DERM register proposed Lot 99 on SP247669 and seek a deed of grant to the Authority for the land.
172. On 28 July 2011 the Governor in Council issued a deed of grant to the Authority.
173. The vested land would ultimately form part of the stage 1 development and therefore on 1 August 2011, the Authority transferred the deed of grant for Lot 99 on SP247669 to the Council. Lot 99 on SP247669 was cancelled on 4 August 2011 at the time the stage 1 survey plan was registered and titles issued.
174. The Authority contemplated utilising the provisions of Land Titles Act 1994, however this option was discounted given the relevant timeframes.

I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*.

Signed 

Taken and declared before me, at Brisbane this ^{15th} day of September 2011


Solicitor/Barrister/Justice of the
Peace/Commissioner for Declarations

PETER JOHN DUNN

Draft Review and Analysis of Existing Queensland Planning Schemes – Flood Provisions

15 September 2011

Version 1

Queensland Reconstruction Authority

Department of Local Government and Planning



Document Control

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TABLE OF CONTENTS

1	INTRODUCTION	2
2	OBJECTIVES.....	6
3	METHODOLOGY	7
4	REVIEW RESULTS	9
4.1	APPROPRIATE REFLECTION OF SPP 1/03 IN THE PLANNING SCHEME.....	9
4.2	MECHANISMS TO MANAGE DEVELOPMENT IN FLOOD PRONE AREAS	12
4.3	NOMINATED DEFINED FLOOD EVENT	14
4.4	OPERATIONAL WORKS PROVISIONS	15
4.5	FLOOD MODELLING DATA	15
5	LIMITATIONS	16
APPENDIX 1:	PLANNING SCHEMES WHICH APPROPRIATELY REFLECT SPP 01/03 (FLOOD)	
APPENDIX 2:	PLANNING SCHEMES COMPLIANCE WITH REVIEW CRITERIA 6	
APPENDIX 3:	PLANNING SCHEMES WHICH DO NOT SPECIFY A DEFINED FLOOD EVENT	
APPENDIX 4:	COLLATED FLOOD RELATED PROVISIONS – REVIEWED PLANNING SCHEMES	

LIST OF FIGURES

Figure 1 Qld Local Government Areas	5
Figure 2 Appropriate Reflection of SPP1/03 in the Planning Scheme	9
Figure 3 Planning Schemes and their Relationship with SPP1/03 (Flood).....	10
Figure 4 Manner in which SPP1/03 is Appropriately Reflected	11
Figure 5 Inclusion of a Mapped Defined Flood Event.....	12
Figure 6 Extent of Defined Flood Event Mapping.....	12
Figure 7 Inclusion of Flood Related Land Use Provisions	13
Figure 8 Inclusions of a Flood Management Overlay Code	13
Figure 9 Nominated Defined Flood Event	14
Figure 10 Flood Related Operational Works Provisions	15

LIST OF TABLES

Table 1 Queensland Local Government Areas and Statutory Planning Schemes (September 2011)	2
Table 2 Review Criteria	7

1 INTRODUCTION

PSA Consulting has been engaged by the Queensland Reconstruction Authority (Qld RA) and the Department of Local Government and Planning (DLGP) to conduct a review of the current flood related provisions contained within all statutory Queensland planning schemes currently in force and effect. In total, 127 Planning Schemes were reviewed. The reviewed Planning Schemes and the corresponding Local Government Areas are identified in *Table 1* below.

This report builds on the work previously undertaken by Qld RA and DLGP to prepare the “*Flood Related Control Audit & Analysis of Selected Queensland Planning Schemes*” report (issued on 09 June 2011) which was limited to the planning schemes applicable to the 24 Local Government Areas which were Flood Disaster Declared Areas in February 2011. Please note that the review has not considered Aboriginal Shire Council’s as they do not have a Planning Scheme prepared in accordance with the *Integrated Planning Act 1997*.

It is noted that Review Criteria 6 has been amended to provide greater clarity and Review Criteria 8 has been added at the request of QldRA. As part of the ongoing review, and further clarification of analysis, some minor amendments and changes have been made to the results presented in the “*Flood Related Control Audit & Analysis of Selected Queensland Planning Schemes*” report.

This review aims to identify, collate and analyse the provisions of Queensland Planning Schemes to develop a comprehensive understanding of their intent, design and standards as they apply to the assessment of:

- Development in the flood plain; and
- Filling within the flood plain.

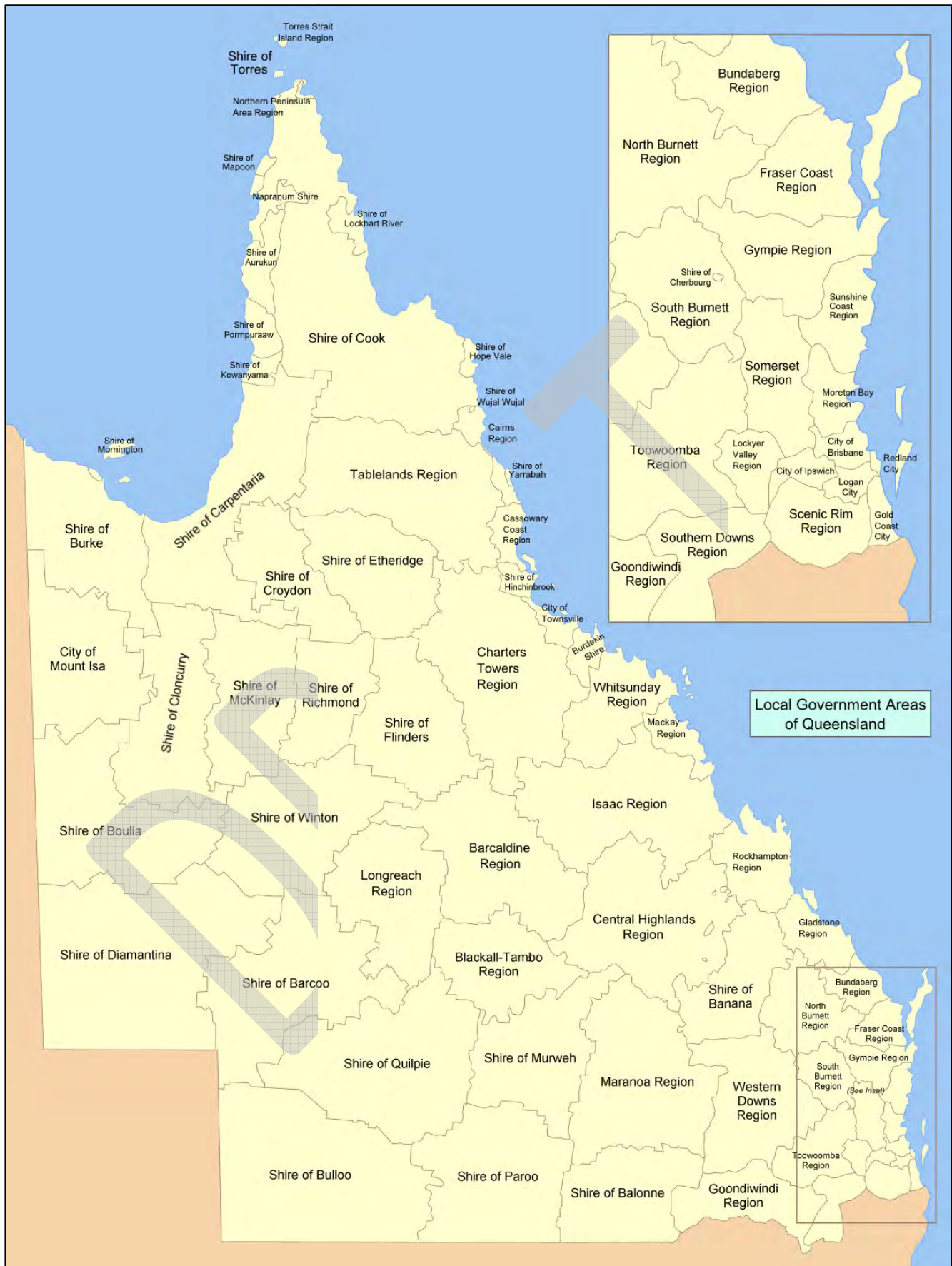
The results of the review are presented in Section 3 of this report.

Table 1 Queensland Local Government Areas and Statutory Planning Schemes (September 2011)

LOCAL GOVERNMENT AREA	PLANNING SCHEMES
Balonne	<ul style="list-style-type: none"> • Balonne
Banana	<ul style="list-style-type: none"> • Banana • Taroom
Barcaldine	<ul style="list-style-type: none"> • Aramac • Barcaldine • Jericho
Barcoo	<ul style="list-style-type: none"> • Barcoo
Blackall-Tambo	<ul style="list-style-type: none"> • Blackall • Tambo
Boulia	<ul style="list-style-type: none"> • Boulia
Brisbane	<ul style="list-style-type: none"> • Brisbane
Bulloo	<ul style="list-style-type: none"> • Bulloo
Bundaberg	<ul style="list-style-type: none"> • Bundaberg • Burnett • Isis • Kolan
Burdekin	<ul style="list-style-type: none"> • Burdekin
Burke	<ul style="list-style-type: none"> • Burke
Cairns	<ul style="list-style-type: none"> • Cairns • Douglas
Carpentaria	<ul style="list-style-type: none"> • Carpentaria
Cassowary Coast	<ul style="list-style-type: none"> • Cardwell • Johnstone
Central Highlands	<ul style="list-style-type: none"> • Bauhinia • Duaringa • Emerald • Peak Downs

LOCAL GOVERNMENT AREA	PLANNING SCHEMES
Charters Towers	<ul style="list-style-type: none"> Charters Towers Dalrymple
Cloncurry	<ul style="list-style-type: none"> Cloncurry
Cook	<ul style="list-style-type: none"> Cook
Croydon	<ul style="list-style-type: none"> Croydon
Diamantina	<ul style="list-style-type: none"> Diamantina
Etheridge	<ul style="list-style-type: none"> Etheridge
Flinders	<ul style="list-style-type: none"> Flinders
Fraser Coast	<ul style="list-style-type: none"> Hervey Bay Maryborough Tiaro Woocoo
Gladstone	<ul style="list-style-type: none"> Calliope Gladstone Miriam Vale
Gold Coast	<ul style="list-style-type: none"> Gold Coast
Goondiwindi	<ul style="list-style-type: none"> Goondiwindi Inglewood Waggamba
Gympie	<ul style="list-style-type: none"> Cooloolo Kilkivan Tiaro
Hinchinbrook	<ul style="list-style-type: none"> Hinchinbrook
Ipswich	<ul style="list-style-type: none"> Ipswich
Isaac	<ul style="list-style-type: none"> Belyando Broadsound Nebo
Lockyer Valley	<ul style="list-style-type: none"> Gatton Laidley
Logan	<ul style="list-style-type: none"> Beaudesert Gold Coast Logan
Longreach	<ul style="list-style-type: none"> Ilfracombe Isisford Longreach
Mackay	<ul style="list-style-type: none"> Mackay Mirani Sarina
Maranoa	<ul style="list-style-type: none"> Bendemere Booringa Bungil Roma Warroo
McKinlay	<ul style="list-style-type: none"> McKinlay
Moreton Bay	<ul style="list-style-type: none"> Caboolture Pine Rivers Redcliffe
Mt Isa	<ul style="list-style-type: none"> Mt Isa
Murweh	<ul style="list-style-type: none"> Murweh

LOCAL GOVERNMENT AREA	PLANNING SCHEMES
North Burnett	<ul style="list-style-type: none"> • Biggenden • Eidsvold • Gayndah • Monto • Mundubbera • Perry
Paroo	<ul style="list-style-type: none"> • Paroo
Quilpie	<ul style="list-style-type: none"> • Quilpie
Redland	<ul style="list-style-type: none"> • Redland
Richmond	<ul style="list-style-type: none"> • Richmond
Rockhampton	<ul style="list-style-type: none"> • Fitzroy • Livingstone • Mount Morgan • Rockhampton
Scenic Rim	<ul style="list-style-type: none"> • Beaudesert • Boonah
Somerset	<ul style="list-style-type: none"> • Esk • Kilcoy
South Burnett	<ul style="list-style-type: none"> • Kingaroy • Murgon • Nanango • Wondai
Southern Downs	<ul style="list-style-type: none"> • Stanthorpe • Warwick
Sunshine Coast	<ul style="list-style-type: none"> • Caloundra • Maroochy • Noosa
Tablelands	<ul style="list-style-type: none"> • Atherton • Eacham • Herberton • Mareeba
Toowoomba	<ul style="list-style-type: none"> • Cambooya • Clifton • Crows Nest • Jondaryan • Millmerran • Pittsworth • Rosalie • Toowoomba
Torres	<ul style="list-style-type: none"> • Torres
Townsville	<ul style="list-style-type: none"> • Thuringowa • Townsville
Western Downs	<ul style="list-style-type: none"> • Chinchilla • Dalby • Murilla • Tara • Taroom • Wambo
Whitsunday	<ul style="list-style-type: none"> • Bowen • Whitsunday
Winton	<ul style="list-style-type: none"> • Winton



2 OBJECTIVES

The following objectives of this review and analysis have been identified:

1. To build on and integrate with the work currently being undertaken by QldRA and DLGP.
2. To provide factual, robust and consistent information for use by all project partners.
3. To provide rigorous and comprehensive data for further investigation and policy development.
4. To provide a review of all Queensland planning schemes in relation to *SPP1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* (SPP1/03).

DRAFT

3 METHODOLOGY

The planning scheme reviews were undertaken between April and September 2011 using the Planning Schemes published on each Council's web site or provided directly from Council officers. A review of all sections of each planning scheme was undertaken and all identified flood related provisions were compiled into a spreadsheet for further analysis and future reference.

The collated spreadsheet is provided as *Appendix 3* and will be an effective tool and resource for ongoing analysis of the flood related planning provisions within the planning schemes.

Once the compilation of all relevant planning scheme provisions was complete, the data was reviewed against a predetermined set of criteria as outlined in the project brief. Standard responses were captured in the spreadsheet to enable quantitative analysis of the flood provisions. A summary of the spreadsheet criteria is provided in *Table 2* below.

Table 2 Review Criteria

	CRITERIA	DETAILS / QUESTION ADDRESSED	STANDARD RESPONSES
1	Local Government Areas	Local Government Area name.	
2	Planning	Statutory Planning Scheme name.	
3	Adoption Date	Date Planning Scheme was adopted by the Local Government.	
4	Flood Amendments	Based on the information available on Council's web site, did been any planning scheme amendments include flood provisions?	<ul style="list-style-type: none"> • Yes • No • Unknown
5	Appropriate Reflection of SPP1/03	<p>Does the planning scheme appropriately reflect the SPP?</p> <p>The planning scheme expressly states that the relevant Minister was satisfied that the SPP is appropriately reflected in the planning scheme.</p> <p>It is not expressly stated in the planning scheme that the relevant Minister was satisfied that the SPP is appropriately reflected in the planning scheme and the planning scheme provisions are not in accordance with the requirements as outlined in Annex 4 of the SPP and Annex 5 of the SPP Guideline.</p>	<ul style="list-style-type: none"> • Yes • No
6	Manner in which SPP1/03 is reflected.	<ol style="list-style-type: none"> 1. The planning scheme identifies a 'natural hazard management area' including land inundated by a Defined Flood Event (DFE) (SPP 5.1 and A3.1). 2. The planning scheme adopts a DFE of 1% Annual Exceedance Probability (AEP) i.e. a Q100 OR alternatively the planning scheme adopts a different DFE, with adequate justification (SPP A3.2). 3. The planning scheme includes the specific outcomes related to flood as outlined in the SPP Annex 4 and/or the SPP Guideline Appendix 5. 4. The planning scheme is supported by a flood study (hydrologic /hydraulic/both) which defines the nature and extent of the flood hazard (SPP Guideline A2.17 – A2.20) or is supported by an assessment of historical flood data, including historical data/interviews with long-term residents, use of older flood studies with limited scope, or dismissal of the need for a flood study as a result of topography or lack of flood history (SPP Guideline A2.21 – A2.26). 	<ul style="list-style-type: none"> • 1(Yes/No) • 2 (Yes/No) • 3 (Yes/No) • 4 (Yes/No)

		5. The planning scheme contains appropriate planning strategies and development assessment measures that address flooding (for example development outcomes, overlays, specific hazard management codes, appropriate levels of assessment for development within natural hazard management areas, appropriate land uses on/near flood plain etc).	<ul style="list-style-type: none"> • 5 (Yes/No)
7	Mapped Defined Flood Event	Is a defined flood event mapped and included in the planning scheme?	<ul style="list-style-type: none"> • Yes • No
8	Extent of Mapping	What is the extent of the Mapped Defined Flood Event in the planning scheme area?	<ul style="list-style-type: none"> • None • Part • Whole
9	Structure Plans	Are flood provisions included within any structure plans?	<ul style="list-style-type: none"> • Yes • No
10	Local Area Plans	Are flood provisions included within any local area plans?	<ul style="list-style-type: none"> • Yes • No
11	Planning Area Codes	Are flood provisions included within any planning area or zone codes?	<ul style="list-style-type: none"> • Yes • No
12	Use Codes	Are flood provisions contained within any specific use codes?	<ul style="list-style-type: none"> • Yes • No
13	Reconfiguring a Lot Codes	Are flood provisions contained within any reconfiguring a lot codes?	<ul style="list-style-type: none"> • Yes • No
14	Overlay Codes	Are flood provisions contained within any overlay codes?	<ul style="list-style-type: none"> • Yes • No
15	Planning Scheme Policies	Are flood provisions of details to support flood assessments contained within any planning scheme policies?	<ul style="list-style-type: none"> • Yes • No
16	Other	Are there any other provisions of the planning scheme which contain flood related provisions?	<ul style="list-style-type: none"> • Yes • No
17	Operational Works Code	Does the planning scheme contain an operational works code which contains provisions in relation to filling or excavation within a flood prone area?	<ul style="list-style-type: none"> • Yes • No
18	Overlay Code	Does a flood related overlay contain provisions in relation to filling or excavation within a flood prone area?	<ul style="list-style-type: none"> • Yes • No
19	Planning Scheme Policy	Does a planning scheme policy contain provisions or details to support flood assessments relevant to filling or excavation within and flood prone area?	<ul style="list-style-type: none"> • Yes • No
20	Other	Are there any other provisions of the planning scheme which contain flood related provisions?	<ul style="list-style-type: none"> • Yes • No

4 REVIEW RESULTS

4.1 APPROPRIATE REFLECTION OF SPP 1/03 IN THE PLANNING SCHEME

4.1.1 Overall Summary

As indicated in *Figure 2*, the planning schemes were reviewed to identify as to whether they appropriately reflected the flood component of *State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (SPP1/03)*. Of the 127 reviewed planning schemes, 31 (24%) were identified as appropriately reflecting the flooding component of *SPP1/03*. The remaining 96 planning schemes (73%) were identified as not appropriately reflecting *SPP1/03*. It is important to note that the planning scheme which does not appropriately reflect the flood component of *SPP1/03* can potentially apply *SPP1/03* through the Development Assessment Process.

The spatial distribution of these planning schemes according to this analysis areas are identified in *Figure 3* and lists of all planning schemes which appropriately reflect and which do not appropriately reflect *SPP1/03* is provided as *Appendix 1*.

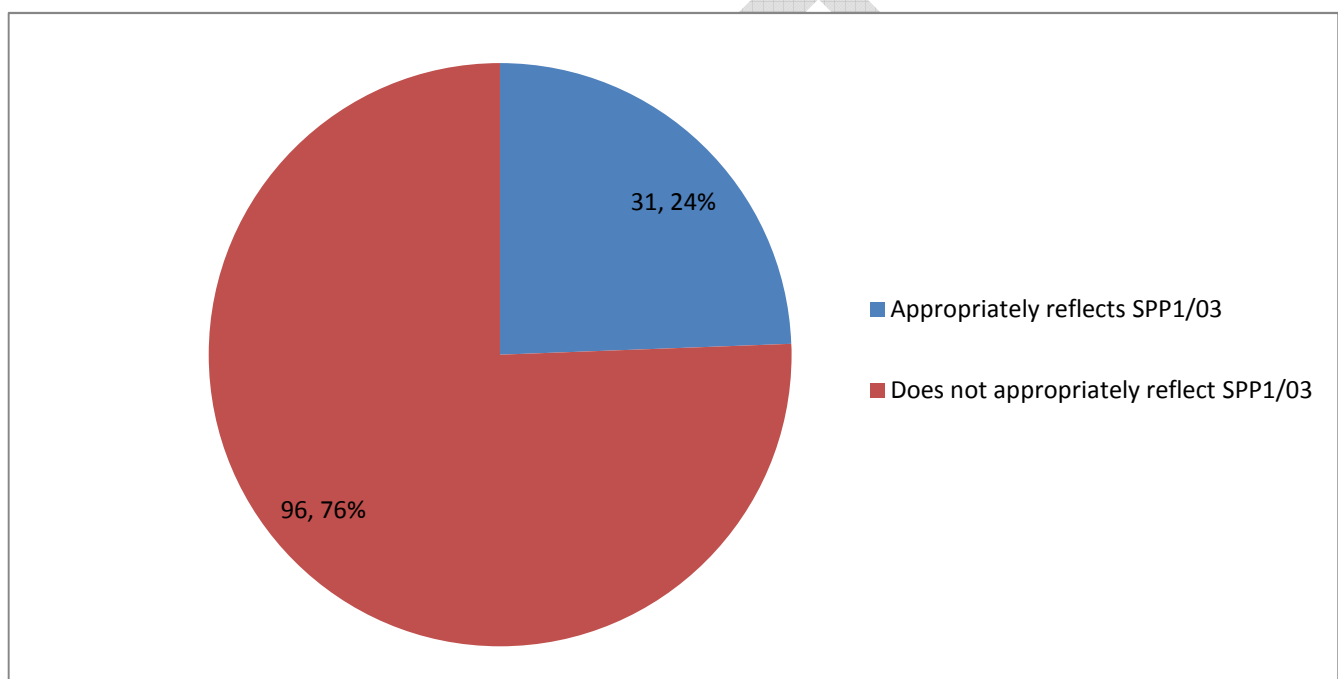


Figure 2 Appropriate Reflection of SPP1/03 in the Planning Scheme

It is important to note that many of the reviewed planning schemes were identified to appropriately reflect either or both the bushfire and landslide components of the *SPP1/03* without appropriately reflecting the flood component.

In this regard, 31 (24%) of the planning schemes were formally identified by the relevant minister as appropriately reflecting the flood component of *SPP1/03*, while 62 (49%) of the reviewed planning schemes were identified as appropriately reflecting either the bushfire and/or landslide component of *SPP1/03* but not the flooding component.

The remaining 34 (27%) planning schemes were identified as not formally appropriately reflecting any component (bushfire, landslide or flood) of *SPP1/03*.

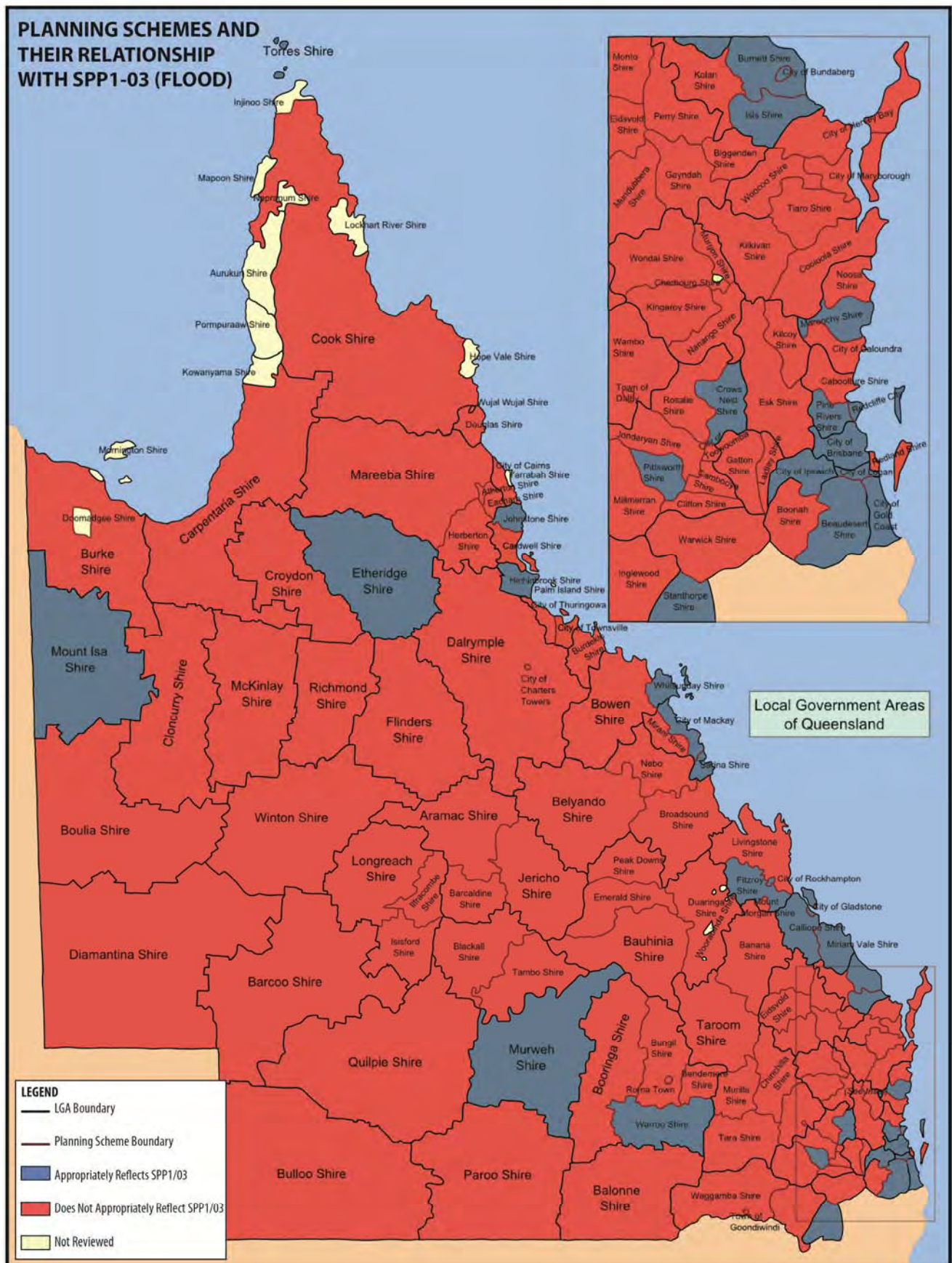


Figure 3 Planning Schemes and their Relationship with SPP1/03 (Flood)

4.1.2 Manner in Which SPP1/03 is Appropriately Reflected

Once it was determined whether SPP1/03 was appropriately reflected, the manner in which it was reflected (in accordance with Review Criteria 6) was identified. The results of this analysis are shown in Figure 4 below.

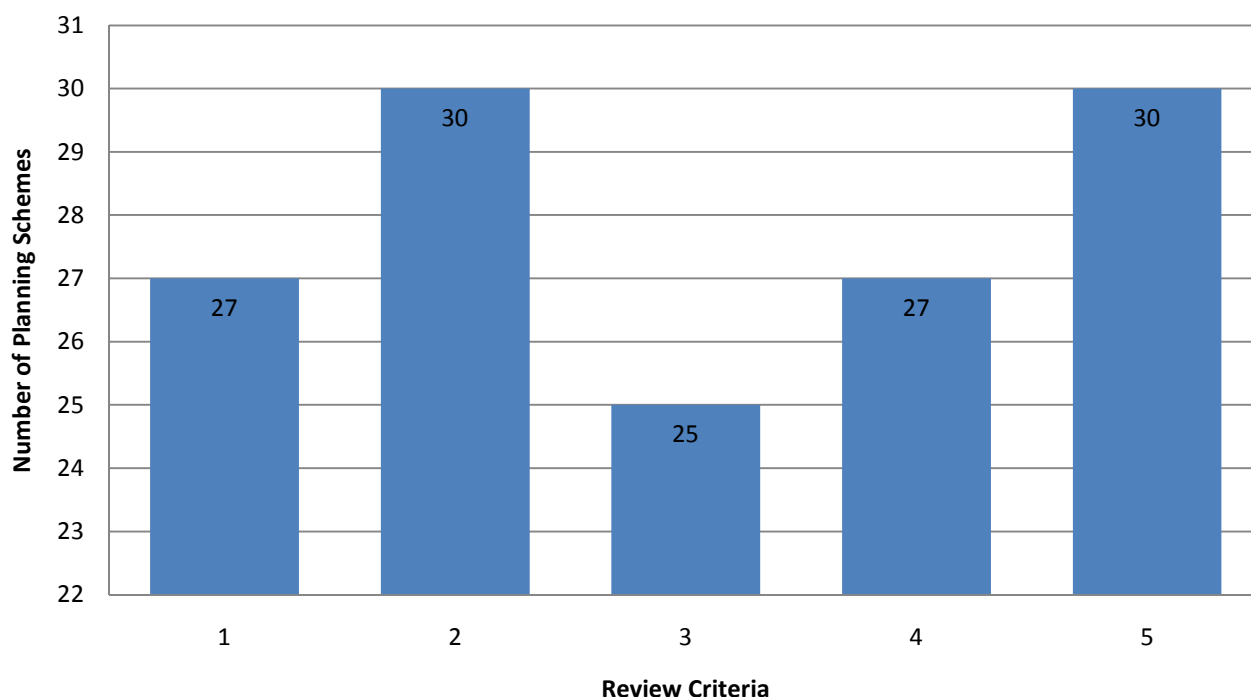


Figure 4 Manner in which SPP1/03 is Appropriately Reflected

For ease of reference, the relevant responses of Review Criteria 6 are listed below:

1. The planning scheme identifies a 'natural hazard management area' including land inundated by a Defined Flood Event (DFE) (SPP 5.1 and A3.1).
2. The planning scheme adopts a DFE of 1% Annual Exceedance Probability (AEP) i.e. a Q100 OR alternatively the planning scheme adopts a different DFE, with adequate justification (SPP A3.2).
3. The planning scheme includes the specific outcomes related to flood as outlined in the SPP Annex 4 and/or the SPP Guideline Appendix 5.
4. The planning scheme is supported by a flood study (hydrologic /hydraulic/both) which defines the nature and extent of the flood hazard (SPP Guideline A2.17 – A2.20) or is supported by an assessment of historical flood data, including historical data/interviews with long-term residents, use of older flood studies with limited scope, or dismissal of the need for a flood study as a result of topography or lack of flood history (SPP Guideline A2.21 – A2.26).
5. The planning scheme contains appropriate planning strategies and development assessment measures that address flooding (for example development outcomes, overlays, specific hazard management codes, appropriate levels of assessment for development within natural hazard management areas, appropriate land uses on/near flood plain etc).

As shown in Figure 4, the planning schemes which appropriately reflect SPP1/03 generally address multiple criteria. Lists of the Planning Schemes which address each of the above criteria are provided in Appendix 2.

It is important to note that a level of planning assessment and judgement was required to assess compliance with the above criteria. For the purpose of the review, a planning scheme was considered to comply with the criteria if the provisions were consistent with the intent of the criteria rather than a replication of provisions verbatim.

It is important to note that due to the information available, it was difficult to determine as to whether the Defined Flood Event was based on hydraulic studies or other investigations (e.g. historic data and aerial photography). As such Criteria 4 includes both options and identifies those planning schemes where the Defined Flood Event is based on either hydraulic studies or historic information.

4.2 MECHANISMS TO MANAGE DEVELOPMENT IN FLOOD PRONE AREAS

This section of the report identifies the review results with respect to the type of mechanisms which have been adopted by the planning schemes to manage the flood risks and impacts on development. It is important to note that the following results include both planning schemes which appropriately reflect and do not appropriately reflect *SPP1/03*.

4.2.1 Mapped Defined Flood Event

As shown in *Figure 5*, of the reviewed planning schemes, 47 (37%) included a mapped Defined Flood Event (DFE) while the remaining 80 schemes (63%) did not include any flood related mapping.

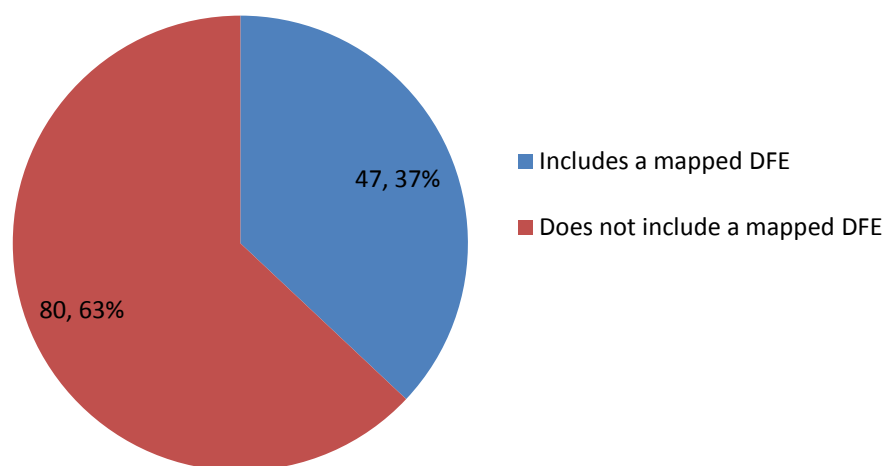


Figure 5 Inclusion of a Mapped Defined Flood Event

4.2.2 Extent of Defined Flood Event Mapping

As shown in *Figure 6*, 24 (19%) of the reviewed planning schemes, included a mapped DFE which covered the entire Planning Scheme Area, while an additional 23 schemes included a mapped DFE for part of the Planning Scheme Area. The remaining 80 planning scheme (63%) did not include any flood related mapping.

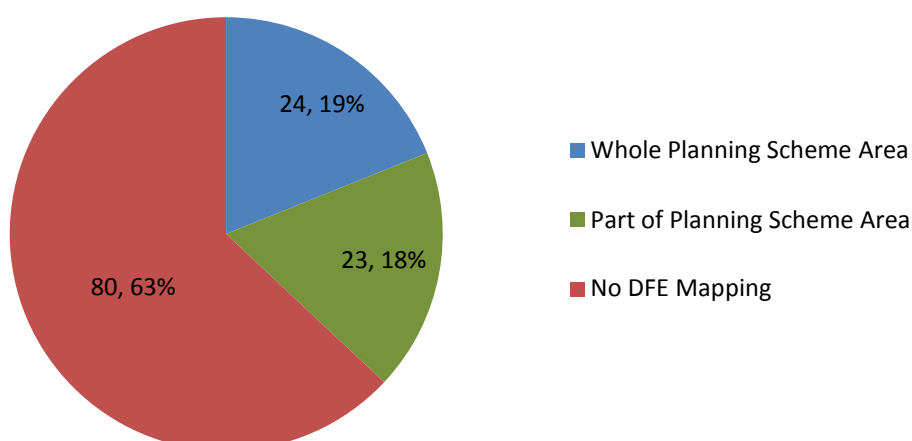


Figure 6 Extent of Defined Flood Event Mapping

4.2.3 Flood Related Land Use Provisions

As shown in *Figure 6*, 121 (95%) of the reviewed planning schemes, included land use provisions that sought to regulate some form of development within flood prone areas. The remaining 6 planning schemes (Bauhina, Cloncurry, Flinders, McKinlay, Richmond and Mount Morgan) did not include any land use provisions (e.g. Intent Statements, Code Provisions or Planning Scheme Policies) which relate to the regulation of development in flood prone areas.

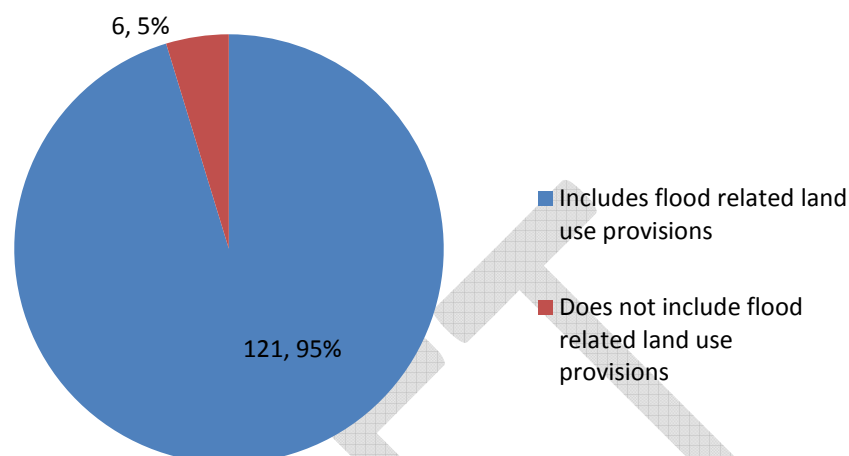


Figure 7 Inclusion of Flood Related Land Use Provisions

It is important to note that the extent of land use provisions contained within these planning schemes varies significantly from basic references to the consideration of potential flooding, to extensive codes and detailed land use provisions which provide detailed guidance with respect the consideration flood hazards within development proposals.

4.2.4 Flood Management Overlay Code

As shown in *Figure 7*, 43 (34%) of the reviewed planning schemes, included a specific flood management overlay code which applied to development within the identified flood prone area. The remaining 84 planning schemes either did not include any flood related provisions (6 schemes) or sought to manage development within the flood prone areas via provisions within planning area or land use codes, or other alternate statutory mechanisms.

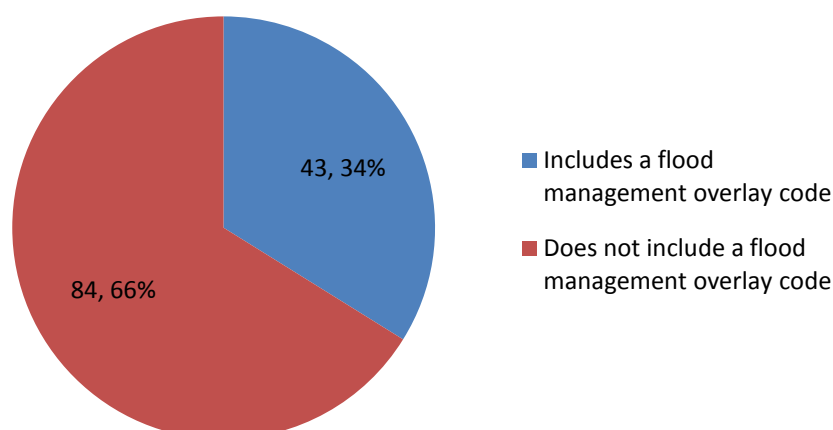


Figure 8 Inclusions of a Flood Management Overlay Code

4.3 NOMINATED DEFINED FLOOD EVENT

The review identified the nominated Defined Flood Event (DFE) used by each planning scheme to regulate development. Where multiple DFE's were adopted within the Planning Scheme to regulate different land uses or areas these have been recorded.

As shown in *Figure 8*, the Q100 event is the most common nominated flood hazard management area being adopted exclusively in 34 Planning Schemes and partially in additional 30 planning schemes. 35 (28%) of the reviewed planning schemes exclusively adopted the highest recorded flood as the applicable DFE and partially in an additional 15 Schemes. It is noted that the planning schemes which reference the Highest Recorded Flood as the DFE, generally include mapping or further guidance in relation to its spatial extent.

A nominated flood hazard management area consistent with a Q50 flood event was identified exclusively in 4 planning schemes and partially in an additional 15 planning schemes. A further 3 planning schemes identified a specific height for the DFE which did not relate to a specific frequency of the event.

A total of 34 planning schemes (27%) adopted a combination of flood events depending on the location of the site, the information available to determine a DFE and the proposed land use. 21 (17%) of the planning schemes did not nominate a DFE. A list of the planning schemes which did not specify a Defined Flood Event is provided in *Appendix 3*.

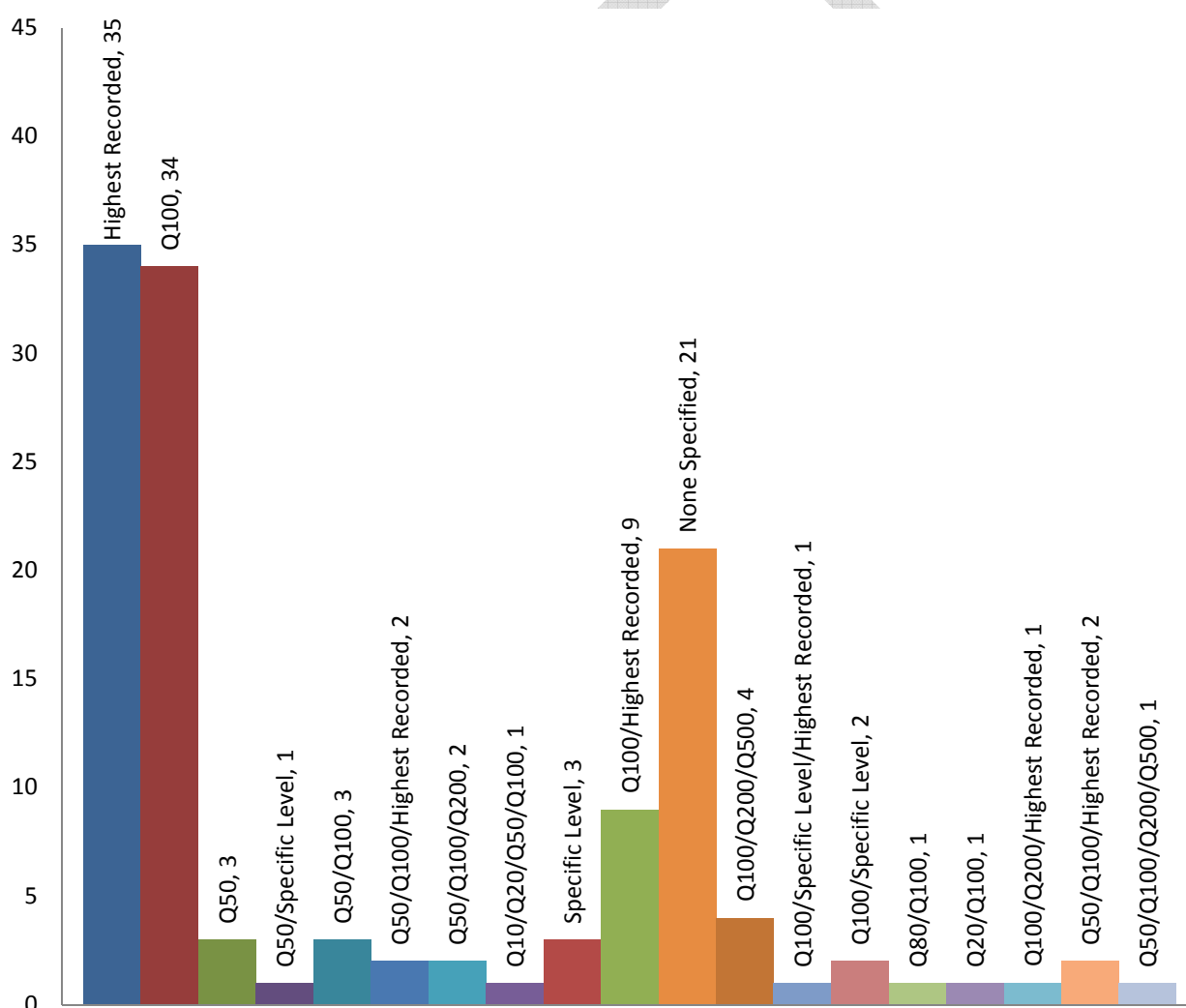


Figure 9 Nominated Defined Flood Event

4.4 OPERATIONAL WORKS PROVISIONS

As shown in *Figure 9*, 77 (61%) of the reviewed planning schemes included a provision that specifically addressed the flood related impacts of filling and/or excavation in the flood plain. Examples of these provisions included restrictions placed on the volume of filling and or excavation, and requirements for the applicant to demonstrate no worsening of flood events on adjoining properties.

The remaining 50 planning schemes did not address filling and excavation with respect to flood hazard issues. It is noted that a number of schemes did place restrictions on filling or excavation within a watercourse, primarily to protect riparian vegetation rather than ameliorating impacts associated with flooding.

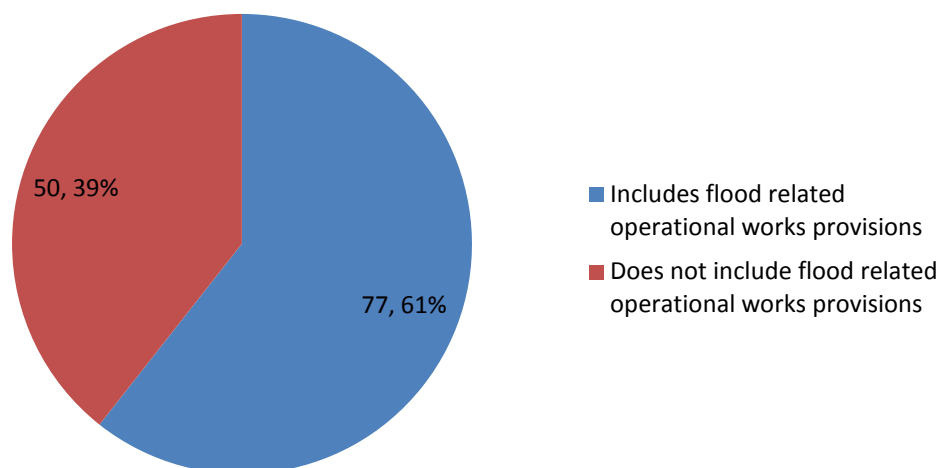


Figure 10 Flood Related Operational Works Provisions

4.5 FLOOD MODELLING DATA

The review was unable to accurately identify if flood data was available through a review of Council web sites. As such no data has been included in this preliminary analysis. It is considered that to accurately determine the status of flood modelling data further engagement with each Council is required.

5 LIMITATIONS

Due to the nature of the investigation it is considered important to identify the limitations to the review undertaken. The limitations include but are not limited to:

- The review has not reviewed the veracity of the hydrological or hydraulic inputs to the planning scheme;
- The review has not reviewed the effectiveness of the adopted planning scheme provisions in delivering flood immunity, impact minimisation or impact management through the planning scheme;
- The review has not made any assessment in relation to level of the 2011 flood event in comparison with any adopted standard;
- The review has relied solely on published planning schemes found on Council web sites or via direct contact with Council;
- The review has not considered Temporary Local Planning Instruments;
- The summary of flood related provisions (*Appendix 4*) contains summarised and/or abridged information and is not intended to present an exhaustive list of every relevant flood related planning scheme provision; and
- The summary (*Appendix 4*) is intended to be used as a reference tool only. For detailed and accurate assessment of individual schemes, please refer to approved copies of the particular planning scheme.

APPENDIX 1: PLANNING SCHEMES WHICH APPROPRIATELY REFLECT SPP 01/03 (FLOOD)

PLANNING SCHEMES WHICH APPROPRIATELY REFLECT SPP1/03

- | | | |
|----------------|---------------|---------------|
| • Brisbane | • Ipswich | • Fitzroy |
| • Bundaberg | • Beaudesert | • Rockhampton |
| • Burnett | • Gold Coast | • Beaudesert |
| • Isis | • Logan | • Stanthorpe |
| • Johnstone | • Mackay | • Maroochy |
| • Etheridge | • Sarina | • Crows Nest |
| • Calliope | • Warroo | • Pittsworth |
| • Miriam Vale | • Pine Rivers | • Torres |
| • Gladstone | • Redcliffe | • Whitsunday |
| • Gold Coast | • Mt Isa | |
| • Hinchinbrook | • Murweh | |

PLANNING SCHEMES WHICH DO NOT APPROPRIATELY REFLECT SPP1/03

- | | | |
|-------------------|---------------|----------------|
| • Balonne | • Woocoo | • Livingstone |
| • Banana | • Goondiwindi | • Mount Morgan |
| • Taroom | • Inglewood | • Boonah |
| • Aramac | • Waggamba | • Esk |
| • Barcaldine | • Cooloola | • Kilcoy |
| • Jericho | • Kilkivan | • Kingaroy |
| • Barcoo | • Tiaro | • Murgon |
| • Blackall | • Belyando | • Nanango |
| • Tambo | • Broadsound | • Wondai |
| • Boulia | • Nebo | • Warwick |
| • Bulloo | • Gatton | • Caloundra |
| • Kolan | • Laidley | • Noosa |
| • Budekin | • Ilfracombe | • Atherton |
| • Burke | • Isisford | • Eacham |
| • Cairns | • Longreach | • Herberton |
| • Douglas | • Mirani | • Mareeba |
| • Carpentaria | • Bendemere | • Cambooya |
| • Cardwell | • Booringa | • Clifton |
| • Bauhina | • Bungil | • Jondaryan |
| • Duaringa | • Roma | • Millmerran |
| • Emerald | • McKinlay | • Rosalie |
| • Peak Downs | • Caboolture | • Toowoomba |
| • Charters Towers | • Biggenden | • Thuringowa |
| • Dalrymple | • Eidsvold | • Townsville |
| • Cloncurry | • Gayndah | • Dalby |
| • Cook | • Monto | • Tara |
| • Croydon | • Mundubbera | • Chinchilla |
| • Diamantina | • Perry | • Murilla |
| • Flinders | • Paroo | • Taroom |
| • Hervey Bay | • Quilpie | • Wambo |
| • Maryborough | • Redland | • Bowen |
| • Tiaro | • Richmond | • Winton |

APPENDIX 2: PLANNING SCHEMES COMPLIANCE WITH REVIEW CRITERIA 6

COMPLIANCE WITH CRITERIA 1

- | | | |
|---------------|----------------|---------------|
| • Brisbane | • Hinchinbrook | • Murweh |
| • Bundaberg | • Ipswich | • Fitzroy |
| • Burnett | • Beaudesert | • Rockhampton |
| • Isis | • Gold Coast | • Beaudesert |
| • Johnstone | • Logan | • Stanthorpe |
| • Calliope | • Mackay | • Maroochy |
| • Miriam Vale | • Pine Rivers | • Crows Nest |
| • Gladstone | • Redcliffe | • Pittsworth |
| • Gold Coast | • Mt Isa | • Whitsunday |

COMPLIANCE WITH CRITERIA 2

- | | | |
|----------------|---------------|---------------|
| • Brisbane | • Ipswich | • Murweh |
| • Bundaberg | • Beaudesert | • Fitzroy |
| • Burnett | • Gold Coast | • Rockhampton |
| • Isis | • Logan | • Beaudesert |
| • Johnstone | • Mackay | • Stanthorpe |
| • Calliope | • Sarina | • Maroochy |
| • Miriam Vale | • Warroo | • Crows Nest |
| • Gladstone | • Pine Rivers | • Pittsworth |
| • Gold Coast | • Redcliffe | • Torres |
| • Hinchinbrook | • Mt Isa | • Whitsunday |

COMPLIANCE WITH CRITERIA 3

- | | | |
|----------------|---------------|---------------|
| • Brisbane | • Ipswich | • Murweh |
| • Bundaberg | • Beaudesert | • Rockhampton |
| • Burnett | • Gold Coast | • Beaudesert |
| • Isis | • Logan | • Stanthorpe |
| • Johnstone | • Mackay | • Maroochy |
| • Calliope | • Sarina | • Crows Nest |
| • Gladstone | • Pine Rivers | • Whitsunday |
| • Gold Coast | • Redcliffe | |
| • Hinchinbrook | • Mt Isa | |

COMPLIANCE WITH CRITERIA 4

- | | | |
|----------------|---------------|---------------|
| • Brisbane | • Ipswich | • Murweh |
| • Bundaberg | • Beaudesert | • Fitzroy |
| • Burnett | • Gold Coast | • Rockhampton |
| • Isis | • Logan | • Beaudesert |
| • Johnstone | • Mackay | • Stanthorpe |
| • Calliope | • Sarina | • Maroochy |
| • Gladstone | • Pine Rivers | • Crows Nest |
| • Gold Coast | • Redcliffe | • Pittsworth |
| • Hinchinbrook | • Mt Isa | • Whitsunday |

COMPLIANCE WITH CRITERIA 5

- | | | |
|----------------|---------------|---------------|
| • Brisbane | • Ipswich | • Murweh |
| • Bundaberg | • Beaudesert | • Fitzroy |
| • Burnett | • Gold Coast | • Rockhampton |
| • Isis | • Logan | • Beaudesert |
| • Johnstone | • Mackay | • Stanthorpe |
| • Calliope | • Sarina | • Maroochy |
| • Miriam Vale | • Warroo | • Crows Nest |
| • Gladstone | • Pine Rivers | • Pittsworth |
| • Gold Coast | • Redcliffe | • Torres |
| • Hinchinbrook | • Mt Isa | • Whitsunday |

APPENDIX 3: PLANNING SCHEMES WHICH DO NOT SPECIFY A DEFINED FLOOD EVENT

PLANNING SCHEMES WHICH DO NOT SPECIFY A DEFINED FLOOD EVENT

- | | | |
|--|---|---|
| <ul style="list-style-type: none">• Burke• Carpentaria• Cardwell• Bauhina• Duaringa• Peak Downs• Charters Towers | <ul style="list-style-type: none">• Dalrymple• Cloncurry• Croydon• Etheridge• Flinders• Nebo• Bendemere | <ul style="list-style-type: none">• McKinlay• Richmond• Mount Morgan• Boonah• Warwick• Atherton• Tara |
|--|---|---|

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APPENDIX 4: COLLATED FLOOD RELATED PROVISIONS – REVIEWED PLANNING SCHEMES

DRAFT

Table of Contents

BALONNE.....	1
Balonne.....	1
BANANA.....	2
Banana Shire.....	2
Taroom	4
BARCALDINE	5
Aramac.....	5
Barcaldine	6
Jericho.....	8
BARCOO	10
Barcoo.....	10
BLACKALL TAMBO	11
Blackall.....	11
Tambo.....	13
BOULIA.....	14
Boulia	14
BRISBANE.....	16
Brisbane	16
BULLOO	25
Bulloo Shire.....	25
BUNDABERG	27
Bundaberg	27
Burnett.....	30
Isis	34
Kolan	37
BURDEKIN	39
Budekin IPA Planning Scheme	39
BURKE.....	43
Burke Shire Planning Scheme	43
CAIRNS.....	44
Cairns Plan	44
Douglas Shire Council	48
CARPENTARIA	49
Shire of Carpentaria Planning Scheme	49
CASSOWARY COAST.....	50
Cardwell Planning Scheme	50
Johnstone Planning Scheme	51
CENTRAL HIGHLANDS.....	54
Bauhina Shire.....	54
Duaringa	56
Emerald.....	58
Peak Downs	60
CHARTERS TOWERS	63
Charters Towers City Council Planning Scheme	63
Dalrymple Shire Council Planning Scheme	64
CLONCURRY	65
Cloncurry Shire	65
COOK.....	66
Cook Planning Scheme	66
CROYDON.....	68
Croydon Planning Scheme	68
DIAMANTINA	69
Diamantina Shire	69
ETHERIDGE	71
Etheridge Planning Scheme	71
FLINDERS	72
Flinders Shire	72
FRASER COAST	73
Hervey Bay.....	73
Maryborough.....	77
Tiaro	80

Woocoo	83
GLADSTONE.....	85
Calliope Shire Planning Scheme.....	85
Miriam Vale Planning Scheme	92
The Gladstone Plan.....	94
GOLD COAST	96
Gold Coast Planning Scheme 2003	96
GOONDIWINDI	104
Goondiwindi	104
Inglewood	105
Waggamba.....	106
GYMPIE	107
Cooloola.....	107
Kilkivan.....	110
Tiaro	114
HINCHINBROOK.....	116
Hinchinbrook Shire Planning Scheme.....	116
IPSWICH	119
Ipswich.....	119
ISAAC	132
Belyando	132
Broadsound	134
Nebo	135
LOCKYER VALLEY	136
Gatton.....	136
Laidley.....	140
LOGAN	142
Beaudesert Planning Scheme	142
Gold Coast Planning Scheme 2003	148
Logan City Planning Scheme	156
LONGREACH	165
Ilfracombe.....	165
Isisford	167
Longreach	169
MACKAY.....	171
Mackay	171
Mirani	179
Sarina	181
MARANOA.....	183
Bendemere	183
Booringa	185
Bungil.....	187
Roma	189
Warroo.....	191
MCKINLAY	193
McKinlay	193
MORETON BAY	194
Caboolture	194
Pine Rivers	197
Redcliffe.....	203
MOUNT ISA	205
Mt Isa	205
MURWEH.....	208
Murweh	208
NORTH BURNETT	212
Biggenden	212
Eidsvold.....	214
Gayndah.....	215
Monto.....	217
Mundubbera.....	218
Perry	220
PAROO	222
Paroo	222
QUILPIE	224
Quilpie	224
REDLAND.....	226
Redland Planning Scheme	226

RICHMOND.....	235
Richmond.....	235
ROCKHAMPTON	236
Fitzroy	236
Livingstone.....	238
Mount Morgan	240
Rockhampton	241
SCENIC RIM	246
Boonah.....	246
Beaudesert.....	248
SOMERSET	256
Esk	256
Kilcoy	258
SOUTH BURNETT	261
Kingaroy	261
Murgon	264
Nanango	268
Wondai	272
SOUTHERN DOWNS	276
Stanthorpe.....	276
Warwick.....	278
SUNSHINE COAST	280
Caloundra City	280
Maroochy.....	286
Noosa.....	295
TABLELANDS.....	299
Atherton Planning Scheme	299
Eacham Planning Scheme	301
Herberton Planning Scheme.....	304
Mareeba Planning Scheme	306
TOOWOOMBA	308
Cambooya (Greenmount).....	308
Clifton	310
Crows Nest.....	312
Jondaryan (Oakey)	316
Millmerran	318
Pittsworth	320
Rosalie (Goombungee)	322
Toowoomba.....	324
TORRES SHIRE COUNCIL.....	326
Torres Shire Planning Scheme	326
TOWNSVILLE.....	328
Thuringowa Planning Scheme	328
Townsville Planning Scheme.....	330
WESTERN DOWNS	332
Dalby	332
Tara	334
Chinchilla	336
Murilla	337
Taroom	339
Wambo	341
WHITSUNDAY.....	342
Bowen.....	342
Whitsunday.....	345
WINTON.....	349
Winton	349

LGA	Balonne
Planning Scheme	Balonne
Adopted	7/07/2006
Flood Amendments	No
SPP Compliance	No
Details	Approval to adopt this planning scheme is conditional upon the continued operation and effect of: 2. Flood assessment provisions State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
Mapped Q100 / DFE	No
Details	Highest Known May be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Town Zone Overall Outcome: (l) is located and designed in ways that minimise the need for flood and landscape mitigation, and to protect people and premises from such natural events; Performance Criteria: PC 20 Flooding Premises are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent and magnitude of flooding. (Footnote: 21 To assist the applicant to demonstrate compliance with PC 20, the maximum recorded flood may be adopted as an indication of flood level.) (No AS)</p> <p>Rural Zone Overall Outcome: (k) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation and to protect people and premises from such natural events; Performance Criteria: PC 21 Flooding Premises are designed and located so as: (a) not to adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact of the extent and magnitude of flooding.(Footnote: 32 To assist the applicant to demonstrate compliance with PC 20, the maximum recorded flood may be adopted as an indication of flood level.)(No AS)</p>
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request: Known / determined flood levels (for MCU / ROL Applications). SPP 1/03 Used to assess applications.
Other	Yes
Details	Schedule 8 EMP Guidelines: (m) Flooding: Analyse inundation problems and proposes solutions acceptable to Council, that do not detrimentally impact upon adjacent landowners, natural water courses or flood levels in the general area.
Op Works Code	Yes
Details	Filling and Excavation Code: PC 3 Drainage - Existing drainage or flood flows, either upstream or downstream of the site, are maintained. (No AS)
Overlay Code	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request: Known / determined flood levels (for MCU / ROL Applications). SPP 1/03 Used to assess applications.
Other	No
Details	
Other Info	Exempt Development: (v) Development involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation , but excluding water supply and sewerage treatment plants;

LGA	Banana
Planning Scheme	Banana Shire
Adopted	7/10/2005
Flood Amendments	No
SPP Compliance	No
Details	Approval to adopt the new Planning Scheme is conditional upon the continued operation and effect of: 2. Those elements of SPP 1/03 relevant to flooding.
Mapped Q100 / DFE	No
Details	"Flood Level Plan for Determination of Floor Levels" called up by Scheme.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Animals Code S6 Intensive animal husbandry uses are located, designed and managed such that: 4. There is no significant adverse impact on the quality of any surface water or groundwater resource due to contamination; P6.1 In partial satisfaction of S6 intensive animal husbandry developments shall provide at least a flood immunity of 1% AEP.</p> <p>Development Design Code S3 No 'worsening' of flood occurs as a result of the filling or excavation activity. P/A3.1 To be in accordance with the CMDG ("Capricorn Municipal Development Guidelines" (CMDG) as reviewed in November 2007 and subject to possible future amendments). S18 Stormwater drainage (including inter allotment drainage) is designed and constructed to: 1. Provide adequate capacity for existing and anticipated development and flows; and 2. Ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits; and . 3. Provide convenience and safety for pedestrians and traffic infrequent stormwater flows by controlling those flows within prescribed limits; and 4. Retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment; and 5. Comply with Australian best practice standards methodology. P18.1 The design of stormwater drainage shall be in accordance with the CMDG. P18.2 Development applications are to comply with the "Flood Level Plan for Determination of Floor Levels" for the Town of Banana in particular. Note: The floor height of buildings will be governed by this plan.</p>
ROL Code	Yes
Details	<p>Reconfiguration of a Lot Code S1 The configuration of lots: 1. Have a minimal impact on the natural environment, having regard to water supply and water quality, effluent disposal, potential erosion and natural habitat; 2. Retain significant landscape features, views and vegetation cover; 3. Provide for a high level of residential amenity, access to services and facilities. Note: All development applications for reconfiguring a lot are accompanied by a Reconfiguration of a Lot Assessment Report, as prepared in accordance with Schedule A: Preparation of a Reconfiguration of a Lot Assessment Report.</p>
Overlay Codes	Yes
Details	<p>Division 1—Natural Features and Conservation Area Overlays The Drainage Problem Areas Overlay regulates development on land which is known to be constrained due to poor drainage. These areas occur in the townships of Biloela, Banana and Dululu, as shown on the relevant Zoning Maps 2, 7 & 8. C. The overall outcomes sought for the Drainage Problem Areas Overlay are: i. Habitable buildings or parts of buildings are sited and designed having regard to the drainage problems of the area; and ii. The extent of filling and excavating is controlled so as not to exacerbate the existing drainage conditions.</p> <p>S6 Development: 1. is sited in areas least prone to inundation; and 2. does not unduly restrict stormwater drainage and does not further contribute to drainage problems on the site or in the surrounding area. P/A6.1 New habitable buildings or any part of a building which is habitable, are sited on that part of the lot or lots with the highest elevation. P/A6.2 Filling and excavating: 1. Does not cause the ponding or damming of water; 2. Is only undertaken for the purposes of siting a house; and 3. Does not involve filling and excavating to a depth more than 300mm or more than 2000m³ of material.</p>
PSPs	No
Details	
Other	No
Details	
Op Works Code	Yes
Details	<p>Development Design Code S3 No 'worsening' of flood occurs as a result of the filling or excavation activity. P/A3.1 To be in accordance with the CMDG ("Capricorn Municipal Development Guidelines" (CMDG) as reviewed in November 2007 and subject to possible future amendments). S18 Stormwater drainage (including inter allotment drainage) is designed and constructed to: 1. Provide adequate capacity for existing and anticipated development and flows; and 2. Ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits; and . 3. Provide convenience and safety for pedestrians and traffic infrequent stormwater flows by controlling those flows within prescribed limits; and 4. Retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment; and 5. Comply with Australian best practice standards methodology. P18.1 The design of stormwater drainage shall be in accordance with the CMDG. P18.2 Development applications are to comply with the "Flood Level Plan for Determination of Floor Levels" for the Town of Banana in particular. Note: The floor height of buildings will be governed by this plan.</p>
Overlay Code	Yes
Details	<p>Division 1—Natural Features and Conservation Area Overlays The Drainage Problem Areas Overlay regulates development on land which is known to be constrained due to poor drainage. These areas occur in</p>

	<p>the townships of Biloela, Banana and Dululu, as shown on the relevant Zoning Maps 2, 7 & 8.</p> <p>C. The overall outcomes sought for the Drainage Problem Areas Overlay are:</p> <p>i. Habitable buildings or parts of buildings are sited and designed having regard to the drainage problems of the area; and</p> <p>ii. The extent of filling and excavating is controlled so as not to exacerbate the existing drainage conditions.</p> <p>S6 Development:</p> <p>1. is sited in areas least prone to inundation; and</p> <p>2. does not unduly restrict stormwater drainage and does not further contribute to drainage problems on the site or in the surrounding area.</p> <p>P/A6.1 New habitable buildings or any part of a building which is habitable, are sited on that part of the lot or lots with the highest elevation.</p> <p>P/A6.2 Filling and excavating:</p> <p>1. Does not cause the ponding or damming of water;</p> <p>2. Is only undertaken for the purposes of siting a house; and</p> <p>3. Does not involve filling and excavating to a depth more than 300mm or more than 2000m³ of material.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	<p>Division 8: Schedule D—Stormwater Drainage Recurrence Intervals Requires Culverts under roads should be designed to accept the full flow for the minor system ARI shown. In addition the designer must ensure that the 100 year ARI backwater does not enter properties upstream. If upstream properties are at a relatively low elevation it may be necessary to install culverts of capacity greater than that for the minor system ARI design storm to ensure flooding of upstream properties does not occur. In addition the downstream face of the causeway embankment may need protection where overtopping is likely to occur.</p>

LGA	Banana
Planning Scheme	Taroom
Adopted	22/12/2006
Flood Amendments	No
SPP Compliance	No
Details	Approval to adopt this planning scheme is conditional upon the continued operation and effect of: 2. Flood assessment provisions State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
Mapped Q100 / DFE	No
Details	maximum recorded flood may be adopted as an indication of flood level for development
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural / Rural Residential / Small Town / Urban / Commercial / Industrial / Open Space and Recreation / PC Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. (No AS) Note: To assist an applicant to demonstrate compliance with PC, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request: Known / determined flood levels (for MCU / ROL Applications). SPP 1/03 Used to assess applications.
Other	No
Details	
Op Works Code	Yes
Details	For Op Works not associated within an MCU in the Rural / Rural Residential / Small Town / Urban / Commercial / Industrial / Open Space and Recreation / PC “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request: Known / determined flood levels (for MCU / ROL Applications). SPP 1/03 Used to assess applications.
Other	No
Details	
Other Info	Exempt Development: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Barcaldine
Planning Scheme	Aramac
Adopted	21/06/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme - 2. The bushfire and landslide components of the State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	the maximum recorded flood may be adopted as an indication of flood
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Small Town/Industrial/Open Space and Recreation Zone Code Purpose Within the “Zone”, “development”: - is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria and Acceptable Solution for the Rural Zone MCU PC Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.
Use Codes	No
Details	
ROL Code	Yes
Details	Part 5 Ral Code Code Purpose (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events;
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council may request 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 - Division 5 Stormwater drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	Yes
Details	For all zone Codes (Rural/Small Town/Industrial/Open Space - Operational work PC4 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. (Small Town/Industrial Zone) AS4 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. (Open Space and Recreation/Rural Zones) AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Barcaldine
Planning Scheme	Barcaldine
Adopted	21/06/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has advised the flood provisions of State Planning Policy 1/03 continue to have effect.
Mapped Q100 / DFE	No
Details	maximum recorded flood may be adopted as an indication of flood level for development
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone, Rural Residential Zone, Urban Zone, Commercial Zone, Industrial Zone, Mixed Use Zone Code Purpose (4.1.3.3 (4)(k), 4.2.33(4)(j), 4.3.3.3(4)(i), 4.4.3.3(4)(i), 4.5.3.3(4)(h), 4.6.3.3 (3)(i), The following outcomes are the Purpose of the Code: Within the "Zone", "development": - is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; Open Space and Recreation Zone 4.7.3.3 Code Purpose The following outcomes are the Purpose of the Code: (4) "Development" in areas other than protected areas: (i) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; Rural Zone, Rural Residential Zone, Urban Zone, Commercial Zone, Industrial Zone, Mixed Use Zone, Open Space and Recreation Zone Performance Criteria (PC34, PC33, PC32, PC27, PC28, PC31, PC42) Flooding "Premises" are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.* *To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level. Acceptable Solution No acceptable solution is prescribed</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Part 5 Reconfiguring a Lot Code 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) "Reconfiguring a Lot": (e) Minimises the need for flood and landslide mitigation, and protects people and premises from such natural events.</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>Planning Scheme Policy 1 - Information Council May Request: 2.5 Infrastructure (1) Sufficient detail should be provided to enable "Council" to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable "Council" to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of know flood levels;</p>
Other	Yes
Details	<p>Part 1 Introduction 1.4 General Assessment Provisions (2) Exempt Development (a) The following "Development" is exempt development within the local government area: (v) "Development" involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Schedule 1: Design and Construction Standards Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT</p>
Op Works Code	Yes
Details	<p>Rural Zone, Open Space and Recreation Zone Performance Criteria</p>

	<p>PC4 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>Acceptable Solution</p> <p>AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p> <p>Rural Residential Zone, Urban Zone, Commercial Zone, Industrial Zone, Mixed Use Zone</p> <p>Performance Criteria</p> <p>PC4 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>Acceptable Solution</p> <p>AS4 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Barcaldine
Planning Scheme	Jericho
Adopted	13/06/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has advised the flood provisions of State Planning Policy 1/03 continue to have effect.
Mapped Q100 / DFE	No
Details	maximum recorded flood may be adopted as an indication of flood level for development
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone, Small Town Zone, Urban Zone, Commercial Zone, Industrial Zone, Code Purpose (4.1.3.3 (4)(k), 4.2.33(5)(i), 4.3.3.3(4)(i), 4.4.3.3(4)(i), 4.5.3.3(4)(h), 4.6.3.3 (3)(i), The following outcomes are the Purpose of the Code: Within the "Zone", "development": - is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>Open Space and Recreation Zone Code Purpose The following outcomes are the Purpose of the Code: (4) "Development" in areas other than protected areas: (i) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>Rural Zone, Small Town Zone, Urban Zone, Commercial Zone, Industrial Zone, Open Space and Recreation Zone PC@ Flooding "Premises" are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.* *To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level. Acceptable Solution No acceptable solution is prescribed.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	Part 5 Reconfiguring a Lot Code 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) "Reconfiguring a Lot": (e) Minimises the need for flood and landslide mitigation, and protects people and premises from such natural events.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request: 2.5 Infrastructure (1) Sufficient detail should be provided to enable "Council" to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable "Council" to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of known flood levels;
Other	Yes
Details	Part 1 Introduction 1.4 General Assessment Provisions (2) Exempt Development (a) The following "Development" is exempt development within the local government area: (v) "Development" involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Schedule 1: Design and Construction Standards Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT

Op Works Code	Yes
Details	<p>Rural Zone, Open Space and Recreation Zone</p> <p>Performance Criteria</p> <p>PC4 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>Acceptable Solution</p> <p>AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p> <p>Rural Residential Zone, Urban Zone, Commercial Zone, Industrial Zone, Mixed Use Zone</p> <p>Performance Criteria</p> <p>PC4 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>Acceptable Solution</p> <p>AS4 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Barcoo
Planning Scheme	Barcoo
Adopted	13/11/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme - 2. The bushfire and landslide components of the State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	The maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Small Town/Industrial/Open Space and Recreation Zone Code Code Purpose (4) Within the “Zone”, “development”: (@) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria and Acceptable Solution for the Rural Zone MCU PC Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. Acceptable Solution No acceptable solution is prescribed.
Use Codes	No
Details	
ROL Code	Yes
Details	Part 5 RaL Code Code Purpose (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events;
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	Schedule 1 - Division 5 Stormwater drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	For all zone Codes (Rural/Small Town/Industrial/Open Space - Operational work PC4 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. (Rural/Open Space and Recreation Zone) AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. (Small Town/Industrial Zone) AS4 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	1.4 General Assessment Provisions (2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Blackall Tambo
Planning Scheme	Blackall
Adopted	14/06/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme - 2. The bushfire and landslide components of the State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	The maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Urban/Commercial/Industrial/Mixed Use/Open Space and Recreation Zone Code Within the “Zone”, “development”: - is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; MCU PC Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. Acceptable Solution No acceptable solution is prescribed.
Use Codes	No
Details	
ROL Code	Yes
Details	Part 5 RaL Code Code Purpose (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events;
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 - Division 5 Stormwater drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	Yes
Details	For all zone Codes (Rural/Urban/Commercial/Industrial/Mixed Use/Open Space and Recreation Zone) PC4 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. (Rural/ Open Space and Recreation Zone) AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. (Urban/Commercial/Industrial/Mixed Use Zone) AS4 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	1.4 General Assessment Provisions (2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Blackall Tambo
Planning Scheme	Tambo
Adopted	16/06/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme - 2. The bushfire and landslide components of the State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	The maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Small Town/Industrial/Mixed Use/Open Space and Recreation Zone Code Within the “Zone”, “development”: - is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; MCU PC Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. Acceptable Solution No acceptable solution is prescribed.
Use Codes	No
Details	
ROL Code	Yes
Details	Part 5 RaL Code Code Purpose (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events;
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 - Division 5 Stormwater drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	Yes
Details	For all zone Codes (Rural Zone/Small Town/Industrial Zone/Mixed Use/Open Space and Recreation) PC4 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. (Rural Zone/Open Space and Recreation) AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. (Small Town Zone/Industrial/Mixed Use) AS4 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	1.4 General Assessment Provisions (2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Boulia
Planning Scheme	Boulia
Adopted	31/10/2006
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme –</p> <p>2. The bushfire and landslide components of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p> <p>The Minister for Local Government and Planning has advised the Integrated Development Assessment System trigger for Department of Main Roads, and the flood provisions of State Planning Policy 1/03 continue to have effect.</p>
Mapped Q100 / DFE	No
Details	The maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone / Rural Residential Zone / Small Town Zone / Urban Zone / Industrial Zone / Open Space and Recreation Zone</p> <p>Within the Rural “Zone”, “development”:</p> <p>(@) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>Zone Code</p> <p>PC@ Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.</p> <p>No acceptable solution is prescribed.</p> <p>Note: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code</p> <p>5.2 Code Purpose</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(1) “Reconfiguring a lot”:</p> <p>(e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events; and</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	No
Details	
Op Works Code	Yes
Details	<p>For all zone Code</p> <p>PC4 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(j) details of any known flood levels;</p>
Other	No
Details	
Other Info	<p>(2) Exempt Development</p> <p>(a) The following “Development” is exempt development within the local government area:</p> <p>(v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;</p> <p>Division 5: Standards For Stormwater Drainage</p> <p>5.1 Standards for Stormwater Drainage</p>

	<p>(1) Stormwater Drainage is in accordance with:</p> <p>Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council</p> <p>Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT</p>
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LGA	Brisbane
Planning Scheme	Brisbane
Adopted	31/10/1999
Flood Amendments	Yes
SPP Compliance	Yes
Details	The Plan explicitly recognises, and is consistent with the following State planning policies: <ul style="list-style-type: none"> • State Planning Policy 1/03—Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
Mapped Q100 / DFE	Yes
Details	Q100 Mapped Accessed Via Flood Search Tool - not Planning Scheme
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>Albion Neighbourhood Plan</p> <p>3.4 Raceway Precinct</p> <p>Development within this precinct will need to address flooding impacts with appropriate building design and infrastructure.</p> <p>3.4 Raceway Precinct</p> <p>Development within this precinct will need to address flooding impacts with appropriate building design and infrastructure.</p> <p>3.7 Hunt Street Precinct</p> <p>Development within this precinct will need to address flooding impacts with appropriate building design and infrastructure.</p> <p>General Assessment</p> <p>P7 Development must have sufficient access or egress available to enable evacuation during a range of floods up to and including the defined flood event</p> <p>Note: Development may achieve minimum flood free access through measures such as amalgamation, securing easements, increasing the flood immunity of the access road or other evacuation measures</p> <p>- A7 New development in the Raceway Precinct and Hunt Street Precinct are to be designed to provide a minimum flood free access of: 20y ARI Brisbane River and Creek Flooding and 50y ARI Local Overland Flow and Storm Surge</p> <p>Where for development within the Raceway Precinct</p> <p>P22 Development must:</p> <ul style="list-style-type: none"> • minimise land use conflict • integrate with surrounding land uses through improved pedestrian and vehicular connections • minimise adverse impacts on the amenity of existing residential properties • mitigate the adverse impacts of flooding <p>- A22: Development must assist in the resolution of local flooding</p> <p>Ithaca District Local Plan</p> <p>3.1 Where in the Butterfield Street Precinct</p> <p>Flooding is a major constraint to development in this precinct. Any new development does not worsen local flooding.</p> <p>P4 Development must not negatively affect local and creek flooding</p> <p>- A4 Development provides for overland flow</p> <p>P5 Emergency access during floods must be available from any residential development</p> <p>- A5.1 Development in Sub-precinct (a) does not contain a residential component</p> <p>- A5.2 Residential development in Sub-precinct</p> <p>(b) achieves Q100 flood free emergency access to Butterfield Street</p> <p>Bulimba District Local Plan</p> <p>3 Precinct intents</p> <p>3.2 If the Department of Defence ceases activities on the Army site, residential uses should be encouraged. Redevelopment must incorporate:</p> <ul style="list-style-type: none"> • management of flooding constraints and water quality <p>General Assessment</p> <p>Stormwater Management</p> <p>P6 Flood immunity must be achieved for</p> <p>Q50 situations without adversely impacting on upstream or downstream properties</p> <p>- A6.1 Flood immunity is achieved for Q50 situations through a combination of relief drainage and an overland flow path as detailed in the Pashen Creek Local Stormwater Management Study and the supplementary study</p> <p>- A6.2 Within areas subject of flooding in Q50 events, shown on Map C—Precinct 3.3:</p> <p>Extent of Q50 Inundation, there will be no filling or other works which will obstruct overland flow or have an adverse impact on surrounding flood levels</p> <p>Note: the plot ratio on sites through which the overland flow path runs can be calculated over the gross area of the site, including the overland flow path</p> <p>Eastern Corridor Neighbourhood Plan</p> <p>3.2 Buranda Station Precinct</p> <p>Buranda Station Corridor Sub-precinct</p> <p>Development within this precinct addresses flooding impacts with appropriate building design and infrastructure.</p> <p>3.3 Stones Corner Precinct</p> <p>This precinct is impacted by overland flow and creek flooding. Development must effectively manage these constraints.</p> <p>3.4 Langlands Park Precinct</p> <p>This precinct is particularly impacted by overland flow and creek flooding. Development must effectively manage these constraints.</p> <p>3.5 Coorparoo Precinct</p> <p>This precinct is particularly impacted by overland flow and creek flooding. Development must effectively manage these constraints.</p> <p>3.6 Bennetts Road Precinct</p> <p>Development addresses flooding impacts through appropriate site layout, building design and infrastructure solutions.</p> <p>5.1 Performance Criteria and Acceptable Solutions</p> <p>Car parking, Access and Servicing</p>

	<p>A22.1 Car parking areas are located underground OR Where it is demonstrated that car parking cannot be located underground, it is located behind the building, or located within the podium, fully concealed behind active uses and not discernible from street frontages Note: The location of infrastructure such as tunnels, flooding or overland flow are the only reasons that car parking should not be located in basement Where in the Langlands Park Corridor Sub-Precinct: P43 Development on land affected by either creek, river or overland flow accommodates floodwaters and ponding through the design and siting of buildings. Development does not adversely affect flood behaviour over adjacent or nearby development A43.2 Development on the south side of Old Cleveland Road: • provides landscaping capable of withstanding floodwaters and ponding A43.3 Development on the south side of Old Cleveland Road with an existing surface level at or lower than 4.5m AHD provides: • ponding for floodwaters under any structures A44.3 Changes between the footpath and the ground floor do not exceed 0.6m Note: Commercial tenancies should be level with the footpath in the High Street. Changes between the footpath and ground floor level are only acceptable where required to achieve flood immunity. The actual height difference should be limited to a maximum of 0.6m and the perceived difference mitigated through building design and materials A46.4 Changes between the footpath and the ground floor do not exceed 0.6m Note: Changes between the footpath and ground floor level are only acceptable where required to achieve flood immunity. The actual height difference should be limited to a maximum of 0.6m and the perceived difference mitigated through building design and materials Holland Park–Tarragindi District Local Plan 3.1 Parkland Precinct The majority of the allotment falls under the Flood Regulation Line and therefore is regarded as unsuitable for development. Lutwyche Road Corridor Neighbourhood Plan 2 Development principles 2.10 Development will incorporate innovative water management strategies to contribute to the provision of sustainable water services, minimise load on existing infrastructure, reduce flooding impacts and mitigate impacts on the health of waterways. Development within this precinct will need to address flooding impacts with appropriate building design and infrastructure. P7 Development fronting Victoria Street complements the existing low density residential environment on the western side of Victoria Street The lower levels of the building fronting Victoria Street are occupied by residential units that overlook the street as shown in Figure f Vehicle access to buildings is visually unobtrusive and necessary flood immunity for basement parking is achieved in a way that is visually unobtrusive as shown in Figure g Milton Station Neighbourhood Plan 2. Development principles 2.9 Development will be designed to protect people and property from the adverse impacts of flooding. Development will be designed so as to effectively manage overland flow paths and flooding constraints, and incorporate innovative integrated water management strategies without reducing the level of activation and human scale interface at the street level. 3.2 Mixed Use Residential Precinct The design of the urban common will encourage both passive and active recreation, and will include flood mitigation works. 5. Milton Station Neighbourhood Plan Code A9.1 Car parking areas are provided in flood immune basements, or concealed behind buildings 5. Nudgee Beach Neighbourhood Plan Development Code A2 Buildings are less than 8.5m in height above Ground level Note: Building height is measured as described in Acceptable Solution A2 of the House Code. Raised floor levels for the purposes of flood immunity must not result in an increase in the 8.5m building height above Ground level Sherwood/Graceville District Neighbourhood Plan 1 Introduction Non-Statutory Flood Guidance Note Parts of this neighbourhood plan area were subject to inundation during the January 2011 flood. Brisbane City Council has determined that flood risk, to the extent regulated by this neighbourhood plan, has been adequately minimised and has had due regard to the State Planning Policy 1/03—Mitigating the Adverse Impacts of Flood, Bushfire and Landslide. However, flooding is predominantly dealt with by other codes and guidelines in City Plan 2000. The Queensland Floods Commission of Inquiry is investigating the flood disaster, including a review of the existing town planning provisions related to flooding and flood risk mitigation. Brisbane City Council is also undertaking separate investigations into the flooding. The findings of Council's investigations and the final report of the Commission may recommend changes to the City Plan 2000, including this neighbourhood plan, and the State Planning Policy. Consequently the provisions of this neighbourhood plan with respect to the management of flooding and flood risk mitigation may be subject to change at the direction of the Queensland Government or Brisbane City Council in the near future. This should be taken into account by applicants and assessment managers when considering development in this neighbourhood plan area. Applicants are advised to make relevant enquiries regarding the status of the provisions relating to flooding. 3.6 St Aidan's School Precinct The 'Ambiwerra' site is predominantly situated below the Q100 Flood Line. The site contains land uses ancillary to the school, including sporting activities. It also contains a small area of land included in the Low Density Residential area, which is suitable for low density residential purposes. South Brisbane Riverside Neighbourhood Plan Non-Statutory Flood Guidance Note Parts of this neighbourhood plan area were subject to inundation during the January 2011 flood. Brisbane City Council has determined that flood risk, to the extent regulated by this neighbourhood plan, has been adequately minimised and has had due regard to the State Planning Policy 1/03—Mitigating the Adverse Impacts of Flood, Bushfire and Landslide. However, flooding is predominantly dealt with by other codes and guidelines in City Plan 2000. The Queensland Floods Commission of Inquiry is investigating the flood disaster, including a review of the existing town planning provisions related to flooding and flood risk mitigation. Brisbane City Council is also undertaking separate investigations into the flooding. The findings of Councils investigations and the final report of the Commission may recommend changes to the City Plan 2000, including this neighbourhood plan, and the State Planning Policy. Consequently the provisions of this neighbourhood plan with respect to the management of flooding and flood risk mitigation may be subject to chance at the direction of the Queensland Government or Brisbane City Council in the near future. This should be taken into account by applicants and assessment managers when considering</p>
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	<p>development in this neighbourhood plan area. Applicants are advised to make relevant enquiries regarding the status of the provisions relating to flooding.</p> <p>Woolloongabba Centre Neighbourhood Plan</p> <p>2 Development principles</p> <p>3.5 Deshon Street</p> <p>Much of the Deshon Street precinct is flood prone. It is therefore proposed to continue light industrial activities to serve the need in the inner City for service trades and support industry. Any new light industrial development must address flooding impacts.</p> <p>Wynnum/Manly Neighbourhood Plan</p> <p>2 Development principles</p> <p>Development in the Wynnum/Manly Neighbourhood Plan area will focus on the following principles:</p> <p>2.7 Development will incorporate innovative integrated water management strategies, including Water Sensitive Urban Design, to contribute to the provision of sustainable water services, minimise load on existing infrastructure, reduce flooding impacts and enhance the health of waterways and Moreton Bay.</p> <p>West End—Woolloongabba District Local Plan</p> <p>5.2 Precinct 1—West End Estate</p> <p>P9 New work must be protected from adverse flooding and must not significantly interfere with the passage of, storage, or quality of stormwater or the natural functions of a waterway</p> <p>A9 Design and construction of the new work complies with Council’s Erosion and Sediment Control Standard</p> <p>P10 Habitable rooms, non-habitable areas (e.g. utility areas, garage, laundry and storage room) must have acceptable levels of flood immunity</p> <p>- A10.1 Where the lot is subject to a resolution about minimum floor levels of habitable rooms under the Standard Building Regulations 1993, the floor level satisfies the level determined in the resolution</p> <p>OR</p> <p>Where the house is on floodable land but the lot is not subject to a resolution about minimum floor levels of habitable rooms under the Standard Building Regulations 1993, the floor level of all habitable rooms is not less than those set out in Table 1—House Flood Immunity Levels in the House Code</p> <p>- A10.2 Where lot is on floodable land, the minimum levels for non-habitable areas (including utility areas, garage, laundry and storage room) are not less than those set out in Table 1—House Flood Immunity Levels in the House Code</p> <p>No Acceptable Solutions or Performance Criteria dealing with river or creek flooding.</p> <p>Banyo/Nudgee Local Plan</p> <p>5. Banyo/Nudgee Local Plan Code</p> <p>Where in Precinct 6—Tufnell Road South</p> <p>P24 Development must not exacerbate flooding of Cannery Creek</p> <p>Mt Coot–tha Local Plan</p> <p>2 Development principles</p> <p>2.6 Natural hazardous events, including bushfire, landslip and flooding, are to be appropriately managed so as not to pose an unacceptable risk to life and property. This is intended to be achieved by:</p> <ul style="list-style-type: none"> • restricting proposals in areas of high bushfire hazard or areas prone to landslip or flooding • applying standards to assessable development so that the risk of damage/loss of life from bushfire, landslip and flooding is minimised. <p>Centenary Suburbs Neighbourhood Plan</p> <p>1 Introduction</p> <p>2.4 Development will incorporate sustainable, climate– responsive design principles and incorporate innovative integrated water management strategies, including Water Sensitive Urban Design, to contribute to the provision of sustainable water services, minimise load on existing infrastructure, reduce flooding impacts and enhance the health of waterways and the Brisbane River.</p> <p>3.4 Precinct 4—Centenary Sport and Recreation</p> <p>Sub–precinct B</p> <p>Any development in this precinct must address potential flooding constraints</p> <p>Sub–precinct C</p> <p>This precinct consists of privately owned sport and recreation land. Any development in this sub precinct must address potential flooding constraints. Sites to the north of Sinnamon Road are further constrained by vehicular access issues.</p> <p>Everton Park Local Plan</p> <p>2 Development principles</p> <p>The use of Water Sensitive Urban Design (WSUD) measures will aid in reducing site stormwater run– off and lessen impacts on local and downstream flooding.</p> <p>3.2 Precinct 2—Centre Residential</p> <p>WSUD measures are incorporated into development to minimise the impacts of development on the water cycle. The use of WSUD measures will aid in reducing site stormwater run–off and lessen impacts on local and downstream flooding.</p> <p>Australia Trade Coast Local Plan</p> <p>Where in the Luggage Point Precinct</p> <p>P2 Industrial development must proceed in a planned manner</p> <p>- A2 A development application must be accompanied by a Structure Plan that demonstrates:</p> <ul style="list-style-type: none"> • area wide flooding and drainage issues are addressed <p>Where in the Myrtletown Precinct</p> <p>P5 Development for industrial purposes must proceed in a planned manner to ensure that the area is properly drained and is flood free</p> <p>- A5.1 Development contributes towards the cost of constructing all roads in the precinct and establishing the drainage system shown on Map C—Myrtletown Structure Plan – Access and Green space</p> <p>- A5.2 Land is filled to produce flood free sites that will drain to the drainage system shown on Map D—Myrtletown Structure Plan – Drainage and Fill</p> <p>No Acceptable Solutions or Performance Criteria dealing with river or creek flooding.</p> <p>Milton Station Neighbourhood Plan</p> <p>General Assessment</p> <p>P9 Car parking must be placed to be unobtrusive, not dominate the streetscape and minimise pedestrian conflict points. Vehicle parking must:</p> <ul style="list-style-type: none"> • not detract from the aesthetics or amenity of the area • be consistent with convenient pedestrian and cyclist access • allow for flexible allocation between uses and conversion to alternative uses over time
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- ensure vibrant street frontages consistent with the ‘transit oriented’ character of the precinct

- A9.1 Car parking areas are provided in flood immune basements, or concealed behind buildings

Lutwyche Road Neighbourhood Plan

Where in the Corridor Mixed Use Sub-precinct

P7 Development fronting Victoria Street complements the existing low density residential environment on the western side of Victoria Street

The lower levels of the building fronting Victoria Street are occupied by residential units that overlook the street as shown in Figure f

Vehicle access to buildings is visually unobtrusive and necessary flood immunity for basement parking is achieved in a way that is visually unobtrusive as shown in Figure g

- A7 Building height is limited to 3 storeys adjoining Victoria Street as shown in Figure g

P1 Enoggera Creek and its tributaries must be protected from any development to:

- allow for flood flows

Sandgate Road Industrial Area Local Plan

3.2 Precinct 2—Virginia Industrial

Development in this precinct for general industry purposes is appropriate, provided that development does not exacerbate flooding or detrimentally impact on the environmental values of the Zillman Waterholes, Downfall Creek and Nundah Creek.

Water Sensitive Urban Design (WSUD) measures are incorporated into development to minimise the impacts of development on the water cycle. The use of WSUD measures will aid in reducing site stormwater run-off and reduce potential impacts on local and downstream flooding.

Acacia Ridge/Archerfield Neighbourhood Plan

4 Precinct Intent

4.9 Learoyd Road Precinct

Any development or reconfiguration must provide a structure plan and demonstrate:

- suitable residential lot sizes and Building Location Envelopes to demonstrate protection of ecological values and provide building pads that achieve habitable floor levels and flood free access.

Bracken Ridge and District Neighbourhood Plan

2.1.2 Waterway Corridors

Development of land will not encroach into the waterway corridors. Development must demonstrate compliance with State and City Plan Planning Scheme Policies on flood impacts.

2.5 Rural Areas

2.5.1 Bald Hills/Bridgeman Downs Precinct

It is acknowledged that this land is within the urban footprint as defined by the South East Queensland Regional Plan 2005–2031; however the majority of the precinct is subject to significant flooding impacts and lacks local infrastructure that could support urban residential outcomes. This area contributes significantly to the habitat and biodiversity values of South Pine River, including biodiversity rich wetland communities.

Fig Tree Pocket Local Plan

2.6 Rural housing

This area contains existing large lots occupied by houses. Land in this area is subject to flooding. The semi-rural setting which is an important part of the landscape character of Fig Tree Pocket must be retained in this area. No further subdivision is intended in this area.

5 Rochedale Local Plan Code

P14 Development must integrate water supply, waterway corridor, wastewater and stormwater management to ensure protection of the water cycle by:

- minimising flooding impacts

It is acknowledged that this land is within the urban footprint as defined by the South East Queensland Regional Plan 2005–2031; however the majority of the precinct is subject to significant flooding impacts and lacks local infrastructure that could support urban residential outcomes. This area contributes significantly to the habitat and biodiversity values of South Pine River, including biodiversity rich wetland communities.

Willawong Local Plan

3.1.1 Waterway corridors

Filling may be allowed only in the context of rehabilitation of mined areas where there is no effect on the hydrology of the creek and the flood plain system.

3.2 Precincts

3.2.1 Pallara community

Any proposals in the Pallara area must have regard for the possibility of local flooding.

3.2.2 Willawong rural area

The rural character, as seen from King Avenue and Learoyd Road, must be preserved. Any proposals must be compatible with the precinct’s broad hectare rural character. This will occur by minimising land subdivision, protecting and enhancing existing vegetation communities, creating built forms consistent with the rural character and being attentive to local flooding constraints.

P1 Enoggera Creek and its tributaries must be protected from any development to:

- allow for flood flows

Sandgate Road Industrial Area Local Plan

3.2 Precinct 2—Virginia Industrial

Development in this precinct for general industry purposes is appropriate, provided that development does not exacerbate flooding or detrimentally impact on the environmental values of the Zillman Waterholes, Downfall Creek and Nundah Creek.

Water Sensitive Urban Design (WSUD) measures are incorporated into development to minimise the impacts of development on the water cycle. The use of WSUD measures will aid in reducing site stormwater run-off and reduce potential impacts on local and downstream flooding.

Acacia Ridge/Archerfield Neighbourhood Plan

4 Precinct Intent

4.9 Learoyd Road Precinct

Any development or reconfiguration must provide a structure plan and demonstrate:

- suitable residential lot sizes and Building Location Envelopes to demonstrate protection of ecological values and provide building pads that achieve habitable floor levels and flood free access.

Bracken Ridge and District Neighbourhood Plan

2.1.2 Waterway Corridors

Development of land will not encroach into the

	<p>waterway corridors. Development must demonstrate compliance with State and City Plan Planning Scheme Policies on flood impacts.</p> <p>Fig Tree Pocket Local Plan</p> <p>2.6 Rural housing</p> <p>This area contains existing large lots occupied by houses. Land in this area is subject to flooding. The semi-rural setting which is an important part of the landscape character of Fig Tree Pocket must be retained in this area. No further subdivision is intended in this area.</p> <p>5 Rochedale Local Plan Code</p> <p>P14 Development must integrate water supply, waterway corridor, wastewater and stormwater management to ensure protection of the water cycle by:</p> <ul style="list-style-type: none"> • minimising flooding impacts <p>It is acknowledged that this land is within the urban footprint as defined by the South East Queensland Regional Plan 2005–2031; however the majority of the precinct is subject to significant flooding impacts and lacks local infrastructure that could support urban residential outcomes. This area contributes significantly to the habitat and biodiversity values of South Pine River, including biodiversity rich wetland communities.</p> <p>Willawong Local Plan</p> <p>3.1.1 Waterway corridors</p> <p>Filling may be allowed only in the context of rehabilitation of mined areas where there is no effect on the hydrology of the creek and the flood plain system.</p> <p>3.2 Precincts</p> <p>3.2.1 Pallara community</p> <p>Any proposals in the Pallara area must have regard for the possibility of local flooding.</p> <p>3.2.2 Willawong rural area</p> <p>The rural character, as seen from King Avenue and Learoyd Road, must be preserved. Any proposals must be compatible with the precinct's broad hectare rural character. This will occur by minimising land subdivision, protecting and enhancing existing vegetation communities, creating built forms consistent with the rural character and being attentive to local flooding constraints.</p>
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>House Code</p> <p>P5 House must be protected from adverse flooding and must not significantly interfere with the passage, storage or quality of stormwater or the natural functions of a waterway</p> <p>A5.1 House and ancillary structures are not within a waterway corridor (as shown on the Planning Scheme Maps)</p> <p>A5.2 Design and construction of the house complies with Council's Erosion and Sediment Control Standard</p> <p>P6 Habitable rooms, non-habitable areas (e.g. utility areas, garage, laundry and storage room) have acceptable levels of flood immunity</p> <p>A6.1 Where the lot is subject to a resolution about minimum floor levels of habitable rooms under the Building Regulation, the floor level of all new rooms satisfied the level determined in the resolution</p> <p>OR</p> <p>Where the house is on floodable land but the lot is not subject to a resolution about minimum floor levels of habitable rooms under the Building Regulation, the floor level of all habitable rooms is not less than those set out in Table 1</p> <p>A6.2 Where a lot is on floodable land, the minimum levels for non-habitable areas (including utility areas, garage, laundry and storage room) are not less than those set out in Table 1</p> <p>Refer Table 1 House flood immunity levels</p> <p>Refer Flood wise report</p> <p>Waterway Code</p> <p>This Code will apply in assessing any assessable development where:</p> <ul style="list-style-type: none"> • in a waterway corridor or the Brisbane River Corridor, as defined, or as indicated on the Planning Scheme Maps • on land subject to storm surge (being land at a level of 2.5m AHD or lower) • on land subject to flooding during a 100 year ARI event. <p>P2 Open space/recreation areas must contribute positively to managing flooding impacts, protecting water quality, preserving or enhancing ecological processes and maintaining/enhancing amenity</p> <p>P3 Fencing materials and design must minimise:</p> <ul style="list-style-type: none"> -impedance to the flow of floodwaters or to fauna movement <p>A3.1 Retaining walls are:</p> <ul style="list-style-type: none"> - designed and constructed to withstand flood conditions <p>Stormwater Management Code</p> <p>1 Application</p> <p>This Code will apply in assessing: material change of use where:</p> <ul style="list-style-type: none"> - involving an increase in floor area located on floodable land, reconfiguring a lot where: - located on floodable land <p>operational works or building works where:</p> <ul style="list-style-type: none"> - located on floodable land <p>2 Using this Code</p> <p>Floodable land: Land affected by one of the following flood sources:</p> <ul style="list-style-type: none"> • Brisbane River • creeks or waterways • localised overland flow paths • designed open channels • localised flooding • storm surge (land below 2.5m AHD elevation). <p>Localised flooding: includes localised overland flow paths and localised ponding. Localised overland flow paths are drainage lines that convey stormwater run-off, from any storm, before it enters a creek or waterway network. Overland flow paths, in general, are not part of river, creek or waterway flooding and by nature are dry except during storm events. Localised ponding occurs in naturally low-lying areas where overland flows from localised storms (of any frequency) collects and creates a temporary detention storage. Water from these ponded areas then slowly drains through stormwater drainage pipes or other waterway networks. These ponded areas are usually dry except during and immediately after storm events.</p>

	<p>Minor drainage system: part of a drainage system in a catchment that controls flows from the minor design storm, e.g. 2 year ARI and 10 year ARI events. The system usually comprises kerbs and channels, roadside channels, gully inlet pits, underground pipes, junction pits, manholes and outlets.</p> <p>3 Purpose</p> <p>The purpose of this Code is to:</p> <ul style="list-style-type: none"> - provide an efficient and cost effective stormwater run-off management system, i.e. a drainage network and detention/retention storage that adequately protects people and the natural and built environments from an unacceptable level of flooding risk. <p>4.1 General</p> <p>P1 The planning of the stormwater management system must provide for the integrated management of stormwater in order to:</p> <ul style="list-style-type: none"> • minimise flooding <p>A1.2 A Site Based Stormwater Management Plan (SBSMP) is prepared for all major and minor stormwater management measures. The SBSMP must provide for the following where applicable:</p> <ul style="list-style-type: none"> - an acceptable level of flood immunity <p>4.2 Flooding</p> <p>P1 The proposed stormwater management system or site works must not adversely impact on flooding or drainage of properties that are upstream, downstream or adjacent to the subject site</p> <p>A1 The proposal meets the requirements of Council's Subdivision and Development Guidelines and does not result in an increase in flood level or flood duration on upstream, downstream or adjacent properties</p> <p>Note: compliance with this acceptable solution can be demonstrated by the submission of a hydraulic and hydrology report (as part of a SBSMP) identifying potential flooding impacts on upstream, downstream or adjacent properties</p> <p>P2 The drainage network must provide capacity to safely convey stormwater run-off resulting from relevant design storm events taking into account increased run-off from roof drainage</p> <p>A2.1 The design demonstrates that a drainage network will be provided that will comply with Council's Subdivision and Development Guidelines</p> <p>Note: compliance with this acceptable solution can be demonstrated by identifying the conceptual drainage requirements for the proposal in a SBSMP</p> <p>A2.2 The design allows sufficient area to provide for a drainage network that will comply with Council's Subdivision and Development Guidelines</p> <p>Note: compliance with this acceptable solution can be demonstrated by the submission of a hydraulic and hydrology report (as part of a SBSMP) identifying the area required to accommodate the drainage network</p> <p>P3 Development design (including any car parking areas) must reduce property damage, provide flood immune access to the property and, where applicable, ensure the safety of all persons by ensuring that the development levels are set above the relevant design flood level or storm surge level</p> <p>A3.1 All development (including ancillary structures and car parking areas) is located above minimum flood immunity levels in accordance with Council's Subdivision and Development Guidelines</p> <p>Note: compliance with this acceptable solution can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels (as part of a SBSMP)</p> <p>A3.2 Road access is provided in accordance with the flood immunity levels identified in Council's Subdivision and Development Guidelines</p> <p>Note: compliance with this acceptable solution can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels</p> <p>P4 Any channel works that are part of the development, major drainage works or flood mitigation works must maintain and/or enhance the environmental values of the waterway corridor or drainage corridor</p> <p>A4 Design and construction of channel works incorporate water sensitive urban design and natural channel design features which will comply with:</p> <ul style="list-style-type: none"> • Council's Subdivision and Development Guidelines, and • where applicable any SMP, LSMP or WMP prepared by Council <p>Note: compliance with this acceptable solution can be demonstrated by the provision of conceptual details of any channel works (as part of a SBSMP)</p> <p>P5 Erosion treatment works along waterway banks and associated drainage structures must maintain or enhance the environmental values of waterways</p> <p>A5 Design and construction of erosion treatment features incorporate natural channel design features which will comply with:</p> <ul style="list-style-type: none"> • Council's Subdivision and Development Guidelines, and • Council's Urban Creek Erosion— Guidelines for Selecting Remedial Works <p>Note: compliance with this acceptable solution can be demonstrated by the provision of conceptual details of any erosion treatment works (as part of a SBSMP)</p> <p>P6 Bridges and culverts provided for flood immunity to minimise traffic disruption must improve the safety of all people and allow for fauna movement and recreation corridors where these needs are identified</p> <p>A6 The design complies with Council's Subdivision and Development Guidelines</p> <p>Note: compliance with this acceptable solution can be demonstrated by the provision of conceptual details of any bridge or culvert works (as part of a SBSMP)</p> <p>P7 The design and construction of detention and retention storage features must:</p> <ul style="list-style-type: none"> • achieve acceptable impacts on environmental values • provide for recreational use where possible • achieve acceptable risk to all persons' safety and property <p>A7 The design complies with Council's Subdivision and Development Guidelines and where applicable any SMP, LSMP or WMP prepared by Council</p> <p>Note: compliance with this acceptable solution can be demonstrated by the provision of conceptual details of any detention and retention storage features (as part of a SBSMP)</p> <p>These constraints must be identified and mapped as part of the Structure Planning process, and addressed as recommended by the relevant component of the City Plan. These include:</p> <ul style="list-style-type: none"> - flood affected land identified as being below the Flood Regulation Line <p>Wetland Code</p> <p>3 Purpose</p> <p>The purpose of this Code is to:</p>
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	<ul style="list-style-type: none"> ensure that the ecological, flood control and water cleaning functions of wetlands are protected and managed to ensure their long term viability
ROL Code	Yes
Details	<p>Subdivision Code</p> <p>4 Purpose</p> <p>The purpose of this Code is to:</p> <p>General</p> <ul style="list-style-type: none"> provide safe, convenient and attractive residential neighbourhoods, and functionally compatible industrial estates, that meet the diverse and changing needs of the community. This includes: ensuring adequate site drainage and control development on floodable areas <p>5.2 Lot design</p> <p>5.2.1 General</p> <p>P3 Lot size and dimensions must enable potential dwellings to be sited to:</p> <ul style="list-style-type: none"> address site constraints including topography, flooding, overland flow, drainage, hazard and risk, incompatible adjoining uses <p>5.4.1 Flooding</p> <p>P1 All lots must be provided with protection of property from flooding, in accordance with an acceptable level of risk as outlined in the Subdivision and Development Guidelines Note: The Stormwater Management Code provides additional guidance on flooding issues</p> <p>A1.1 All lots below 1000m² in size are located entirely above the minimum design levels for flood immunity in accordance with Council's Subdivision and Development Guidelines</p> <p>A1.2 All lots equal to or above 1000m² in size have a building platform located above the minimum design levels for flood immunity in accordance with Council's Subdivision and Development Guidelines</p> <p>A1.3 All created lots have unencumbered and unrestricted access from the building platform to road frontages with flood immunity in accordance with Council's Subdivision and Development Guidelines</p> <p>5.4.8 Building location plans where subject to hazard & risk</p> <p>P15 Potential dwellings must not be subject to unreasonable safety, hazard, risk and amenity impacts from:</p> <ul style="list-style-type: none"> flooding <p>7 Assessment guidance</p> <p>7.1 Supporting information</p> <p>A Detailed Subdivision Layout with requirements for each site is to be drawn to an appropriate scale, containing:</p> <ul style="list-style-type: none"> flood levels
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>Brisbane River Corridor Planning Scheme Policy</p> <p>4 Brisbane River Corridor Precincts and assessment guidelines</p> <p>The Brisbane River Management Plan has identified the following guiding principles for managing the whole corridor:</p> <ul style="list-style-type: none"> recognise and manage flooding risk through mitigation, planning and education <p>2 Objectives</p> <p>The objective of this policy is to ensure that earthworks reduce neither the flood–storage capacity nor flood– carrying capacity of the area within a Waterway Corridor.</p> <p>Compensatory Earthworks Planning Scheme Policy</p> <p>3 Balanced vs. Compensatory Earthworks</p> <ul style="list-style-type: none"> reducing the flood–carrying capacity of a watercourse; and/or reducing flood storage; <p>It is too simplistic to assume that earthworks will have a negligible impact on the hydraulics of a waterway if the works are balanced. That is the total volume of 'fill' (material added within a Waterway Corridor) equals or is less than the total volume of 'cut' (material excavated from within a Waterway Corridor). Hydraulic processes are complex; a simple 'total fill ≤ total cut' equation will not guarantee that the flood–storage capacity and flood–carrying capacity of a Waterway Corridor are maintained. These requirements ensure that that the hydraulic characteristics of the waterway are maintained.</p> <p>To preserve the hydraulic characteristics within a Waterway Corridor, the volume of 'cut' and 'fill' must be compensatory between incremental flood levels. In Example 2, the volume of 'fill' is equal to or less than the volume of 'cut' between each incremental level. If more 'fill' than 'cut' were added between levels (see Example 1, 5.2 – 5.4m AHD) then the flood–storage capacity and flood-carrying capacity within a Waterway Corridor would be reduced for certain flood events with adverse consequences to flooding.</p> <p>Balanced earthworks can reduce the hydraulic capacity of a watercourse for large floods. The increase arising from a single development may be small; however, once allowed on one property, history has shown that neighbouring properties seek the same relaxation on the basis of the precedent set. The cumulative effect leads to unacceptable rises in flood levels. For this reason applications to develop within a floodplain must be based on compensatory earthworks rather than balanced earthworks.</p> <p>4 Pre lodgement Guidance</p> <p>Compensatory earthworks are not to be carried out below the 1 in 20 year Average Recurrence Interval (ARI) flood inundation level based upon ultimate catchment development. Excavation below this limit is known to lead to erosion problems on the floodplain and watercourse banks that can be difficult to repair or stabilise. This has occurred on previous developments.</p> <p>Compensatory earthworks will not be approved in areas close to the watercourse within the waterway that is subject to high velocity water currents. This is because altering the geometry of the watercourse in these areas is likely to raise upstream flood levels. Scour problems can also occur to the newly exposed surfaces (whether they be cut or fill surfaces). Scour problems can also occur to undisturbed areas nearby caused by swirling eddies as a result of the ground surface changes. Areas subject to backwater flooding are more amenable to have compensatory earthworks approved as impacts are likely to have less impact on storage and conveyance.</p> <p>If the proposed compensatory earthworks involve excavation outside the Waterway Corridor, then the Waterway Corridor mapping will be amended in order to encompass the excavated area. This requirement protects the excavated area from being refilled at a later date and thus worsening flooding.</p> <p>5 Application Requirements Investigation to justify compensatory earthworks involves:</p> <ul style="list-style-type: none"> hydraulic modelling to determine pre– and post–development flood levels for a range of floods up to and including the defined flood to test the development proposal on its own and in combination with other development. <p>5.2 Item (b) Compensatory Earthwork Volumes</p>

	<p>Applicants must provide a table of earthwork volumes to demonstrate that the hydraulic characteristics within a Waterway Corridor are not adversely affected by the proposed development. The method to determine whether 'cut and fill' volumes are compensatory between specific flood levels is described below and illustrated in Table 1 and Figure a.</p> <ol style="list-style-type: none"> 1. Determine the lowest limit of the proposed earthworks (either 'cut' or 'fill' level) remembering that compensatory earthworks are not to be carried out below the anticipated 1 in 20-year ARI flood level. 2. Acquire from Council the pre-development flood levels for the 1 in 100-year ARI design event based upon ultimate catchment development. If unavailable, the developer needs to determine this. 3. Determine the increment y, where y is either 200mm or approximately one quarter of the difference between the anticipated 1 in 100 year ARI flood level and the Low Earthwork Limit, whichever is smaller. 4. The first increment between which to calculate cut and fill volumes is the Low Earthwork Limit plus y (refer to Table 1). 5. Determine cut and fill volumes for each increment up to a level equal to the anticipated 1 in 100 year ARI flood level, based on ultimate catchment development. 6. In order to be compensatory, fill volumes must be equal to or less than the cut volumes at the corresponding increments. <p>Typical Compensatory Earthworks</p> <p>This requirement helps to protect the excavated area from being refilled at a later date and thus worsening flooding.</p> <p>Typical Example of 'Balanced Earthworks' that is Unacceptable</p> <p>The earthworks therefore will change the storage characteristics of the watercourse, increasing flood levels downstream for some flood events. The increase arising from a single development may be small; however, once allowed on one property, it is a natural and equitable process for the neighbouring properties to seek the same relaxation on the basis of the precedent set. The cumulative effect leads to unacceptable rises in flood levels.</p> <p>5.3 Item (c) Hydraulic Modelling</p> <p>Therefore, development applicants are required to model pre- and post-development flood levels for a range of flood events up to and including the defined flood event to test that the development proposal causes no increase or decrease in flood level immediately upstream of the proposed compensatory earthworks.</p> <p>This is because increasing the conveyance capacity of the watercourse at the site of the earthworks reduces the effectiveness of flood storage and is likely to increase flooding downstream.</p> <p>Environmental Impact Assessment</p> <p>Planning Scheme Policy</p> <p>2.4.2 Physical features</p> <p>B Hydrology</p> <p>Provide a description of the hydrology of the site and surrounding areas in sufficient detail to show:</p> <ul style="list-style-type: none"> • surface and subsurface hydrology, including definition of the local drainage basin and aquifers, water movements in and out of the site, and frequency and extent of flooding <p>2.5.2 Bio/physical features</p> <ul style="list-style-type: none"> • watercourses on or adjacent to the site or indirectly affected by development on the site in terms of alterations to water quality, waterway/ecological health, drainage patterns, flooding characteristics, siltation rates and biotic characteristics, including impacts on fish movement <p>2.6 Impact monitoring, protection, risk management and post-development management procedures</p> <p>For example, in the case of the construction of an artificial lake or water body through impoundment or excavation activities, describe:</p> <ul style="list-style-type: none"> • mitigation measures and control structures preventing impacts on water quality and hydrological regime during construction and operating life of the proposal, including siltation, weed growth, flood protection and pest and insect control
Other	Yes
Details	<p>Current Definitions (As Defined in the City Plan 2000)</p> <p>Adverse flooding: flooding that adversely affects the value, safety or use of land, whether public or privately owned. Adverse flooding may result from a change in:</p> <ul style="list-style-type: none"> • peak discharge • run-off volume • impervious area • rate of run-off, i.e. the travel time of stormwater run-off through the catchment <p>Freeboard (defined in the Subdivision and Development Guidelines) The difference in height between the calculated water surface elevation and the top, obvert, crest of a structure or the floor level of a building, provided for the purpose of ensuring a safety margin above the calculated design water elevation. In Council policy, Freeboard is the additional 0.5m above DFL required in the Subdivision and Development Guidelines. The purpose of freeboard is to allow for turbulence and waves. The above definition is from the Queensland Urban Drainage Manual.</p> <p>Flood regulation lines: lines used by Council to indicate floodplain areas reserved for flood water storage and flow, where development may be restricted</p> <p>Local stormwater management plan (LSMP): a plan for specific localised stormwater management such as local flooding of a street or pollution in a lake</p> <p>Overland flow path:</p> <ul style="list-style-type: none"> • where a piped drainage system exists, the path where flood waters exceeding the capacity of the underground drainage system would flow <p>Waterway Corridors: the corridors along a waterway indicated on the Planning Scheme Maps. These corridors are defined by:</p> <ul style="list-style-type: none"> • a flood regulation line (FRL) <p>Waterway Management Plan (WMP): integrated plan addressing management of waterways in a catchment including stormwater drainage, water quality, ecological health, flooding and waterways usage</p>
Op Works Code	Yes
Details	<p>Filling and Excavation Code</p> <p>P3 Filling or excavation must not directly, indirectly or cumulatively, cause any increase in flooding or drainage problems</p> <p>Earthworks within a Waterway Corridor are to be in accordance with the Compensatory Earthworks Planning Scheme Policy</p> <p>A3.1 No filling or excavation is located:</p> <ul style="list-style-type: none"> • in any waterway corridor as shown on the Planning Scheme Maps and defined in the definitions • within the waterway corridor or, if there is no waterway corridor, within the 100 year ARI extent

	<ul style="list-style-type: none"> • in any wetland as shown on the Planning Scheme Maps and defined in the definitions <p>A3.2 Filling or excavation does not cause ponding on the site or on nearby land</p> <p>A3.3 Changes to flooding due to filling or excavation will not adversely affect the safety or use of any adjoining site and land upstream and downstream</p> <p>A3.4 Any changes to run-off characteristics resulting from filling for storm events, up to at least the 2 year ARI design storm, are minimised in an ecologically sensitive manner</p> <p>A3.5 Filling or excavation does not adversely affect the flow of water in any overland flow path</p> <p>Note: compliance with Acceptable Solutions</p> <p>A3.1 to A3.5 can be demonstrated through the submission of a report detailing:</p> <ul style="list-style-type: none"> • calculations for flood modelling of the riparian zone, including ground cover, understorey and canopy vegetation • management strategies to prevent adverse flooding and minimise changes to run-off characteristics consistent with Council's current Subdivision and Development Guidelines and Environmental Best Management Practice for Waterways and Wetlands 1996
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	<p>LAP Part 2</p> <p>Mt Coot-tha Local Plan</p> <p>5.4 Foothills Residential Precinct</p> <p>P1 Enoggera Creek and its tributaries must be protected from any development to:</p> <ul style="list-style-type: none"> • allow for flood flows <p>Sandgate Road Industrial Area Local Plan</p> <p>3.2 Precinct 2—Virginia Industrial</p> <p>Development in this precinct for general industry purposes is appropriate, provided that development does not exacerbate flooding or detrimentally impact on the environmental values of the Zillman Waterholes, Downfall Creek and Nundah Creek.</p> <p>Water Sensitive Urban Design (WSUD) measures are incorporated into development to minimise the impacts of development on the water cycle. The use of WSUD measures will aid in reducing site stormwater run-off and reduce potential impacts on local and downstream flooding.</p> <p>Acacia Ridge/Archerfield Neighbourhood Plan</p> <p>4 Precinct Intents</p> <p>4.9 Learoyd Road Precinct</p> <p>Any development or reconfiguration must provide a structure plan and demonstrate:</p> <ul style="list-style-type: none"> • suitable residential lot sizes and Building Location Envelopes to demonstrate protection of ecological values and provide building pads that achieve habitable floor levels and flood free access. <p>Bracken Ridge and District Neighbourhood Plan</p> <p>2.1.2 Waterway Corridors</p> <p>Development of land will not encroach into the waterway corridors. Development must demonstrate compliance with State and City Plan Planning Scheme Policies on flood impacts.</p> <p>2.5 Rural Areas</p> <p>2.5.1 Bald Hills/Bridgeman Downs Precinct</p> <p>It is acknowledged that this land is within the urban footprint as defined by the South East Queensland Regional Plan 2005–2031; however the majority of the precinct is subject to significant flooding impacts and lacks local infrastructure that could support urban residential outcomes. This area contributes significantly to the habitat and biodiversity values of South Pine River, including biodiversity rich wetland communities.</p> <p>Fig Tree Pocket Local Plan</p> <p>2.6 Rural housing</p> <p>This area contains existing large lots occupied by houses. Land in this area is subject to flooding. The semi-rural setting which is an important part of the landscape character of Fig Tree Pocket must be retained in this area. No further subdivision is intended in this area.</p> <p>5 Rochedale Local Plan Code</p> <p>P14 Development must integrate water supply, waterway corridor, wastewater and stormwater management to ensure protection of the water cycle by:</p> <ul style="list-style-type: none"> • minimising flooding impacts <p>It is acknowledged that this land is within the urban footprint as defined by the South East Queensland Regional Plan 2005–2031; however the majority of the precinct is subject to significant flooding impacts and lacks local infrastructure that could support urban residential outcomes. This area contributes significantly to the habitat and biodiversity values of South Pine River, including biodiversity rich wetland communities.</p> <p>Willawong Local Plan</p> <p>3.1.1 Waterway corridors</p> <p>Filling may be allowed only in the context of rehabilitation of mined areas where there is no effect on the hydrology of the creek and the flood plain system.</p> <p>3.2 Precincts</p> <p>3.2.1 Pallara community</p> <p>Any proposals in the Pallara area must have regard for the possibility of local flooding.</p> <p>3.2.2 Willawong rural area</p> <p>The rural character, as seen from King Avenue and Learoyd Road, must be preserved. Any proposals must be compatible with the precinct's broad hectare rural character. This will occur by minimising land subdivision, protecting and enhancing existing vegetation communities, creating built forms consistent with the rural character and being attentive to local flooding constraints.</p>

LGA	Bulloo
Planning Scheme	Bulloo Shire
Adopted	21/06/1006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	The maximum recorded flood may be adopted as an indication of flood level. Natural Feature Map included that reflects -Water body -Lake -Water body - submerged to Inundated - Water body - swamp Map notes however *other water courses may exist that are not shown on the map.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Small Town/Urban/Mixed Use/Industrial/Open Space and Recreation Zone The following outcomes are the Purpose of the Code: - Within the “Zone”, “development”: - is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria and Acceptable Solutions PC Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding AS No acceptable solution is prescribed.
Use Codes	No
Details	
ROL Code	Yes
Details	Part 5 - Reconfiguring a Lot Code 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events; PSP1 -Information Council May Request 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council may request 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 Design and Construction Standards 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	Yes
Details	For all zone Codes (Rural Zone/Small Town/Urban/Mixed Use/Industrial Zone/Open Space and Recreation) - “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. (Rural Zone/Open Space and Recreation Zone) AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. (Small Town Zone/Urban/Mixed Use/Industrial) AS4 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No

Details	
PSPs	No
Details	
Other	No
Details	
Other Info	1.4 General Assessment Provisions (2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Bundaberg
Planning Scheme	Bundaberg
Adopted	5/02/2004
Flood Amendments	Yes
SPP Compliance	Yes
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme - 4. State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	Yes
Details	Map - Burnett River 2% Annual Exceedance Probability Flood (1 in 50 years) Map - Q100 ARI Localised Flood (map)
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>3.1.3 Local Area 3 - Takalvan Street</p> <p>3.1.3.2 Precincts</p> <p>Non Urban 3g</p> <p>12. This Precinct includes areas of land unsuitable for urban development because of physical constraints such as flooding and local drainage.</p> <p>3.1.4 Local Area 4 - Higher Density Residential</p> <p>3.1.4.2 Precincts</p> <p>Non Urban Precinct 4d</p> <p>7. This Precinct includes areas of land unsuitable for urban development because of physical constraints such as flooding and local drainage.</p> <p>3.1.5 Local Area 5 - Central Business District (CBD)</p> <p>3.1.5.2 CBD Precinct</p> <p>Non Urban Precinct 5e</p> <p>11. This precinct includes areas of land unsuitable for urban development because of physical constraints such as flooding and local drainage issues.</p> <p>3.1.6 Local Area 6 - Eastern Bundaberg</p> <p>3.1.6.2. Precincts</p> <p>Non Urban Precinct 6e</p> <p>12. This precinct includes areas of land unsuitable for urban development because of physical constraints such as flooding and local drainage issues.</p> <p>3.1.7 Local Area 7 - Eastern Industrial</p> <p>3.1.7.2 Precincts</p> <p>Non Urban Precinct 7f</p> <p>5. This precinct includes areas of land unsuitable for urban development because of physical constraints such as flooding and local drainage issues.</p> <p>3.1.8 Local Area 8 - North Bundaberg</p> <p>3.1.8.2 Precincts</p> <p>Non Urban 8f</p> <p>10. This precinct includes areas of land unsuitable for urban development because of physical constraints such as flooding and local drainage issues.</p>
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	Yes
Details	<p>General Codes</p> <p>4.3.3 Lot Reconfiguration Code</p> <p>Purpose of the code</p> <p>To facilitate the creation of a variety of serviced flood-free allotments that meet the diverse needs of the community while ensuring that adverse off-site impacts are limited, that the sub-divisional design is capable of integration with likely future development and that adequate open space is provided.</p> <p>Probable Solution</p> <p>A3.2 Parklands are not located on land that is:</p> <p>-below the 20% AEP localised flood level</p> <p>Performance Criteria</p> <p>P4 The creation of allotments must not result in increased risk to life or property as a result of flooding, or riverbank instability.</p> <p>Acceptable Solution</p> <p>A4.1 No new residential allotments are create in natural hazard areas e.g. within the DFE area.</p>
Overlay Codes	Yes
Details	<p>4.3.8 Flood management Code</p> <p>PURPOSE OF THE CODE</p> <p>To ensure that development generates no adverse alteration of the storage and flow characteristics of floodwaters and that people, property, essential services and community infrastructure are protected from specified flood events.</p> <p>PERFORMANCE CRITERIA AND PROBABLE SOLUTIONS</p> <p>P1: The proposed development must not:</p> <p>- Adversely impact on the downstream properties by maintaining the pre-development flow peaks, inundation time and flood levels up to and including the DFE.</p> <p>- Increase the flood levels upstream and downstream for storm events up to and including DFE.</p> <p>A1.1: The design and construction of all major and minor stormwater runoff management measures for the proposed development is in accordance with the Bundaberg City Engineering Design Planning Scheme Policy.</p> <p>P2: Any changes to runoff characteristics (hydrograph volume, peak and time to peak) for a range of storm events up to and including DFE must</p>

	<p>be minimised, consistent with the maintenance of the environmental values and waterways.</p> <p>A2.1: Any changes to runoff characteristics are in accordance with the Bundaberg City Engineering Design Planning Scheme Policy.</p> <p>P3: Bridges and culverts for flood immunity minimise traffic disruption, provide for public safety and bike ways, allow for fauna habitat and movements and maintain necessary hydraulic performance.</p> <p>A3.1: The design parameters are in accordance with the Bundaberg City Engineering Design Planning Scheme Policy.</p> <p>P4: Land surface and road access thereto of land used for residential purposes must provide safe egress during the DFE.</p> <p>A4.1: On all allotments in the Residential A and Residential B Precinct existing at the date the planning scheme commences, no solution is prescribed.</p> <p>A4.2: On all other allotments, the land surface and road access thereto of all land used for residential purposes is above the DFE level for the site.</p> <p>P5: The occupants and chattels of habitable rooms must be safeguarded against illness, injury and damage caused by the DFE.</p> <p>A5.1: The floor level of a habitable room is at least 300mm above the DFE.</p> <p>P6: Land surface and road access thereto of land used for commercial, business or industrial purposes shall provide for safe egress during the DFE.</p> <p>A6.1: Land surface and road access thereto of land used for commercial business or industrial purposes is above the DFE level for the site.</p> <p>P7: The occupants and chattels of commercial, business or industrial premises shall be safeguarded against injury or damage caused by the DFE.</p> <p>P8: Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous, toxic or noxious materials manufactured or stored in bulk.</p> <p>A8.1: The manufacture or storage in bulk of hazardous, toxic or noxious materials takes place above the DFE levels; or</p> <p>A8.2: Structures used in the manufacture or storage in bulk of hazardous, toxic or noxious materials are designed to prevent intrusion from floodwaters.</p> <p>P9: Essential services infrastructure (e.g. electricity, gas, sewerage and telecommunications) maintains its function during a DFE.</p> <p>A9.1: Essential services infrastructure is located above the DFE level; or</p> <p>A9.2: Essential services infrastructure located below the DFE are designed and constructed to exclude floodwater intrusion/infiltration; and</p> <p>A9.3: Essential services infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the DFE.</p> <p>P10: Community Infrastructure is able to function effectively during and immediately after a DFE.</p> <p>A10.1: Community Infrastructure located below the Recommended Flood Level can function effectively during and after flood events; and</p> <p>A10.2: Essential Community Infrastructure has an emergency rescue area above the Recommended Flood Level.</p>
PSPs	Yes
Details	<p>5.2 Open Space and Recreation Planning Scheme Policy</p> <p>Table 5.1 Open Space and Recreation Standards</p> <p>(c) Land contributions are required to be above the 20% AEP flood event level.</p> <p>Engineering Design Planning Scheme Policy</p> <p>4. Design and considerations</p> <p>4.6 Design Storms</p> <p>Notes</p> <p>2. Culverts under roads should be designed to accept the full flow for the minor system ARI shown. In addition the designer must ensure that the 100 year ARI backwater does not enter properties upstream. If upstream properties are at a relatively low elevation it may be necessary to install culverts of capacity greater than that for the minor system ARI design storm to ensure flooding of upstream properties does not occur. In addition the downstream face of the causeway embankment may need protection where overtopping is likely to occur.</p> <p>4.7 Flow Depths (Freeboard) and Flooded Widths Limitations</p> <p>4.10 Flood ways/Open Channels</p> <p>4.10.1 General</p> <p>Flood ways shall be designed to contain the 100 year ARI stormwater run-off with adequate freeboard per QUDM Section 5.08.1 and comply with ss4.3, 4.5 of this manual.</p>
Other	Yes
Details	<p>DEO 3 Infrastructure</p> <p>Performance Indicators</p> <p>3.2 Urban Growth</p> <p>(a) An increase in the number and location of serviced, flood-free residential and industrial allotments.</p> <p>DEO 5 Residential Communities</p> <p>Performance Indicators</p> <p>5.1 Housing Diversity and Choice</p> <p>(a) An increase in the number, type, density and location of serviced flood-free residential developments</p> <p>Table 1.2</p> <p>Explanatory Definition</p> <p>Defined Flood Event (DFE) means the 2% Annual Exceedence Probability (AEP) Burnett River flood event and the 1% AEP local flood event, whichever is the higher.</p> <p>Recommended Flood Level (RFL) as defined in the SPP 1/03 Guideline - Mitigating the Adverse Impacts of Flood Bushfire and Landslide (Appendix 9)</p> <p>2.0 City Planning Strategy</p> <p>2.2 Residential Strategy</p> <p>2.2.2 Primary Measures</p> <p>Key Strategies</p> <p>1.2 An adequate supply of serviced urban residential land with an acceptable level of flood immunity is available to satisfy the housing needs of the further population.</p> <p>Preferred Settlement Pattern and Development Characteristics</p> <p>1. The amenity of existing and future residential areas will be protected by requiring proposals in or adjacent to residential areas (Existing and future) to ensure:</p> <p>(d) the proposed development would not create or increase flooding problems in any residential area.</p> <p>7. Land subject to inundation by the DFE shall be excluded from urban development in order to provide an acceptable level of flood immunity. Lands subject to inundation by the 1% AEP Local Rainfall Event shall also be excluded from urban development in order to conserve the capacity and hydraulic and ecological function of the watercourse and to provide an acceptable level of flood immunity.</p> <p>2.5 Open Space and Environmental Management Strategy</p> <p>2.5.2 Primary Measures</p>

	<p>Open Space and Recreation</p> <p>3. It is also intended that open space areas will have one or more of the following functions:</p> <p>(a) watercourse and floodplain management.</p> <p>4. The Burnett River and the Bundaberg, Saltwater, O'Connell's, Palmer's, McCoy's and Yellow Waterholes Creeks and their tributaries, provide opportunities to develop a linked network of "green spaces" through the City. The management and use of these major watercourse corridors is intended to be in accordance with the following priorities:</p> <p>(b) Accommodation of flood events.</p> <p>Environmental Management and Development Characteristics</p> <p>9. Lands subject to inundation by the DFE shall be excluded from urban development in order to provide an acceptable level of flood immunity. Lands subject to inundation by the 1% AEP Local Rainfall Event shall be protected from urban development in order to conserve the capacity and hydraulic and ecological functions of the water course and to provide an acceptable level of flood immunity.</p> <p>2.8 Non Urban Strategy</p> <p>2.8.2 Primary Measures</p> <p>Preferred Settlement Pattern and Development Characteristics</p> <p>3. Non-Urban land is also intended to identify areas that are generally unsuitable for urban purposes because of physical constraints, particularly those related to flooding or drainage problems and existing land use commitments. Development of land within this area is intended to be mainly for land uses that are unlikely to be affected by or affect flooding.</p> <p>4.3 General Codes</p> <p>4.3.1 Infrastructure Services Code</p> <p>Performance Criteria</p> <p>P4 Stormwater Drainage must not result in unacceptable water quality, increased flooding or erosion impacts.</p> <p>Acceptable Solutions</p> <p>A4.1 Design storm criteria in all situations shall be:</p> <ul style="list-style-type: none"> -major system design ARI (years) 100 -Minor system Design ARI (years) <ul style="list-style-type: none"> Commercial 10 Community 10 Industrial 10 Recreation Indoor 10 Special Use 10 Utilities 10 Recreation Outdoor 5 Residential 5 Park 1
Op Works Code	Yes
Details	<p>4.3.2 Filling and Excavation Code</p> <p>Purpose of the Code</p> <p>To ensure that filling or excavation is carried out in a manner that does not:</p> <ul style="list-style-type: none"> -cause an increase in flooding or drainage problems <p>Performance Criteria</p> <p>P4 Filling or excavation must not:</p> <ul style="list-style-type: none"> - cause any increase in the flood levels either upstream or downstream of the site; -cause unacceptable changes to runoff characteristics (hydrograph volume, peak and time to peak) for storm events up to at least the 1 in 100 year design storm <p>Acceptable Solution</p> <p>A4.1 There is no change to hydro graphic volume peak and time to peak for storm events up to the 1 in 100 year design storm; and</p> <p>A4.2 a. No filling or excavation is located in any area subject to the DFE or in any overland flow path.</p>
Overlay Code	Yes
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Bundaberg
Planning Scheme	Burnett
Adopted	10/05/2006
Flood Amendments	No
SPP Compliance	Yes
Details	State planning policies The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme— 4. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire, Flood and Landslide).
Mapped Q100 / DFE	Yes
Details	Defined flood event (DFE) for Burnett Shire is 1% AEP.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Division 3, Coastal Towns Planning Area Code Table 3.6 Specific outcomes and probable solutions -effects of use in the Coastal Towns Planning Area Avoiding or mitigating adverse environmental outcomes SO.15 Community infrastructure* is able to function effectively during and immediately after flood, bushfire or landslide events. *For the purposes of this specific outcome, the meaning of 'community infrastructure' is as defined in State Planning Policy 1/03-Mitigating the adverse impacts of Flood, Bushfire and Landslide. No probable solution identified. SO54. Works protect the health and safety of people and the amenity of the locality by - ix. Not causing or exacerbating slope instability, a flooding or drainage problem or erosion potential. PS54.1 Development complies with the Stormwater Management Planning Scheme Policy. Division 3-Rural Planning Area Code 4.3.3 Purpose of the code (2) The following are the overall outcomes for the Rural Planning Area- (f) Development does not cause or exacerbate slope instability, a flooding or drainage problem or erosion potential. Table 4.5 Specific outcomes and probable solutions - effects of use in the Rural Planning Area SO.142 Development does not exacerbate slope instability, flooding, drainage problems or erosion. No probable solution identified. SO.146 Community infrastructure *is able to function effectively during and immediately after flood, bushfire or landslide events. *For the purposes of this specific outcome, the meaning of 'community infrastructure' is as defined in State Planning Policy 1/03-Mitigating the adverse impacts of Flood, Bushfire and Landslide. No probable solution identified.
Use Codes	Yes
Details	Division 4- Detached Dwelling, Domestic Storage and Building Works Code SO.255 Detached Dwellings are provided with an acceptable level of immunity from flood and storm tide. PS255.1 The floor levels of all habitable rooms are 300mm above— i. the inundation levels shown on the flood and storm tide risk area maps if located in the study area;30 ii. the 1971 flood level for the Kolan River and the maximum flood levels for the upper Burnett River in Schedule 3, if located within 1km of the centreline of the upper Burnett River (outside the study area for (i) above) or the Kolan River; iii. for Rocky Point and Baffle Creek — 2.7mAHD; or iv. 3.3m AHD in all other locations* *Flood / storm tide risk studies have not been completed for the remainder of the Shire. These levels are based on the information the local government had available at the time of publication. SO269. Stormwater drainage is provided to - x. protect present design flood immunity levels of local and state controlled roads. PS.269.1 Stormwater drainage is designed and in accordance with the Stormwater Management Planning Scheme Policy.
ROL Code	Yes
Details	Division 13-Reconfiguring a Lot Code 8.14.2 Purpose of the code (2) The overall outcomes for the Reconfiguring a Lot Code are- (d) the reconfiguring does not result in increased risk to life or property as a result of flooding, landslip, bushfire or other natural hazard, having regard to the likely subsequent use of the land; 6.11 Reconfiguring a Lot Code Lot size and configuration—generally applicable PS 197.3 A suitable building platform is available that— i. is above the 1% AEP flood event; SO 198. The reconfiguring does not result in increased risk to life or property as a result of flooding, landslide, bushfire, or other natural hazard, having regard to the likely subsequent development on the land. No probable solution identified
Overlay Codes	Yes
Details	Division 2-Natural Features or Resources Overlays Code 5.3.3 Purpose of the code (2) Overall Outcomes Natural Hazards (r) Development - (i) maintains the free passage and temporary storage of floodwaters;

	<p>(ii) avoids creating a flood nuisance;</p> <p>(iii) is compatible with the flood hazard and local drainage conditions; and</p> <p>(iv) development does not cause or exacerbate significant land degradation, including erosion and landslip.</p> <p>Table 5.7 Specific Outcomes, Acceptable Solutions and Probable Solutions- Natural hazard areas</p> <p>If within a flooding or storm tide risk area identified on Maps NHA 2.1 to NHA 2.4 and maps NHA 3.1 to NHA 3.7</p> <p>SO.209 Development maintains the safety of people on the premises from all floods up to the Defined Flood Event (DFE) and storm tide events</p> <p>PS.209.1 Development is sited on land that would not be subject to flooding during the DFE.</p> <p>SO.210 Access to premises is maintained during the DFE or storm tide events.</p> <p>No probable solutions identified.</p> <p>SO.212 Development does not result in adverse impacts on people's safety or the capacity to use land for its intended purpose within the flooding and storm tide area.</p> <p>PS.212.1 Work does not involve—</p> <p>i. any physical alteration to a watercourse or floodway including vegetation clearing; or</p> <p>ii. net filling exceeding 50 cubic metres.</p> <p>SO.213 Proposed works—</p> <p>i. avoid any reductions of any onsite flood storage capacity and contain within the subject site any changes to depth, duration or velocity of flood waters of all floods up to and including the DFE; or</p> <p>ii. do not change the flood characteristics of the DFE outside the subject site in ways that result in—</p> <p>a reduced flood storage;</p> <p>b reduced or changes to flow paths;</p> <p>c acceleration or retardation of flows; or</p> <p>d any reduction in flood warning times elsewhere on the floodplain.</p> <p>No probable solutions identified.</p> <p>SO.214 Development minimises the potential damage from flooding or storm tide to property on the development site.</p> <p>PS.214.1 Residential Uses are sited so that the floor levels of all habitable rooms are 300mm above—</p> <p>i. the inundation levels shown on the flood and storm tide risk area maps NHA2.1 to NHA2.4 if located in the study area;18</p> <p>ii. the 1971 flood level for the Kolan River and the maximum flood levels for the upper Burnett River in Schedule 3, if located within 1km of the centreline of the upper Burnett River (outside the study area for (i) above) or the Kolan River; iii. For Rocky Point and Baffle Creek — 2.7mAHD; or</p> <p>iv. 3.3m AHD in all other locations19.</p> <p>SO.215 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater or storm tide on hazardous materials manufactured or stored in bulk.</p> <p>PS.215.1 The manufacture or storage of bulk or hazardous materials takes place above the DFE flood level.</p> <p>PS.215.2 Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of floodwaters.</p> <p>SO.216 Essential service infrastructure (e.g. on-site electricity, gas, water, sewerage and telecommunications) maintain its function during the DFE or storm tide events.</p> <p>PS.216.1 Any components of the infrastructure that are likely to fail to function or may result in contamination when inundated by floodwater (e.g. electrical switchgear and motors, water supply pipeline air valves) are—</p> <p>i. located above the DFE; or</p> <p>ii. Designed and constructed to exclude floodwater intrusion or infiltration.</p> <p>PS.216.2 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the DFE</p>
PSPs	Yes
Details	<p>PSP 1: Information Requirements for Applications</p> <p>1.3 Assessment of Urban Development outside the Coastal Towns Planning Area—</p> <p>(b) details of how the proposed development demonstrates sufficient planning grounds including consideration of the following issues—</p> <p>1.6 Assessment against Natural Features and Resource Overlays</p> <p>1.6.4 Declared catchment areas</p> <p>(1) If an application is within a declared catchment area—information sufficient to establish the likely effect on water quality including—</p> <p>(ii) the full supply level, planned full supply level or flood margin reserve, whichever will provide the greater distance.</p> <p>1.6.12 Natural hazard (flood)</p> <p>(1) If an application is within a natural hazard (flood) area, or is known to have drainage problems the following information will be required—</p> <p>(a) contour plans of the site showing existing and proposed finished levels and the locations of the 1% AEP;</p> <p>(b) a stormwater drainage plan indicating overland flows before and after development and velocities of flows in the drainage catchment; and</p> <p>(c) the depth of expected inundation at a 1% AEP event.</p> <p>PSP 5: Stormwater Management</p> <p>5.2 Application of the Policy</p> <p>(3) High risk development is development or a development proposal in the following circumstances—</p> <p>(v) if within a flooding or storm tide risk area;</p> <p>5.3 Purpose</p> <p>(2) The purpose of this policy is to ensure that development, construction and design of works which are undertaken as part of new development, achieve a consistent standard which reflects best practice in engineering, environmental management and natural resource planning, while addressing flooding, safety, accessibility and aesthetically appropriate considerations.</p> <p>(3) The overall outcomes sought by the Stormwater Management Planning Scheme Policy are that development incorporates stormwater quality and quantity management systems which are planned, designed, constructed, implemented and maintained so that—</p> <p>(a) stormwater originating from development is of a quality that—</p> <p>(ii) the natural water flow regime in waterways, wetlands and ground waters is maintained to minimise the impact on flooding, contamination, erosion and scouring;</p> <p>(f) provide an efficient and cost effective stormwater run-off management system which minimises flooding</p> <p>5.8 Information Requirement for all Development</p> <p>5.8.1 Erosion and Sediment Control Plan</p> <p>(2) The Erosion and Sediment Control Plan is to be at a scale of either</p> <p>1:200 or 1:500 and contain the following general information—</p> <p>(a) Overall site plan with existing contours at sufficient intervals to adequately define general drainage paths and estimated Q100 flood contours;</p> <p>5.9.2 Methodology and Models for SBSMP</p> <p>(1) The following method is to be followed in preparing the SBSMP.</p>

	<p>(2) Site Assessment — A Site assessment is required for the design of stormwater management practices during the operational and construction phases. In all cases, an understanding should be obtained of—</p> <p>(a) key water quality; flooding and waterway corridor issues within the catchment (refer to relevant Council Flood Studies, Stormwater Management Plans, Waterway Management Plans, Catchment Management Plans and Local Stormwater Management Plans where available).</p> <p>(h) physically inspect the site — the site inspection should be undertaken by a suitably qualified person. It should be documented in the SBSMP with field notes and photographs and identify—</p> <p>(iv) evidence of previous flooding and the state of waterway corridors;</p> <p>(k) Assess Potential for Flooding — the assessment of whether the site is prone to flooding is to be undertaken in accordance with Australian Rainfall and Runoff (ARR) and the Queensland Urban Drainage Manual - QUDM. The assessment must be undertaken by a suitably qualified person in hydrology and hydraulics.</p>
Other	Yes
Details	<p>Schedule 3 - Flood Levels</p> <p>- graphs and tables regarding relevant flood profiles for Rivers</p> <p>“Defined flood event (DFE)” for Burnett Shire is 1% AEP.</p>
Op Works Code	Yes
Details	<p>Division 9-Filling or Excavation Code</p> <p>8.10 Filling or Excavation Code</p> <p>8.10.2 Purpose of the code</p> <p>(2) The overall outcomes for the Filling or Excavation Code are-</p> <p>(b) where filling or excavation occurs on a flood-affected site, there is no increase in the risk of damage to life or property.</p> <p>Table 8.9 Specific outcomes, acceptable solutions and probable solutions— Filling or excavation</p> <p>Flooding and drainage</p> <p>SO.305 The finished surface level —</p> <p>ii. is free from flooding;</p> <p>PS.305.1 Development complies with the Stormwater Management Planning Scheme Policy.</p> <p>SO.306 Filling or excavation does not cause any new or exacerbate an existing flooding or drainage problem including—</p> <p>i. the loss or reduction of flood storage;</p> <p>ii. creation of afflux (increase in flow to or toward an area);</p> <p>iii. Hazards to property or people;</p> <p>iv. creating new flood prone land or a flood hazard, or;</p> <p>v. adverse hydraulic impact on areas external to the site.</p> <p>PS.306.1 Filling or excavation does not occur—</p> <p>i. for the upper Burnett River, below the flood levels identified Schedule 3;</p> <p>ii. for the Kolan River, below the flood levels identified at Figure 2 in Schedule 3; or</p> <p>iii. otherwise, below the 1% AEP flood level.</p> <p>PS.306.2 Development complies with the Stormwater Management Planning Scheme Policy.</p> <p>8.14.3 Specific outcomes and probable solutions</p> <p>SO.374 Lot size and dimensions enable buildings to be sited to—</p> <p>i. protect natural or cultural features;</p> <p>ii. address site constraints including slope, soil erosion, flooding, drainage and bushfire risk; and</p> <p>iii. retain special features such as trees and views.</p> <p>No probable solution identified</p> <p>SO.391 Land made available for public open space is not—</p> <p>i. below the Q5 localised flood level;</p> <p>No probable solution identified</p> <p>Table 8.2 Standards for Park and Open Space</p> <p>Topography & Flooding Min. 75% of area with gradient less than 10%; All above Q2, min. 50% above Q20; buildings & sporting infrastructure above Q100; Min 50% of area with gradient less than 15%; buildings above Q100 & HAT + storm surge Car parks above Q20, Buildings above Q100</p> <p>Car parks above Q20, buildings above Q100</p>
Overlay Code	Yes
Details	<p>Division 2-Natural Features or Resources Overlays Code</p> <p>5.3.3 Purpose of the code</p> <p>(2) Overall Outcomes</p> <p>Natural Hazards</p> <p>(r) Development -</p> <p>(i) maintains the free passage and temporary storage of floodwaters;</p> <p>(ii) avoids creating a flood nuisance;</p> <p>(iii) is compatible with the flood hazard and local drainage conditions; and</p> <p>(iv) development does not cause or exacerbate significant land degradation, including erosion and landslip.</p> <p>Table 5.7 Specific Outcomes, Acceptable Solutions and Probable Solutions- Natural hazard areas</p> <p>If within a flooding or storm tide risk area identified on Maps NHA 2.1 to NHA 2.4 and maps NHA 3.1 to NHA 3.7</p> <p>SO.209 Development maintains the safety of people on the premises from all floods up to the Defined Flood Event (DFE) and storm tide events</p> <p>PS.209.1 Development is sited on land that would not be subject to flooding during the DFE.</p> <p>SO.210 Access to premises is maintained during the DFE or storm tide events.</p> <p>No probable solutions identified.</p> <p>SO.212 Development does not result in adverse impacts on people’s safety or the capacity to use land for its intended purpose within the flooding and storm tide area.</p> <p>PS.212.1 Work does not involve—</p> <p>i. any physical alteration to a watercourse or floodway including vegetation clearing; or</p> <p>ii. net filling exceeding 50 cubic metres.</p> <p>SO.213 Proposed works—</p> <p>i. avoid any reductions of any onsite flood storage capacity and contain within the subject site any changes to depth, duration or velocity of flood waters of all floods up to and including the DFE; or</p>

	<p>ii. do not change the flood characteristics of the DFE outside the subject site in ways that result in—</p> <p>a reduced flood storage;</p> <p>b reduced or changes to flow paths;</p> <p>c acceleration or retardation of flows; or</p> <p>d any reduction in flood warning times elsewhere on the floodplain.</p> <p>No probable solutions identified.</p>
PSPs	Yes
Details	<p>PSP1 Information Council May Request</p> <p>Development Works- Planning scheme Policy</p> <p>5.6.7 STORMWATER</p> <p>(2) Fill placed is not to cause water to pond on adjacent properties or increase the possibility of flooding risk to upstream or downstream properties.</p>
Other	No
Details	
Other Info	No

LGA	Bundaberg
Planning Scheme	Isis
Adopted	23/01/2007
Flood Amendments	No
SPP Compliance	Yes
Details	<p>State Planning Policies</p> <p>The Minister for Local Government, Planning and Sport has identified the following State Planning Policies as having been appropriately reflected in the planning scheme:</p> <p>- State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Mapped Q100 / DFE	Yes
Details	<p>Document 1% AEP (Q100) flood level</p> <p>Map 1% AEP (100 Year ARI) Flood Study</p>
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Assessment Criteria for Rural Protected Zone (Category 1 and Category 2), Rural Zone, Rural Residential Zone, Industry Zone (4.2, 4.4, 4.6, 4.12, 4.14)</p> <p>Overall Outcomes for the Rural Protected Zone Code, Rural Zone Code, (4.2.3, 4.4.3, 4.6.3, 4.12.3, 4.13.4)</p> <p>Development has an appropriate level of flood immunity and does not result in an increase in flood level or duration on surrounding properties; ((g),(i),(e),(f),</p> <p>Flood Management</p> <p>Development does not alter the shape, direction or capacity of drainage paths in a way that diverts flood flows onto other land or prevents or slows the escape of flood water from other land. (PC6, PC6, PC6, PC8, PC7)</p> <p>No acceptable solution prescribed. (AS6.1, AS6.1, AS6.1, AS8.1, AS7.1)</p> <p>Natural hydrological systems, landforms and drainage lines and the flood conveyance capacity of floodplains and waterways are maintained. (PC7, PC7, PC7, PC9, PC8)</p> <p>No acceptable solution prescribed. (AS7.1, AS7.1, AS7.1, AS9.1, AS8.1)</p> <p>Development and community infrastructure has an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk*. (PC8, PC8, PC8, PC10, PC9)</p> <p>* The Council has adopted minimum floor levels for habitable rooms for development in various parts of the Shire under section 53 of the Standard Building Regulation 1993.</p> <p>Floor levels for habitable rooms are – (AS8.1, AS8.1, AS8.1, AS10.1, AS9.1)</p> <p>(a) for areas where minimum floor levels are specified, not less than the specified level; or</p> <p>(b) for areas where flood modelling is available, not less than 300mm above the modelled 1% AEP (Q100) flood level; or</p> <p>(c) for areas where flood modelling is to available, not less than 300m above the highest known flood level r 300mm above ground level here no flood level is known.</p> <p>Community infrastructure is located at or above the recommended flood levels identified in Schedule 6.(AS8.2, AS8.2, AS8.2, AS10.2, AS9.2)</p> <p>Assessment Criteria for Residential Zone (4.8)</p> <p>Overall Outcomes for the Residential Zone Code (4.8..3)</p> <p>Development has an appropriate level of flood immunity and does not result in an increase in flood level or duration on surrounding properties (f).</p> <p>PC10 Development is designed and located to be clear of tidal surge and any predicted sea level rise associated with climate change*.</p> <p>AS10.1 Floor levels for habitable rooms are –</p> <p>(a) for areas where minimum floor levels are specified, not less than the specified level; or</p> <p>(b) for areas where tidal surge flood modelling is available, not less than 300mm above the modelled 1% AEP (Q100) flood level; or</p> <p>(c) for areas where tidal surge flood modelling is not available, not less than 300mm above the highest known flood level or 300mm above ground level where no flood level is known.</p> <p>*The Council has adopted minimum floor levels for habitable rooms in various parts of the Shire under section 53 of the Standard Building Regulation 1993.</p> <p>Flood Management</p> <p>PC11 Development does not alter the shape, direction or capacity of drainage paths in a way that diverts flood flows onto other land or prevents or slows the escape of flood water from other land.</p> <p>AS11.1 No acceptable solution prescribed.</p> <p>PC12 Natural hydrological systems, landforms and drainage lines and the flood conveyance capacity of floodplains and waterways are maintained.</p> <p>AS12.1 No acceptable solution prescribed.</p> <p>PC13 Development and community infrastructure has an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk.*</p> <p>*The Council has adopted minimum floor levels for habitable rooms for development in various parts of the Shire under section 53 of the Standard Building Regulation 1993.</p> <p>AS13.1* Floor levels for habitable rooms are –</p> <p>(a) for areas where minimum floor levels are specified, not less than the specified level; or</p> <p>(b) for areas where flood modelling is available, not less than 300mm above the modelled 1% AEP (Q100) flood level; or</p> <p>(c) for areas where flood modelling is not available, not less than 300mm above the highest known flood level or 300mm above ground level where no flood level is known.</p> <p>AS13.2 Community infrastructure is located at or above the recommended flood levels identified in Schedule 6.</p> <p>PC23 Development retains the existing hydrological regime (surface and ground water cycle and flow) to protect significant vegetation and habitats.</p> <p>AS23.1 Existing flows of surface and ground water are not altered through construction of channelled flows or the redirection or interruption of flows OR</p> <p>AS23.2 Earthworks and changes to drainage, groundwater levels, flooding and tidal hydraulics are designed and constructed to avoid detrimental</p>

	<p>impacts on wetland habitat.</p> <p>Assessment Criteria for Commercial Zone (49)</p> <p>Overall Outcomes for the Residential Zone Code (4.9.3)</p> <p>Development has an appropriate level of flood immunity and does not result in an increase in flood level or duration on surrounding properties (n).</p> <p>PC16 Development retains the existing hydrological regime (surface and ground water cycle and flow) to protect significant vegetation and habitats.</p> <p>AS16.1 Existing flows of surface and ground water are not altered through construction of channelled flows or the redirection or interruption of flows OR</p> <p>AS16.2 Earthworks and changes to drainage, groundwater levels, flooding and tidal hydraulics are designed and constructed to avoid detrimental impacts on wetland habitat.</p> <p>Flood Management</p> <p>PC18 Development does not alter the shape, direction or capacity of drainage paths in a way that diverts flood flows onto other land or prevents or slows the escape of flood water from other land.</p> <p>AS18.1 No acceptable solution prescribed.</p> <p>PC19 Natural hydrological systems, landforms and drainage lines and the flood conveyance capacity of floodplains and waterways are maintained.</p> <p>AS19.1 No acceptable solution prescribed.</p> <p>PC20 Development and community infrastructure has an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk.*</p> <p>The Council has adopted minimum floor levels for habitable rooms for development in various parts of the Shire under section 53 of the Standard Building Regulation 1993.</p> <p>AS20.1 Floor levels for habitable rooms are –</p> <p>(a) for areas where minimum floor levels are specified, not less than the specified level; or</p> <p>(b) for areas where flood modelling is available, not less than 300mm above the modelled 1% AEP (Q100) flood level; or</p> <p>(c) for areas where flood modelling is not available, not less than 300mm above the highest known flood level or 300mm above ground level where no flood level is known.</p> <p>AS20.2 Community infrastructure is located at or above the recommended flood levels identified in Schedule 6.</p>
Use Codes	Yes
Details	<p>6.2.3 Rural Development Code assessment criteria</p> <p>PC5 Intensive Animal Husbandry, Aquaculture</p> <p>(Minor and Major Impact), Saleyards and Kennels are developed on a site which:</p> <p>(a) is sufficiently elevated to facilitate ventilation and drainage;</p> <p>(b) has adequate vehicle access;</p> <p>(c) is supplied with a reliable, good quality water supply, and a secure power supply;</p> <p>(d) will not cause unacceptable environmental harm; and</p> <p>(e) will not unreasonably impact on the amenity of any town, village, rural residential area or other existing sensitive receptor.</p> <p>AS5.1 Intensive Animal Husbandry, Aquaculture, Saleyards and Kennels, are developed on sites with:</p> <p>(a) slopes less than 10%;</p> <p>(b) land that is not subject to flooding and is not low-lying land;</p> <p>(c) sealed road access.</p>
ROL Code	Yes
Details	<p>6.9 Reconfiguring a Lot Code</p> <p>6.9.3 Reconfiguring a Lot Code assessment criteria</p> <p>PC3 Created lots are of an appropriate shape and design, with the appropriate frontage to cater for the general intended use.</p> <p>AS3.2 Additional lots are not created on land that is flood prone or subject to a medium or high bushfire hazard.</p>
Overlay Codes	Yes
Details	<p>5.2 Assessment Criteria for Natural Hazards Overlay</p> <p>5.2.3 Overall Outcomes for the Natural Hazards Overlay Code</p> <p>(c) development has an appropriate level of flood immunity and does not result in an increase in flood level or duration on surrounding properties.</p> <p>Flood Management</p> <p>PC9 Development does not alter the shape, direction or capacity of drainage paths in a way that diverts flood flows onto other land or prevents or slows the escape of flood water from other land.</p> <p>AS9.1 Apple Tree Creek In the Low Hazard area and High Hazard area on Natural Hazards Overlay Map 3 Flood Management, filling within the 1% AEP (Q100) floodplain does not exceed 400mm in depth and 250 m3 in volume except:</p> <p>(a) east of Drummond Street, either side of Spencer Street;</p> <p>(b) between Tyndall Street and the unnamed road reserve east thereof; and</p> <p>(c) on Lot 1 on RP809376 to provide a maximum building site of 1,000m2 above the 1% AEP (Q100) flood level.</p> <p>PC10 Natural hydrological systems, landforms and drainage lines and the flood conveyance capacity of floodplains and waterways are maintained.</p> <p>AS10.1 No acceptable solution prescribed.</p> <p>PC11 Development and community infrastructure has an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk.</p> <p>AS11.1 Development other than filling in accordance with acceptable solution AS9.1 is not located in the High Hazard Area on Natural Hazards Overlay Map 3 Flood Management,</p> <p>AS11.2 Development within the Low Hazard area on Natural Hazards Overlay Map 3 Flood Management is designed to retain its structural integrity in flood conditions.</p> <p>AS11.3 The floor level of any habitable room within the Low Hazard Area on Natural Hazards Overlay Map 3 Flood Management is a minimum of 300mm above the 1% AEP (Q100) flood level.</p> <p>5.4 Assessment Criteria for Natural Features and Resources Overlay</p> <p>5.4.3 Overall Outcomes for the Natural Features and Resources Code</p> <p>(d) Natural waterways are protected to preserve their important contribution to ecological processes, shore line and bank stabilisation, hydraulic and flood carrying capacity, and their open space, recreational, environmental, scientific, commercial and cultural values;</p>

	<p>PC7 Development retains the existing hydrological regime (surface and ground water cycle and flow) to protect significant vegetation and habitats.</p> <p>AS7.2 Earthworks and changes to drainage, groundwater levels, flooding and tidal hydraulics are designed and constructed to avoid detrimental impacts on waterway habitat.</p> <p>PC9 Any potentially adverse effect of filling or excavation on:</p> <p>(a) any property, watercourse or stormwater drainage works in the vicinity; or</p> <p>(b) any watercourse is prevented or adequately mitigated.</p> <p>AS9.1 The excavation or filling does not:</p> <p>(d) Reduce the waterway area available in any natural or artificial watercourse for either present or estimated future flood flows;</p> <p>(f) Reduce the volume within a flood plain available for the storage of floodwaters.</p>
PSPs	Yes
Details	<p>2.0 Planning Scheme Policy 2/07 - Public Open Space Contributions</p> <p>2.3 Provisions</p> <p>Where the Reconfiguring a Lot Code requires an area of land to be provided for use as park, the land to be provided as park shall not be:</p> <p>(ii) Lower in level than the flood level resulting from the runoff of a one in two year (Q2) storm calculated in a manner considered satisfactory to the local government's engineer;</p> <p>(b) The land capability and environmental assessment report is to address the following matters for each proposed lot:</p> <p>(ii) an assessment of land capability and constraints, including:</p> <ul style="list-style-type: none"> - susceptibility to flooding; <p>5.0 Planning Scheme Policy 5/07 - State Approvals</p> <ul style="list-style-type: none"> • Area below a flood line adopted by the local government
Other	Yes
Details	<p>1. Introduction</p> <p>1.4 Strategic Framework</p> <p>1.4.1 Broad Shire Strategies</p> <p>(5) Development occurs in areas where it would not generally be subject to environmental hazards, including (but not limited to) bushfire, land-slip and flooding;</p> <p>2. Interpretation</p> <p>2.1 Definitions - the dictionary</p> <p>2.1.2 Other Development and Administrative Terms</p> <p>AEP: Means the average exceedance probability or the likelihood of occurrence of a flood of a given size or larger in any one year, usually expressed as a percentage (e.g. 1% AEP).</p> <p>Schedule 6 – Recommended Flood Levels for Community Infrastructure (refer table s6.1 - Recommended Flood Levels for Community Infrastructure</p>
Op Works Code	Yes
Details	<p>6.12 Excavation and Filling Code</p> <p>6.12.2 Overall Outcomes for the Excavation and Filling Code</p> <p>(v) changes to drainage and flooding characteristics</p> <p>6.12.3 Excavation and Filling assessment criteria</p> <p>PC6 Any potentially adverse effect of filling or excavation on:</p> <p>(a) any property, watercourse or stormwater drainage works in the vicinity; or</p> <p>(b) any watercourse is prevented or adequately mitigated.</p> <p>(d) Reduce the waterway area available in any natural or artificial watercourse for either present or estimated future flood flows;</p> <p>(f) Reduce the volume within a flood plain available for the storage of floodwaters.</p>
Overlay Code	Yes
Details	<p>5.4 Assessment Criteria for Natural Features and Resources Overlay</p> <p>5.4.3 Overall Outcomes for the Natural Features and Resources Code</p> <p>(d) Natural waterways are protected to preserve their important contribution to ecological processes, shore line and bank stabilisation, hydraulic and flood carrying capacity, and their open space, recreational, environmental, scientific, commercial and cultural values;</p> <p>PC7 Development retains the existing hydrological regime (surface and ground water cycle and flow) to protect significant vegetation and habitats.</p> <p>AS7.2 Earthworks and changes to drainage, groundwater levels, flooding and tidal hydraulics are designed and constructed to avoid detrimental impacts on waterway habitat.</p> <p>PC9 Any potentially adverse effect of filling or excavation on:</p> <p>(a) any property, watercourse or stormwater drainage works in the vicinity; or</p> <p>(b) any watercourse is prevented or adequately mitigated.</p> <p>AS9.1 The excavation or filling does not:</p> <p>(d) Reduce the waterway area available in any natural or artificial watercourse for either present or estimated future flood flows;</p> <p>(f) Reduce the volume within a flood plain available for the storage of floodwaters.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Bundaberg
Planning Scheme	Kolan
Adopted	18/04/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme— 3. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire Only).
Mapped Q100 / DFE	No
Details	1% AEP flood event used.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 2-Assessment provisions-Zones</p> <p>5.2 Commercial Zone Code</p> <p>SO 4. Community infrastructure⁸ is able to function effectively during and immediately after flood, bushfire or landslide events.</p> <p>PS 4.1 Community infrastructure is not located in a medium or high bushfire hazard area.</p> <p>PS 4.2 Community infrastructure is not located in an area subject to landslide risk.</p> <p>PS 4.3 The floor level of community infrastructure is located 300mm above the 1% AEP flood level.</p> <p>5.3 Community Purposes Zone Code</p> <p>SO 14. Community infrastructure¹⁰ is able to function effectively during and immediately after flood, bushfire or landslide events.</p> <p>PS 14.1 Community infrastructure is not located in a medium or high bushfire hazard area.</p> <p>PS 14.2 Community infrastructure is not located in an area subject to landslide risk.</p> <p>PS 14.3 The floor level of community infrastructure is located 300mm above the 1% AEP flood level.</p> <p>5.4 Industrial Zone Code</p> <p>SO 23. Community infrastructure¹² is able to function effectively during and immediately after flood, bushfire or landslide events.</p> <p>PS 23.1 Community infrastructure is not located in a medium or high bushfire hazard area.</p> <p>PS 23.2 Community infrastructure is not located in an area subject to landslide risk.</p> <p>PS 23.3 The floor level of community infrastructure is located 300mm above the 1% AEP flood level.</p> <p>SO 33. Wastewater does not enter watercourses or groundwater because the following measures have been implemented— v. locating storage tanks containing hazardous, toxic or noxious wastes only in locations that are flood free for a 1 in 100 year flood event.</p> <p>5.5 Residential Zone Code</p> <p>SO 41. Community infrastructure¹³ is able to function effectively during and immediately after flood, bushfire or landslide events.</p> <p>PS 41.1 Community infrastructure is not located in a medium or high bushfire hazard area.</p> <p>PS 41.2 Community infrastructure is not located in an area subject to landslide risk.</p> <p>PS 41.3 The floor level of community infrastructure is located 300mm above the 1% AEP flood level.</p> <p>5.6 Rural Zone</p> <p>SO 59. Community infrastructure¹⁴ is able to function effectively during and immediately after flood, bushfire or landslide events.</p> <p>PS 59.1 Community infrastructure is not located in a medium or high bushfire hazard area.</p> <p>PS 59.2 Community infrastructure is not located in an area subject to landslide risk.</p> <p>PS 59.3 The floor level of community infrastructure is located 300mm above the 1% AEP flood level.</p> <p>SO 66. Residential uses are located in areas with a flood immunity of 1% average recurrence interval.</p> <p>No probable solution identified</p>
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>5.8 Infrastructure Areas and Items Overlay Code</p> <p>5.8.2 Purpose of the code</p> <p>(1) The purpose of the Infrastructure Areas and Items Overlay Code is to ensure that all development within the identified overlays assists the achievement of the following overall outcomes for the Infrastructure Areas and Items Overlay— (a) development does not create or increase risks to people, property or the natural environment through flooding, poor drainage or overland flow; SO 82. An acceptable level of flood immunity is provided.</p> <p>PS 82.1 Habitable rooms are to have a floor level not less than 300mm above the 1% AEP flood level.</p> <p>If located in the Flood and Drainage Liability Area</p> <p>SO 84. Works do not create or increase flooding or drainage problems.</p> <p>No probable solution identified</p>
PSPs	Yes
Details	<p>Division 2-Information for assessment of development applications</p> <p>2.5.4 If involving infrastructure works</p> <p>(1) If an application involving infrastructure works, including works for reconfiguring a lot— (d) any additional calculations in support of overland flow path capacities, weir flows over kerbs, flood fill studies;</p> <p>4.3 Information requirements</p> <p>The Local Government may request the following information— (b) an assessment of land capability and constraints with regard to— (ix) susceptibility to flooding</p>
Other	Yes
Details	3.2.10 Desired Environmental Outcome 10 Community safety and well being are protected through the avoidance or management of natural hazards including flood, bushfire and landslide.

Op Works Code	Yes
Details	<p>6.3 Filling and Excavation Code</p> <p>(2) The overall outcomes for the Filling and Excavation Code are—</p> <p>(b) where filling or excavation occurs on a flood affected site, there is no increase in the risk of flood damage to life or property for existing and proposed development;</p> <p>SO 134. Filling and excavation does not adversely affect environmental values in receiving waterways or wetlands nor adversely affect areas of biodiversity value identified on map FRO3.1 to NFRO3.5 and NFRO3 in Gin Gin.</p> <p>PS 134.1 Filling or excavation does not occur—</p> <p>i. within 100 metres of any wetland or creek or 200 metres of a river; or,</p> <p>ii. below a 1% AEP flood level.</p> <p>Flooding and Drainage</p> <p>SO 139. Filling and excavation does not cause any new or exacerbate an existing flooding or drainage problem including—</p> <p>i. the loss or reduction of flood storage;</p> <p>ii. creation of afflux;</p> <p>iii. hazards to property or people;</p> <p>iv. any impediment to a Counter Disaster Plan measure;</p> <p>v. creating new flood prone land or a flood hazard; and,</p> <p>vi. adverse hydraulic impact on areas external to the site.</p> <p>No acceptable or probable solution identified</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Burdekin
Planning Scheme	Burdekin IPA Planning Scheme
Adopted	14/12/2010
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone (Rural Settlement Sub Area)/ Village Zone Code</p> <p>Overall Outcomes</p> <ul style="list-style-type: none"> - Damage, risk and loss to property due to inundation by storm surge, tidal surge or floodwaters upon new development in the Shire is minimised; - Development encroaching into the flood plain is restricted; and - A clear corridor for the conveyance of floodwaters is provided. <p>Rural Zone</p> <p>Specific Outcomes</p> <p>Hazard Planning</p> <p>015 In rural areas, all premises have safe access during emergencies and hazards such as flooding, cyclonic events and bushfires.</p> <p>S15 None Specified.</p> <p>Residential Zone Code</p> <p>Overall Outcomes</p> <p>(xi) The design and siting of housing considers the location, flood potential, the surrounding land uses and the intensity of the proposed use;</p> <p>Residential Zone/Village Zone Code</p> <p>Specific Outcomes</p> <ul style="list-style-type: none"> O Residential buildings achieve an adequate level of privacy for inhabitants and neighbours. S Residential buildings (except dwelling house) are provided with a screen fence on the side and rear boundaries of at least 1.8m in height, which does not impede the free flow of flood waters.
Use Codes	Yes
Details	<p>Intensive Animal Husbandry Code</p> <p>Specific Outcomes and Acceptable Solutions</p> <p>01 Premises for intensive animal husbandry are to:</p> <ul style="list-style-type: none"> d) be free of flooding; <p>S1 Premises developed on land which:</p> <ul style="list-style-type: none"> b) is not subject to flooding at a frequency of greater than 1 in 50 years; c) is otherwise not low-lying;
ROL Code	Yes
Details	<p>6.18 Reconfiguring a Lot Code</p> <p>Specific Outcomes and Probable Solutions</p> <p>Neighbourhood Design</p> <p>05 The new subdivision layout retains significant vegetation and habitat areas incorporating natural and cultural features, minimising soil erosion and avoiding development on flood prone land or land subject to inundation by storm surge.</p> <p>S5 None specified.</p> <p>Rural Subdivision</p> <p>09 Reconfiguring a lot in the Rural Zone incorporates a design that considers safe road networks that allows for potential hazardous situations to be addressed.</p> <p>S9.12 Rural road networks provide alternative routes for use at times of natural hazard, such as flooding and bushfire.</p> <p>Open Space Network</p> <p>019 Public open space provides:</p> <ul style="list-style-type: none"> c) for existing constraints caused by the physical characteristics of the land; <p>S19.2 Acceptable public open space includes:</p> <ul style="list-style-type: none"> c) land subject to inundation in major flood events and storm surge events;
Overlay Codes	Yes
Details	<p>DIVISION 4 – CODES FOR DEVELOPMENT AFFECTED BY AN OVERLAY</p> <p>6.23 Flooding (drainage problem areas) and Coastal Processes code</p> <p>The following provisions comprise the Flooding (drainage problem areas) and Coastal Processes code –</p> <ul style="list-style-type: none"> (a) compliance with the Flooding (drainage problem areas) and Coastal Processes code; (b) overall outcome for development on land affected by Flooding (drainage problem areas) and Coastal Processes as identified on Natural Features Maps 5, 6, 7 & 8; (c) specific outcomes and acceptable solutions for development on land affected by Flooding (drainage problem areas) and Coastal Processes. <p>Compliance with the Flooding (drainage problem areas) and Coastal Processes code</p> <p>For assessable development, compliance with the Flooding (drainage problem areas) and Coastal Processes code is achieved when development is consistent with the specific outcomes of Table 24.</p> <p>Overall outcomes for the Flooding (drainage problem areas) and Coastal Processes code</p> <ol style="list-style-type: none"> 1. The overall outcomes are the purpose of the Flooding (drainage problem areas) and Coastal Processes code. 2. The overall outcomes sought for the Flooding (drainage problem areas) and Coastal Processes code is the following: <ul style="list-style-type: none"> (a) minimise damage, risk and loss to property due to inundation by storm surge, tidal surge or floodwaters upon new development in the Shire;

	<p>(b) restrict development in drainage problem areas and other identified flood prone areas.</p> <p>(c) restrict development encroaching into the flood plain; and</p> <p>(d) provide a clear corridor for the conveyance of floodwaters.</p> <p>Specific outcomes and acceptable solutions for the Flooding (drainage problem areas) and Coastal Processes code</p> <p>The specific outcomes sought from the Flooding (drainage problem areas) and Coastal Processes Code are included in column 1 of Table 24. The acceptable solutions are in column 2 of Table 24.</p> <p>TABLE 24</p> <p>Assessable Development</p> <p>Drainage Problem Areas</p> <p>O1 Development on Drainage problem Areas as indicated on Natural Features Overlay Maps 5,6,7 & 8 have a reasonable flood immunity such that persons and property are not placed at an unreasonable risk of injury or damage caused by flooding or inundation.</p> <p>S1.1 Development is undertaken in accordance with a risk assessment as set out in Planning Scheme Policy 2 – Information Council May Request.</p> <p>S1.2 The minimum floor level of habitable rooms is 500 mm above the highest known flood height.</p> <p>S1.3 Where filling is required to achieve the minimum floor level, alternative forms of construction, other than slab on ground, is provided.</p> <p>S1.4 Development does not include solid fences with the capability of retaining or diverting floodwaters.</p> <p>Flood Protection –Excavating and Filling</p> <p>Where flood levels are not known, development, including development involving excavation or filling of land, is undertaken such that there is no worsening of inundation or flows on the site or flood or inundation levels and flows up-stream and down-stream of the site.</p> <p>S2 None specified.</p> <p>Note: No net worsening of floodwater levels or storage at any location, not otherwise approved, results from the excavation or filling. Excavation or filling is carried out in accordance with an approved hydrology and hydraulics report, prepared by a suitably qualified person that demonstrates that any proposed excavation, filling or structure will not adversely affect flood levels or flows on the site, upstream of the site and downstream of the site, i.e. no net loss in flood storage or increase in flood levels.</p> <p>Coastal Processes</p> <p>O3 Premises are sensitive to the effects of climatic events, such as cyclonic storms and coastal processes such as beach erosion and heightened wave action.</p> <p>S3 Premises are designed and sited to minimise the risk of loss or damage due to climatic events or coastal processes by:</p> <p>a) avoiding permanent construction in areas known to be subject to inundation during storm events and cyclonic storm surges;</p> <p>b) locating development for which a waterfront location is essential to the function of the use, as far landward as possible;</p> <p>Environmental Values</p> <p>Flood conveyance, environmental and community values of rivers, water courses, creeks and streams are maintained by:</p> <p>a) keeping development clear of waterways, creeks or over land flow paths;</p> <p>b) securing flood corridors in tenure that preserves flood carrying capacity and environmental values; and</p> <p>c) providing public access to foreshores for maintenance, removal of debris, protection of riparian vegetation, and public recreation.</p> <p>S4 For development requiring a reconfiguring a lot, each allotment shall have a suitable land area above the surface water level for a 1 in 100 year ARI rainfall or storm surge event, with no development to be carried out within:</p> <p>a) 50m from freshwater wetlands;</p> <p>b) 100m from tidal wetlands;</p> <p>c) 50m from each river high bank; and</p> <p>d) 25m from each stream or creek bank.</p> <p>O5 Development will not increase flooding, or adversely affect the value, safety or use of any land.</p> <p>S5 None specified.</p> <p>Access</p> <p>O6 Ingress and egress from any new premises is safe for all users by having flood immunity appropriate to the intended use.</p> <p>S6 None specified.</p>
PSPs	Yes
Details	<p>Planning Scheme Policy 2 - Information Local Government may Request</p> <p>(d) Drainage problem areas and areas susceptible to inundation</p> <p>If an application involving land included in the Drainage Problem Areas or an area susceptible to inundation by flood waters, storm surge or tidal surge – a risk assessment study carried out by a suitably qualified person that identifies the level of risk of inundation by flood waters and demonstrates that:</p> <p>(i) no deleterious flooding impact will be occasioned upon other properties as a direct consequence of the development; and</p> <p>(ii) the risk of inundation by storm surge or flood waters does not place persons and property at an unreasonable risk of injury or damage.</p>
Other	Yes
Details	<p>Schedule 1 - Dictionary</p> <p>Storm Tide inundation</p> <p>Flooding along coastal areas and the tidal reaches of waterway associated with intense storm events.</p> <p>(Note: Factors that contribute to storm tide flooding include inverted barometer effects, wind set-up, wave set-up and tidal effects, together with any other factors that increase tidal water levels).</p> <p>Wetlands</p> <p>Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6m.</p> <p>To be a wetland the area must have one or more of the following attributes:</p> <p>(b) The substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers.</p> <p>Schedule 4 - Natural Features or Resources</p> <p>Natural Feature of Resources</p> <p>This schedule identifies the Natural Features or Resources in the Shire for the purposes of the Natural Features or Resources Overlay (Division 2).</p> <p>Freshwater Lagoons along the Burdekin – Barratta – Houghton flood plains (e.g. Cromarty Wetlands)</p> <p>- No relevant Overlay Map</p>
Op Works Code	Yes
Details	6.17 Operational Works (Excavation and Filling) code

	<p>Overall outcomes</p> <p>(a) Operational works involving filling and excavation does not impact adversely on the site, the surrounding area in terms of the physical services and the environmental, cultural or social values by providing that filling and excavation works:</p> <p>(iii) are located in areas that do not result in increased flooding and drainage problems on upstream and downstream property;</p> <p>Specific Outcomes and Acceptable Solutions</p> <p>Flooding and Drainage</p> <p>O4 The carrying out of any excavation or filling does not create any intensification of flooding or drainage problems by:</p> <p>a) resulting in ponding on the site or on nearby land;</p> <p>b) adversely affecting the flow of water through an overland flow path; and</p> <p>c) resulting in the loss of safety to users or uses of any other land now or in the future.</p> <p>S4 No filling or excavation is carried out:</p> <p>a) in any waterway or wetland; or</p> <p>b) in any flood prone area or drainage problem area as identified on the Natural Features Overlay Maps 5, 6, 7 and 8, in Schedule 4.</p>
Overlay Code	Yes
Details	<p>(v) Flooding Drainage Problem Area and Coastal Processes code;</p> <p>Table 11 - Assessment categories and relevant assessment criteria for natural hazard overlays - making a Material Change of Use</p> <p>Defined Use - All uses except road</p> <p>Assessment Category-</p> <p>For Drainage Problem Overlay Areas</p> <p>Impact Assessable – if the site area is located within a Drainage Problem Areas identified on Overlay Maps 5,6,7 & 8 in Schedule 4, except for the following uses:</p> <ul style="list-style-type: none"> - Code Assessable where for a Dwelling House - Exempt where for the following uses: - Agriculture - Park <p>Table 12</p> <p>Assessment categories and relevant assessment criteria for Natural Features or Resources Overlay</p> <p>Type of development - Operational work (for excavation and filling) not associated with a material change of use</p> <p>Assessment Category -</p> <p>For Drainage Problem Overlay Area</p> <p>Code assessable if excavating and filling.</p> <p>Type of development - Reconfiguring a Lot</p> <p>Assessment Category -</p> <p>For Drainage Problem Overlay Areas Code Assessable if the site area is located in a Residential, Village or Retail and Commercial Zone in a drainage problem overlay area, identified in Schedule 4.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	<p>Division 2 - Strategic Framework</p> <p>The strategy framework is based on three strategies that are relevant to the whole of the shire and relate to:</p> <p>1. Flooding and Coastal Processes;</p> <p>Strategy 1 – Flooding and Coastal Processes</p> <p>Minimise the detrimental effects of inundation by storm surge, tidal surge or flood waters upon development in the Shire; and</p> <p>Support the dynamic relationship between the river catchments and the coastal processes and minimise the adverse effects of development upon the coastal zone and marine environments.</p> <p>Outcomes:</p> <p>(a) Development (material change of use and reconfiguration of lot) is located to avoid detrimental inundation by floodwaters, stormwater or tidal surge and accommodates the dynamic relationship between the river catchments and the coastal processes.</p> <p>(b) New development within the existing urban environment of the Burdekin is developed to accommodate any potential flooding impacts from floodwaters, stormwater or tidal surge.</p> <p>DEOs</p> <p>(b) Biodiversity and Conservation Areas</p> <p>(v) the protection of biodiversity through the maintenance, rehabilitation and enhancement of ecological processes and habitat values of the coastal areas, wetlands, floodplains, the foothills and ranges and riparian and remnant vegetation, including:</p> <ul style="list-style-type: none"> - Other river and riparian vegetation adjacent to the Burdekin River (including flood prone areas); <p>(vi) the recognition and accommodation of ecological and geomorphological processes including coastal processes, flooding, storm surge, erosion, and sediment movement.</p> <p>(c) Urban Development and Infrastructure</p> <p>(iv) is generally free from the constraining effects of flooding or inundation by floodwaters, tidal surge or other storm events whilst having regards to the reasonable expectations of residents;</p> <p>(v) will minimise the potential impacts of flood, bushfire and landslide on people, property and the environment;</p> <p>Division 4 - Priority Infrastructure Area</p> <p>4. Due to flooding and other constraints it is not envisaged that significant development will occur in the towns and settlements of Giru and Ava Beach over the period of the PIP.</p> <p>Division 5 - Desired Standards of Service</p> <p>7.19 Public parks and land for community facilities desired standard of service</p> <p>Land Quality / Suitability</p> <ul style="list-style-type: none"> - Flood immunity <p>Planning Criteria</p>

	<p>Public parks will be provided to a standard which supports a diverse range of recreational, sporting and health promoting activities to meet community expectations. This includes ensuring land is of an appropriate size, configuration and slope and has an acceptable level of flood immunity.</p> <p>Design Criteria</p> <p>The minimum flood immunity for public parks is identified in Table 5.5.5.</p> <p>Table 33: Minimum desired flood immunity for parks</p>
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LGA	Burke
Planning Scheme	Burke Shire Planning Scheme
Adopted	21/08/2003
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Town Zone Consistent uses and preferred use areas a) located in the preferred use areas identified on zoning maps ZM2, ZM3 or ZM4 as follows— (vi) in the Open space area—uses for flood protection, drainage, conservation or recreation purposes not involving the construction of buildings or structures, other than for access, safety or basic amenity such as fencing, gates, shelters, boardwalks and the like; Specific Outcomes Residential use (c) each new lot or separate part of a lot intended for residential use has adequate useable area to allow for— (i) a dwelling unit and ancillary buildings and structures to be erected in a location that is convenient and, as far as practicable, avoids placing people and works at risk from flooding or other hazard; Rural Specific Outcomes Amenity, public health or safety (b) there are no significant adverse effects on amenity, public health or safety with regard to— (iv) permanent or temporary occupation of, or access to, areas subject to natural hazards; or</p>
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Desired Environmental Outcomes (3) The desired environmental outcomes for the local government area are as follows— (i) the adverse effects from natural and other hazards, including flooding, acid sulfate soils, coastal hazards and aircraft operations, are minimised; Performance Indicator (i) Where development has occurred, has it been located away from areas subject to natural or other hazards, or designed to mitigate adverse impacts? Schedule 6 - Dictionary “Community or recreation” means the use of premises for community or recreation purposes of the following types (n) urban water cycle management infrastructure including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation;</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Cairns
Planning Scheme	Cairns Plan
Adopted	25/02/2009
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme - <ul style="list-style-type: none"> State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire Only).
Mapped Q100 / DFE	Yes
Details	Mapped Overlay Flood Inundation (ARI 100 year);
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>Barron-Smithfield District - Intent The dominant features of the Barron-Smithfield District are the wetlands adjacent to the coastline and waterways; the floodplain of the Barron Delta with its extensive cane fields; It is intended that the Barron Delta should continue to be utilised as productive agricultural land because of the susceptibility to flooding; the value of the good quality agricultural land;</p> <p>Redlynch Valley District - Intent The lower section of the Valley opens out to the floodplains of Freshwater Creek and the Barron River. Areas of the lower section of the Valley located outside the floodplains are intended for conventional residential living.</p> <p>Whie Rock - Edmonton - Intent The District is located between the wetlands of the upper reaches of Trinity Inlet and the hill slopes of the coastal ranges. The wetlands preclude any significant expansion of this area and the form of residential development must take account of the constraints imposed by the Queerah Explosives Magazine. It is acknowledged that the area of land required for the Sub-Regional Business and Industry Centre may be reduced pending further land use needs analysis, and constraints mapping (particularly in relation to flood inundation).</p>
Zone Codes	Yes
Details	<p>Rural 1 Planning Area Purpose/DEO's Land which is susceptible to flooding or drainage problems, including difficulties associated with high ground water tables is protected from urban or other uses.</p> <p>Performance Criteria and Acceptable Solutions P6 Land which is susceptible to flooding or drainage problems, including difficulties associated with high ground water tables are protected from urban or other uses A6.1 No acceptable measures are specified.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>4.8.6 RaL Code Identification of Affected Premises All premises that are reconfigured will be affected by this code. Premises may also be affected by Overlay Maps and respective Codes which will impact upon how the premises will be reconfigured. The relevant overlays and respective Codes must be addressed at the time of application for Reconfiguration, these Overlays/Codes include: Flood Management</p>
Overlay Codes	Yes
Details	<p>Flood Inundation (ARI 100 year) Overlay The 100 ARI year flood inundation overlay identifies the general location of the 100 ARI year flood event (defined flood event) based on the findings of the relevant flood studies and stream management plans. The overlay does not represent exhaustive mapping of the defined flood event in the City and is the best available information at the time of preparation.</p> <p>Purpose Flood Management Code Premises affected by this Code are: <input type="checkbox"/> Premises affected by the 1 in 100 year flood event (the defined flood event); or <input type="checkbox"/> Premises containing or adjoining a waterway or drainage path.</p> <p>The 100 ARI year flood inundation overlay contained in Chapter 3 identifies the general location of the 100 ARI year flood event (defined flood event) based on the findings of the relevant flood studies and stream management plans. The overlay does not represent exhaustive mapping of the defined flood event in the City.</p> <p>Flood studies and stream management plans have been prepared, or are being prepared for identified catchments and these plans may contain further information regarding the location of the defined flood event for these catchments.</p> <p>The purpose of this Code is to ensure that: All new development has flood immunity from the defined flood event; - Development on premises will not cause significant adverse impacts on adjoining or other external premises; and - Development does not adversely impact on ecological functions including water quality or the hydraulic capacity of waterways or other drainage paths; and - New development does not create an adverse impact on existing properties in the Barron Delta and the values of the Delta are protected.</p> <p>Applicability This Code applies to development that is: <input type="checkbox"/> Assessable development; <input type="checkbox"/> On premises:</p>

	<p>a) affected by the 1 in 100 year flood event (defined flood event) as shown on the Overlay Maps; or</p> <p>b) containing or abutting a waterway as shown on the Vegetation Conservation/ Waterways Significance Overlay Maps; and</p> <p>☐ Identified in the table below.</p> <p>APPLICABLE DEVELOPMENT</p> <p>Material Change of Use, except a material change of use within an existing building, House, Home Activity, Home Based Business, Caretakers Residence, Illuminated Tennis Court, Dual Occupancy, Shopping Facilities 0 – 500m2 gfa, Restaurant, Veterinary Facilities, Primary Industry, Extractive Industry, Park, Telecommunications Facility, Railway Activities.</p> <p>Reconfiguring a Lot, resulting in one or more additional lots</p> <p>Operational Works associated with Reconfiguring a Lot</p> <p>Operational Work, involving excavation or filling of more than 50m3 of material not associated with a Material Change of Use.</p> <p>Elements of the Code</p> <p>Part B – For Assessable Development Only</p> <p>P1 An acceptable level of flood immunity must be provided for new development.</p> <p>A1.1 Development satisfies the minimum levels set out in Table 1 below; and</p> <p>P2 An acceptable level of flood immunity must be provided for the access to new development.</p> <p>A2.1 Access to new development is in accordance with the Queensland Urban Drainage Manual.</p> <p>P3 Development on premises does not result in a significant impact on other premises.</p> <p>A3.1 Excavation or filling in premises results in a no worsening on other premises both upstream and downstream of up to 20 millimetres; and</p> <p>A3.2 Development does not occur within the riparian corridor.</p> <p>P4 Drainage paths on premises are maintained free of obstruction to permit unimpeded flow of stormwater.</p> <p>A4.1 Where premises contain a waterway a drainage reserve or easement with a minimum width of 10 metres from the high bank of the waterway is provided; and</p> <p>A4.2 No excavation or filling of drainage paths are permitted.</p> <p>P5 New development does not create an adverse impact on existing properties within Barron Delta as mapped on the Smithfield - Barron District Flood Inundation (ARI 100 year) Overlay Map.</p> <p>A5.1 No acceptable measures are specified.</p> <p>Note: The Planning Scheme Policy, Reports and Information Council May Request, provides a guide to the information which should be provided to demonstrate that the Performance Criteria is achieved.</p> <p>TABLE 1</p> <p>LAND USE</p> <p>Residential Uses</p> <p>Tourist and Short Term</p> <p>Accommodation Uses</p> <p>Community Uses with a residential component</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 100 year A.R.I. Flood</p> <p>FLOOR LEVEL</p> <p>150 mm above 1 in 100 year A.R.I. immunity.</p> <p>LAND USE</p> <p>Retail Uses</p> <p>Business and Commercial Uses</p> <p>Industry and Associated Uses</p> <p>Community Uses involving access by the public</p> <p>Permanent Residential Car parking</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 100 year A.R.I. Flood</p> <p>FLOOR LEVEL</p> <p>Immunity to 1 in 100 year A.R.I. Flood Event</p> <p>LAND USE</p> <p>Temporary Car parking</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 20 year A.R.I. Flood</p> <p>LAND USE</p> <p>Parks and open space</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 5 year A.R.I. Flood</p>
PSPs	No
Details	
Other	Yes

Details	<p>Desired Environmental Outcomes</p> <p>2.2.4 Risk Management</p> <p>The location and design of development minimises the potential risk to the safety and health of the community as a result of:</p> <ul style="list-style-type: none"> - Flooding or Storm Surge <p>Discussion</p> <p>Flooding or Storm Surge</p> <p>Tropical cyclones are a feature of the region's climate. Cairns also occasionally experiences storm surges and flooding. Most of the coastal plain is low-lying and prone to flooding or subject to encroachment by tidal waters. Global warming, and impacts related to this such as rising sea levels, could potentially exacerbate the effects of storm surge and tidal inundation in the foreseeable future.</p> <p>Performance Indicator</p> <p>Where development has occurred, have the threats to the safety and health of the community which may result from flooding, slope instability, bushfire, contaminated land, reduction in air quality, or increase in noise levels been minimised?</p>
Op Works Code	Yes
Details	<p>Excavation and Filling Code</p> <p>The purpose of this Code is to ensure that excavation and filling does not</p> <ul style="list-style-type: none"> - cause flooding and drainage problems. <p>P6 Excavation or filling must not adversely impact on other premises as a result of stormwater drainage flows or flooding.</p> <p>A6.1 Stormwater drainage flows must be taken to a lawful point of discharge; and</p> <p>A6.2 Excavation or filling must not result in:</p> <ol style="list-style-type: none"> a) the ponding of water; or b) an erosive velocity of overland flow, on premises or adjacent premises; and <p>A6.3 All berms must be:</p> <ol style="list-style-type: none"> a) graded towards the upwards slope, and b) contain adequate drainage infrastructure to accommodate the changed drainage flows; and <p>A6.4 Excavation or filling must not result in an increase in the volume of water or concentration of water in:</p> <ol style="list-style-type: none"> a) overland flow paths of the premises and other premises; and b) waterways; and <p>A6.5 Excavation or filling must not occur:</p> <ol style="list-style-type: none"> a) within a waterway; or b) within a riparian corridor; or c) below the 1 in 100 year flood line; and
Overlay Code	Yes
Details	<p>Flood Inundation (ARI 100 year) Overlay</p> <p>The 100 ARI year flood inundation overlay identifies the general location of the 100 ARI year flood event (defined flood event) based on the findings of the relevant flood studies and stream management plans.</p> <p>The overlay does not represent exhaustive mapping of the defined flood event in the City and is the best available information at the time of preparation.</p> <p>Purpose</p> <p>Flood Management Code</p> <p>Premises affected by this Code are:</p> <ul style="list-style-type: none"> ☑ Premises affected by the 1 in 100 year flood event (the defined flood event); or ☑ Premises containing or adjoining a waterway or drainage path. <p>The 100 ARI year flood inundation overlay contained in Chapter 3 identifies the general location of the 100 ARI year flood event (defined flood event) based on the findings of the relevant flood studies and stream management plans. The overlay does not represent exhaustive mapping of the defined flood event in the City.</p> <p>Flood studies and stream management plans have been prepared, or are being prepared for identified catchments and these plans may contain further information regarding the location of the defined flood event for these catchments.</p> <p>The purpose of this Code is to ensure that:</p> <ul style="list-style-type: none"> All new development has flood immunity from the defined flood event; - Development on premises will not cause significant adverse impacts on adjoining or other external premises; and - Development does not adversely impact on ecological functions including water quality or the hydraulic capacity of waterways or other drainage paths; <p>and</p> <ul style="list-style-type: none"> - New development does not create an adverse impact on existing properties in the Barron Delta and the values of the Delta are protected. <p>Applicability</p> <p>This Code applies to development that is:</p> <ul style="list-style-type: none"> ☑ Assessable development; ☑ On premises: <ol style="list-style-type: none"> a) affected by the 1 in 100 year flood event (defined flood event) as shown on the Overlay Maps; or b) containing or abutting a waterway as shown on the Vegetation Conservation/ Waterways Significance Overlay Maps; and <ul style="list-style-type: none"> ☑ Identified in the table below. <p>APPLICABLE DEVELOPMENT</p> <p>Material Change of Use, except a material change of use within an existing building, House, Home Activity, Home Based Business, Caretakers Residence, Illuminated Tennis Court, Dual Occupancy, Shopping Facilities 0 – 500m² gfa, Restaurant, Veterinary Facilities, Primary Industry, Extractive Industry, Park, Telecommunications Facility, Railway Activities.</p> <p>Reconfiguring a Lot, resulting in one or more additional lots</p> <p>Operational Works associated with Reconfiguring a Lot</p> <p>Operational Work, involving excavation or filling of more than 50m³ of material not associated with a Material Change of Use.</p> <p>Elements of the Code</p> <p>Part B – For Assessable Development Only</p> <p>P1 An acceptable level of flood immunity must be provided for new development.</p> <p>A1.1 Development satisfies the minimum levels set out in</p> <p>Table 1 below; and</p> <p>P2 An acceptable level of flood immunity must be</p>

	<p>provided for the access to new development.</p> <p>A2.1 Access to new development is in accordance with the Queensland Urban Drainage Manual.</p> <p>P3 Development on premises does not result in a significant impact on other premises.</p> <p>A3.1 Excavation or filling in premises results in a no worsening on other premises both upstream and downstream of up to 20 millimetres; and</p> <p>A3.2 Development does not occur within the riparian corridor.</p> <p>P4 Drainage paths on premises are maintained free of obstruction to permit unimpeded flow of stormwater.</p> <p>A4.1 Where premises contain a waterway a drainage reserve or easement with a minimum width of 10 metres from the high bank of the waterway is provided; and</p> <p>A4.2 No excavation or filling of drainage paths are permitted.</p> <p>P5 New development does not create an adverse impact on existing properties within Barron Delta as mapped on the Smithfield - Barron District Flood Inundation (ARI 100 year) Overlay Map.</p> <p>A5.1 No acceptable measures are specified.</p> <p>Note: The Planning Scheme Policy, Reports and Information Council May Request, provides a guide to the information which should be provided to demonstrate that the Performance Criteria is achieved.</p> <p>TABLE 1</p> <p>LAND USE</p> <p>Residential Uses</p> <p>Tourist and Short Term</p> <p>Accommodation Uses</p> <p>Community Uses with a residential component</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 100 year A.R.I. Flood</p> <p>FLOOR LEVEL</p> <p>150 mm above 1 in 100 year A.R.I. immunity.</p> <p>LAND USE</p> <p>Retail Uses</p> <p>Business and Commercial Uses</p> <p>Industry and Associated Uses</p> <p>Community Uses involving access by the public</p> <p>Permanent Residential Car parking</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 100 year A.R.I. Flood</p> <p>FLOOR LEVEL</p> <p>Immunity to 1 in 100 year A.R.I. Flood Event</p> <p>LAND USE</p> <p>Temporary Car parking</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 20 year A.R.I. Flood</p> <p>LAND USE</p> <p>Parks and open space</p> <p>FILL LEVEL</p> <p>Immunity to 1 in 5 year A.R.I. Flood</p>
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Cairns
Planning Scheme	Douglas Shire Council
Adopted	21/08/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme - • State Planning Policy 1/03: Mitigating the Adverse Impacts on Flood, Bushfire and Landslide (Bushfire Only).
Mapped Q100 / DFE	No
Details	Investigation Zones (vegetation and flooding) identified on maps)
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	Mossman and Environs Locality Flood Immunity for Residential Development PC e) Residential development does not occur on flood prone land. A17.1 Residential development occurs on land on or above Q100 flood level. A17.2 Development of Lot 3 on RP 720296, Junction Road is undertaken in accordance with the recommendations of a Drainage/Flood Study which outlines the necessary improvements to be undertaken on the Site to make it suitable for residential development and avoid impacts on adjoining land. AND Council may enter into a partnership to investigate/address the drainage and flooding issues which affect the general area.
Zone Codes	Yes
Details	Special Management Area 1 – Foxton Avenue PC g) Land described as Lot 31 on SP 121816 adjacent to Foxton Avenue is developed taking account of the opportunities and constraints and existing topographic and man made features of the whole of the Site, and in particular, that part of the Site identified as Investigation Zone (vegetation and flooding). AC No Acceptable Solution PC h) Development located on the Site is free from flood inundation and does not adversely affect current drainage regimes. A20.1 The extent of future urban development is established following flood investigations of the Site. A20.2 Residential development occurs on land on or above the Q100 flood level. Special Management Area 2 – Residential Growth Area The Residential Growth Area is developed taking account of the opportunities and constraints and existing topographic and manmade features of the whole of the Site, and in particular, that part of the Site identified as Investigation Zone (vegetation and flooding). AC No Acceptable Solution. Community Facilities PC 14 Public open space for active or passive recreation, parkland or community recreation uses is provided and appropriately located to service the needs of the local community and to avoid detrimental impacts on the amenity of residential areas. Public Open Space should be made available free from drainage and flooding issues in accordance with the requirements of Planning Scheme Policy No 9 – Open Space Contributions.
Use Codes	Yes
Details	Aquaculture and Intensive Animal Husbandry Code P4 The topography of the Site is suitable for the intended use. A4.2 The area of the Site containing the Aquaculture or Intensive Animal Husbandry Facility is located above the Q100 flood level.
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	No
Details	
Other	No
Details	
Op Works Code	Yes
Details	Filling and Excavation Code The purpose of this Code is to ensure that filling and excavation do not: cause flooding and drainage problems; Flooding and Drainage PERFORMANCE CRITERIA P3 Filling and excavation does not result in a change to the run off characteristics of a Site which then have a detrimental impact upon the Site or nearby land or adjacent Road reserves. A3.1 Filling and excavation does not result in the ponding of water on a Site or adjacent land or Road reserves. A3.2 Filling and excavation does not result in an increase in the flow of water across a Site or any other land or Road reserves. A3.3 Filling and excavation does not result in an increase in the volume of water or concentration of water in a Watercourse and overland flow paths. A3.4 Filling and excavation complies with the specifications set out in the Planning Scheme Policy No 6 – FNQROC Development Manual.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Carpentaria
Planning Scheme	Shire of Carpentaria Planning Scheme
Adopted	16/06//2006
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	6.2 Dwelling House Code DEOs The Overall Outcomes are the purpose of the Dwelling House Code and are as follows:- c) ensure that Dwelling Houses and Station Homesteads are not subject to hazards or flooding or noise because of the location.
ROL Code	Yes
Details	6.8.3 RaL Code Residential Use Specific Outcomes Each new lot or separate part of a lot has adequate useable area to allow for:- (i) a dwelling unit and ancillary buildings to be erected in a location that is convenient and, as far as practicable, avoids placing people and works at risk from flooding and other hazard; Probable Solutions N/A Commercial/Industrial/Community Infrastructure Use Each new lot or separate part of a lot has adequate useable area to allow for:- (i) buildings and structures to be erected in a location that is convenient and, as far as practicable, avoids placing people and works at risk from flooding or other hazard; Probable Solutions N/A
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 2 - Information Local Government may Request Areas Prone to Natural Hazards (f) if an application involves land subject to a flood hazard - information in accordance with State Planning Policy 1/03: Mitigating the Adverse Impact of Flood, Bushfire and Landslide and, State Planning Policy 1/03 Guideline: Mitigating the Adverse Impact of Flood, Bushfire and Landslide - relating to the degree of severity of the hazard and an assessment of the development proposal in relation to the nature of the hazard(s);
Other	No
Details	
Op Works Code	Yes
Details	6.9.3 Specific Outcomes and Probable Solutions for the General Development Code SO Drainage and Filling The drainage or filling of land to enable its use. PS There is no adverse impact on adjacent premises
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Cassowary Coast
Planning Scheme	Cardwell Planning Scheme
Adopted	28-Jun-07
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme:</p> <ul style="list-style-type: none"> • State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire Only).
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Aquaculture Code</p> <p>Aquaculture developments are designed and developed to take into account:</p> <ul style="list-style-type: none"> • Flooding potential of site; and a) No probable solution prescribed.
ROL Code	Yes
Details	<p>Outcome 6 – Lot Layout</p> <p>Lot sizes and dimensions are to be compatible with the physical characteristics of a site and the projected user requirements having regard to the agricultural quality of the land, availability of vehicular Access, scenic and cultural values, slope, stability and flooding potential.</p> <p>a) Lot areas will comply with the minimum area requirements as specified in the Zones or Precinct Codes. In some circumstances the area and/or Frontage of a lot may need to be greater than the minimum identified to take account of the site constraints including vegetation, topographical conditions and any necessary buffering required by a Zone or Precinct Code.</p>
Overlay Codes	Yes
Details	<p>8.5 WATERCOURSE AND ESPLANADE/FORESHORE OVERLAY</p> <p>8.5.1 Purpose Statement</p> <p>The Outcome sought from the application of the watercourse and Esplanade/Foreshore Overlay is the conservation of environmental values of these environmental features by ensuring the developments are appropriately Setback in addition to reducing the vulnerability of people and property to flooding and natural riparian processes.</p> <p>Proposed developments are appropriately set back from</p> <p>Watercourses and wetlands to ensure that they do not result in detrimental impacts on natural coastal/riverine processes, pose no risk to land stability on the site or adjoining properties if erosion occurs and ensures that environmental values of the Watercourse or wetland are retained or enhanced particularly by the creation of movement corridors.</p> <p>a) Assessable development is not located within:-</p> <ul style="list-style-type: none"> • 25 metres from the top of the bank of a major Watercourse as identified on Map 21. • 10 metres from the top of the bank from all other Watercourses as identified on Map 21. • 25 metres from the outermost extent of a wetland, esplanade/foreshore as identified on Map 21.
PSPs	No
Details	
Other	Yes
Details	<p>2.2 Desired Environmental Outcomes</p> <p>Outlined below are the Desired Environmental Outcomes that the Planning Scheme seeks to achieve:</p> <p>2.2.1 A settlement pattern that avoids land use conflicts and provides for a coordinated sequencing of development and infrastructure by the consolidation and logical expansion of development within the existing Urban Areas of Tully, Cardwell, Mission Beach and Tully and Hull Heads.</p> <p>2.2.2 Potential adverse impacts on the public infrastructure from natural disasters and other hazards are minimized.</p>
Op Works Code	Yes
Details	<p>Engineering Works Code</p> <p>Outcome 5 – Stormwater Drainage</p> <p>To ensure that developments incorporate appropriate stormwater infrastructure and design principles and ensure that stormwater is collected and conveyed from a catchment to its receiving waters with minimal nuisance, danger or damage and at a development and environmental cost which is acceptable to the community as a whole.</p> <p>Limit flooding of public and private property, both within the catchment and downstream, to acceptable levels.</p> <p>Provide convenience and safety for pedestrians and traffic in areas of frequent stormwater flows by controlling those flows within prescribed velocity/depth limits.</p> <p>a) Stormwater drainage systems are to be designed and developed in accordance with the Regional Development Manual contained in Part 9 (Policies). In particular design guideline D4 and specification S4 are to be satisfied.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Cassowary Coast
Planning Scheme	Johnstone Planning Scheme
Adopted	20-Jun-05
Flood Amendments	No
SPP Compliance	Yes
Details	
Mapped Q100 / DFE	Yes
Details	<p>Maps</p> <p>Map10a - 20 year ARI Peak Flood Level and Extent</p> <p>Map 10b - 20 year ARI Peak Flood Level and Extent</p> <p>Map 10c - 50 Year ARI Peak Flood Level and Extent</p> <p>Map 10d - 50 year ARI Peak Flood Level and Extent</p> <p>Map 10e - 100 Year ARI Peak Flood Level and Extent</p> <p>Map 10f - 100 Year ARI Peak Flood Level and Extent</p>
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>4.6.10 Innisfail Recreation Precinct</p> <p>The Innisfail Recreational Precinct are the Recreation Precinct and the Recreational/Flood Detention Basin Precinct identified on the Innisfail Plan (Map2a-b). The Recreational/Flood Detention Basin Precinct includes low lying land which performs the function of a flood detention basin.</p> <p>The purpose of the Innisfail recreation precinct is to:</p> <p>3. Ensure the integrity of the flood detention basin identified on Map 2 is maintained;</p> <p>4.6.12 Innisfail Recreational Precinct Codes</p> <p>Protecting the Flood Retention Basin</p> <p>S4. Development on land identified on Map 2 as Recreational/Flood Detention Basin Precinct does not compromise the effectiveness of that basin.</p> <p>P7. No probably solution except that:</p> <p>Development on land identified on Map 2 is for conservation and recreational purposes only.</p>
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Division 4 - Hazards shire wide measure</p> <p>The Hazard shire wide measure is applicable to development in the entire shire and adds additional requirements for select areas. The measure covers: flooding, storm surge and coastal and riverine erosion.</p> <p>5.4.2 Hazards Code</p> <p>The purpose of this code is to minimise the risk to life and property caused by hazards (flooding, storm surge and coastal and riverine erosion) through preventing unsuitable development in areas of potential natural hazards, whilst ensuring that the environment is allowed to function in its natural state, without detrimental impact from development.</p> <p>Flooding</p> <p>The purpose of this section of the code is to seek a level of flood immunity and to ensure that development will not contribute to the worsening of flood conditions on site, or elsewhere in the catchment.</p> <p>S1. Development for a single residential purpose provides the greatest level of flood immunity practical.</p> <p>P1. The minimum habitable room floor level for a single residential is 300mm above the 100 year ARI flood level.</p> <p>P2 On allotments created prior to 1997 where achievement of P1 above is not practical the minimum habitable room floor level for a single residential is 300mm above the 50 year ARI flood level.</p> <p>S2. Development involving a reconfiguration of a lot for residential, commercial or industrial purpose is to have sufficient height to prevent the floor levels of buildings from being exposed to the risk of inundation in a 100 year ARI flood.</p> <p>P3. Each allotment has the entire area of the lot or a minimum area of 1,000m² (minimum dimension of 25 metres) whichever is the lesser, of the land that is no more than 300mm above the 100 year ARI flood level.</p> <p>S4. Development for Commercial and Industrial Uses provides for the greatest level of flood immunity practical.</p> <p>P5. The minimum floor level for all Commercial and Industrial uses on allotments within the Central Business and Business Frame Precincts of the Innisfail Zone (identified on Map 2) is 300mm above the 20 year ARI flood level.</p> <p>P6 The minimum ground level for a car park on allotments within the Central Business and Business Frame Precincts of the Innisfail Zone (identified on Map 2) is 300mm above the 10 year ARI flood level.</p> <p>P7. The minimum floor level for all Commercial and Industrial Uses in all other locations is 300mm above the 50 year ARI flood level.</p> <p>S5. Aquaculture, heavy industry and intensive agriculture are not exposed to a 100 year ARI flood.</p> <p>P8. The minimum ground level for aquaculture, heavy industry and intensive agriculture is 300mm above the 100 year ARI flood level.</p> <p>S6. Any development involving the excavation or filling of land is carried out such that no increase in flood water levels or flows result.</p> <p>P9 No acceptable solution prescribed.</p> <p>S7 New roads are designed to be drivable in a 50 year ARI flood.</p> <p>P10 Roads are constructed so that the surface is no greater than 300mm lower than the 50 year ARI flood level.</p> <p>P11. The rate of flow is less than 0.5 metres/second.</p> <p>Storm Surge</p> <p>The purpose of this section of the code is to reduce the loss of life and property through the appropriate development of the coastal area.</p> <p>S1. Development does not compromise the safety of residents or property.</p> <p>P1 There is no building work other than for a Class 10 building on land below 3.5 metres AHD.</p> <p>P2 The minimum floor level of all building other than Class 10 building is 300 millimetres above the 3.5 metres AHD.</p> <p>S2 Development involving the reconfiguration of a lot below 3.5 metres AHD provides the protection from storm surge.</p> <p>P3. Each allotment has the entire area of the lot or a minimum area of 1,000m² (minimum width of 25 metres) whichever is the lesser of the land</p>

	<p>that is at or above 3.5 metres AHD.</p> <p>Coastal and Riverine Erosion</p> <p>The purpose of this section of the code is to ensure that development on erosion prone land is appropriate and secure with minimal risk to life, property or the environment.</p> <p>S1 Development is located outside the erosion prone land except where development would not result in detrimental impacts to natural coastal/riverine processes and poses no risk to land stability in the site or adjoining properties if erosion occurs.</p> <p>P1. No development occurs within 100 metres of the high water mark on rural and conservation zoned land.</p> <p>P2. Development is not located within:</p> <p>a) 25 metres of the high bank of a natural watercourse. (Identified on Map 10).</p> <p>b) 50 metres of the high bank of a major watercourse (identified on Map 10) or wetland (identified on Map 7).</p> <p>Division 3 - Natural area shire wide measure</p> <p>5.3.2 Natural Area Code</p> <p>S5. Riparian and coastal corridors along watercourses, wetlands and the coast are maintained, protected and/or enhanced.</p> <p>P8. The maintenance of existing habitat corridor of:</p> <p>a) 25 metres width from the high bank of a watercourse;</p> <p>b) 50 metres from the high bank of a major watercourse or wetland;</p> <p>c) 100 metres width from the high water mark along the coast.</p>
PSPs	Yes
Details	<p>Planning Scheme Policy 6 - Trunk infrastructure contributions and external works</p> <p>4. Stormwater infrastructure contributions (Innisfail Estate only)</p> <p>a) objective of policy</p> <p>Council's objective for stormwater infrastructure is to:</p> <ul style="list-style-type: none"> - collect and convey stormwater from the catchment to the Johnstone River; - limit flooding of public and private property within the catchment and downstream. <p>b) Desired standard of service</p> <p>The proposed stormwater drainage infrastructure is largely designed for the 50 year ARI design event however some elements are sized for alternative ARIs.</p>
Other	Yes
Details	<p>Schedule 1 - Definition</p> <p>1.1.2 Defined administrative terms</p> <p>"development area" the area of the lot that contains the proposed lots, open space/parks, roads, and infrastructure. It does not include land below the 2 year ARI flood event unless that land is included in the proposed lots.</p> <p>"watercourse" as defined by the Water Act 2000 except "major watercourse" as identified on Map 7 a to e.</p>
Op Works Code	Yes
Details	<p>6.3.2 Filling and excavation code</p> <p>Flooding and drainage</p> <p>S2 Filling and excavation does not result in a change to the run off characteristics of a site that will have detrimental affect upon the site, surrounding land, ground water and/or infrastructure.</p> <p>P4. Filling and excavation does not result in the ponding of water on the site, surrounding land and/or infrastructure.</p> <p>P5. Filling and excavation does not result in an increase in the flow of water across the site, surrounding land and/or infrastructure.</p> <p>P6 Filling and excavation does not result in an increase in the volume of water or concentration of water in a watercourse and overland flow paths.</p>
Overlay Code	Yes
Details	<p>Division 4 - Hazards shire wide measure</p> <p>The Hazard shire wide measure is applicable to development in the entire shire and adds additional requirements for select areas. The measure covers: flooding, storm surge and coastal and riverine erosion.</p> <p>5.4.2 Hazards Code</p> <p>The purpose of this code is to minimise the risk to life and property caused by hazards (flooding, storm surge and coastal and riverine erosion) through preventing unsuitable development in areas of potential natural hazards, whilst ensuring that the environment is allowed to function in its natural state, without detrimental impact from development.</p> <p>Flooding</p> <p>The purpose of this section of the code is to seek a level of flood immunity and to ensure that development will not contribute to the worsening of flood conditions on site, or elsewhere in the catchment.</p> <p>S1. Development for a single residential purpose provides the greatest level of flood immunity practical.</p> <p>P1. The minimum habitable room floor level for a single residential is 300mm above the 100 year ARI flood level.</p> <p>P2 On allotments created prior to 1997 where achievement of P1 above is not practical the minimum habitable room floor level for a single residential is 300mm above the 50 year ARI flood level.</p> <p>S2. Development involving a reconfiguration of a lot for residential, commercial or industrial purpose is to have sufficient height to prevent the floor levels of buildings from being exposed to the risk of inundation in a 100 year ARI flood.</p> <p>P3. Each allotment has the entire area of the lot or a minimum area of 1,000m² (minimum dimension of 25 metres) whichever is the lesser, of the land that is no more than 300mm above the 100 year ARI flood level.</p> <p>S4. Development for Commercial and Industrial Uses provides for the greatest level of flood immunity practical.</p> <p>P5. The minimum floor level for all Commercial and Industrial uses on allotments within the Central Business and Business Frame Precincts of the Innisfail Zone (identified on Map 2) is 300mm above the 20 year ARI flood level.</p> <p>P6 The minimum ground level for a car park on allotments within the Central Business and Business Frame Precincts of the Innisfail Zone (identified on Map 2) is 300mm above the 10 year ARI flood level.</p> <p>P7. The minimum floor level for all Commercial and Industrial Uses in all other locations is 300mm above the 50 year ARI flood level.</p> <p>S5. Aquaculture, heavy industry and intensive agriculture are not exposed to a 100 year ARI flood.</p> <p>P8. The minimum ground level for aquaculture, heavy industry and intensive agriculture is 300mm above the 100 year ARI flood level.</p> <p>S6. Any development involving the excavation or filling of land is carried out such that no increases in flood water levels or flows result.</p> <p>P9 No acceptable solution prescribed.</p> <p>S7 New roads are designed to be drivable in a 50 year ARI flood.</p> <p>P10 Roads are constructed so that the surface is no greater than 300mm lower than the 50 year ARI flood level.</p> <p>P11. The rate of flow is less than 0.5 metres/second.</p>

	<p>Storm Surge</p> <p>The purpose of this section of the code is to reduce the loss of life and property through the appropriate development of the coastal area.</p> <p>S1. Development does not compromise the safety of residents or property.</p> <p>P1 There is no building work other than for a Class 10 building on land below 3.5 metres AHD.</p> <p>P2 The minimum floor level of all building other than Class 10 building is 300 millimetres above the 3.5 metres AHD.</p> <p>S2 Development involving the reconfiguration of a lot below 3.5 metres AHD provides the protection from storm surge.</p> <p>P3. Each allotment has the entire area of the lot or a minimum area of 1,000m² (minimum width of 25 metres) whichever is the lesser of the land that is at or above 3.5 metres AHD.</p> <p>Coastal and Riverine Erosion</p> <p>The purpose of this section of the code is to ensure that development on erosion prone land is appropriate and secure with minimal risk to life, property or the environment.</p> <p>S1 Development is located outside the erosion prone land except where development would not result in detrimental impacts to natural coastal/riverine processes and poses no risk to land stability in the site or adjoining properties if erosion occurs.</p> <p>P1. No development occurs within 100 metres of the high water mark on rural and conservation zoned land.</p> <p>P2. Development is not located within:</p> <ul style="list-style-type: none"> a) 25 metres of the high bank of a natural watercourse. (identified on Map 10). b) 50 metres of the high bank of a major watercourse (identified on Map 10) or wetland (identified on Map 7). <p>Division 3 - Natural area shire wide measure</p> <p>5.3.2 Natural Area Code</p> <p>S5. Riparian and coastal corridors along watercourses, wetlands and the coast are maintained, protected and/or enhanced.</p> <p>P8. The maintenance of existing habitat corridor of:</p> <ul style="list-style-type: none"> a) 25 metres width from the high bank of a watercourse; b) 50 metres from the high bank of a major watercourse or wetland; c) 100 metres width from the high water mark along the coast.
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Central Highlands
Planning Scheme	Bauhina Shire
Adopted	23/02/2007
Flood Amendments	No
SPP Compliance	No
Details	Not Specified. No Provisions.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Town – Rural Residential Precinct</p> <p>Overall Outcome (vi) The land in the Precinct is afforded an urban standard of road access and a reasonable level of flood immunity ;</p> <p>Town Zone Code</p> <p>S1 Land uses and works are located and designed so as not to have significant negative impacts on natural values of the environment including:</p> <ol style="list-style-type: none"> 1. Natural fauna and flora habitats; 2. Water quality, watercourse integrity and, ground water resources, 3. Soil and land resources; and 4. Natural landscape features which: <ul style="list-style-type: none"> (a) contribute to the diversity of recreation settings; and (b) provide linkages between open space areas or corridors for path networks. <p>P/A1.1 All uses and works are setback a minimum of 50m from any watercourse, as measured to the top of bank.</p>
Use Codes	Yes
Details	<p>Animals Code</p> <p>S6 Intensive animal husbandry uses are located, designed and managed such that: 4. There is no significant adverse impact on the quality of any surface water or groundwater resource due to contamination;</p> <p>P6.1 In partial satisfaction of S6 intensive animal husbandry developments shall provide at least a flood immunity of 1% AEP.</p> <p>Development Design Code</p> <p>S3 No ‘worsening’ of flood occurs as a result of the filling or excavation activity.</p> <p>P/A3.3 The excavation of filling does not concentrate or divert stormwater onto adjoining land to a degree which is worse than that which existed prior to the works.</p> <p>P/A3.4 The excavation or filling does not cause or allow ponding or water on the site or adjoining land.</p> <p>S5 Filling and excavating does not adversely affect existing infrastructure.</p> <p>P/A5.4 The excavation or filling does not result in the inundation of land containing electricity works.</p> <p>S17 Stormwater drainage (including inter allotment drainage) is designed and constructed to:</p> <ol style="list-style-type: none"> 1. Provide adequate capacity for existing and anticipated development and flows; and (a) To ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits; and (b) To provide convenience and safety for pedestrians and traffic in frequent stormwater flows by controlling those flows within prescribed limits; and (c) To retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment; and 2. Comply with Australian best practice standards, methodology and design; and 3. For new development, provide a stormwater drainage system in accordance with the “major/minor” system concept in accordance with Queensland Urban Design Manual (QUDM); that is, the “major” system shall provide safe, well-defined overland flow paths for rare and extreme storm runoff events while the “minor” system shall be capable of carrying and controlling flows from frequent runoff events; and 4. For redevelopment, –, ensure that the estimated peak flow rate from the site for the design average occurrence interval (ARI) of the receiving minor system is no greater than that which would be expected from the existing development and is not concentrated in such a way as to cause nuisance to downstream properties, where the proposed development replaces an existing development. <p>P17.1 The design of stormwater drainage shall be in accordance with relevant parts of the Capricorn Municipal Development Manual adopted by Council by resolution and as modified by Division 8: Schedule E Stormwater Drainage Recurrence intervals.</p>
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>Schedule Division 13: Schedule A—Reconfiguring a Lot: Assessment Report Requirements</p> <ol style="list-style-type: none"> 1. A scaled plan of the site indicating the location of: <ul style="list-style-type: none"> (a) Proposed lot boundaries and any proposed staging of lots; (b) Site access and any proposed roads within the site; (c) Proposed building envelopes; (d) Proposed open space provision for recreation and sport; and (e) Topographical and natural features such as watercourses, ridgelines, and the extent of existing vegetation, and extent of known local flooding. <p>For development in the Town Investigation Precinct Area: A Master Plan will be required as part of any Reconfiguration of Lot application in the Town – Investigation Precinct Area. The Master Plan is to address the above matters, as well as addressing the following potentially relevant matters:</p> <ol style="list-style-type: none"> 6. Natural resource management features, such as the location and conservation status of remnant vegetation, wildlife corridors, watercourses and drainage paths and proposals for their protection;

	8. Areas subject to bushfire, landslip and inundation risk and proposed mitigation measures.
Other	No
Details	
Op Works Code	Yes
Details	Development Designs Code - Filling and Excavation S3 No ‘worsening’ of flood occurs as a result of the filling or excavation activity. P/A3.3 The excavation of filling does not concentrate or divert stormwater onto adjoining land to a degree which is worse than that which existed prior to the works. P/A3.4 The excavation or filling does not cause or allow ponding or water on the site or adjoining land.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	Division 8: Schedule E—Stormwater Drainage Recurrence Intervals Requires Culverts under roads should be designed to accept the full flow for the minor system ARI shown. In addition the designer must ensure that the 100 year ARI backwater does not enter properties upstream. If upstream properties are at a relatively low elevation it may be necessary to install culverts of capacity greater than that for the minor system ARI design storm to ensure flooding of upstream properties does not occur. In addition the downstream face of the causeway embankment may need protection where overtopping is likely to occur.

LGA	Central Highlands
Planning Scheme	Duaringa
Adopted	1/08/2007
Flood Amendments	No
SPP Compliance	No
Details	Not Specified. No Provisions.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Town Zone Purpose: e) Development is located and designed in ways that minimise risks from flood damage and bush fire;</p> <p>Village Zone Purpose: i) Exposure of people and property to risks from natural hazards in minimised.</p> <p>Town Zone Code / Village Zone Code S1 Land uses and works are located and designed so as not to have significant negative impacts on natural values of the environment including: 1. Natural fauna and flora habitats; 2. Water quality, watercourse integrity and, ground water resources, and 3. Soil and land resources. P/A1.1 All uses and works are setback a minimum of 50m from any watercourse, as measured to the top of bank S4 Land uses and works are located, and include mitigation measures that: 8. for development in proximity to watercourses and water bodies, are outlined in the SEQWATER Development Assessment Guidelines, prepared as a collaboration of State Government Departments;</p>
Use Codes	Yes
Details	<p>Development Standards Code S12 Stormwater drainage is designed and constructed to provide adequate capacity for existing and anticipated development and flows, and to protect against negative environmental impacts, particularly those affecting surface and ground water quality. P/A12.1 No solution specified. S3 Filling and excavating does not adversely affect the amenity of adjoining or surrounding land. P/A 3.5 The excavation or filling does not result in water ponding (i.e. sites should be free draining) S27 The sewerage system in the town of Blackwater efficiently transports sewage from domestic, commercial and industrial properties using gravity flow pipes and, where this is uneconomic, by pumping to the treatment plant; and in planning for such a system the following elements of the system are taken into consideration: 1. Gravity sewers including junctions to property service drains; 2. Access chambers and other structures 3. Rising Mains; 4. Pumping Stations. P27.10 Bolt down covers are provided in areas; 1. Below a Q10 flood event; 2. In parks and reserves; and 3. In all trunk sewers greater than 375mm in diameter. S28 Stormwater drainage is designed and constructed to: 1. Provide adequate capacity for existing and anticipated development and flows; and (a) To ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits; and (b) To provide convenience and safety for pedestrians and traffic in frequent stormwater flows by controlling those flows within prescribed limits; and (c) To retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment; Major Structures All Cross Road Drainage structures are designed for the ARI storm event appropriate for the class of road in accordance with Table D5.1 (QUDM Table 5.06.1). P28 Various requirements in relation to conveyance of stormwater with no worsening effect. i.e. Major Structures P28.20 For bridges a minimum clearance of 0.3m between the design ARI flood level and the underside of any major structure superstructure is provided to allow for passage of debris without blockage. P28.21 All bridges are designed for debris loading for a maximum probability flood event.</p>
ROL Code	Yes
Details	<p>Reconfiguring of a Lot Code S1 The configuration of lots: Provide for a high level of residential amenity, access to services and facilities, and safety from risk of natural hazards such as flooding, land slip and bushfire. (No AS) Note: A means to demonstrate compliance with S1 is via a Reconfiguration of a Lot Assessment Report, as prepared in accordance with Schedule A: Preparation of a Reconfiguration of a Lot Assessment Report.</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Schedule J - Stormwater Drainage Recurrence Intervals Average Recurrence Intervals (ARI) for Design</p>

Op Works Code	Yes
Details	Development Standards Code S12 Stormwater drainage is designed and constructed to provide adequate capacity for existing and anticipated development and flows, and to protect against negative environmental impacts, particularly those affecting surface and ground water quality. P/A12.1 No solution specified. S3 Filling and excavating does not adversely affect the amenity of adjoining or surrounding land. P/A 3.5 The excavation or filling does not result in water ponding (i.e. sites should be free draining)
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Central Highlands
Planning Scheme	Emerald
Adopted	22/01/2007
Flood Amendments	No
SPP Compliance	No
Details	Approval to adopt this planning scheme is conditional upon the continued operation and effect of: 2. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide – Flood component.
Mapped Q100 / DFE	No
Details	“Flood Level Plan for determination of Floor Levels” for the Town of Emerald in particular, the floor height of buildings will be governed by this plan. Gemfields Zone - Policeman Creek Flooding Mapped
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone Code / Open Space Zone / Town Zone Code / Village Zone Code / Gemfield Zone Code / Special Industrial Zone</p> <p>S1 Land uses and works are located and designed so as not to have significant negative impacts on natural values of the environment including:</p> <ol style="list-style-type: none"> 1. Natural fauna and flora habitats; 2. Water quality, watercourse integrity and, ground water resources, 3. Soil and land resources. <p>P/A1.1 All uses and works are setback a minimum of 50m from any watercourse, as measured to the top of bank.</p> <p>P1.2 Despite the provisions of P/A1.1 above, the setbacks for development, in particular the clearing of any vegetation, to riparian corridors are:</p> <ol style="list-style-type: none"> 1. 50m widths along each side of waterways of stream order 1 and 2, 2. 100m widths along each side of creeks of stream orders 3 & 4, and 3. 200m widths along each side of rivers (stream orders 5 & 6). <p>S5 Land uses and works are located, and include mitigation measures that:</p> <p>8. For development in proximity to watercourses and waterbodies, are outlined in the SEQWATER Development Assessment Guidelines, prepared as a collaboration of State Government Departments;</p> <p>Town Zone Code:</p> <p>Purpose: (l) The overall outcomes sought for the Town Investigation Precinct Area B– are:</p> <p>(i) Land is predominately used for rural residential uses and to a lesser extent residential uses subject to an Area B Master Plan, submitted with any Development Application, which addresses protection from flooding, appropriate environmental, and amenity outcomes as well as efficient servicing and access.</p> <p>(n) The overall outcomes sought for the Town Investigation Precinct Area D – are:</p> <p>(ii) Any development application for residential development in this investigation Area D shall be on the basis of consistency with a Master Plan for Area D. This Master Plan, submitted with any development application will address protection from flooding, remnant vegetation, appropriate environmental and amenity outcomes as well as efficient servicing and access.</p> <p>Gemfield Zone Code:</p> <p>Purpose: The purpose of the Gemfields Zone Code is to achieve the following overall outcomes:</p> <p>11. Development within the mapped Policeman’s Creek area as shown on Map 5a is not likely to cause further erosion or to unduly impede the flow of water in that creek. Development is to be safely located, constructed and maintained in respect to potential floods.</p> <p>A. The overall outcomes sought for the Gemfields – Core Area are:</p> <p>6. All new uses and newly created lots in the Policeman’s Creek mapped area are to be able to demonstrate that buildings are safely located in respect to potential inundation.</p> <p>B. The overall outcomes sought for the Gemfields – Balance Area are:</p> <p>5. All new uses and newly created lots in the Policeman’s Creek mapped area are to be able to demonstrate that buildings are safely located in respect to potential inundation.</p> <ol style="list-style-type: none"> 1. Natural fauna and flora habitats; 2. Water quality, watercourse integrity and, ground water resources, 3. Soil and land resources.
Use Codes	Yes
Details	<p>Development Standards Code:</p> <p>S12 Stormwater drainage is designed and constructed to provide adequate capacity for existing and anticipated development and flows, and to protect against negative environmental impacts, particularly surface and ground water quality.</p> <p>p12.1 Stormwater drainage is to meet the requirement of the Queensland Urban Drainage MANUAL EXCEPT where modified by Division 8.</p> <p>House Code:</p> <p>5. Are located so as not to lead to unacceptable inundation, flood and environmental risks (No AS)</p>
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code: (Rural Living Area / Open Space Zone / Town Zone / Village Zone / Gemfields Zone / Special Industrial Zone)</p> <p>S@ Lots are of an appropriate size and configuration to sustain the intended overall outcomes for the Rural Living Area, to ensure necessary separation of uses, and to maintain rural character; whilst having regard for whether the proposed lot boundaries are derived from one or more of the following:</p> <ol style="list-style-type: none"> 3. The natural landforms and topography of the land including soil types, slopes, flooding and drainage characteristics and the location of existing vegetation; 4. The existence of any natural topographical features such as watercourses and gullies which traverse or constrain the land;
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes

Details	<p>Desired Environmental Outcomes:</p> <p>(h) The Shire's water resources, including aquifers, watercourses, springs and floodplains and particularly the Nogoa River system are managed sustainably and development is appropriately conditioned to ensure water quality is maintained and enhanced wherever possible and is protected for its importance for watercourse integrity.</p> <p>Schedule D - Stormwater Drainage Recurrence Intervals</p> <p>Average Recurrence Intervals (ARI) for Design</p> <p>Division 13: Schedule A—Reconfiguring a Lot: Assessment Report Requirements:</p> <p>The site and proposal:</p> <p>1. A scaled plan of the site indicating the location of:</p> <p>(e) Topographical and natural features such as watercourses, ridgelines, and the extent of existing vegetation, and extent of known local flooding.</p>
Op Works Code	Yes
Details	<p>Development Design Code</p> <p>S3 Filling and excavating is structurally stable for the intended purpose and does not adversely affect the amenity of adjoining or surrounding land. No 'worsening' of flood occurs as a result of the filling or excavation activity.</p> <p>P/A3.3 The excavation of filling does not concentrate or divert stormwater onto adjoining land to a degree which is worse than that which existed prior to the works,</p> <p>P/A3.4 The excavation or filling does not cause or allow ponding or water on the site or adjoining land.</p> <p>S4 On-site and off-site erosion and sedimentation is minimised, whether drainage is via formed drainage systems or runoff from the site.</p> <p>P/A4.4 No 'worsening' of flood occurs as a result of the filling or excavation activity.</p> <p>S18 Stormwater drainage (including interallotment drainage) is designed and constructed to:</p> <p>1. Provide adequate capacity for existing and anticipated development and flows; and</p> <p>(a) To ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits; and .</p> <p>(b) To provide convenience and safety for pedestrians and traffic in frequent stormwater flows by controlling those flows within prescribed limits; and</p> <p>(c) To retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment;</p> <p>2. Comply with Australian best practice standards, methodology and design; and</p> <p>3. For new development, provide a stormwater drainage system in accordance with the "major/minor" system concept in accordance with Queensland Urban Design Manual (QUDM); that is, the "major" system shall provide safe, well-defined overland flow paths for rare and extreme storm runoff events while the "minor" system shall be capable of carrying and controlling flows from frequent runoff events; and</p> <p>4. For redevelopment, –, ensure that the estimated peak flow rate from the site for the design average occurrence interval (ARI) of the receiving minor system is no greater than that which would be expected from the existing development and is not concentrated in such a way as to cause nuisance to downstream properties, where the proposed development replaces an existing development.</p> <p>P18.1 The design of stormwater drainage shall be in accordance with relevant parts of the Capricorn Municipal Development Manual adopted by Council by resolution and as modified by Division 8: Schedule D Stormwater Drainage Recurrence intervals.</p> <p>P18.2 Development applications are to comply with the "Flood Level Plan for determination of Floor Levels" for the Town of Emerald in particular, the floor height of buildings will be governed by this plan.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Central Highlands
Planning Scheme	Peak Downs
Adopted	23/11/2005
Flood Amendments	No
SPP Compliance	No
Details	Not Specified.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone Code / Open Space Code / Town Centre Code / S1 Land uses and works are located and designed so as not to have significant negative impacts on natural values of the environment including: 1. Natural fauna and flora habitats; 2. Water quality, watercourse integrity and, ground water resources, 3. Soil and land resources. P/A1.1 All uses and works are setback a minimum of 50m from any watercourse, as measured to the top of bank. P1.2 Despite the provisions of P/A1.1 above, the setbacks for development, in particular the clearing of any vegetation, to riparian corridors are consistent with the State vegetation management policy, and in particular the State code for clearing of vegetation on freehold land, which are: 1. 50m widths along each side of waterways of stream order 1 and 2, 2. 100m widths along each side of creeks of stream orders 3 & 4, and 3. 200m widths along each side of rivers (stream orders 5 & 6). S5 Land uses and works are located, and include mitigation measures that: 8. for development in proximity to watercourses and waterbodies, are outlined in the SEQWATER Development Assessment Guidelines, prepared as a collaboration of State Government Departments; Town Centre Code Purpose: (b) The overall outcomes sought for the Town – Rural Residential Precinct are: (vi) The land in the Precinct is afforded an urban standard of road access and a reasonable level of flood immunity ; Land uses and works are located and designed so as not to have significant negative impacts on natural values of the environment including: 1. Natural fauna and flora habitats; 2. Water quality, watercourse integrity and, ground water resources, 3. Soil and land resources; and 4. Natural landscape features which: (a) contribute to the diversity of recreation settings; and (b) provide linkages between open space areas or corridors for path networks. P/A1.1 All uses and works are setback a minimum of 50m from any watercourse, as measured to the top of bank. P1.2 Despite the provisions of P/A1.1 above, the setbacks for development, in particular the clearing of any vegetation, to riparian corridors are consistent with the State vegetation management policy, and in particular the State Code for clearing of vegetation on freehold land, which are: 1. 50m widths along each side of waterways of stream order 1 and 2; 2. 100m widths along each side of creeks of stream orders 3 and 4; and 3. 200m widths along each side of rivers of stream orders 5 and 6. S3 Land uses and works are located, and include mitigation measures that: 8. for development in proximity to watercourses and waterbodies, are outlined in the SEQWATER Development Assessment Guidelines, prepared as a collaboration of State Government Departments;</p>
Use Codes	Yes
Details	<p>Development Standards Code S12 Stormwater drainage is designed and constructed to provide adequate capacity for existing and anticipated development and flows, and to protect against negative environmental impacts, particularly surface and ground water quality. P/A12.1 No solutions specified. Development Design Code S23 Road pavement and surfacing materials, types, layer thicknesses and configurations are appropriate to ensure that the pavement performs adequately and requires minimal maintenance under the anticipated traffic loading for the design life adopted. The following factors relating to moisture environment are considered in determining the design subgrade strength/stiffness and in the choice of pavement and surfacing materials: 1. Rainfall/evaporation pattern; 2. Permeability of wearing surface; 3. Depth of water table; 4. Relative permeability of pavement layers; 5. Whether shoulders are sealed or not; 6. Pavement type (boxed or full width); and 7. Subject to flooding (eg. Causeways and Floodways). S27 The sewerage system in the towns of Capella and Tieri efficiently transports sewage from domestic, commercial and industrial properties using gravity flow pipes P27.10 Bolt down covers are provided in areas; 1. Below a Q10 flood event; 2. In parks and reserves; and 3. In all trunk sewers greater than 375mm in diameter. S28 Stormwater drainage is designed and constructed to: 1. Provide adequate capacity for existing and anticipated development and flows; and</p>

	<p>(a) To ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits;</p> <p>(b) To provide convenience and safety for pedestrians and traffic in frequent stormwater flows by controlling those flows within prescribed limits; and</p> <p>(c) To retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment;</p> <p>4. For redevelopment, –, ensure that the estimated peak flow rate from the site for the design average occurrence interval (ARI) of the receiving minor system is no greater than that which would be expected from the existing development and is not concentrated in such a way as to cause nuisance to downstream properties, where the proposed development replaces an existing development.</p> <p>Note: All open channels are provided with an armoured treatment below the ARI 5 year storm event, where armouring is designed to suit the maximum flow velocity up to an ARI 100 year storm event. Overland Flow</p> <p>P28.8 The major overland flow system is designed in accordance with QUDM.</p> <p>P28.9 Where overland flow is to be transferred from the road network into drainage reserves, open space or parkland, dedicated drainage flow paths are provided with a minimum width of 5m.</p> <p>P28.10 In urban areas, the transfer of overland flow from road reserves to open space does not occur within private property.</p> <p>P28.11 Where overland flow is designed for open space areas in the Town - Rural Residential Precinct, the inundated area of land during a Q5 rainfall event is not included in parkland contributions where the inundated land cannot be maintained as active recreation parkland.</p> <p>P28.12 Where overland flow is designed for open space areas in residential areas, the inundated area of land during a Q10 rainfall event is not included in parkland contributions where the inundated land cannot be maintained as active recreation parkland.</p> <p>Major Structures</p> <p>Note: All Cross Road Drainage structures are designed for the ARI storm event appropriate for the class of road in accordance with Table D5.1 (QUDM Table 5.06.1). Note: Minor</p> <p>Roads shall be defined as Access Place and Access Streets with Major Road defined as Collector Street and greater.</p> <p>P30.19 For bridges a minimum clearance of 0.3m between the design ARI flood level and the underside of any major structure superstructure is provided to allow for passage of debris without blockage.</p> <p>P30.20 All bridges are designed for debris loading for a maximum probability flood event.</p>
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code (in the Open Space Zone)</p> <p>S5 Lots are of an appropriate size and configuration to sustain the intended uses in the Zone, to provide green spaces and connectivity of open space networks, whilst having regard for whether the proposed lot boundaries are derived from one or more of the following:</p> <p>3. The natural landforms and topography of the land including soil types, slopes, flooding and drainage characteristics and the location of existing vegetation; (No AS)</p> <p>P5.1 No solution specified</p> <p>Reconfiguring a Lot Code (in the Town Zone)</p> <p>S6 Lots are of an appropriate size and configuration to sustain the intended uses for the Zone, to ensure necessary separation of uses, and to maintain town character; whilst having regard for whether the proposed lot boundaries are derived from one or more of the following:</p> <p>3. The natural landforms and topography of the land including soil types, slopes, flooding and drainage characteristics and the location of existing vegetation; (No AS)</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Desired Environmental Outcomes</p> <p>(g) The Shire's water resources, including the waters of Capella Creek, Nogoa River Theresa Creek and floodplains are managed sustainably and development is appropriately conditioned to ensure water quality, is maintained and enhanced wherever possible.</p> <p>Schedule J - Stormwater Drainage Recurrence Intervals</p> <p>Average Recurrence Intervals (ARI) for Design</p> <p>Schedule S - Reconfiguring a Lot: Assessment Report Requirements</p> <p>The site and proposal:</p> <p>1. A scaled plan of the site indicating the location of:</p> <p>(e) Topographical and natural features such as watercourses, ridgelines, and the extent of existing vegetation, and extent of known local flooding.</p>
Op Works Code	Yes
Details	<p>Development Standards Code</p> <p>S12 Stormwater drainage is designed and constructed to provide adequate capacity for existing and anticipated development and flows, and to protect against negative environmental impacts, particularly surface and ground water quality.</p> <p>P/A12.1 No solutions specified.</p> <p>Development Design Code</p> <p>S23 Road pavement and surfacing materials, types, layer thicknesses and configurations are appropriate to ensure that the pavement performs adequately and requires minimal maintenance under the anticipated traffic loading for the design life adopted. The following factors relating to moisture environment are considered in determining the design subgrade strength/stiffness and in the choice of pavement and surfacing materials:</p> <p>1. Rainfall/evaporation pattern;</p> <p>2. Permeability of wearing surface;</p> <p>3. Depth of water table;</p> <p>4. Relative permeability of pavement layers;</p> <p>5. Whether shoulders are sealed or not;</p> <p>6. Pavement type (boxed or full width); and</p> <p>7. Subject to flooding (eg. Causeways and Floodways).</p> <p>S27 The sewerage system in the towns of Capella and Tieri efficiently transports sewage from domestic, commercial and industrial properties</p>

	<p>using gravity flow pipes</p> <p>P27.10 Bolt down covers are provided in areas;</p> <ol style="list-style-type: none"> 1. Below a Q10 flood event; 2. In parks and reserves; and 3. In all trunk sewers greater than 375mm in diameter. <p>S28 Stormwater drainage is designed and constructed to:</p> <ol style="list-style-type: none"> 1. Provide adequate capacity for existing and anticipated development and flows; and (a) To ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits; (b) To provide convenience and safety for pedestrians and traffic in frequent stormwater flows by controlling those flows within prescribed limits; and (c) To retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment; 4. For redevelopment, –, ensure that the estimated peak flow rate from the site for the design average occurrence interval (ARI) of the receiving minor system is no greater than that which would be expected from the existing development and is not concentrated in such a way as to cause nuisance to downstream properties, where the proposed development replaces an existing development. <p>Note: All open channels are provided with an armoured treatment below the ARI 5 year storm event, where armouring is designed to suit the maximum flow velocity up to an ARI 100 year storm event.</p> <p>Overland Flow</p> <p>P28.8 The major overland flow system is designed in accordance with QUDM.</p> <p>P28.9 Where overland flow is to be transferred from the road network into drainage reserves, open space or parkland, dedicated drainage flow paths are provided with a minimum width of 5m.</p> <p>P28.10 In urban areas, the transfer of overland flow from road reserves to open space does not occur within private property.</p> <p>P28.11 Where overland flow is designed for open space areas in the Town - Rural Residential Precinct, the inundated area of land during a Q5 rainfall event is not included in parkland contributions where the inundated land cannot be maintained as active recreation parkland.</p> <p>P28.12 Where overland flow is designed for open space areas in residential areas, the inundated area of land during a Q10 rainfall event is not included in parkland contributions where the inundated land cannot be maintained as active recreation parkland.</p> <p>Major Structures</p> <p>Note: All Cross Road Drainage structures are designed for the ARI storm event appropriate for the class of road in accordance with Table D5.1 (QUDM Table 5.06.1). Note: Minor</p> <p>Roads shall be defined as Access Place and Access Streets with Major Road defined as Collector Street and greater.</p> <p>P30.19 For bridges a minimum clearance of 0.3m between the design ARI flood level and the underside of any major structure superstructure is provided to allow for passage of debris without blockage.</p> <p>P30.20 All bridges are designed for debris loading for a maximum probability flood event.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Charters Towers
Planning Scheme	Charters Towers City Council Planning Scheme
Adopted	19-Jul-06
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Environment, Local Government, Planning and Women has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme: 1. SPP 1/92: Development and the Conservation of Agricultural Land.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural Zone Code A6 Rural development has minimal impact on the environmental values of the site or the surrounding locality in terms of: (d) flooding or severely altered drainage regimes; S6 No acceptable solutions prescribed.
Use Codes	Yes
Details	6.8 Caravan Park Code A1 Caravan parks are established on sites suitable for the use in terms of: (a) the land use character of the locality; S1.5 Caravan parks sites are: (c) not affected by flooding or inundation by stormwater.
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	Desired Environmental Outcomes 3.4 Sustainable Urban Growth § development in the City will minimise the potential impacts of flood, on people, property and the environment;
Op Works Code	Yes
Details	Operational Works (Filling and Excavation) Code: A3 Excavation and filling does not create any intensification of flooding and drainage problem. S3 (a) Filling is shaped so that runoff from the subject land does not flow onto adjacent privately owned land and where the level of fill required at the rear or side boundaries of a premises exceeds the level of the adjoining premises by more than 100mm, a retaining wall is provided with at least a 50mm parapet above the fill to ensure water is not diverted onto adjoining premises. (b) Drainage lines are established so that runoff is discharged in graded drains to the table drain or to the kerbing and channelling in the frontage streets, as applicable; (c) Upstream drainage is intercepted and conveyed to an approved point of discharge. (d) Where applicable, the development provides for upstream neighbour's lots to drain. A5 Operational work (filling and excavation) does not cause nuisance or damage to adjoining or downstream properties by way of: (b) flooding or drainage problems; S5 (b) Operational works provide interception drains and result in a finished surface profile which drains evenly to an approved point of discharge and does not cause flooding or drainage problems on adjoining or downstream properties;
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Charters Towers
Planning Scheme	Dalrymple Shire Council Planning Scheme
Adopted	8-Aug-06
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Environment, Local Government, Planning and Women has identified the following State Planning Policies as having been appropriately reflected in the planning scheme: SPP1/92: Development and the Conservation of Agricultural Land; and, SPP1/02: Development in the Vicinity of certain Airports and Aviation Facilities.
Mapped Q100 / DFE	Yes
Details	Burdekin Falls Dam Reservoir Area Map contained in Planning Scheme indicating maximum flood effect of the Dam.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	No
Details	PSP's not accessible on web
Other	Yes
Details	Desired Environmental Outcomes DEO 1 The Rural character and amenity of the Shire including settlements is maintained to ensure the health and safety of people is maximised. Shire Strategies. DEO 1 is intended to be achieved by - (b) Ensuring places, areas or sites identified as being susceptible to land degradation or natural hazard, (including contamination, erosion, salinity and landslip flood areas) are protected and further degradation is minimised.
Op Works Code	Yes
Details	Filling and Excavation Code P2 Filling or excavation does not result in changes to the flooding or overland flow paths. A2.1 Filling or excavation does not impact adversely on any overland flow path or watercourse.
Overlay Code	No
Details	
PSPs	Unknown
Details	PSP's not accessible onweb
Other	No
Details	
Other Info	

LGA	Cloncurry
Planning Scheme	Cloncurry Shire
Adopted	10-Sep-03
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	Yes
Details	Reconfiguring a Lot Code Performance Criteria and Acceptable Solutions Infrastructure services standards P7. Reconfiguration must not result in adverse effects on drainage of the subject land or adjacent lands. A7.1 Reconfiguration does not result in ponding of water or interfere with the natural flow of water across the subject land or adjacent lands.
Overlay Codes	Yes
Details	3.12.3 Strategic Business and Industry Overlay Code Preferred development pattern Buffer areas- The Strategic Business and Industry Area contains two buffer areas designed to protect sensitive areas. The buffer areas are shown in Figure 3.12.3. - The buffer to One Mile Creek is designed to preserve the floodplain of the creek. The buffer extends along the creek and is a total of 80m wide (40m measured from the uppermost creek bank on either side of the creek) and is to be retained in its natural state. Performance Criteria and Acceptable Solution P8 Natural Environment - The floodplain of One Mile Creek must be maintained. A8.1 Buildings and/or works do not encroach upon the buffer to One Mile Creek (as described in this code and shown in Figure 3.12.4).
PSPs	No
Details	
Other	No
Details	
Op Works Code	Yes
Details	3.13.6 Filling and Excavation Code Performance Criteria and Acceptable Solutions P3. Filling or excavation must not result in ponding on adjoining properties or changes to the flooding or overland flowpath. A3.1 Ponding on adjoining properties does not occur as a result of filing or excavation.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	1.3 Definitions Watercourse means a river, creek or stream in which water flows permanently or intermittently. It includes the bed and banks and any other element of a river, creek or stream confining or containing water.

LGA	Cook
Planning Scheme	Cook Planning Scheme
Adopted	22-Nov-06
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	Storm Tide Mapping for Bloomfield and Cooktown Watercourses and Wetlands Mapping. Note where the average recurrence interval 100 is not known, 1.5 m above the highest recorded flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	4.5.2 Coen Locality Code The purpose of this code is to achieve the following overall outcomes for the Marton Locality: - new development occurs on land that is unconstrained by past mining activities and has appropriate flood immunity. Performance Criteria PC1 No Performance Criteria specified
Zone Codes	No
Details	
Use Codes	Yes
Details	Caravan Park Code Performance Criteria and Acceptable Solutions PC3 Caravan Parks are well drained and flood free. AS3 No acceptable Solution specified.
ROL Code	No
Details	
Overlay Codes	Yes
Details	4.3.7 Natural Hazards Code The purpose of this code is to achieve the following overall outcomes for land that is in a bushfire hazard area, has a slope of 15% or greater, is flood prone, and/or is at risk of a storm surge event: - Development in natural hazard areas is compatible with the nature of the natural hazard; - The impacts from natural hazards on existing developed areas is minimised; and - Development does not materially increase the extent or the severity of natural hazards. Performance Criteria and Acceptable Solutions Flooding PC 5 New buildings and structures are immune to flood events which result in unacceptable risk to health and safety or unacceptable risk to property. In the absence of specific information about flood levels, a qualified engineer will be consulted to determine whether the proposed development falls within a flood hazard area. AS 5 The floor level of a habitable room is: (a) located at least 1.5 m above the average recurrence interval 100 flood level for the site; or (b) where the average recurrence interval 100 is not known, 1.5 m above the highest recorded flood level. PC 6 Community infrastructure is able to function effectively during and immediately after flood events. AS 6 No Acceptable Solution specified. PC 7 New buildings, structures and works retain the flood carrying capacity of rivers, streams and floodways and the flood storage function of floodplains and waterways. AS 7 Buildings and structures are built on poles/stumps so as not to obstruct flood or stormwater run-off or to divert such water to downstream land. Storm Surge PC 8 New buildings and structures are located and designed so as to minimise the threat to people and property from storm surge events. AS 8 Floor levels of all habitable rooms are above Highest Astronomical Tide plus 1.5 m.
PSPs	Yes
Details	5 Planning Scheme Policies 5.1.3 Provision of Open Space Planning Scheme Policy In the case of reconfiguration of larger areas of land (i.e. exceeding 4 ha) a contribution of 10 % of the total area as public open space may be acceptable provided the land to be contributed: -Is well drained, flood free and does not slope in excess of 1:10 grade.
Other	Yes
Details	Desired Environmental Outcomes 3.1.8 DEO 8: A Safe Environment Human life, property and the environment are protected from the adverse effects of landslips, bushfires and flooding.
Op Works Code	Yes
Details	4.3.5 Works, Services and Infrastructure Code: Performance Criteria and Acceptable Solutions Filing and Excavation PC12 Filing and excavation does not result in a change to the run off characteristics of a site or have a detrimental impact upon the site and nearby land. AS 12.1 Filing and excavation does not result in the ponding of water on the site or adjacent land. AS 12.2 Filing and excavation does not result in an increase in flow of water from the

	site to any other land or a transport corridor. AS 12.3 Filling and excavation does not result in an increase in the volume of water or concentration of water in a watercourse or overland flow paths. AS 12.4 Filling and excavation complies with the specifications set out in Section D2 – D7 of the Development Manual Planning Scheme Policy.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Croydon
Planning Scheme	Croydon Planning Scheme
Adopted	19-Jan-06
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	Dwelling House Code The Overall Outcomes are the purpose of the Dwelling House Code and are as follows:- (c) ensure that Dwelling Houses and Station Homesteads are not subject to hazards or flooding or noise because of the location.
ROL Code	Yes
Details	Reconfiguring a Lot Code Specific Outcomes and Acceptable Solutions Specific Outcomes <u>Residential Use -</u> Each new lot or separate part of a lot has adequate useable area to allow for:- (i) a dwelling unit and ancillary buildings to be erected in a location that is convenient and, as far as practicable, avoids placing people and works at risk from flooding and other hazard; Acceptable Solutions No relevant acceptable solution. Specific Outcomes <u>Commercial Uses/Industrial Uses/Community Infrastructure Uses -</u> Each new lot or separate part of a lot has adequate useable area to allow for:- (i) buildings and structures to be erected in a location that is convenient and, as far as practicable, avoids placing people and works at risk from flooding or other hazard; Acceptable Solutions No relevant acceptable solution.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 2 - Information Local Government may Request Other Overlay Assessment (c) if an application requiring assessment against an Overlay Code, then:- (ii) an assessment of how the development may create or increase a risk of significant adverse effects on the natural or built environment or human health or safety; or Areas Prone to Natural Hazard (f) if an application involves land subject to a flood hazard - information in accordance with State Planning Policy 1/03: Mitigating the Adverse Impact of Flood, Bushfire and Landslide and, State Planning Policy 1/03 Guideline: Mitigating the Adverse Impact of Flood, Bushfire and Landslide - relating to the degree of severity of the hazard and an assessment of the development proposal in relation to the nature of the hazard(s);
Other	No
Details	
Op Works Code	Yes
Details	General Development Code Specific Outcomes and Probable Solutions Drainage and Filling Specific Outcomes The drainage or filling of land to enable its use. Acceptable Solution There is no adverse impact on adjacent premises.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Diamantina
Planning Scheme	Diamantina Shire
Adopted	20-Nov-06
Flood Amendments	No
SPP Compliance	No
Details	2. The bushfire and landslide components of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide The Minister for Local Government and Planning has advised the Integrated Development Assessment System trigger for Department of Main Roads, and the flood provisions of State Planning Policy 1/03 continue to have effect.
Mapped Q100 / DFE	No
Details	the maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Small Town/Industrial/Open Space and Recreation Zone Code Code Purpose Within the “Zone”, “development”: - is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria and Acceptable Solution: Flooding Performance Criteria “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. Acceptable Solution No acceptable solution is prescribed.
Use Codes	No
Details	
ROL Code	Yes
Details	Part 5 Reconfiguring A Lot Code 5.2 Code Purpose The following outcomes are the Purpose of the Code: (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events;
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council may request 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 - Division 5 Standards for Stormwater Drainage Stormwater drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	Yes
Details	For all zone Codes (Rural Zone/Small Town/Industrial Zone/Open Space and Recreation) Performance Criteria “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. Acceptable Solution (Rural Zone/Open Space and Recreation Zone) A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. Acceptable Solution (Small Town/Industrial Zone) A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	

Other Info	<p>(2) Exempt Development</p> <p>(a) The following “Development” is exempt development within the local government area:</p> <p>(v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;</p>
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LGA	Etheridge
Planning Scheme	Etheridge Planning Scheme
Adopted	18/19-Oct-05
Flood Amendments	No
SPP Compliance	Yes
Details	3. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Residential/Industrial/Community infrastructure/Commercial Zone Code Specific Outcomes and Probable Solutions Amenity, Public Health or Safety There are no significant adverse effects on amenity, public health or safety with regard to the following:- (iii) permanent or temporary occupation of, or access to, areas subject to natural hazards;
Use Codes	Yes
Details	6.2 Dwelling House Code 6.2.1 Overall Outcomes The Overall Outcomes are the purpose of the Dwelling House Code and are as follows:- (c) ensure that Dwelling Houses and Station Homesteads are not subject to hazards or flooding or noise because of the location.
ROL Code	Yes
Details	6.8 Reconfiguring a Lot Code Specific Outcomes and Probable Solutions Residential/Commercial/Industrial/Community Infrastructure Use Each new lot or separate part of a lot has adequate useable area to allow for:- (i) a dwelling unit / building and ancillary buildings to be erected in a location that is convenient and, as far as practicable, avoids placing people and works at risk from flooding and other hazard; Probable Solutions No relevant acceptable solution.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 2 - Information Local Government may request 2.1 Information Local Government may request Other Overlay Assessment (c) if an application requiring assessment against an Overlay Code, then:- (ii) an assessment of how the development may create or increase a risk of significant adverse effects on the natural or built environment or human health or safety; Areas Prone to Natural Hazards (f) if an application involves land subject to a flood, bushfire or landslide hazard - information in accordance with State Planning Policy 1/03: Mitigating the Adverse Impact of Flood, Bushfire and Landslide and, State Planning Policy 1/03 Guideline: Mitigating the Adverse Impact of Flood, Bushfire and Landslide - relating to the degree of severity of the hazard and an assessment of the development proposal in relation to the nature of the hazard(s);
Other	Yes
Details	3.1 Desired Environmental Outcomes 3.1.2 Land use and defined uses or use classes (k) To identify and minimise the adverse impacts of flood, bushfire, and landslide on the community and the built and natural environment.
Op Works Code	Yes
Details	6.9 General Development Code Specific Outcome Drainage and Filling The drainage or filling of land to enable its use. Probable Solution There is no adverse impact on adjacent premises
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Flinders
Planning Scheme	Flinders Shire
Adopted	20-Jul-05
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Environment, Local Government, Planning and Women has identified the following State Planning Policies as having being appropriately reflected in the planning scheme - - SPP1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire and Landslide only)
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	Yes
Details	4.5 Reconfiguring A Lot Code Performance Criteria and Acceptable Solutions Performance Criteria P3 Reconfiguration must not result in adverse effects on the drainage of the subject land or adjacent lands. A3.1 Reconfiguration does not result in ponding of water or interfere with the natural flow of water across the subject land or adjacent lands.
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	Desired Environmental Outcomes 2.1.2 Shire Strategies (c) development in the Shire will minimise the potential impacts of flood, bushfire and landslide on people, property and the environment Schedule 1 - Definitions Wetland An area of permanent or periodic/intermittent inundation, whether natural or artificial, static or flowing, fresh, brackish or saline and including: · ponds; · billabongs; · lakes; · forest swamps; · marsh swamps; · salt marshes; · estuaries; and · floodplains.
Op Works Code	Yes
Details	4.4 Filing and Excavation Code Performance Criteria and Acceptable Solutions Performance Criteria P3 Filling or excavation does not result in ponding on adjoining properties A3.1 Ponding on adjoining properties does not occur as a result of filling or excavation.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Fraser Coast
Planning Scheme	Hervey Bay
Adopted	13/12/2006
Flood Amendments	No
SPP Compliance	No
Details	State planning policies The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme - 3. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood for Bushfire and Landslide only.
Mapped Q100 / DFE	No
Details	Various ARI used as DFE by the Scheme Provisions.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>3.7 House Code 3.7.2 Overall Outcomes for the House Code a) The building form, siting, design and use of the house and ancillary structures/development- - Achieves an acceptable level of flood immunity</p> <p>3.9 Intensive Rural Uses Code Site Suitability PC1 The site has sufficient area to accommodate the use and is suitably located to ensure the use does not impact on the environmental values of the area. AS1.1 The site, or portion of the site to be utilised for the activity: - does not occur below a Q50 flood line (Except where an aquaculture activity).</p> <p>3.10 Multiple Residential Code PC3 Development is designed to: - address site constraints such as, steep slopes, soil erosion, flooding, overland flow, storm surges, etc. AS3.1 The site - does not occur below a Q50 flood line.</p> <p>3.11 Retirement Villages Code PC2 Development is designed to: - address site constraints such as, steep slopes, soil erosion, flooding, overland flow, storm surges, etc. AS2.1 The site: - has slopes less than 15%; - does not occur below a Q50 flood line.</p> <p>4.12 Structure Planning Code 4.12.4 Development Guidelines Natural Hazards PC3 Exposure to natural hazards such as bushfire, flooding, storm surge and tidal/wave action is minimised.</p> <p>Stormwater Management PC16 Layout plans incorporate an effective and efficient stormwater drainage system that does not adversely affect the natural state of watercourses and their drainage characteristics. AS16.6 Modification of the channel and/or floodplain is discouraged. PC17 Layout plans accommodate water quality devices and solutions. AS17.3 Existing natural features that provide scope for water quality treatment such as wetlands, natural watercourses and floodplains are maintained in a natural state to assist in water quality management.</p> <p>4.14 Works, Services & Infrastructure Code Flood Management PC8 Development design must reduce property damage and where applicable, ensure public safety by ensuring that the development levels are set above the relevant design flood event, and by avoiding causing exposure to undue flood hazard. AS8.1 Habitable and non-habitable floor levels are located above the minimum flood immunity levels identified in Table 1. AS8.2 Development is designed and constructed to address flood hazards in accordance with the 'Degree of Flood Hazard by Land Use Table' contained in Planning Scheme Policy No 2 – Development Manual. Open space, parkland: 50% AEP Freeboard - 0 mm, 50% AEP + freeboard (Hab) 50% AEP (Non Hab) Accommodation building, bed and breakfast, caretakers residence, caravan park, house, home business, motel, multiple residential, relocatable home park, display home/office, funeral parlour, licensed premises, local store, office, outdoor sales premises, restraint, shop, veterinary facility, extractive industry, industry, mechanical repair workshop, service stations, special industry (where not defined elsewhere in this table), cemetery, correctional facilities, indoor recreation, outdoor recreation (where not defined elsewhere in this table), park facility (where not defined elsewhere in this table), passenger terminal: 1% AEP Freeboard- 300mm (when adjacent to floodplains) 500mm (when adjacent to confined waterways) 1% AEP + freeboard (Hab) 1 % AEP (Non-Hab) Retirement village, equipment and vehicle depot, warehouse, childcare centre, community facilities (where not defined elsewhere in this table), minor public utility, police/fire stations, places of refuge, hazardous chemical storage (eg fuel depot): 0.5% AEP 300mm (when adjacent to floodplains), 500mm (when adjacent to confined waterways), 0.5% AEP + freeboard (Hab) 0.5% AEP (Non-Hab). Medical centre, hospital, disaster management facilities, power stations, major electrical infrastructure, water treatment plants: 0.2% AEP 300mm (when adjacent to floodplains) 500mm (when adjacent to confined Waterways) 0.2% AEP + freeboard (Hab) 0.2% AEP (Non Hab).</p>

	<p>PC9 Development must not compromise flood evacuation procedures, with sufficient access of egress available to enable evacuation during a range of floods up to and beyond the designated flood event.</p> <p>AS9.1 Development does not – a) increase the number of people calculated to be at risk from flooding;</p> <p>b) increase the number of people likely to need evacuation;</p> <p>c) shorten flood warning times;</p> <p>d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes;</p> <p>e) place additional burdens on Council's resources or emergency services;</p> <p>f) increase the duration of flooding unless the increase is part of a Council approved strategy.</p> <p>PC10 The proposed stormwater management system or site works must not adversely impact on flooding or drainage of properties that are upstream, downstream or adjacent to the subject site.</p> <p>AS10.1 The proposal meets the requirements of Planning Scheme Policy No. 2 – Development Manual, and does not result in an increase in flood level or flood duration on upstream, downstream or adjacent properties.</p> <p>Note: Compliance with this acceptable solution can be demonstrated the submission of a Stormwater Management Report identifying potential flooding impacts on upstream, downstream or adjacent properties.</p> <p>PC11 Development must not reduce the flood storage capacity of the creek or waterway.</p> <p>AS11.1 No filling occurs below the Q100 flood level.</p> <p>PC13 Landscaping must not impede a natural watercourse, flood channel or overland flow path. No acceptable solution specified.</p> <p>PC19 Development must be designed and constructed to avoid causing exposure to undue flood hazard.</p> <p>AS19.1 Development is to be designed and constructed so that uses are not exposed to a greater degree of flood hazard than shown in the 'Degree of Flood Hazard by Land Use Table' of Planning Scheme Policy No 2 – Development Manual.</p>
ROL Code	Yes
Details	<p>4.10 Reconfiguration of a Lot Code</p> <p>4.10.4 Development Principles</p> <p>Land Layout</p> <p>PC2 Lots are of a suitable size and dimension to:</p> <ul style="list-style-type: none"> - address site constraints such as, steep slopes, soil erosion, flooding, overland flow, storm surge, bushfire risk, etc <p>AS2.1 The site;</p> <ul style="list-style-type: none"> - does not occur below a Q50 flood line. <p>PC28 Public open space and parks:</p> <ul style="list-style-type: none"> - are of a size, shape, location and condition and have physical attributes, suitable for the intended use; - are designed and located for safe recreational opportunities for the community; - provide opportunities for casual surveillance; - are cost effective to maintain; and - allow for access by vehicle, particularly fire fighting and maintenance vehicles, and for access by foot. <p>AS28.6 Adequate areas of public open space for recreation and sporting parks are provided exclusive of:</p> <p>a) Flood inundation below the 1 in 2 ARI level (or Q2)</p> <p>AS28.7 At least 10% of the total open space provision is exclusive of flood inundation of below the 1 in 100ARI level or the highest recorded flood level whichever is the greatest.</p> <p>PC29 Public open space for natural areas is provided to:</p> <ul style="list-style-type: none"> - Facilitate appropriate measures for storm water and flood management
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>Planning Scheme Policy 2 Development Manual</p> <p>2.0 Earthworks Design Standard</p> <p>2.1.4 Building Pad Requirements</p> <p>(i) The Building Pad is required to have the minimum freeboard above the Q100 flood level as state in QUDM and in the Design Freeboard area of the Stormwater Design section of this manual or the adopted stormwater strategy for the area. Refer to Table 2.1.5 Minimum Area for building Pads by Locality and Lot Size.</p> <p>(v) Unless agreed by council, a flood study will be required in Park Residential and Rural zones to demonstrate freeboard requirements.</p> <p>2.1.6 Filling Below the Q100 Flood Line</p> <p>(i) Where any filling is to be carried out within the Q100 flood line they will be in accordance with an adopted flood policy for the area or a flood study will be required to demonstrate the effects on flood levels on the adjacent properties.</p> <p>(ii) The flood study will be required to clearly identify the flood levels and flow velocities of both the existing and developed scenarios.</p> <p>4.0 Stormwater Design Standards</p> <p>4.1.1 General</p> <p>(iii) Where it is proposed to deviate from an approved strategy, a flood study is to be undertaken in accordance with the requirements of this manual to demonstrate that the proposal will not compromise the adopted strategy.</p> <p>(iv) Where it is determined at the pre-design meeting, or where development is to occur in an area where Council does not have an up to date flood study, a flood study is required to establish the Q100 flood level of an adjacent influential stream or otherwise.</p> <p>(xviii) Refer to the Earthworks section of this manual for building pad requirements and criteria for filling below the Q100 flood level.</p> <p>4.1.2 Flood Studies</p> <p>(iii) Where fill is to be placed within the flood plain it will be necessary to verify that the placement of fill will not detrimentally affect any existing flooding upstream or downstream of the development by analysing the existing and developed cases.</p> <p>(xiv) In special circumstances, the use of other programs such as MIKE-11 or MIKE-21 will be permitted. These circumstances may be because of significant flood plain flow where a two dimensional flow regime is dominant. Deviation from XP-Storm and HEC-RAS needs to be well documented by the applicant and approved by Council prior to beginning the analysis.</p> <p>(xvi) Channel conditions (e.g. manning roughness, topography, etc) will be established in accordance with this manual and be reflective of existing conditions. It will be necessary to analyse future conditions, or modified conditions and this will be documented in the flood study.</p> <p>4.1.4 Drainage Reserves and Easements</p> <p>(ii) Land below the minor storm inundation boundary including open channels, overland flow paths, flood plains, detention basins, and lakes is to be provided within a dedicated drainage reserve, public reserve, road or pathway.</p> <p>Refer Table 4.1.4.1 Minimum Drainage Easements and Reserve Width Requirements</p> <p>4.1.14 Flow Depths and Width Limitations</p>

	<p>(iii) Refer to the Culvert Design section of this manual for floodway depth and width limitations.</p> <p>(iv) Refer to the tables below (Table 4.1.14.1 and Table 4.1.14.2) for degree of flood hazard by Land Use</p> <p>4.1.18 Design Freeboard</p> <p>(ii) The Building Pad is required to have the minimum freeboard above the Q100 flood level as stated in the “Lot and Building Pad Immunity and Freeboard by Zone Type” table of this manual and QUDM Table 5.08.1 and Table 8.02.</p> <p>(v) Unless agreed with by council, a flood study will be required in Park Residential and Rural zones to demonstrate freeboard requirements to the Building Pad and Access. Refer Table 4.1.18.1 Lot and Building Pad Immunity and Freeboard by Zone Type</p> <p>4.1.23.2 Acceptance of Liability Letter</p> <p>A detailed letter to Council from the land owner clearly accepting liability to:</p> <p>(iv) Indemnify Council against all claims arising from the drainage system failing to perform the design intent due to the failure of the outlet (can include flooding of upstream or downstream properties or the result of erosion or transportation of silt); and</p> <p>(v) Ensure that any purchaser of the land provide HBCC with a written acceptance of the above obligations prior to the sale of the land.</p> <p>4.3 Culverts and Floodway Design Standards</p> <p>(iii) Refer to the table below for design floodway event and criteria to be assessed with all culvert designs (Refer to tables 4.3.11- Road Cross Culvert Capacity (Minor Event) Requirements for Zone and Road Types and 4.3.1.2 Floodway Event (Major) and Criteria for Road Types)</p> <p>(iv) Backwater from the Major Floodway event is not to enter upstream properties in events of similar return frequency.</p> <p>(ix) Where the design floodway event flow attains critical velocity on the downstream road batter, concrete or alternate approved scour protection is to be provided for the full length of the floodway.</p> <p>4.3.3 Design Criteria for Road Type</p> <p>(iii) The headwater inundation is not to increase existing upstream property flood levels.</p> <p>(iv) The effect of flooding to house sites caused by the floodway event is to be considered with all culvert designs.</p> <p>4.4 Detention Basins Design Standards</p> <p>4.4.1 General</p> <p>(v) Calculations are to be provided detailing the ability of the design of the embankment to structurally withstand an extreme flood event.</p> <p>4.4.2 High Level Outlet Design Extreme Flood Event</p> <p>Refer Table 4.4.2.1 Runoff design rainfall intensity/duration data for Extreme Flood Events</p> <p>4.6 Open Channels Design Standards</p> <p>(vi) For all open channel hydraulic calculations a sensitivity analysis is to be conducted using a mannings n value of 0.03 to check scouring velocities and mannings 0.065 to check the impact of the design flood level.</p> <p>17.1.1 Finished Surface Formations</p> <p>A topographic ‘as constructed’ will be provided for all subdivisional developments detailing the finished surface formations and verifying that the finished surfaces are in accordance with the approved engineering drawings and related flood studies.</p> <p>PSP No 11 Information Requests</p> <p>2.13 STORMWATER MANAGEMENT REPORT</p> <p>2.13.3 Report Content</p> <p>Where appropriate the Stormwater Management report is to include</p> <p>b) Impacts Pre/ Post DevelopmentIncreases/ decreases in:</p> <ul style="list-style-type: none"> - Flood levels - Frequency of flooding <p>e) Events to be modeled and reported on</p> <ul style="list-style-type: none"> • Probable Maximum Flood • 100 year ARI • 10 year ARI • 2 year ARI • 3 month ARI <p>PSP No12</p> <p>2.0 Structure Plans</p> <p>2.3 Constraints and Natural Assets</p> <p>The planning and design of development must address relevant land use constraints and natural assets including Odour Buffers, Wetlands Buffers, Flooding and Storm Tide Innundation, Stormwater Natural Assets, Natural Areas Assets, and Significant Heritage Assets as depicted on:</p> <ul style="list-style-type: none"> • Structure Planning Map C – Constraint Mapping and Natural Assets. <p>PSP No15 Development Procedures</p> <p>1.2.6 Stormwater</p> <p>(i) Review any flood studies which have been previously undertaken within the relevant catchment.</p> <p>(ii) Identification of potential flooding impact from Q50 and Q100 floods where applicable.</p> <p>2.6.7 Flood Study</p> <p>(i) Refer to the Design section for content criteria</p> <p>(ii) Presentation is to include the following:-</p> <ul style="list-style-type: none"> - Catchment Map; - Summary of all modelling parameters and assumptions used in the model; - Stream flood profile and bed profile for the study area showing cross section locations; - Cross sections of the stream and flood plain; - Tabulated Calculations of the pre and post developed scenarios; - Plan Showing proposed finished surface contours with the flood line interpolated; - Q100 levels are to be shown where the flood line crosses property boundaries; and - Copies of the models and all relevant files. <p>(iii) Full set of drawings and Calculations are to be submitted for the pre-development and post development drainage strategies.</p>
Other	Yes
Details	<p>2.4 DEO 4 – Open Space, Natural Environment & Cultural Heritage</p> <p>Strategies for achieving DEO 4 – Open Space, Natural Environment & Cultural Heritage include –</p> <p>a) the open space system protects and enhances the City’s waterways and floodplain management systems, and be used to improve water quality;</p>
Op Works Code	Yes

Details	4.14 Works, Services & Infrastructure Code 4.14.3 Compliance with the Works, Services and Infrastructure Code The code is divided into a number of discrete sections that deal with different elements of the engineering components of the projects including: (c) Flooding Management 4.14.4 Development Guidelines Flood Management PC8 Development design must reduce property damage and where applicable, ensure public safety by ensuring that the development levels are set above the relevant design flood event, and by avoiding causing exposure to undue flood hazard. AS8.1 Habitable and non-habitable floor levels are located above the minimum flood immunity levels identified in Table 1. AS8.2 Development is designed and constructed to address flood hazards in accordance with the 'Degree of Flood Hazard by Land Use Table' contained in Planning Scheme Policy No 2 – Development Manual. PC9 Development must not compromise flood evacuation procedures, with sufficient access of egress available to enable evacuation during a range of floods up to and beyond the designated flood event. AS9.1 Development does not – a) increase the number of people calculated to be at risk from flooding; b) increase the number of people likely to need evacuation; c) shorten flood warning times; d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes; e) place additional burdens on Council's resources or emergency services; f) increase the duration of flooding unless the increase is part of a Council approved strategy. PC10 The proposed stormwater management system or site works must not adversely impact on flooding or drainage of properties that are upstream, downstream or adjacent to the subject site. AS10.1 The proposal meets the requirements of Planning Scheme Policy No. 2 – Development Manual, and does not result in an increase in flood level or flood duration on upstream, downstream or adjacent properties. Note: Compliance with this acceptable solution can be demonstrated the submission of a Stormwater Management Report identifying potential flooding impacts on upstream, downstream or adjacent properties. PC11 Development must not reduce the flood storage capacity of the creek or waterway. AS11.1 No filling occurs below the Q100 flood level. PC13 Landscaping must not impede a natural watercourse, flood channel or overland flow path. No acceptable solution specified. PC19 Development must be designed and constructed to avoid causing exposure to undue flood hazard. AS19.1 Development is to be designed and constructed so that uses are not exposed to a greater degree of flood hazard than shown in the 'Degree of Flood Hazard by Land Use Table' of Planning Scheme Policy No 2 – Development Manual.
	Overlay Code No
	Details No
	PSPs Yes
	Planning Scheme Policy 2 Development Manual 2.1.6 Filling Below the Q100 Flood Line (i) Where any filling is to be carried out within the Q100 flood line they will be in accordance with an adopted flood policy for the area or a flood study will be required to demonstrate the affects on flood levels on the adjacent properties. (ii) The flood study will be required to clearly identify the flood levels and flow velocities of both the existing and developed scenarios.
	Other No
	Details
	Other Info No

LGA	Fraser Coast
Planning Scheme	Maryborough
Adopted	1/03/2000
Flood Amendments	Yes
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	Yes
Details	Flood Managemnet Overlay Code Mapped
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>3.4 Local Area 3 - The Pocket Vision (part of) Flood prone areas of the Local Area will not have been more intensively developed.</p> <p>3.5 Local Area 4 - Tinana 3.5.1 Local Area Specific Measures Rural Residential Precinct Land in the Rural Residential Precinct is intended to be progressively subdivided subject to the following principles: (ii) all proposed allotments require a sealed road access to the Maryborough City urban area which is flood free in a 1 in 20 year flood event;</p> <p>Wharf Street Precinct Code – Appendix B Precinct Specific Measures Overall Intent of the Wharf Street Precinct Sub-Precinct 7 Commercial uses, such as restaurants, offices, exhibitions and displays may be established where fronting Wharf Street with residential uses located above known flood levels. Sub-Precinct 9 This sub-precinct is separate visually due to its size, physical character (low lying and floodable, with some of the area filled significantly above its natural level) and because it is developed with old, light industrial, corrugated iron sheds. This sub-precinct provides an opportunity to redevelop comprehensively a large site for inner-city residential uses that are complimentary to the tourist, cultural, recreation and entertainment focus of the Wharf Street Precinct. In particular, provided that development constraints caused by flooding are taken into account in the design of new development, multiple residential uses in the form of apartment buildings, serviced rooms and motels would be encouraged. Railyards Redevelopment Area Precinct Code – Appendix Precinct Specific Measures Sub-Precinct 7 – Major Shopping Complex The intent will be implemented through: (ii) The centre will be required to provide adequate carparking spaces, principally contained in large parking areas, which may also be used as part of an overall flood retention system.</p>
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>4.2.6 House Code 2. Purpose of the Code To ensure that the building form, siting, design, infrastructure and use of each house is consistent with the desired character of the area, that an acceptable level of flood immunity is achieved and that off-site impacts are within acceptable limits. 3. Performance Criteria P8 The house must be sited in a location with an acceptable level of flood immunity, including site access.</p> <p>4.2.7 Medium Density Residential Code 2. Purpose of Code To ensure that building form, siting, design and use are consistent with the desired character of the area, an acceptable level of flood immunity is achieved and that off-site impacts are within acceptable limits. 3. Performance Criteria P4 The siting and design of residential development must achieve an acceptable level of flood immunity (including site access and parking areas).</p> <p>4.3.14 On-Site Effluent Disposal Reconfiguring a Lot A2.3 The proposed on-site effluent disposal system is located on land: -situated above the Q10 flood level.</p>
ROL Code	Yes
Details	<p>4.3.7 Lot Reconfiguration Code 3. Performance Criteria A2.2 Proposals to create new allotments within the Rural Residential Precinct, include the provision of a minimum area of 750m2 which satisfies the following requirements:- e. lies wholly above the Adopted Flood Line.</p>
Overlay Codes	Yes
Details	<p>4.3.3 Flood Management Code 2. Purpose of Code · To reserve land needed for flood water storage and flows. · To limit possible damage to property and risks to safety.</p> <p>Material Change of Use P1 The adverse effects of flooding must not be increased. A1.1 A technical report is provided to Council prior to or as part of an information request verifying that any increase in flooding will not adversely affect the value, safety or use of any land either now or in the future. P2 Any changes to runoff characteristics (hydrograph volume, peak and time to peak) for a range of storm events</p>

	<p>including 1 in 2 year, 1 in 5 year, 1 in 10 year, 1 in 20 year, 1 in 50 year and 1 in 100 year design storm must be minimised, consistent with the maintenance of the environmental values of waterways.</p> <p>A2.1 A technical report is provided to Council prior to or as part of an information request verifying that any changes to runoff characteristics comply with Council's Subdivisional and Engineering Works Code.</p> <p>A2.2 The proposal does not decrease the flood storage capacity within areas inundated up to the Q100 flood event.</p> <p>P3 An acceptable level of flood immunity must be provided, particularly for residential properties.</p> <p>A3.1 The proposal complies with requirements for flood affected land in Council's Subdivisional and Engineering Works Code.</p> <p>Reconfiguration of a Lot</p> <p>P4 The adverse effects of flooding must not be increased.</p> <p>A4.1 A technical report is provided verifying that any increase in flooding will not adversely affect the value, safety or use of any land either now or in the future.</p> <p>P5 Any changes to runoff characteristics (hydrograph volume, peak and time to peak) for a range of storm events including 1 in 2 year, 1 in 5 year, 1 in 10 year, 1 in 20 year, 1 in 50 year and 1 in 100 year design storm must be minimised, consistent with the maintenance of the environmental values of waterways.</p> <p>A5.1 A technical report is provided verifying that any changes to runoff characteristics comply with Council's Subdivisional and Engineering Works Code.</p> <p>A5.2 The proposal does not decrease the flood storage capacity within areas inundated up to the Q100 flood event.</p> <p>P6 An acceptable level of flood immunity must be provided, particularly for residential properties.</p> <p>A6.1 The proposal complies with requirements for flood affected land in Council's Subdivisional and Engineering Works Code.</p>
PSPs	Yes
Details	<p>6.2 Reconfiguration of Lot Planning Scheme Policy</p> <p>6.2.1 Application to Council</p> <p>Information Required</p> <p>The proposal plan should preferably show the following information and particulars:-</p> <p>(b) The location of all watercourses, waterholes, the Adopted Flood Line and inundating levels correlated to Australian Height Datum, and the high water mark of any tidal water;</p> <p>(n) The position of the Adopted Flood Line.</p> <p>6.5 Coastal Townships Planning Scheme Policy - Guidelines for Minimum Development Levels</p> <p>6.5.1 Minimum Development Levels</p> <p>In the coastal townships, the levels for development need to be sufficient to achieve the following:</p> <p>(a) minimise the risk to persons in time of flood, particularly due to storm tide inundation;</p>
Other	Yes
Details	<p>Part 2</p> <p>2.11 Public Health and Safety Strategy</p> <p>DEO 35 Development in the City takes place with due recognition of public health and safety issues.</p> <p>Primary Measures to Achieve DEO 35</p> <p>3. Measures to limit problems caused by flooding are contained in the Flood Management Code and the Coastal Townships Code. Pursuant to the Building Regulation 2006 Council has resolved minimum floor levels for building work in the Coastal townships.</p> <p>Public Health and Safety Strategy Performance Indicators</p> <p>Reduction in the damage to properties caused by flooding or storm surges.</p> <p>2.4 Industry Strategy</p> <p>DEO 7 A sufficient supply of well-serviced industrial land with a satisfactory level of flood immunity is provided to meet the requirements of new and expanding industries.</p> <p>Primary Measures to achieve DEO 7</p> <p>9. The achievement of this DEO will be supported by the establishment of new small-scale industrial enterprises in The Pocket Local Area subject to consideration and resolution of flooding issues.</p> <p>DEO 11 A high standard of visual amenity and site access is achieved in industry/commerce areas, particularly where located on major roads or adjacent to residential areas.</p> <p>Industry Development Strategy Performance Indicators</p> <p>An increase in the number, location and size of vacant serviced floodfree industrial allotments;</p> <p>2.8 Residential Strategy</p> <p>DEO 24 A sufficient supply of sequentially serviced urban residential land with an acceptable level of flood immunity is available to cater for the accommodation requirements of the future population of the urban area of the City.</p> <p>DEO 26 Safe, quiet and attractive residential areas are established and maintained.</p> <p>Primary Measures to Achieve DEO 26</p> <p>The proposed development would not create or increase flooding problems in any residential area.</p> <p>DEO 28 Choice of housing types, including town houses and apartments are available in locations close to the City Centre.</p> <p>Primary Measures to Achieve DEO 28</p> <p>An increase in the number, location and size of vacant serviced floodfree residential allotments;</p> <p>Definitions</p> <p>Overland Flow Path</p> <p>means, where a piped drainage system exists, the path along which flood waters exceeding the capacity of the underground drainage system would flow; or, where no piped drainage system or other form of defined watercourse exists, the path taken by surface runoff from higher parts of the catchment.</p>

Op Works Code	Yes
Details	4.3.2 Filling and Excavation Code 2. Purpose To ensure that filling or excavation is carried out in a manner which does not: - cause an increase in flooding or drainage problems; Operational Work P7 Filling or excavation must not: · cause any increase in adverse flooding;
Overlay Code	Yes
Details	4.3.3 Flood Management Code 2. Purpose of Code · To reserve land needed for flood water storage and flows. · To limit possible damage to property and risks to safety. Operational Works P7 Bridges and culverts for flood immunity must minimise traffic disruption, improve public safety, allow for terrestrial and aquatic habitat and movements, and bike ways. A7.1 The design levels are set in accordance with Council's Subdivisional and Engineering Works Code. A7.2 The design complies with the DPI Fisheries Fish Habitat Guideline - Fish Passage in Streams (in particular the page 24 Design Requirements). P8 Design for the proposed development must not: • adversely impact on the downstream properties by maintaining the predevelopment flow peaks, inundation time and flood levels for a 1 in 2 year ARI design storm; • increase the flood levels upstream and downstream for a 1 in 10 year and 1 in 100 year ARI design storms. A8.1 The design and construction of all major and minor stormwater runoff management measures for the proposed development comply with Council's Subdivisional and Engineering Works Code.
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Fraser Coast
Planning Scheme	Tiaro
Adopted	20/10/2005
Flood Amendments	Yes
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme- - State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide Only);
Mapped Q100 / DFE	No
Details	Q100 / Highest known Adopted in Provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 2—Assessment Criteria for the Rural Zone Code, Division 4—Assessment Criteria for the Rural Residential Zone, Division 6 – Assessment Criteria for the Residential Zone, Division 8—Assessment Criteria for the Commercial Zone Code, Division 10—Assessment Criteria for the Industry Zone Code</p> <p>4.7 Specific Outcomes and Probable Solutions for the Rural Zone, 4.14 Rural Residential Zone, 4.12 Residential Zone, 4.28 Commercial Zone, 4.34 Industry Zone</p> <p>SO (3) Amenity and Character</p> <p>(b) Buildings and other works are sited to provide flood-free habitable areas.</p> <p>PS (b) Habitable rooms are constructed with floor levels a minimum of:-</p> <ul style="list-style-type: none"> - 300mm above the Q100 flood for the locality; or - where the Q100 flood level is not known, 300mm above the highest known flood; or . - if within one kilometre of a tidal area:-5m AHD. <p>Division 12—Assessment Criteria for the Green Space Zone Code</p> <p>4.40 Overall Outcomes for the Green Space Zone</p> <p>(h) To ensure that uses and works that may be adversely affected by flooding do not locate in known flood prone areas;</p> <p>4.42 Specific Outcomes and Probable Solutions for the Green Space Zones</p> <p>SO (3) Amenity and Character</p> <p>(b) Buildings and other works are sited to provide flood-free habitable areas.</p> <p>PS (b) Habitable rooms are constructed with floor levels a minimum of:-</p> <ul style="list-style-type: none"> - 300mm above the Q100 flood for the locality; or - where the Q100 flood level is not known, 300mm above the highest known flood; or . - if within one kilometre of a tidal area:-5m AHD.
Use Codes	Yes
Details	<p>6.19 Specific Outcomes and Probable Solutions for the Building Works Code</p> <p>SO(2) Amenity and Character</p> <p>Building assessment provision – (QDC MP1.2 P4)</p> <p>(b) Buildings and other works are sited to provide flood-free habitable areas. AS2 (b) Habitable rooms are constructed with floor levels a minimum of:-</p> <ul style="list-style-type: none"> - 300mm above the Q100 flood for the locality; or - where the Q100 flood level is not known:- 300mm above the highest known flood; or - if within one kilometre of a tidal area:- 5m AHD. <p>Division 6—Caravan Park Code</p> <p>6.23 Specific Outcomes and Probable Solutions for the Caravan Park Code</p> <p>SO(2) Amenity and Character</p> <p>(a) Uses and other works are sited to:</p> <ul style="list-style-type: none"> - ensure the safety of users and - allow only minor, short-term and infrequent flooding of nonhabitable areas. <p>PS(2) (a)(i) Amenity and recreational buildings and structures are constructed with floor levels:-</p> <ul style="list-style-type: none"> - above the Q100 flood for the locality; or - where the Q100 flood level is not known, above the highest known flood; or . - if within one kilometre of a tidal area:- not less than 5m AHD. <p>(ii) Permanent vans, annexes and relocatable homes are constructed with floor levels a minimum of:-</p> <ul style="list-style-type: none"> - 300mm above the Q100 flood for the locality; or - where the Q100 flood level is not known, 300mm above the highest known flood; or . - if within one kilometre of a tidal area:- 5m AHD. <p>Division 9—Child Care Centre Code</p> <p>6.35 Specific outcomes and probable solutions for the Child Care Centre Code</p> <p>SO(b) The development is located to minimise:-</p> <ul style="list-style-type: none"> (iii) flood damage or hazard <p>PS (b) The development is not located:-</p> <ul style="list-style-type: none"> (iii) on a site subject to flooding. <p>Division 12—Dwelling House Code</p> <p>6.48 Specific Outcomes and Probable Solutions for the Dwelling House Code</p> <p>SO(2) Amenity and Character</p> <p>Building assessment provision – (QDC MP 1.2, P4)</p> <p>(b) Buildings and other structures:-</p> <ul style="list-style-type: none"> - do not visually dominate the street, surrounding spaces or the existing skyline; and - preserve the amenity or surrounding land including access to sunlight.

	<p>(c) Buildings and other works are sited to provide flood-free habitable areas.</p> <p>PS(2) Alternative provision to MP 1.2, A1 and A2.</p> <p>(c) Habitable rooms are constructed with floor levels a minimum of:-</p> <ul style="list-style-type: none"> - 300mm above the Q100 flood for the locality; or - where the Q100 flood level is not known:- 300mm above the highest known flood; or - if within one kilometre of a tidal area:- 5m AHD. <p>Division 16—General Development Code</p> <p>6.64 Specific outcomes and probable solutions for the General Development Code</p> <p>(d) Lot Access and Drainage</p> <p>(iii) flood free and with systems that ensure all lots are free draining*</p> <p>*Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP3</p> <p>SO (3)</p> <p>(d) Lot Access and Drainage</p> <p>All developments ensure access and drainage are:</p> <p>(iii) flood free and with systems that ensure all lots are free draining.*</p> <p>*Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP3</p> <p>PS(3)</p> <p>(d) (ii) Lots in the Rural, Rural Residential and Residential Zones have a vehicle accessway between the house site area and the road frontage that is not flooded prior to the road being flooded;</p> <p>Division 17— Holiday Cabins Code</p> <p>6.68 Specific Outcomes and Probable Solutions for the Holiday Cabins Code</p> <p>PS(2) Amenity and Character</p> <p>(c) The development incorporates a site management plan addressing relevant health and safety issues including:-</p> <p>(iv) flood</p> <p>Division 21—Intensive Rural Use Code</p> <p>6.84 Specific Outcomes and Probable Solutions for the Intensive Rural Use Code</p> <p>SO(1) Natural Values</p> <p>(a) Intensive rural uses are located and sited such that: natural flood and drainage processes and patterns are maintained;</p> <p>(4) Infrastructure Services General</p> <p>Lot Access and Drainage</p> <p>(c) (iii) Access and drainage are: flood free and with stormwater systems that ensure all lots are free draining.</p>
ROL Code	Yes
Details	<p>Division 24—Reconfiguring a Lot Code</p> <p>6.84 Specific Outcomes and Probable Solutions for the Intensive Rural Use Code</p> <p>SO (3) Amenity and Character</p> <p>(a) Lots are not constrained by:</p> <p>(ii) flood</p> <p>(b) Lots are sited to provide sufficient flood free area for the use and ancillary works.</p> <p>PS(b)(i)</p> <p>Lots in the Rural and Rural Residential Zones have a minimum use area of 1000m² that is:-</p> <ul style="list-style-type: none"> - above the highest recorded flood level or Q100 flood level for the locality, whichever is higher; or - if within 1 km of tidal areas, above 5m AHD. <p>Lots in the Residential Zone have a minimum use area of 750m² that is:-</p> <ul style="list-style-type: none"> - above the highest recorded flood level or Q100 flood level for the locality, whichever is higher; or - if within 1 km of tidal areas, above 5m AHD
Overlay Codes	Yes
Details	<p>Division 4 —Assessment criteria for the Natural Hazards Overlay Code</p> <p>5.12 Specific Outcomes and Probable Solutions for the Natural Hazards Overlay Code</p> <p>Specific Outcomes</p> <p>(1) Tidal Areas</p> <p>(a) Development maintains the safety of people on a development site from all tidal and surge effects and associated flood inundation.</p> <p>(b) Development does not result in adverse impacts on public safety or the capacity to use land on the foreshore or within the coastal floodplain.</p> <p>(c) Public safety and the environment are not adversely affected by the detrimental impacts of tidal surges or associated floodwaters on hazardous materials manufactured or stored in bulk.</p> <p>(d) Essential public utilities are available and maintain their function during tidal surges and an associated 1:100 year flood event.</p> <p>(e) Community Infrastructure¹⁹ is able to function effectively during and immediately after flood events or tidal surges.</p> <p>Probable Solutions (if self assessable or Code Assessable)</p> <p>(a) Development is sited on land that - would not be subject to flooding during a 1:100 year flood event and is located at least 100m from the highest astronomical tide (HAT) in all tidal areas</p> <p>(b) Development does not result in adverse impacts on public safety or the capacity to use land on the foreshore or within the coastal floodplain.</p> <p>(b) Works do not involve:</p> <ul style="list-style-type: none"> - any physical alteration to a major watercourse floodway or foreshore including vegetation clearing; or - net filling exceeding 100m³. <p>(c) The manufacture or storage in bulk of hazardous materials takes place at least 100m from the level of the Highest Astronomical Tide (HAT) or above the level of associated floods</p> <p>OR</p> <p>Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event or at least 100m from the HAT</p> <p>(d) Components of the infrastructure that are likely to fail or may result in contamination are</p> <ul style="list-style-type: none"> - located above the level of a 1:100 year flood event associated with tidal surges or - are designed and constructed to exclude water inundation or infiltration and resist hydrostatic and hydrodynamic forces as a result of inundation. <p>(e) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the</p>

	Adverse Impacts of Flood, Bushfire and Landslide Guideline
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 3 : ENVIRONMENTAL MANAGEMENT PLANS (EMP).</p> <p>(g) Flood Studies</p> <p>A flood study will include the following minimum information:</p> <ul style="list-style-type: none"> - The highest recorded flood level or the Q100 flood whichever is the highest in the locality and its likely impacts on the proposal and - The likely impacts of the proposal on flood levels in the area, and - Proposals should demonstrate that all parts of the development are above the highest flood level and all residential floor levels are at least 300mm above the Q100 flood level <p>PLANNING SCHEME POLICY 5---POLICY REFERENCES</p> <p>(3) Valuable Features</p> <p>The scheme incorporates through assessment criteria and codes for assessable development the following provisions for:</p> <ul style="list-style-type: none"> - acceptable standards for provision of water supply, disposal of wastes, erosion, stormwater and flood mitigation;
Other	Yes
Details	
Op Works Code	Yes
Details	<p>Division 14— Filling and Excavation Code</p> <p>6.55 Overall Outcomes of the Filling and Excavation Code</p> <p>(b) Filling or excavation does not adversely impact on the local environment and adjacent properties having regard for,</p> <ul style="list-style-type: none"> - the natural features of the area - the local watercourses and water quality - flooding, surface flows, and siltation on adjoining property. <p>6.56 Specific Outcomes and Probable Solutions for the Filling and Excavation Code</p>
Overlay Code	Yes
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Fraser Coast
Planning Scheme	Woocoo
Adopted	15/11/2006
Flood Amendments	Yes
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme- - State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide Only);
Mapped Q100 / DFE	No
Details	1893 Flood Level Adopted by Provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 2 - Assessment Criteria for the Community Use Zone 3.7.2 The specific outcomes for the Community Use Zone are – (2) There are no significant adverse effects on the amenity, public health and safety of residents and visitors having regard to– (f) locating habitable rooms in residential buildings (where the land is subject to flooding and/or drainage problems) a minimum of 500 millimetres above the recorded 1893 flood levels for Maryborough and District; (3) The efficient and safe operation of infrastructure is provided by– b) Roads being designed and constructed, with particular attention to - (vi) flood immunity and the design of stormwater drainage; and</p> <p>Division 6 Assessment criteria for the Rural Zone (2) There are no significant adverse effects on the amenity, public health and safety of residents and visitors having regard to– (d) locating habitable rooms in residential buildings (where the land is subject to flooding and/or drainage problems) a minimum of 500 millimetres above the recorded 1893 flood levels for Maryborough and District; (3) The efficient and safe operation of infrastructure is provided by– b) Roads being designed and constructed, with particular attention to - (vi) flood immunity and the design of stormwater drainage;</p> <p>3.28.2 The Specific Outcomes for Rural Residential A Zone and Rural Residential B Zone are - (2) There are no significant adverse effects on the amenity, public health and safety of residents and visitors having regard to- (b) locating habitable rooms in residential buildings (where the land is subject to flooding and/or drainage problems) a minimum of 500 millimetres above the recorded 1893 flood levels for Maryborough and District; (3) The efficient and safe operation of infrastructure is provided by – (vi) flood immunity and the design of stormwater drainage;</p> <p>Division 12 Assessment criteria for the Conservation Zone 3.42.2 The Specific Outcomes for the Conservation Zone are - (2) There are no significant adverse effects on the amenity, public health and safety of residents and visitors having regard to- (d) the use of open space and conservation areas to protect floodways and/or providing buffer strips between incompatible land uses;</p> <p>Division 14 – Assessment criteria for the Village Zone 3.49.2 The Specific Outcomes for Village Zone are - (2) There are no significant effects on the amenity, public health and safety of residents and visitors having regard to- (e) locating habitable rooms in residential buildings (where the land is subject to flooding and/or drainage problems) a minimum of 500 millimetres above the recorded 1893 flood levels for Maryborough and District; (3) The efficient and safe operation of infrastructure is provided by – (b) roads being designed and constructed, with particular attention to - (vi) flood immunity and the design of stormwater drainage.</p>
Use Codes	Yes
Details	<p>5.4 Community Use Code Child Care Facility SO-6. The development is sited to minimise: (a) the hazards of traffic; and (b) flood hazard or damage. PS-6.1 The site is not located – (a) on arterial roads; and (b) on a site subject to flooding, as indicated on the recorded 1893 flood levels for Maryborough and District, or a flood level adopted by Council</p> <p>5.7 House Code 5.7.3 Specific outcomes and Probable Solutions SO-3. Habitable rooms are above acceptable flood levels. PS-3 Where a lot is on floodable land, the minimum floor level for habitable rooms is 500 millimetres above the recorded 1893 flood levels for Maryborough and District.</p> <p>5.10 Residential Code 5.10.3 Specific Outcomes and Probable Solutions Caretakers Residence SO-6. Habitable rooms are above acceptable flood levels. PS-6 Where a lot is on floodable land, the minimum floor level for habitable rooms is 500 millimetres above the recorded 1893 flood levels for Maryborough and District.</p> <p>5.2 Building Matters Code 5.2.3 Specific outcomes and Acceptable Solutions SO-4 Buildings and structures are located to minimise impacts from natural disasters including flooding. PS-4.1 Buildings and structures are constructed at least 500 millimetres above the recorded 1893 flood levels for Maryborough and District, or a flood level adopted by Council.</p>

ROL Code	Yes
Details	<p>5.9 Reconfiguring a Lot Code</p> <p>Design Elements - All Zones</p> <p>Drainage Design and Construction</p> <p>SO-8. Each road and each proposed allotment is adequately drained.PS-8.1 The design of any proposed subdivision is to demonstrate that each allotment can be provided with a flood free house site of at least 1200 square metres in area, and flood free access from a fully constructed road.</p> <p>Public Garden and Recreation Space</p> <p>PS-12.1 Ten (10) percent of the area of land to be subdivided is provided for use as public garden or recreation space; seventy-five percent of which is above the 1 in 20 year flood level;</p>
Overlay Codes	Yes
Details	<p>4.18 Natural Hazards Overlay Code</p> <p>4.21 Specific Outcomes and Acceptable Solution for the Natural Hazards Overlay Code</p> <p>(1) Tidal Areas (1)</p> <p>SO (a) Development maintains the safety of people on a development site from all tidal and surge effects and associated flood inundation.</p> <p>PS (a) Development is sited on land that - would not be subject to flooding during a 1:100 year flood event and is located at least 100m from the highest astronomical tide (HAT) in all tidal areas</p> <p>(b) Development does not result in adverse impacts on public safety or the capacity to use land on the foreshore or within the coastal floodplain.</p> <p>(b) Works do not involve:</p> <ul style="list-style-type: none"> - any physical alteration to a major watercourse floodway or foreshore including vegetation clearing; or - net filling exceeding 100m³. <p>(c) Public safety and the environment are not adversely affected by the detrimental impacts of tidal surges or associated floodwaters on hazardous materials manufactured or stored in bulk.</p> <p>(c) The manufacture or storage in bulk of hazardous materials takes place at least 100m from the level of the Highest Astronomical Tide (HAT) or above the level of associated floods OR</p> <p>Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event or at least 100m from the HAT</p> <p>(d) Essential public utilities are available and maintain their function during tidal surges and an associated 1:100 year flood event.</p> <p>(d) Components of the infrastructure that are likely to fail or may result in contamination are –</p> <ul style="list-style-type: none"> - located above the level of a 1:100 year flood event associated with tidal surges or - are designed and constructed to exclude water inundation or infiltration and resist hydrostatic and hydrodynamic forces as a result of inundation. <p>(e) Community Infrastructure¹⁹ is able to function effectively during and immediately after flood events or tidal surges.</p> <p>(e) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide Guideline</p>
PSPs	No
Details	
Other	Yes
Details	<p>PART 2—DESIRED ENVIRONMENTAL OUTCOMES</p> <p>2.2 Desired Environmental Outcomes</p> <p>(j) The use and development of land not considered suitable for development, or adversely impacting on community safety and wellbeing, because of topographical, stability, drainage and flooding, bushfire, or salinity effects is restricted.</p> <p>SCHEDULE 2 – STORMWATER DRAINAGE STRATEGIES</p> <p>Part 1 – Reconfiguring a Lot</p> <p>A stormwater drainage strategy for development is to be provided by an approved and appropriately qualified professional engineer. The strategy shall take into account the required overland flow paths for a Q100 storm event. The strategy shall include the internal and external catchments and any effect on upstream and downstream drainage structures. The strategy shall clearly identify:</p> <p>(e) A flood free house site of at least 1200 square metres on each lot; and</p>
Op Works Code	Yes
Details	<p>5.5 Filling and Excavation Code</p> <p>5.5.3 Specific outcomes and Probable Solutions</p> <p>SO-2. Filling or excavation does not cause any increase in flooding or drainage problems.</p> <p>PS-6.1 The site is not located –</p> <ul style="list-style-type: none"> (a) on arterial roads; and (b) on a site subject to flooding, as indicated on the recorded 1893 flood levels for Maryborough and District, or a flood level adopted by Council
Overlay Code	Yes
Details	<p>4.18 Natural Hazards Overlay Code</p> <p>4.21 Specific Outcomes and Acceptable Solution for the Natural Hazards Overlay Code</p> <p>(1) Tidal Areas (1)</p> <p>SO (b) Development does not result in adverse impacts on public safety or the capacity to use land on the foreshore or within the coastal floodplain.</p> <p>PS(b) Works do not involve:</p> <ul style="list-style-type: none"> - any physical alteration to a major watercourse floodway or foreshore including vegetation clearing; or - net filling exceeding 100m³.
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Gladstone
Planning Scheme	Calliope Shire Planning Scheme
Adopted	13-Apr-07
Flood Amendments	No
SPP Compliance	Yes
Details	the Minister for Local Government, Planning and Sport has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme: 3. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide; and
Mapped Q100 / DFE	Yes
Details	Flood Management Area Overlay Map
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>Boyne Island/Tannum Sands Locality, Calliope Frame Locality O@ All new Rural Residential allotments provide the following: (i) a house pad and surrounds of 600 sqm which is 1 metre above the 1% AEP flood event or of the highest known historical flood level (whichever is the highest); S@ No solution specified.</p> <p>Gladstone State Development Area Locality O1 Development provides for the following: (i) buildings are located and oriented having regard to adjoining land uses, landform and watercourses, storage, parking areas and flood immunity; S1 No solution specified</p>
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Environment and Infrastructure Code Flood and Stormwater O1. Premises subject to risk of inundation or damage through flood or storm surge are provided with appropriate flood and storm surge immunity to reduce potential property damage and to ensure public safety. Note: These provisions apply to areas not included in the Flood & Inundation Management Overlay Code. S1.1 Development is sited on land that would not be subject to flooding during a 1% AEP flood and storm surge event; or S1.2 Development complies with the provisions of the Flooding and Inundation Planning Scheme Policy in regard to protection from flood and storm surge. O2. Development does not result in adverse impacts for the safety of people or the capacity to use land within a floodplain and does not involve: (i) any physical alteration to a watercourse; or (ii) net filling of 50 cubic m or (iii) the proposed works either: (A) avoid any reductions of on site flood storage capacity and contain within the subject site any changes in depth/duration/velocity of flood waters of all floods up to and including a 1% AEP flood event; or (B) do not change the flood characteristics at the 1% AEP flood event outside the subject site in ways that result in: (a) loss of flood storage; (b) loss of/changes to flow paths; (c) acceleration or retardation of flows; or (d) any reduction of flood warning times elsewhere on the floodplain. S2. No solution specified.</p> <p>Residential Code O4. Residential buildings achieve an adequate level of privacy for inhabitants and neighbours. S4. Residential buildings, other than dwelling houses, are provided with a solid screen fence on the side and rear boundaries of at least 1.8m in height (providing such fencing will not impede the free flow of floodwaters).</p> <p>Rural Code Cattle Feedlots, Piggeries, Poultry Farms & Aquaculture O2. Premises developed for Cattle Feedlots, Piggeries, Poultry Farms and Aquaculture: (i) are sufficiently elevated to provide for ventilation and drainage; (ii) have adequate vehicle access; (iii) are free of flooding; (iv) are supplied with a reliable, good quality water supply; and (v) have a secure power supply. S2. Premises are on land which: (i) has a slope less than 5%; (ii) has flood immunity from the 1% AEP flood event (iii) has sealed road access; (iv) is connected to an electricity supply network; and (v) is provided with a reliable water supply with a capacity to store a minimum of 2 day's supply.</p>
ROL Code	Yes
Details	<p>Reconfiguring A Lot Code 3. The new subdivision layout: (i) retains significant vegetation and habitat areas incorporating natural and cultural features; (ii) minimises soil erosion; (iii) avoids development on flood prone land or land subject to inundation by storm surge (refer Flood and Storm Surge Regulatory Plan 1); and (iv) is compatible with the nature of any natural hazard, including flood, bushfire and landslip consistent with SPP 1/03. 3.1 No solution specified. Rural and Rural Residential O3. Rural and rural residential road networks provide alternative routes for use at times of natural hazard, such as flooding and bushfire.</p>

	S3. No solution specified.
Overlay Codes	Yes
Details	<p>Division 7 – Flood and Inundation Management Overlay Code</p> <p>9.49 Overall Outcomes for the Flood and Inundation Management Overlay Code</p> <p>(1) The overall outcomes are the purpose of the Flood and Inundation Management Overlay Code.</p> <p>(2) The overall outcomes sought for the Flood and Inundation Management Overlay Code are to:</p> <p>(a) protect the safety of people and property from unreasonable risk from flooding and inundation hazard;</p> <p>(b) minimise damage and loss of property due to flooding and inundation;</p> <p>(c) restrict development encroaching into the flood plain;</p> <p>(d) provide a clear corridor for the conveyance of floodwaters;</p> <p>(e) provide for the safe storage of hazardous substances; and</p> <p>(f) protect the ecological functions of watercourses in the Shire.</p> <p>9.50 Specific Outcomes and Probable and Acceptable Solutions for the Flood and Inundation Management Overlay Code as follows:</p> <p>(a) Flooding and Inundation (Table 9-30)</p> <p>(b) Protecting Flood Conveyance, Community Values and Environmental Values (Table 9-31)</p> <p>(c) Hazardous Substances and Materials Storage (Table 9-32)</p> <p>(d) Stormwater Management (Table 9-33)</p> <p>Land, Building and Works Flood and Storm Surge Immunity Levels</p> <p>O1 Property, persons and other works are not placed at unreasonable risk against injury or damage caused by flood and storm surge providing that:</p> <p>(i) land developed for reconfiguration of a lot and material change of use of premises have reasonable immunity to surface waters;</p> <p>(ii) floors of buildings, including for both habitable and non-habitable rooms, have floor levels with reasonable immunity to surface waters; and</p> <p>(iii) new lots created have a sufficient useable land area.</p> <p>S1.1 All land is immune to surface water levels in accordance with the levels specified in Table 13.4-1 of the Flooding and Inundation Planning Scheme Policy;</p> <p>S1.2 All floors of buildings, including for both habitable and non-habitable rooms, have the minimum floor levels specified in Table 13.4-1 of the Flooding and Inundation Planning Scheme Policy;</p> <p>S1.3 For Assessable Development, all new lots created have a useable land area in accordance with Table 13.4-2 of the Flooding & Inundation Planning Scheme Policy</p> <p>Works Flood and Storm Surge Immunity Levels</p> <p>O2 All Operational Works are constructed with flood and storm surge immunity .</p> <p>Note: The Flooding and Inundation Planning Scheme Policy provides guidelines in regards to appropriate immunity levels.</p> <p>S2 No solution specified.</p> <p>Table 9-31 Protecting Flood Conveyance, Community Values and Environmental Values</p> <p>Flood Conveyance</p> <p>O1 Flood conveyance is maintained and the adverse effect of flooding are not increased by:</p> <p>(i) keeping buildings, structures and other works clear of water courses, creeks, and overland flow paths;</p> <p>(ii) securing flood corridors in a tenure that preserves flood carrying capacity; and</p> <p>S1.1 For residential, commercial and industrial development (of less than 1,000 m2 of impermeable area), land subject to inundation by the 1% AEP flood is transferred to Council tenure;</p> <p>S1.2 For rural, rural residential and industrial development (of 1,000 m2 or more of impermeable area):</p> <p>(i) useable land area is provided in accordance with Table 13.3 of the Flooding & Inundation Planning Scheme Policy;</p> <p>(ii) land subject to the requirements of the Developer Contributions Parks and Recreational Facilities Planning Scheme Policy transferred to Council tenure; and</p> <p>(iii) easements are provided over inlets and outlets.</p> <p>S1.3 Avoiding development, as listed below, on land below the 1% AEP flood that will result in increased flooding or adversely affect the value, safety or use of any land either now or in the future²⁸:</p> <p>(i) multi-unit or commercial development with an impermeable area larger than 2,500 m2;</p> <p>(ii) reconfiguration of more than five allotments;</p> <p>(iii) industrial activities with over 1,000 m2 of impermeable area;</p> <p>(vi) open carparks with more than 100 car spaces.</p> <p>Community Values</p> <p>O2 The values to the community of water courses, creeks, streams and foreshore areas are maintained by providing public access to foreshores for maintenance and public recreation purposes.</p> <p>S2 No solution specified.</p> <p>Environmental Values</p> <p>O3 Environmental values of rivers, creeks and water courses are preserved and maintained where practical by securing flood corridors in a tenure that provides for the protection of riparian vegetation.</p> <p>S3 No solution specified.</p> <p>Material Storage and Hazardous Substances (including Intensive Animal Husbandry)</p> <p>O1 Inundation of the facilities, equipment, stock or materials do not:</p> <p>(i) cause harm to the environment or other persons; or</p> <p>(ii) cause significant economic loss; or</p> <p>(iii) cause blockage or damage to structures or vegetation; or</p> <p>(iv) create debris or refuse in rivers or waterways.</p> <p>S1 Any hazardous substance is stored above or securely isolated from the 1% AEP event rainfall or storm surge event including appropriate freeboard as required for habitable rooms in buildings as set out in Table 13.2 of the Flooding & Inundation Planning Scheme Policy.</p> <p>O2 Storage and handling of substances do not create a hazard to the environment or human safety by the risk of contamination due to flooding or inundation:</p> <p>Note: Development is undertaken in accordance with a risk analysis report outlining substances involved, toxicity to the environment and the risk of contamination due to flooding and mitigation measures to prevent hazard.</p> <p>S2.1 Equipment, goods or materials of significant value or goodwill are housed in buildings above the 1% AEP event including appropriate freeboard as required for habitable rooms in buildings as set out in Table 13.2 of the Flooding & Inundation Planning Scheme Policy.</p> <p>S2.2 Material, equipment, stock or goods that are transient in water are stored securely to the level of the 1% AEP event including appropriate</p>

	<p>freeboard as required for habitable rooms in buildings as set out in Table 13.2 of the Flooding & Inundation Planning Scheme Policy.</p> <p>Table 9-33 Stormwater Management</p> <p>O1 The design and construction of stormwater management systems:</p> <ul style="list-style-type: none"> (i) avoids reduction of on site flood storage capacity; (ii) does not adversely impact on flooding of upstream and downstream properties and roads by providing an acceptable level of flood immunity; (iii) makes best use of the use of natural waterway corridors by retaining natural waterway corridors wherever practical; (iv) utilises existing stormwater management infrastructure by providing for an underground or open drain / overland flow path network (for major and minor systems) whilst maximising use of natural channel design; (v) protects and enhances environmental values within the receiving waters; (vi) provides for detention / retention storage basins where applicable; (vii) provides for erosion and sediment controls; and (viii) considers public safety factors and risk. <p>S1 The design and construction of stormwater management systems complies with the requirements of the Engineering Design and Infrastructure Standards Planning Scheme Policy</p> <p>Lake Awoonga Catchment Overlay Code</p> <p>O1 Land within the Flood Margin between 40 m and 47 m AHD and between 47 m and 62 m AHD is protected from inappropriate development and activities.</p> <p>S1 Other than in the Village Zone or the Local Industry Zone, development within the Flood Margin between 40 m AHD and 47 m AHD is restricted to long term grazing, temporary occupancy (4 to 6 weeks) or for special purposes including fishing and canoe clubs.</p>
PSPs	Yes
Details	<p>13.4 Flooding & Inundation Planning Scheme Policy</p> <p>13.4.1 Purpose</p> <p>The purpose of the Flooding and Inundation planning scheme policy is to:-</p> <ul style="list-style-type: none"> (a) provide details of the flood immunity and requirements for development to ensure that there is no unreasonable risk from flooding; and (b) safeguard occupants of buildings from illness or injury, and protect buildings against damage caused from surface water by ensuring the statutory requirements of Queensland's Standard Building Regulation are met, particularly for "habitable rooms". <p>13.4.2 The Uncertainties of Flooding Estimation</p> <p>Although flood levels may be determined scientifically and by modelling, there are quite a number of uncertainties in the nature of flood estimation.</p> <p>Water levels during a flood can vary due to a number of hydraulic variables such as wind set-up, wave action, afflux, and water velocity, as well as bed movement and changes in the catchment such as the variation of vegetation cover in water courses and flood plains and the increase in impermeable ground covers.</p> <p>When interpreting flood information, allowance must also be made for uncertainty with the analysis of flood levels due to unavoidable inaccuracies in statistics, survey information, hydrology, changes within the catchment and hydraulic engineering methods.</p> <p>Flood levels are based on a level of risk known as an Annual Exceedance Probability or AEP. The Annual Exceedance Probability adopted by Council (and adopted generally in Queensland as an acceptable risk) is one percent (ie 1%AEP). This means through statistical analysis the amount of rainfall has a one percent chance of occurring in any one year. This does not preclude two of the same events occurring one year apart, nor even larger and higher flood events occurring during the same period.</p> <p>13.4.3 Catchment Issues</p> <p>The Shire contains several river catchment systems, including:-</p> <ul style="list-style-type: none"> • the Boyne River; • the Calliope River • Raglan Creek • A small part of the Don River catchment, drawing into the Dawson River. <p>Each of these systems has the capabilities of causing flood issues for lands within their catchments. Council has varying levels of flood information available to it for these catchments, ranging from recently prepared documentation and modelling for the Boyne River and its main tributaries downstream of Awoonga Dam, to no hydrological or hydraulic modelling at all for other systems. The downstream section of Calliope River is currently the subject of a coordinated flood study which will greatly assist in flooding estimations once completed.</p> <p>The Shire also has a significant coastal area where storm surge can be an issue. Council has been able to reference a report which investigated storm surge issues on Port Curtis and provided information as to water levels likely to be encountered from cyclonic storm surge and tides. The findings of this report were adopted by Council, and a 1% AEP event (plus a margin for uncertainty) was interpreted from the report and has been consistently used by Council since 1984 as the "development level" in affected areas.</p> <p>In circumstances where no hydraulic modelling is available, potential flooding impacts have to be estimated from historical levels and events, and an evaluation made on determining a credible 1% AEP value. All calculations using historical data should include an appropriate freeboard to account for reliability and reputability concerns. Where flood levels are not known the Integrated Planning Act 1997 provides that it is the applicants' responsibility to obtain all information to allow assessment of the application by the Assessment Manager or certifier.</p> <p>13.4.4 Interpretation of Flooding and Storm Surge Information</p> <p>It would be unrealistic for Council to expect that no development could occur below the adopted flood level. As to be expected, prior to the current flood level information being available to Council, some areas now identified as flood affected have already been developed. It is also unrealistic to expect that all land below the adopted flood level would be purchased for inclusion into the public land portfolio, due partly to cost and partly to the fact that some activities and land uses are quite acceptable on land below the adopted flood level. Nonetheless, in a general sense development does need to have a level of protection from the risk of flooding, and Council intends to ensure that all new development which should have flood immunity is provided with the appropriate controls.</p> <p>The following Table 13.4-1 sets out Council's development level requirements for certain developments within various zones in the scheme area.</p> <p>Table 13.4-1 Immunity Requirements for Certain Developments in all zones (with the exception of the Conservation Zone, the Forestry Zone and the Open Space and Recreation Zone).</p> <p>Boyne or Calliope River - Lot Earthworks 1% AEP+0.8m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.3m, Other Non-Habitable 1%AEP.</p> <p>Creek or Waterway - Lot Earthworks 1% AEP+0.3m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.3m, Other Non-Habitable 1%AEP.</p> <p>Localised over land flow path, or designed open channel - Lot Earthworks 1% AEP+0.3m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.3m, Other Non-Habitable 1%AEP.</p> <p>Storm Surge - Lot Earthworks 1% AEP+0.8m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.8m, Other Non-Habitable 1%AEP.</p>

	<p>For new allotments created, the following Table 13.4-2 sets out Councils criteria in terms of the proportion of land required to be above the development level.</p> <p>Commercial - 80%</p> <p>Community Use - 50%</p> <p>Conservation - No set minimum</p> <p>Forestry - No set minimum</p> <p>Gladstone State Development Area - 50%</p> <p>Local Industry - 800m² (20m X 40m)</p> <p>Major Industry - 50%</p> <p>Major Infrastructure - 50%</p> <p>Open Space and Recreation - No set minimum</p> <p>Residential - 600m² (20m x 30m) – unless Master planned residential development which can be 80%</p> <p>Rural Residential - 600m² (20m X 30m)</p> <p>Rural - 1200m² (30m X 40m)</p> <p>Urban Expansion - 1200m² (30m X 40m)</p> <p>Village - 600m² (20m X 30m)</p> <p>Notes to Tables</p> <p>The 1% AEP flood level for the Boyne River downstream of Awoonga Dam has been derived from the report “Report on Awoonga Dam, Boyne River Dam Break and Flooding Study” Sunwater October 2003.</p> <p>The 1% AEP storm surge level for Port Curtis has been derived from the report “Report of an Investigation into Probable Water Levels in the Gladstone Area Resulting from the Interaction of Cyclonic Storm Surges and Astronomical Tides” Blain Bremmer and Williams Pty Ltd, January 1980.</p> <p>The 1% AEP flood level from other flooding sources is to be derived from existing hydrologic and hydraulic studies, or hydrologic and hydraulic models, or historical levels and events investigated and interpreted, to provide an acceptable level.</p> <p>Where a report is required, the report is to be certified by an Engineer with suitable registration (RPEQ or NPER3) and experience, use recognised and locally accepted data and design methodologies, and use calculations for flood modelling that include options based on a vegetated riparian zone including ground cover, understorey and canopy vegetation.</p> <p>Parks & Recreational Facilities</p> <p>13.2.14 Flooding and Waterways</p> <p>Flood liable land will only be considered suitable for parkland where this would result in a recreational benefit to the public. Land adjacent to watercourses or subject to flooding may be considered suitable if it:</p> <ul style="list-style-type: none"> ☐ is free of regular inundation, being land that is generally located above the 2% AEP event. Land below the 2% AEP event will normally be part of a waterway corridor ☐ does not comprise part of a high velocity overland flow path, which could pose a danger to the public or result in erosion or other damage to parkland, and does not consist of areas used for long duration storage of flood waters ☐ is suitable for active recreation, eg sport <p>For the purposes of this Policy, a ‘watercourse’ refers to any element of a river, creek or stream including the bed and extending to the high floodway bank, as well as associated wetland areas.</p> <p>Sufficient land above the 1% AEP flood event will need to be dedicated to accommodate any proposed structures which are generally associated with parkland facilities, e.g. clubhouse, changing rooms. The extent of land will generally have to also contain the flow from a 1% AEP flood event. Where the width of flow exceeds the minimum width required, the additional park dedication shall not be credited as park land.</p> <p>Reconfiguration of a Lot Policy</p> <p>Information Required</p> <p>The proposal plan should preferably show the following information and particulars:</p> <p>(b) The location of all watercourses, waterholes, the Flood Lines/levels and inundating levels correlated to Australian Height Datum, and the high water mark of any tidal water;</p>
Other	Yes
Details	<p>Strategic Framework</p> <p>Urban Expansion: Significant factors to be considered in the pattern of future urban development are:</p> <ul style="list-style-type: none"> - ☐ bushfire, landslip and flood risk; <p>Desired Environmental Outcomes</p> <p>(c) Community Development</p> <p>The desired environmental outcome sought for community development is that Calliope Shire will be an equitable, sustainable and prosperous community characterised by a strong local community focus.</p> <p>In particular, the community development desired environmental outcome is to be achieved through:</p> <p>(vi) a clean, safe environment where the risk of flood, bushfire and landslide is minimised; and</p>
Op Works Code	Yes
Details	<p>Operational Works (Earthworks) Code</p> <p>Overall Outcomes for the Operational Works (Earthworks) Code</p> <p>(2) The overall outcomes sought for the Operational Works (Earthworks) Code are the following:</p> <p>(iii) are located in areas that do not result in increased flooding and drainage problems on upstream and downstream property; and</p> <p>Bridge and Culvert Works</p> <p>O1. Bridges and culverts for flood immunity minimise traffic disruption, improve public safety, consider fauna habitat movement and allow for bikeways during and after construction.</p> <p>S1. No solution specified.</p>
Overlay Code	Yes
Details	<p>Division 7 – Flood and Inundation Management Overlay Code</p> <p>9.49 Overall Outcomes for the Flood and Inundation Management Overlay Code</p> <p>(1) The overall outcomes are the purpose of the Flood and Inundation Management Overlay Code.</p> <p>(2) The overall outcomes sought for the Flood and Inundation Management Overlay Code are to:</p> <ul style="list-style-type: none"> (a) protect the safety of people and property from unreasonable risk from flooding and inundation hazard; (b) minimise damage and loss of property due to flooding and inundation; (c) restrict development encroaching into the flood plain; (d) provide a clear corridor for the conveyance of floodwaters;

(e) provide for the safe storage of hazardous substances; and
 (f) protect the ecological functions of watercourses in the Shire.

9.50 Specific Outcomes and Probable and Acceptable Solutions for the Flood and Inundation Management Overlay Code as follows:

(a) Flooding and Inundation (Table 9-30)
 (b) Protecting Flood Conveyance, Community Values and Environmental Values (Table 9-31)
 (c) Hazardous Substances and Materials Storage (Table 9-32)
 (d) Stormwater Management (Table 9-33)

Land, Building and Works Flood and Storm Surge Immunity Levels

O1 Property, persons and other works are not placed at unreasonable risk against injury or damage caused by flood and storm surge providing that:

(i) land developed for reconfiguration of a lot and material change of use of premises have reasonable immunity to surface waters;
 (ii) floors of buildings, including for both habitable and non-habitable rooms, have floor levels with reasonable immunity to surface waters; and
 (iii) new lots created have a sufficient useable land area.

S1.1 All land is immune to surface water levels in accordance with the levels specified in Table 13.4-1 of the Flooding and Inundation Planning Scheme Policy;

S1.2 All floors of buildings, including for both habitable and non-habitable rooms, have the minimum floor levels specified in Table 13.4-1 of the Flooding and Inundation Planning Scheme Policy;

S1.3 For Assessable Development, all new lots created have a useable land area in accordance with Table 13.4-2 of the Flooding & Inundation Planning Scheme Policy

Works Flood and Storm Surge Immunity Levels

O2 All Operational Works are constructed with flood and storm surge immunity .

Note: The Flooding and Inundation Planning Scheme Policy provides guidelines in regards to appropriate immunity levels.

S2 No solution specified.

Table 9-31 Protecting Flood Conveyance, Community Values and Environmental Values

Flood Conveyance

O1 Flood conveyance is maintained and the adverse effect of flooding are not increased by:

(i) keeping buildings, structures and other works clear of water courses, creeks, and overland flow paths;
 (ii) securing flood corridors in a tenure that preserves flood carrying capacity; and

S1.1 For residential, commercial and industrial development (of less than 1,000 m2 of impermeable area), land subject to inundation by the 1% AEP flood is transferred to Council tenure;

S1.2 For rural, rural residential and industrial development (of 1,000 m2 or more of impermeable area):

(i) useable land area is provided in accordance with Table 13.3 of the Flooding & Inundation Planning Scheme Policy;
 (ii) land subject to the requirements of the Developer Contributions Parks and Recreational Facilities Planning Scheme Policy transferred to Council tenure; and
 (iii) easements are provided over inlets and outlets.

S1.3 Avoiding development, as listed below, on land below the 1% AEP flood that will result in increased flooding or adversely affect the value, safety or use of any land either now or in the future²⁸:

(i) multi-unit or commercial development with an impermeable area larger than 2,500 m2;
 (ii) reconfiguration of more than five allotments;
 (iii) industrial activities with over 1,000 m2 of impermeable area;
 (vi) open carparks with more than 100 car spaces.

Community Values

O2 The values to the community of water courses, creeks, streams and foreshore areas are maintained by providing public access to foreshores for maintenance and public recreation purposes.

S2 No solution specified.

Environmental Values

O3 Environmental values of rivers, creeks and water courses are preserved and maintained where practical by securing flood corridors in a tenure that provides for the protection of riparian vegetation.

S3 No solution specified.

Material Storage and Hazardous Substances (including Intensive Animal Husbandry)

O1 Inundation of the facilities, equipment, stock or materials do not:

(i) cause harm to the environment or other persons; or
 (ii) cause significant economic loss; or
 (iii) cause blockage or damage to structures or vegetation; or
 (iv) create debris or refuse in rivers or waterways.

S1 Any hazardous substance is stored above or securely isolated from the 1% AEP event rainfall or storm surge event including appropriate freeboard as required for habitable rooms in buildings as set out in Table 13.2 of the Flooding & Inundation Planning Scheme Policy.

O2 Storage and handling of substances do not create a hazard to the environment or human safety by the risk of contamination due to flooding or inundation:

Note: Development is undertaken in accordance with a risk analysis report outlining substances involved, toxicity to the environment and the risk of contamination due to flooding and mitigation measures to prevent hazard.

S2.1 Equipment, goods or materials of significant value or goodwill are housed in buildings above the 1% AEP event including appropriate freeboard as required for habitable rooms in buildings as set out in Table 13.2 of the Flooding & Inundation Planning Scheme Policy.

S2.2 Material, equipment, stock or goods that are transient in water are stored securely to the level of the 1% AEP event including appropriate freeboard as required for habitable rooms in buildings as set out in Table 13.2 of the Flooding & Inundation Planning Scheme Policy.

Table 9-33 Stormwater Management

O1 The design and construction of stormwater management systems:

(i) avoids reduction of on site flood storage capacity;
 (ii) does not adversely impact on flooding of upstream and downstream properties and roads by providing an acceptable level of flood immunity;
 (iii) makes best use of the use of natural waterway corridors by retaining natural waterway corridors wherever practical;
 (iv) utilises existing stormwater management infrastructure by providing for an underground or open drain / overland flow path network (for major and minor systems) whilst maximising use of natural channel design;
 (v) protects and enhances environmental values within the receiving waters;
 (vi) provides for detention / retention storage basins where applicable;

	<p>(vii) provides for erosion and sediment controls; and</p> <p>(viii) considers public safety factors and risk.</p> <p>S1 The design and construction of stormwater management systems complies with the requirements of the Engineering Design and Infrastructure Standards Planning Scheme Policy</p>
PSPs	Yes
Details	<p>13.4 Flooding & Inundation Planning Scheme Policy</p> <p>13.4.1 Purpose</p> <p>The purpose of the Flooding and Inundation planning scheme policy is to:-</p> <p>(a) provide details of the flood immunity and requirements for development to ensure that there is no unreasonable risk from flooding; and</p> <p>(b) safeguard occupants of buildings from illness or injury, and protect buildings against damage caused from surface water by ensuring the statutory requirements of Queensland's Standard Building Regulation are met, particularly for "habitable rooms".</p> <p>13.4.2 The Uncertainties of Flooding Estimation</p> <p>Although flood levels may be determined scientifically and by modelling, there are quite a number of uncertainties in the nature of flood estimation.</p> <p>Water levels during a flood can vary due to a number of hydraulic variables such as wind set-up, wave action, afflux, and water velocity, as well as bed movement and changes in the catchment such as the variation of vegetation cover in water courses and flood plains and the increase in impermeable ground covers.</p> <p>When interpreting flood information, allowance must also be made for uncertainty with the analysis of flood levels due to unavoidable inaccuracies in statistics, survey information, hydrology, changes within the catchment and hydraulic engineering methods.</p> <p>Flood levels are based on a level of risk known as an Annual Exceedance Probability or AEP. The Annual Exceedance Probability adopted by Council (and adopted generally in Queensland as an acceptable risk) is one percent (ie 1%AEP). This means through statistical analysis the amount of rainfall has a one percent chance of occurring in any one year. This does not preclude two of the same events occurring one year apart, nor even larger and higher flood events occurring during the same period.</p> <p>13.4.3 Catchment Issues</p> <p>The Shire contains several river catchment systems, including:-</p> <ul style="list-style-type: none"> • the Boyne River; • the Calliope River • Raglan Creek • A small part of the Don River catchment, drawing into the Dawson River. <p>Each of these systems has the capabilities of causing flood issues for lands within their catchments. Council has varying levels of flood information available to it for these catchments, ranging from recently prepared documentation and modelling for the Boyne River and its main tributaries downstream of Awoonga Dam, to no hydrological or hydraulic modelling at all for other systems. The downstream section of Calliope River is currently the subject of a coordinated flood study which will greatly assist in flooding estimations once completed.</p> <p>The Shire also has a significant coastal area where storm surge can be an issue. Council has been able to reference a report which investigated storm surge issues on Port Curtis and provided information as to water levels likely to be encountered from cyclonic storm surge and tides. The findings of this report were adopted by Council, and a 1% AEP event (plus a margin for uncertainty) was interpreted from the report and has been consistently used by Council since 1984 as the "development level" in affected areas.</p> <p>In circumstances where no hydraulic modelling is available, potential flooding impacts have to be estimated from historical levels and events, and an evaluation made on determining a credible 1% AEP value. All calculations using historical data should include an appropriate freeboard to account for reliability and reputability concerns. Where flood levels are not known the Integrated Planning Act 1997 provides that it is the applicants' responsibility to obtain all information to allow assessment of the application by the Assessment Manager or certifier.</p> <p>13.4.4 Interpretation of Flooding and Storm Surge Information</p> <p>It would be unrealistic for Council to expect that no development could occur below the adopted flood level. As to be expected, prior to the current flood level information being available to Council, some areas now identified as flood affected have already been developed. It is also unrealistic to expect that all land below the adopted flood level would be purchased for inclusion into the public land portfolio, due partly to cost and partly to the fact that some activities and land uses are quite acceptable on land below the adopted flood level. Nonetheless, in a general sense development does need to have a level of protection from the risk of flooding, and Council intends to ensure that all new development which should have flood immunity is provided with the appropriate controls.</p> <p>The following Table 13.4-1 sets out Council's development level requirements for certain developments within various zones in the scheme area.</p> <p>Table 13.4-1 Immunity Requirements for Certain Developments in all zones (with the exception of the Conservation Zone, the Forestry Zone and the Open Space and Recreation Zone).</p> <p>Boyne or Calliope River - Lot Earthworks 1% AEP+0.8m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.3m, Other Non-Habitable 1%AEP.</p> <p>Creek or Waterway - Lot Earthworks 1% AEP+0.3m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.3m, Other Non-Habitable 1%AEP.</p> <p>Localised over land flow path, or designed open channel - Lot Earthworks 1% AEP+0.3m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.3m, Other Non-Habitable 1%AEP.</p> <p>Storm Surge - Lot Earthworks 1% AEP+0.8m, Habitable Room & Hazardous Materials 1% AEP +0.5m, Residential Non-Habitable 1%AEP +0.8m, Other Non-Habitable 1%AEP.</p> <p>For new allotments created, the following Table 13.4-2 sets out Councils criteria in terms of the proportion of land required to be above the development level.</p> <p>Commercial - 80%</p> <p>Community Use - 50%</p> <p>Conservation - No set minimum</p> <p>Forestry - No set minimum</p> <p>Gladstone State Development Area - 50%</p> <p>Local Industry - 800m² (20m X 40m)</p> <p>Major Industry - 50%</p> <p>Major Infrastructure - 50%</p> <p>Open Space and Recreation - No set minimum</p> <p>Residential - 600m² (20m x 30m) – unless Master planned residential development which can be 80%</p> <p>Rural Residential - 600m² (20m X 30m)</p> <p>Rural - 1200m² (30m X 40m)</p> <p>Urban Expansion -1200m² (30m X 40m)</p>

	<p>Village - 600m2 (20m X 30m)</p> <p>Notes to Tables</p> <p>The 1% AEP flood level for the Boyne River downstream of Awoonga Dam has been derived from the report “Report on Awoonga Dam, Boyne River Dam Break and Flooding Study” Sunwater October 2003.</p> <p>The 1% AEP storm surge level for Port Curtis has been derived from the report “Report of an Investigation into Probable Water Levels in the Gladstone Area Resulting from the Interaction of Cyclonic Storm Surges and Astronomical Tides” Blain Bremmer and Williams Pty Ltd, January 1980.</p> <p>The 1% AEP flood level from other flooding sources is to be derived from existing hydrologic and hydraulic studies, or hydrologic and hydraulic models, or historical levels and events investigated and interpreted, to provide an acceptable level.</p> <p>Where a report is required, the report is to be certified by an Engineer with suitable registration (RPEQ or NPER3) and experience, use recognised and locally accepted data and design methodologies, and use calculations for flood modelling that include options based on a vegetated riparian zone including ground cover, understorey and canopy vegetation.</p>
Other	No
Details	
Other Info	

LGA	Gladstone
Planning Scheme	Miriam Vale Planning Scheme
Adopted	24-Feb-09
Flood Amendments	No
SPP Compliance	Yes
Details	the Minister for Infrastructure and Planning has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme 1. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide;
Mapped Q100 / DFE	No
Details	Insufficient data is available to accurately map the extent of 1 in 100 year and 1 in 50 year flood events. Please contact Council's Technical Services Branch to determine the extent of local information available regarding flooding.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Community Use Code Design for Child Care Centres S08 Sites are located to minimise:</p> <ul style="list-style-type: none"> - exposure to unreasonable risks and hazards, such as flooding, excessive noise and air pollution; - exposure to soil contamination; and - The intrusion of nonresidential traffic into the minor neighbourhood street network. <p>AS8.1 Child Care Centres (as defined in Part 1 of the Scheme) are not located:</p> <ul style="list-style-type: none"> - adjacent to Lowmead Road, Round Hill Road or the Bruce Highway; - on a contaminated site; - adjacent to a Local Access Road; - within 150 metres of an Industrial Zone or use; - within 100 metres of a high voltage electricity easement; or - within 50 metres of a service station: or - In a flood prone area. <p>Forestry Code SO2 Development (a) retains (i) significant species of vegetation; and (ii) wildlife corridors; and (iii) creek corridors; and (iv) habitat areas; and (b) minimises land degradation; (c) avoids (i) steep and unstable land; & (ii) land subject to flooding;& (iii) Land subject to high bushfire risk. AS2.1 No Solution Specified.</p> <p>Works Services and Infrastructure Code SO10 An acceptable level of flood immunity is provided for new development and access to new development. AS10.1 The floor levels of all habitable rooms shall be a minimum of 500mm above the level of 1 in 100 year floods.</p>
ROL Code	Yes
Details	<p>Reconfiguration of a Lot Code SO2 The layout is designed to:</p> <ul style="list-style-type: none"> a) protect natural and cultural features; b) Address site constraints such as, steep slopes, soil erosion, flooding, overland flow, storm surges, bushfire risk etc; c) retain special features such as trees and views; d) provide adequate buffers to risks and hazards such as noise impacts, air quality, radioactivity, etc; and e) Ensure that adequate buffers are provided between incompatible land uses. <p>AS2.1 No Solution specified.</p>
Overlay Codes	Yes
Details	<p>Environmental Management Overlay Code SO3 Development maintains the integrity of the Fred Haig Dam Declared Catchment Area for water-supply catchment purposes. AS3.1 Development in the Fred Haig Dam Declared Catchment Area as identified on the Planning Scheme Maps 4.39.1 Environmental Management Overlay Plan is not located within:</p> <ul style="list-style-type: none"> - 400 metres of the Full Supply Level, or flood reserve margin, whichever is the greater distance; - 100 metres of the high bank of a designated watercourse (as per the Water Act 2000); and - 25 metres of each bank of other watercourses.
PSPs	Yes
Details	<p>Planning Scheme Policy No. 1 - Engineering Standards for Development Works Purpose:</p> <ul style="list-style-type: none"> h) The efficiency of all elements of the water cycle is optimised, including reduction in potable demand, no increase in stormwater or flood damages at all locations due to increases in stormwater volumes and/or peak discharges and the maximisation of reuse opportunities; m) Adverse impacts, including cumulative impacts, on flood storage and conveyance capacity are minimised and unacceptable risk1 to people and

	<p>property is not created;</p> <p>DIVISION 39 WORKS SERVICES AND INFRASTRUCTURE CODE</p> <p>Flood Management</p> <p>SO10 An acceptable level of flood immunity is provided for new development and access to new development.</p> <p>AS10.1 Development does not occur in areas known to be flood prone. Note: Insufficient data is available to accurately map the extent of 1 in 100 year and 1 in 50 year flood events. Please contact Council s Technical Services Branch to determine the extent of local information available regarding flooding.</p> <p>(iv) Rural Residential Subdivisions</p> <p>The following information may be required:</p> <p>The estimated Q100 flood contours for all flows on natural drainage corridors, designed channels or overland flow paths.</p> <p>Planning Scheme Policy 2 Engineering Standards for Self Assessable Development</p> <p>3.2 Flood Management Standards</p> <p>3.2.1 Flood Immunity for Land Uses and Lots</p> <p>Where in the Rural and Rural Character Zones</p> <p>For areas in the Rural Zone, a minimum of 600m² of each lot is to be located above the 100 year ARI flood level, and suitable for a building platform.</p> <p>For areas in the Rural Character Zone, where portions of the allotment are below the 100 year ARI flood level, a drainage easement may be required by Council. Access to habitable buildings in the Rural Character Zone and the Rural Zone is to ensure that a low hazard criteria is met. The safety of the site can be determined by the following equation for calculating Low Hazard:</p> <p>Low Hazard: $D + 0.3V \leq 0.8$</p> <p>where:</p> <p>D = depth of floodwater in 100 year ARI event (m) and must be less than 0.8m and</p> <p>V = velocity of floodwater in 100 year ARI event (m/s) and must be less than 2m/s</p> <p>3.2.2 Flood Immunity for Certain Infrastructure</p> <p>Emergency Services and Residential and Commercial Land Uses</p> <p>Lot levels for the following activities (as defined in Part 1 of the Planning Scheme) are to be above the 100 year ARI flood level:</p> <ul style="list-style-type: none"> Community Facilities (including all defined uses such as emergency services); Hospital; Residential uses, being Dwelling House and Home Occupation; Commercial uses, being Commercial Premises, Local Shop and Shop; and Indoor Recreation. <p>Mechanical and Electrical Works</p> <p>Mechanical and electrical works are to be located above the 100 year ARI flood level.</p> <p>Roads</p> <p>The flood immunity for roads is to be provided in accordance with the Queensland Urban Drainage Manual (QUDM) except for the Bruce Highway, which is to be above 100 year ARI flood levels.</p>
Other	Yes
Details	<p>2.1.1 Broad Strategies for Miriam Vale Shire</p> <p>Areas being at risk for land slide, flood events, or storm surge events, are to be carefully used and managed according to the nature of the risk, and through compliance with the Planning Scheme Codes.</p>
Op Works Code	Yes
Details	<p>Works Services and Infrastructure Code</p> <p>SO10 An acceptable level of flood immunity is provided for new development and access to new development.</p> <p>AS10.1 The floor levels of all habitable rooms shall be a minimum of 500mm above the level of 1 in 100 year floods.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>Planning Scheme Policy No. 1 - Engineering Standards for Development Works</p> <p>Purpose:</p> <p>h) The efficiency of all elements of the water cycle is optimised, including reduction in potable demand, no increase in stormwater or flood damages at all locations due to increases in stormwater volumes and/or peak discharges and the maximisation of reuse opportunities;</p> <p>m) Adverse impacts, including cumulative impacts, on flood storage and conveyance capacity are minimised and unacceptable risk¹ to people and property is not created;</p> <p>DIVISION 39 WORKS SERVICES AND INFRASTRUCTURE CODE</p> <p>Flood Management</p> <p>SO10 An acceptable level of flood immunity is provided for new development and access to new development.</p> <p>AS10.1 Development does not occur in areas known to be flood prone. Note: Insufficient data is available to accurately map the extent of 1 in 100 year and 1 in 50 year flood events. Please contact Council s Technical Services Branch to determine the extent of local information available regarding flooding.</p> <p>(iv) Rural Residential Subdivisions</p> <p>The following information may be required:</p> <p>The estimated Q100 flood contours for all flows on natural drainage corridors, designed channels or overland flow paths</p>
Other	No
Details	
Other Info	

LGA	Gladstone
Planning Scheme	The Gladstone Plan
Adopted	12-Dec-06
Flood Amendments	No
SPP Compliance	Yes
Details	the Minister for Local Government, Planning and Sport has identified the following State Planning Policies as having been appropriately reflected in the planning scheme: 3. State Planning Policy 1/03 : Mitigating the Adverse Impacts of Flood, Bushfire and Landslide - Flood, and Landslide components only;
Mapped Q100 / DFE	Yes
Details	Regulatory Plans Regulatory Plan 1 – Flood & Storm Surge Mapping for a 100 Year ARI Overlay
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>North West Locality Code P1 Land within the Rural Zone preserves the rural landscape and is retained as a physical buffer to the industrial activities and major infrastructure by: (ii) retaining timbered ridgelines, areas of bushland, riparian corridors, particularly for the Calliope River along the banks and in flood prone areas and other areas of habitat value, in their natural state;</p> <p>Eastern Harbour Locality Code P1 Development in the Rural Zone maintains the environmental and landscape value of land by: (ii) retaining timbered ridgelines, areas of bushland, riparian corridors, particularly the Calliope River, Boyne river, Auckland Creek and South Trees Inlet along the banks and in flood prone areas (refer Flood and Storm Surge Regulatory Plan 1) and other areas of habitat value in their natural state;</p> <p>Suburban Locality Code P5 New urban development in the designated Urban Expansion Zone is not located on land which is unable to be economically and efficiently serviced with development infrastructure including; (iii) land in bushfire or flood hazard areas (refer Flood and Storm Surge Regulatory Plan 1). Division 14 – Specific Outcomes and Acceptable and Probable Solutions for the Kirkwood Road South Precinct P2 The development pattern and layout ensures areas which could result in costly infrastructure solutions or potential for environmental harm, are protected from development including: (ii) unstable land or land prone to slippage, land in bushfire or (refer Flood and Storm Surge Regulatory Plan 1) hazard areas;</p>
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Environment and Infrastructure Code Flood & Storm Surge Self Assessable Development SO1. Premises subject to risk of inundation or damage through flood or storm surge (refer to Flood and Storm Surge Regulatory Plan – 1) and including all premises and land within the Harbour Islands Locality situated below 4 metres AHD are provided with appropriate flood and storm surge immunity to reduce potential property damage and to ensure public safety. PS 1.1 Development is sited on land that would not be subject to flooding during a 100 yr ARI flood and storm surge event (refer to Flood and Storm Surge Regulatory Plan 1); or PS 1.2 There is no increase in the number of people living or working on a flood prone site, except where the premises are occupied on a short term or intermittent basis (e.g. by construction workers); or PS 1.3 For development comprising a residential element, the floors of all habitable rooms are located 500mm above the 100 yr ARI flood and storm surge event; or PS 1.4 For non residential development and development involving temporary or moveable residential structures (e.g. caravan parks): (i) Buildings are located and designed so that floor levels (except areas used for car parking) are 500 mm above the 100 yr ARI flood and storm event; or (ii) there is at least one evacuation route that remains passable for emergency evacuations during all floods up to and including 100 yr ARI storm surge events; or (iii) a flood warning system enables safe evacuation; or (iv) a flood free refuge is available for people within the development. Assessable Development SO2. Development does not result in adverse impacts for the safety of people or the capacity to use land within a floodplain and does not involve: (i) any physical alteration to a watercourse; or (ii) net filling of greater than 50 m3; or (iii) the proposed works either: (A) avoid any reductions of on site flood storage capacity and contain within the subject site any changes in depth/duration/velocity of flood waters of all floods up to and including a Q100 storm event; or (B) do not change the flood characteristics at the Q100 storm event outside the subject site in ways that result in: (a) loss of flood storage; (b) loss of/changes to flow paths; (c) acceleration or retardation of flows; or (d) any reduction of flood warning times elsewhere on the floodplain. PS 2.1 No solution specified.</p> <p>Residential Code 4. Residential buildings achieve an adequate level of privacy for inhabitants and neighbours. 4.1 Residential buildings, other than dwelling houses, are provided with a solid screen fence on the side and rear boundaries of at least 1.8 metres in height (providing such fencing will not impede the free flow of floodwaters).</p> <p>Rural Code</p>

	<p>2. Premises developed for Cattle Feedlots, Piggeries, Poultry Farms and Aquaculture:</p> <p>(i) are sufficiently elevated to facilitate ventilation and drainage;</p> <p>(ii) have adequate vehicle access;</p> <p>(iii) are free of flooding;</p> <p>(iv) are supplied with a reliable, good quality water supply; and</p> <p>(v) have a secure power supply.</p> <p>2.1 Premises are on land which:</p> <p>(ii) has flood immunity from the 1% AEP flood event</p>
ROL Code	Yes
Details	<p>Reconfiguring A Lot Code</p> <p>3. The new subdivision layout:</p> <p>(i) retains significant vegetation and habitat areas incorporating natural and cultural features;</p> <p>(ii) minimises soil erosion;</p> <p>(iii) avoids development on flood prone land or land subject to inundation by storm surge (refer Flood and Storm Surge Regulatory Plan 1); and</p> <p>(iv) is compatible with the nature of any natural hazard, including flood, bushfire and landslip consistent with SPP 1/03.</p> <p>3.1 No solution specified.</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>Reconfiguration of a Lot Policy</p> <p>Information Required</p> <p>The proposal plan should preferably show the following information and particulars:</p> <p>(b) The location of all watercourses, waterholes, the Flood Lines/levels and inundating levels correlated to Australian Height Datum, and the high water mark of any tidal water;</p>
Other	Yes
Details	<p>Strategy</p> <p>The strategy for “Urban” is directed towards the following:</p> <p>(iii) greenfield development is in accordance with a master plan for the entire area to create an integrated development in terms of:</p> <ul style="list-style-type: none"> • drainage and flood management; <p>The strategy for “Rural” is directed towards the following:</p> <p>(iii) the risk of hazards such as bushfire and flooding are minimised;</p> <p>Definitions</p> <p>"Defined Flood Event" means the flood event adopted by Gladstone City Council for the management of development in a particular locality.</p> <p>To avoid any confusion with SPP1/03 where referred to in the Scheme as the one in 100 year Average Recurrence Interval (ARI) flood event, this is equivalent to the 1% Annual Exceedance probability (AEP) flood.</p>
Op Works Code	Yes
Details	<p>Operational Works (Earthworks) Code</p> <p>11.49 Overall Outcomes for the Operational Works (Earthworks) Code</p> <p>Operational works involving filling and excavation does not impact adversely on the site, the surrounding area in terms of the physical services and the environmental, cultural or social values by providing that filling and excavation works;</p> <p>(d) are located in areas that do not result in increased flooding and drainage problems on upstream and downstream property; and</p> <p>Bridge and Culvert works</p> <p>1. Bridges and culverts for flood immunity minimise traffic disruption, improve public safety, consider fauna habitat movement and allow for bikeways during and after construction.</p> <p>1.1 No solution specified.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Gold Coast
Planning Scheme	Gold Coast Planning Scheme 2003
Adopted	current version (1.2) adopted 15-Oct-2010
Flood Amendments	No
SPP Compliance	Yes
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme: c) State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
Mapped Q100 / DFE	Yes
Details	
Structure Plans (Etc)	Yes
Details	<p>Beenleigh District Structure Plan</p> <p>7.3.1 Planning Context</p> <p>Beenleigh is situated at the confluence of the Logan and Albert Rivers. With an early history of river transport this location has been influential in its development as a service centre. It has also been a major constraint in terms of flood hazard. As a result, potential for expansion of the urban areas is limited to the flood free lands to the west and south west of the town centre.</p> <p>Implementation</p> <p>a) Buffer areas are identified along the Structure Plan's wetland areas to provide visual, environmental and flood protection. Buffers are also identified between conflicting land uses and adjacent to the Regional Transport Corridors.</p> <p>7.4.2 Rural Purpose</p> <p>Rural areas include and protect cane land, agriculture areas and areas intended to be used for rural pursuits. It may also include land that is flood prone, physically difficult to develop, has significant environmental value and/or is relatively remote from urban services.</p> <p>8.0 Albert Corridor A: Ormeau Structure Plan</p> <p>8.6.4 Rural Areas Role and Character</p> <p>Rural areas include and protect caneland, agriculture areas and areas intended to be used for rural pursuits. It may also include land, which is flood prone, physically difficult to develop, has significant environmental value, and/or is relatively remote from urban services.</p> <p>Implementation</p> <p>c) Subject to the satisfactory resolution of any flooding issues, Council may consider applications for residential or other urban uses on land which is suitable for cane production, where that land is relinquished and released by the Rocky Point Mill and documentary evidence is furnished from the Rocky Point Mill and the Rocky Point Canegrowers Committee that such land is no longer required for cane growing purposes or for other viable agricultural purposes.</p> <p>d) Further to (c) above, Council may consider applications for development of a residential, park living or community nature within the designated rural areas only where:</p> <ul style="list-style-type: none"> - such a proposal would not cause unacceptable flooding impacts upon neighbouring properties. <p>8.6.5 Open Space and Buffer</p> <p>Buffer areas are identified along the Structure Plan's wetland areas to provide visual, environmental and flood protection.</p> <p>8.6.6 Conservation and Landscape Protection Role and Character</p> <p>The Conservation and Landscape Protection designation forms an overlay to other designations, and includes the flood plains of rivers and creeks and areas with slopes of 20% or greater.</p> <p>9.0 Albert Corridor B: Upper Coomera Structure Plan</p> <p>9.6.3 Rural Areas Role and Character</p> <p>Rural areas include and protect agricultural areas and areas intended for rural pursuits. It may also include land, which is flood prone, physically difficult to develop, has significant environmental value and/or is relatively remote from urban services.</p> <p>c) Council may consider applications for development of a residential, park living or community nature within the designated rural areas only where:</p> <ul style="list-style-type: none"> ☐ such a proposal would not cause unacceptable flooding impacts upon neighbouring properties. <p>9.6.4 Conservation and Landscape Protection Role and Character</p> <p>The Conservation and Landscape Protection designation forms an overlay to other designations, and includes the flood plains of rivers and creeks and areas with slopes of 20% or greater. The Conservation and Landscape Protection designation also includes other areas for reasons of their high visibility or environmental value.</p> <p>10.0 Albert Corridor D: South Helensvale Structure Plan</p> <p>10.5.2 Open Space and Buffer Areas Role and Character</p> <p>Buffer areas are identified along the Structure Plan area's wetland areas to provide visual, environmental and flood protection. Buffers are also identified between conflicting land uses and adjacent to the regional transport corridors.</p> <p>12.0 Gilston Structure Plan</p> <p>Water quality of the Nerang River in the Gilston area is relatively good. Council's flooding information reveals that this section of the Nerang River is prone to flooding. However, due to topography, the inundation is restricted to those properties in close proximity to the river and mouth of Bridge Creek.</p> <p>13.0 Reedy Creek Structure Plan</p> <p>b) The open space areas will have a primary role in retaining the areas of natural environment. These areas will also assist in defining preferred development patterns and enhancing the character of the place, as defined by this Structure Plan. In particular, the areas nominated as open space will:</p> <ul style="list-style-type: none"> ☐ serve floodway and drainage functions; <p>Inter-Urban Break Structure Plan</p> <p>14.5.2 Small Lot Rural Precinct Purpose</p>

	<p>The following criteria are applied in determining areas for inclusion in the Small Lot Rural Precinct:</p> <ul style="list-style-type: none"> ☐ areas not subject to flooding;
Local Area Plans	Yes
Details	<p>Beenleigh Town Centre</p> <p>4.4.1 Urban Areas</p> <p>Potential for expansion of urban areas is limited to the flood free lands to the west and south west of the town centre. Parts of these areas are identified on Planning Strategy Map PS3 – Conservation Strategy Plan.</p> <p>Intent for Parklands and Recreation:</p> <p>The precinct also includes attractively vegetated land parcels and land affected by flooding, in particular, areas extending north from James Street and Hamel Park and sites adjacent to Bougainville Street between Manila and Kokoda Streets.</p> <p>Intent for Education:</p> <p>The western part of the precinct, accommodating the private school, church and community facilities, contains extensive building complexes. It is traversed by a major creek, and has a significant area of low lying land that is flood prone. The integrity of the creek system should be maintained, and the filling of land and/or location of buildings on flood prone land is not supported.</p> <p>Intent for Town Centre Mixed Residential: New housing is not supported on flood-prone land.</p> <p>Coomera Local Area Plan</p> <p>4.3 Development Considerations</p> <p>A number of development constraints are evident within the LAP area. These constraints have been mapped (refer Coomera LAP Map 9.5 – Constraints), and include slopes above 16%, significant vegetation and habitat corridors, agricultural land, land subject to flooding, land difficult to service with physical infrastructure, and land affected by major transport corridors. The proposed development form has recognised these constraints, and any proposed development is to recognise and/or address the identified constraints.</p> <p>(a) Location Criteria for District Level/Major Facilities</p> <p>In the Coomera LAP, the criteria for location of these facilities are to:</p> <ul style="list-style-type: none"> - allow for all built facilities to be located above the Q100 flood level; <p>Coomera Town Centre LAP</p> <p>5.1 Precinct 1 Coomera Activity Centre Intent</p> <p>Any development within this precinct shall demonstrate that the environmental qualities and flood regimes of Oakey Creek and its environs are not negatively impacted. An adequate creek corridor shall be retained as part of the open space network and well integrated with development in Precinct 1.</p> <p>5.8 Precinct 8 Dreamworld Intent / 5.9.3 Sub-precinct 9c Environmental/ Open Space Corridor</p> <p>Any development in the vicinity of Oakey Creek will provide for flood mitigation, allow for natural movement in the alignment of Oakey Creek, protect and maintain the existing ecological values of Oakey Creek and provide a movement path for fauna.</p> <p>Jurisdictions For Master Plan Applications: Department of Community Safety</p> <ul style="list-style-type: none"> - Planning for and management of development as provided under the State Planning Policy 1/03 <p>Mitigating the Adverse Impacts of Bushfire, Flooding and Landslide</p> <p>Eagleby LAP</p> <p>Land Use Development:</p> <p>Urban development has occurred almost entirely in the south western ‘quadrant’ of Eagleby, due to land liable to inundation during major flooding events, as well as proximity to Beenleigh and the Pacific Motorway. The majority of the urban area has developed in a series of land subdivisions extending from Logan, Fryar, River Hills and Herses Roads. Flood prone land limits the expansion of the existing urban area, but considerable opportunities exist for future new development, as well as infill redevelopment of larger existing low density allotments.</p> <p>5.1 Precinct 1 Intent for Low Density Residential</p> <p>Expansion of the existing urban area is limited by risks of flooding.</p> <p>LDR2 contains relatively large allotments, some of which have frontage to the Albert River.</p> <p>Development in this sub-precinct is to accord with the following principles:</p> <ul style="list-style-type: none"> a) current lot sizes are maintained in areas subject to flooding and to provide diversity of housing types and density; b) areas not subject to flooding are suitable for low density residential development subject to the dedication to open space of land within 30 metres of the High Water Mark of the Albert River. <p>LDR5 comprises a number of areas located on the periphery of the current urban settlement. Some parts are flood prone and provide important open space connections. Development in this sub-precinct is to provide public open space, proposed open space/nature links and access links (Eagleby LAP Maps 12.5a and 12.5b – Open Space Network and Eagleby LAP Map 12.6 – Movement Network).</p> <p>LDR6 contains land which is flood prone. The extent of development that may be appropriate in this sub-precinct will be subject to a satisfactory management of flooding issues and the provision of open space and access links shown on (Eagleby LAP Maps 12.5a and 12.5b – Open Space Network and Eagleby LAP Map 12.6 – Movement Network).</p> <p>LDR8 comprises a cluster of residential dwellings located on Curlew Crescent. Development in this sub-precinct is to accord with the following principles:</p> <ul style="list-style-type: none"> a) current lot sizes are maintained in areas subject to flooding. This will also provide diversity in housing types and density; b) areas not subject to flooding are suitable for low density residential development, subject to the dedication to open space of land within 30 metres of the high water mark of the Logan River. <p>5.4 Precinct 4 Intent for Public Open Space</p> <p>Specifically, it is intended that:</p> <ul style="list-style-type: none"> - areas of ecological significance, such as the riparian corridors, flood plains, overland flow areas, wetlands and open space linkages between significant remaining habitats, are protected and rehabilitated (Eagleby LAP Maps 12.5a and 12.5b – Open Space Network); <p>Precincts 4 and 6</p> <p>PC25 All sites must be designed and managed to maintain natural watercourses and to protect and enhance environmental water quality.</p>

	AS25 Where land is flood liable, provision is made for major flow paths and storage areas to be preserved, without interference with building and other infrastructure.
Zone Codes	Yes
Details	Public Open Space Domain Intent: f) protection of areas that perform important environmental management functions including riparian corridors, flood plains, overland flow areas and permanent wetlands;
Use Codes	Yes
Details	Child Care Centre Code PC8 The development must be located to minimise: a) the hazards of heavy traffic; b) introduction of additional traffic into minor residential streets; c) flood damage or hazard. AS8.1 The development is not located: a) on arterial roads; b) on minor residential streets; c) on a site subject to flooding in a Q5 storm event or within a Flood Regulation Line; or d) adjacent to a railway. AS8.2 Overland flow paths are not impeded by buildings, structures, fences or landscaping, unless acceptable alternative paths are provided.
ROL Code	Yes
Details	Reconfiguration of a Lot Code PC1 Lots must have the appropriate area and dimensions to enable: b) siting and construction of buildings to minimise risk of soil erosion, flooding and bushfire; AS1.1.2 Allotments created on steep slopes in the Village, Detached Dwelling, or Residential Choice domains that are intended to be used for residential purposes provide a minimum private outdoor area of 30m ² , with the following criteria: a) ratio 2:1 (length to width) maximum; b) gradient less than 5%; c) adjoining proposed building envelope; d) flood free for the 1 in 5 ARI. PC16 All lots created have sufficient area that is flood free to safely and adequately accommodate their intended use and development. AS16.1 Every lot must be adequately filled and drained, without adverse environmental impact, so that it can be used for its intended purpose. The minimum area available, above the planning flood level for each lot, is in accordance with this Table to Acceptable Solutions. AS16.2 Any filling to be undertaken to provide the minimum area above the planning flood level required by AS16.1 is in accordance with Specific Development Code 11 – Changes to Ground Level and Creation of New Waterbodies and Constraint Code 9 – Flood Affected Areas and Constraint Code 10 – Natural Wetland Areas and Natural Waterways. AS16.3 Residential lots contain a rectangle above the planning flood level measuring nine metres by 15 metres and clear of all statutory boundary setbacks. AS16.4 Residential lots with an area less than 300m ² are square or rectilinear in shape. AS16.5 The flood free area provided in accordance with AS16.1 has access to a road frontage that is flood free. AS16.6 Flood modelling, if required, assumes that 100% of the lots are filled to a level above the 1 in 100 year flood line in the Village, Detached Dwelling, Residential Choice, Residential and Tourist, Integrated Business, Local Business and Fringe Business Domains and their LAP precinct equivalents. Domain: Minimum Area that is Flood Free Rural 1,000m ² plus additional area required for effluent disposal Park Living 1,000m ² plus additional area required for effluent disposal Village 450m ² Detached Dwelling 450m ² Residential Choice 100% of allotment Residential and Tourist 800m ² Integrated Business 800m ² Local Business 800m ² Fringe Business 800m ² Industry 1 1,000m ² Industry 2 800m ² Extractive Industry n/a Marine Industry 800m ² Community Purposes 450m ² Conservation n/a Private Open Space n/a Public Open Space 1,000m ² or 10% of the total site area, whichever is the greater. Emerging Communities 450m ² , except where an adopted structure plan provides for a greater flood free area to be provided. PC21 Land intended for public open space must be of a physical standard and condition that permits use of the land for its intended purpose. AS21.3 At least 10% of the total open space provision is exclusive of flood inundation of below the 1 in 100 ARI level (or Q100) or the highest recorded flood level, whichever is the greatest. PC23 An environmental open space network must be protected to: a) ensure the retention of significant vegetation, wetlands, waterways, and other habitat areas, their associated buffer and linkages/corridors and natural and cultural features; and b) facilitate appropriate measures for stormwater and flood management and care of valuable environmental resources; c) be cost effective to maintain. AS23 No acceptable solution provided.
Overlay Codes	Yes
Details	Constraint Codes Canals and Waterways PC3 All buildings and structures must provide for setbacks from the waterway which ensure the efficient use of the site, respond to the waterside location, and have minimal impact on adjoining properties, whilst having regard to:

d) hydraulic performance (flood storage, flood flow paths);
AS3 No acceptable solution provided.
PC8 The development must not adversely affect the waterbody or bank, and must have regard to the:
d) hydraulic performance (flood storage, flood flow paths);
AS8 No acceptable solution provided.

Chapter 8 Flood Affected Areas

1.0 Purpose
To ensure that, where premises within flood affected areas are to be developed, adequate measures are taken to:

- ☐ ensure that the development does not cause, or have the cumulative potential to cause, real damage (as defined below);
- ☐ provide standards for development in these areas that will ensure that the runoff from land and/or premises does not create any adverse environmental impacts.

Key objectives include:

- a) avoiding, if practicable, or otherwise lessening, the adverse impacts of flooding;
- b) maintaining or improving the City's counter disaster response efforts during a flood emergency;
- c) equitably sharing development constraints and development potential within a single river catchment and its sub catchments;
- d) equitably sharing the costs and benefits of flood mitigation infrastructure within a river catchment and its sub-catchments;
- e) protecting the flood storage function of the City's flood plains;
- f) protecting the flood discharge capacity of the City's rivers, streams and canals;
- g) achieving and maintaining a best practice approach to flood plain management;
- h) protecting ocean beaches and the shores and banks of estuaries, lakes, canals, rivers, streams and other waterbodies from erosion.

This code seeks to manage the effects of flooding on flood prone land, where it relates to new and existing development, infrastructure and ecosystems, by requiring:

- ☐ certified engineering hydraulic management plans or studies;
- ☐ specific design criteria for certain types of land uses.

All such proposals for development will be fully evaluated against the following criteria:

- ☐ real damage: whether the development is likely to cause damage that would adversely affect land and/or premises to an extent likely to be actionable;
- ☐ cumulative impact: whether the cumulative impact of development is likely to cause real damage;
- ☐ flood hazard: whether the development is likely to cause or worsen flood hazard;
- ☐ risks: whether the risks associated with the development are fully known, quantifiable and capable of being dealt with to Council's satisfaction, without any uncertainties; and
- ☐ flood mitigation: whether flood mitigation works, intended to reduce flood risk, hazard and damage, do so without adversely impacting upon other land and/or premises.

2.0 Application

2.1 This code applies to development that is indicated as self, code or impact assessable in the Table of Development to the domain or Local Area Plan (LAP) within which the development is proposed. In particular, this code applies to any site that is located within a Flood Affected Area*, defined as follows:

- ☐ flood prone land; or
- ☐ premises where access would be adversely affected during a range of floods, up to and including the designated flood. *Refer to Overlay Map OM17 – Natural Hazard (Flood) Management Areas sheets 1-35.

2.2 This code does not apply to Class 1 or Class 10 buildings as defined in the Building Code of Australia, except where Council has declared an area to be flood liable under Section 53 of the Queensland Building Regulations. However, this code provides recommendations for minimum floor levels for Class 1 and Class 10 buildings within flood prone land.

2.3 Note that where Operational Work is being undertaken within flood affected areas that results in a disturbance to the surface of the land, Specific Development Code 11 – Changes to Ground Level and Creation of New Waterbodies and Constraint Code 14 – Sediment and Erosion Control are also relevant.

2.4 Performance Criteria PC1-PC14 apply to all code and impact assessable development subject to this code. For development identified as self assessable in the relevant domain or LAP, only the acceptable solutions to Performance Criteria PC1-PC4 apply.

PC1 All development activity conducted on land below the designated flood level must not detrimentally affect the flood storage capacity of the catchment and the drainage regime.

AS1 The flood storage volume on the site is maintained up to the Designated Flood Level. Note: The Designated Flood Level can be obtained from Council's Flood Search.

PC2 Building floor levels of habitable rooms must be raised to provide an allowance for the hydraulic gradient above the main floodway, so as to meet the requirements of the Standard Building Regulation and Building Code of Australia.

AS2.1.1 An allowance of at least 300mm is added to the Designated Flood Level for habitable rooms, or other allowance amount specified in a Local Area Plan. OR

AS2.1.2 Damaged residential buildings are reconstructed to have a Design Floor Level at or above the level that existed prior to the building's damage, provided that the building work is limited to reinstatement.

AS2.2 Where the building has been destroyed by flood, the reconstructed floor level accords with AS2.1.1.

PC3 Building floor levels of garages and non habitable rooms must be constructed at a height that reflects an acceptable flood risk for their purpose.

Note: PC3 does not apply to:

- a) extensions to existing buildings;
- b) structures detached from a dwelling, for which the use is ancillary to that of a dwelling, provided that use is not listed in column 1 of Table to Acceptable Solution AS7.1.

AS3.1 Building floor levels of garages and non habitable rooms, constructed at approximately the same level as, and attached to, the main dwelling, is constructed at a height above the Designated Flood Level, except where the dwelling has a suspended floor, constructed one metre or more above ground, or where the building is to be constructed within a Rural Domain.

AS3.2 Non-habitable rooms and garages, detached from the fabric but within the curtilage of a building, that are not for the storage of goods are constructed above or below the Designated Flood Level.

	<p>PC4 Building work must not provide obstructions to the free passage of stormwater through a property.</p> <p>AS4 Overland flowing stormwater is allowed free passage between the street and any waterway at the rear of the property, in accordance with the provisions of the Building Code of Australia.</p> <p>PC5 Development in flood affected areas must not cause, or have the cumulative potential to cause, real damage, must not increase the level of risk to life, or be to the detriment of flood evacuation procedures.</p> <p>AS5 Development does not:</p> <ul style="list-style-type: none"> a) increase the number of people calculated to be at risk from flooding; b) increase the number of people likely to need evacuation; c) shorten flood warning times; d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes, or as identified within Council's Counter Disaster Plan (flooding); e) place additional burdens on Council's resources or emergency services; f) increase the duration of flooding, unless that increase is part of a Council approved flood mitigation strategy. <p>PC6 Development with plans for earthworks in a floodplain on or over a water body or within a flood affected area below the Designated Flood Level must allow for the maintenance of flood storage, and flood conveyance of flood and drainage channels and overland flow paths.</p> <p>AS6.1 Provide flood storage calculations that demonstrate that flood storage volume, over the site below the Designated Flood Level, is maintained or increased.</p> <p>AS6.2 A certified hydraulic study (and, if necessary, a hydrologic study) is prepared by a suitably qualified and experienced engineer to investigate the hydraulic characteristics of both the undeveloped and developed site and make comparisons between them. Proposed developments in, on or over a water body, or within a flood affected area, must be tested for:</p> <ul style="list-style-type: none"> a) the 50%, 20%, 10%, 5%, 2% and 1% Annual Exceedance Probability (AEP) for local flood events; b) the 5%, 2%, and 1% AEP floods and the designated flood and design flood AEP (as specified in Table to Acceptable Solution AS7.1) for riverine flood events, c) any resultant afflux or increase in flood velocities <p>sufficient to cause real damage to premises. The Assessment Manager may also require the development to be assessed against rarer floods.</p> <p>AS6.3 The Assessment Manager may decide that a hydraulic and/or hydrological study is not necessary if in the Assessment Manager's opinion:</p> <ul style="list-style-type: none"> a) a relevant study, that is not outdated, demonstrates there are no significant flooding impacts that were not covered in the relevant study; or b) the flooding impact of the approval, in relation to the development, is minor, c) in which event the Assessment Manager must provide a written notice to that effect to the applicant. <p>PC7 Development listed in Table to Acceptable Solution</p> <p>AS7.1 must allow for flood events and be constructed at a level above most floods.</p> <p>AS7.1 Development is designed for the Design Flood AEP, as specified in Table to Acceptable Solution AS7.1.</p> <p>Note: The designated flood level for residential buildings in general is a 1% flood level except for:</p> <ul style="list-style-type: none"> a) Broadwater – the 1% AEP storm surge level, plus an allowance of 0.27 metres, to account for sea level rise resulting from climate change; b) Logan and Albert Rivers – the designated flood is based, in part, on rainfall that occurred during the January 1974 flood and assumptions made regarding the ultimate level of development, in accordance with the relevant local planning instruments; and c) Historical flood level is the only information available to be specified designated flood level. <p>AS7.2 Development is constructed at or above the Design Flood Reclamation Level, shown in the Table to Acceptable Solution AS7.1, where the Designated Flood is the 1% AEP flood event, except as follows:</p> <ul style="list-style-type: none"> a) Broadwater: the 1% AEP storm surge level, plus an allowance of 0.27 metres, to account for sea level rise resulting from climate change; b) Logan and Albert Rivers: the designated flood is based, in part, on rainfall that occurred during the January 1974 flood and assumptions made regarding the ultimate level of development, in accordance with the relevant local planning instruments; and c) Coomera River: the designated flood is based on the modelled 1% AEP flood event or historic levels, whichever is the higher. <p>Table to Acceptable Solution AS7.1</p> <p>Land Use Design Flood</p> <p>Disaster management facilities 0.2% AEP</p> <p>Hospitals 0.2% AEP</p> <p>Major electrical switchyards, power stations, water treatment plants 0.2% AEP</p> <p>Fire/police stations 0.5% AEP</p> <p>Places of refuge 0.5% AEP</p> <p>Electricity substations 0.5% AEP</p> <p>Sewage treatment plants 0.5% AEP</p> <p>Homes for the aged, hospice 0.5% AEP</p> <p>Regional fuel storage 0.5% AEP</p> <p>Food storage warehouses 0.5% AEP</p> <p>Hotel residential Designated flood</p> <p>Educational facilities Designated flood</p> <p>Residential buildings Designated flood</p> <p>Camping grounds, caravan parks and relocatable homes reclamation levels Designated flood</p> <p>Commercial Designated flood</p> <p>Light industrial/warehousing Designated flood</p> <p>Theme parks Not specified, but users should not be subjected to any more than high hazard conditions in the designated flood, as specified in AS10.1</p> <p>Clubs/non-habitable buildings associated with enjoyment of public open space</p> <p>Not specified, but users should not be subjected to any more than high hazard conditions in the designated flood, as specified in AS10.1</p> <p>Car parking below buildings Not specified, but users should not be subjected to any more than high hazard conditions in the designated flood, as specified in AS10.1</p> <p>Open space Not specified, but ancillary structures are subject to appropriate hazard conditions in the designated flood, as specified in AS10.1</p> <p>Rural Not specified</p>
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	<p>PC8 Development must consider hydrologic and hydraulic impacts of development in flood affected areas with regard to future climate change.</p> <p>AS8 No acceptable solution provided.</p>
PSPs	No
Details	
Other	Yes
Details	<p>Introduction</p> <p>1.3 Merrimac/Carrara Flood Plain Structure Plan and Hydraulic Master Plan</p> <p>This project was initiated to provide an integrated approach for planning and future management of the remaining undeveloped areas of the Merrimac/Carrara Floodplain. These remaining areas are critical in providing for large open space uses, significant flood storage and the appropriate distribution of floodwaters along major flow paths. The resulting planning policies achieve an appropriate balance between the interests of landowners and the broader environmental considerations. Amongst other things, they address environmental, land use and hydraulic issues to provide a unique opportunity for limited development within a planned 'green heart' to the city.</p> <p>The outcomes of the Merrimac/Carrara Flood Plain Structure Plan are reflected directly in DEOs Ecol.1, Ecol.2, Econ.4, Soc.1 and Soc.7 and in the Natural Hazards Mitigation Strategy and the Flood Plain Management – Merrimac/Carrara Land Use Theme. They have also directly influenced the codes for Flood Affected Areas, Canals and Waterways, Natural Wetland Areas and Natural Waterways and Changes to Ground Level, as well as the provisions of the Guragunbah LAP.</p> <p>7.0 DEO Soc.7</p> <p>The location and design of development to minimise the potential risk to life and property from known natural hazards.</p> <p>7.1 Explanation</p> <p>Steep slopes, flood prone areas, acid sulfate soils and bushfire hazard areas are examples of areas subject to natural hazards that require careful assessment prior to any development activity. For development to proceed in such areas, the measures needed to effectively mitigate the identified hazard should be carefully appraised against the capacity of the local environment to accommodate those measures in a sustainable manner.</p> <p>7.2 Planning Objectives to Support DEO Soc.7</p> <p>Soc.7.1 to ensure that development is located away from areas where the risk to life and property from the impact of natural hazards is unacceptable, in terms of either the likely cost of damage or the measures needed to effectively mitigate the risk.</p> <p>Soc.7.2 to ensure that development is designed to mitigate the risk to life and property from known natural hazards.</p> <p>Soc.7.3 to facilitate cost effective counter disaster and emergency procedures.</p> <p>7.3 Planning Measures to Support DEO Soc.7</p> <p>This DEO is further addressed in the Key Strategy for Natural Hazards. It is important to the Key Strategy for Infrastructure Provision and Sequencing. It is related to development in all Land Use Themes, domains and LAPs. It also has particular relevance to the Flood Plain Management – Merrimac/Carrara Land Use Theme and to the Guragunbah and Hope Island LAPs.</p> <p>It will be largely achieved through the following provisions of this Planning Scheme:</p> <ul style="list-style-type: none"> § Specific Development Codes for Changes to Ground Level and Creation of New Waterbodies and Reconfiguring a Lot; § Constraint Codes for Bushfire Management Areas, Flood Affected Areas, Ocean Front Land and Steep Slopes or Unstable Soils; § relevant provisions of Part 8 - Infrastructure; and § Planning Scheme Policies for Land Development Guidelines, Management of Activities Located within Areas of Acid Sulfate Soils, Site Analysis and Guidelines for Preparing Fire Management Plans during the Development Process. <p>Performance Indicators</p> <p>SOC7 No increase in number of dwellings subject to floods greater than 1 in 100 frequency.</p> <p>Key Strategies</p> <p>GM 2.6 to discourage very low density residential development in urban areas, unless such development is: § adjacent to flood prone land;</p> <p>NR 4.5 to ensure that natural in-stream flows (including flooding and drainage patterns) are maintained within natural aquatic systems.</p> <p>CI 1.6 to maintain the natural function and distinctive character of floodplain areas.</p> <p>2.0 Natural Hazards Mitigation Policies</p> <p>2.1 NH Policy 1</p> <p>Ensuring that further development in areas prone to natural disasters is restricted, unless it can be acceptably designed to minimise risk to life and property.</p> <p>2.1.1 Explanation</p> <p>The introduction of new development into areas subject to natural disasters such as flood or bushfire is unwise. It may be possible to minimise risk with appropriate design and through environmental management measures. This option can be supported where there is no long term detrimental impact on the environment and the risk to life and property is known and accepted.</p> <p>2.1.2 Planning Objectives to Support NH Policy 1</p> <p>NH 1.1 to accurately identify areas that are vulnerable to natural hazards, including flood, bushfire, landslip and storm surge, and to protect such areas from inappropriate development.</p> <p>NH 1.2 to avoid development in high potential bushfire hazard areas where environmental constraints preclude necessary risk reduction measures, such as clearing and provision of adequate access (these constraints may include high nature conservation values, high scenic amenity, steep slopes and unstable soils).</p> <p>NH 1.3 to identify and assess the development of future Council infrastructure that may be vulnerable to damage from natural hazards, so that this may be designed to minimise risk of failure during an event.</p> <p>2.2 NH Policy 2</p> <p>Reducing the risk of damage to life and property from natural hazards in existing developed areas.</p> <p>2.2.1 Explanation</p> <p>Planning and development measures can be taken to improve the situation of existing developed areas in terms of risk of damage from flood, fire and other natural hazards. These measures may be implemented where redevelopment of existing areas is proposed, or where improvements to infrastructure and facilities are proposed which can have a positive impact on the risk exposure of the local area.</p> <p>2.2.2 Planning Objectives to Support NH Policy 2</p> <p>NH 2.1 to identify existing populations and developments that are vulnerable to damage from natural hazards and to improve existing methods of disaster management.</p>

	NH 2.2 to identify existing Council infrastructure, vital for public health and safety, that might be vulnerable to damage from natural hazards. NH 2.3 to protect the functional safety of important existing services, such as power and gas supplies and telecommunications, so that these services can be maintained during or soon after natural hazard events.
Op Works Code	Yes
Details	<p>Chapter 11 Changes to Ground Level and Creation of New Waterbodies</p> <p>1.0 Purpose: This code seeks to ensure that changes to existing ground levels, including the creation of new waterbodies, do not adversely affect other properties or the general amenity of the locality in which the works are occurring. Ground level changes must be geotechnically and ecologically sound and, where a flood affected site is proposed to be developed, adequate measures will be taken to ensure that the development achieves no increase in risk of flood damage to life or to property for existing and proposed residential dwellings. The code also seeks to prevent any increase in runoff that might occur from development that would increase the rate of runoff or the magnitude of the flood volume that would run off during a flood emergency.</p> <p>PC2 Development must not cause adverse stormwater drainage impacts on areas external and internal to the site.</p> <p>AS2.1 The change to ground level maintains flood storage volume over the site for the 20 year ARI storm event.</p> <p>AS2.2 The change in ground level does not involve filling below Q100.</p> <p>AS2.3 The change in ground level does not impound or divert rainfall runoff.</p> <p>PC9 Any change to the level of the land must not have an adverse flooding impact on the flooding and drainage characteristics of external sites and/or premises.</p> <p>AS9 As demonstrated by a hydraulic report prepared in accordance with Council's Hydraulic Report Requirements, the filling or excavation does not:</p> <ul style="list-style-type: none"> a) cause ponding on the site or nearby land; b) increase flooding which adversely affects the safety or use of any land upstream and downstream; c) adversely affect the flow of water in any overland flow path; or otherwise d) contravene the intent of Constraint Code 8 - Flood Affected Areas. <p>PC10 Development upstream of areas with over floor flooding shall not increase the contribution of floodwater from the catchment. Over floor flooding occurs adjacent to:</p> <ul style="list-style-type: none"> a) Currumbin Creek, downstream of weir near Stackpole Street; b) Tallebudgera Creek, downstream of Benardon Court; c) Mudgeeraba Creek, downstream of Berrigans Road; d) Nerang River, east of the Pacific Motorway; e) Coomera River, east of the Oxenford - Tamborine Road; f) Coombabah Creek, downstream of the Pacific Highway; g) Saltwater Creek, downstream of its crossing by Kopps Road. <p>AS10.1 Flood storage detention facilities are provided, where possible, on public land, of sufficient capacity to retain runoff such that the total peak runoff rate and volume released during the flood is not greater than would have been the case prior to development.</p> <p>AS10.2 A certified hydraulic study (and, if necessary, a hydrologic study) is prepared by a suitably qualified and experienced engineer to investigate the characteristics of both the undeveloped and developed site, and determines to the satisfaction of the Assessment Manager that a detention storage is not required, and a contribution is made by the developer to a Council sponsored community flood detention facility.</p> <p>PC16 All development must have a finished surface level which is free draining and free from flooding.</p> <p>AS16.1.1 The development is free draining and the surface gradient of the fill and/or excavated area is within the range 0.5% to 1.5%.OR</p> <p>AS16.1.2 The development includes steep surface gradients, which achieve integration with the surrounding topography, and the finished profile does not interrupt or materially change the surface water drainage, from or onto adjoining land.</p>
Overlay Code	Yes
Details	Flood Code
PSPs	No
Details	
Other	Yes
Details	<p>Priority Infrastructure Area</p> <p>Table 1-30 Stormwater Network Planning Criteria</p> <p>Measure Desirable Outcomes</p> <ul style="list-style-type: none"> ☑ Collect and convey stormwater flows (both low flows and Q100 flows) to a lawful point of discharge in a safe manner that minimises nuisance, the inundation of habitable rooms and protects life ☑ The free and safe drainage of existing and future urban land ☑ Maximise the ecological health of waterways and minimise the economic cost of stormwater run-off from development ☑ Ensure protection of habitable rooms ☑ Ensure trunk infrastructure takes into account the use of water sensitive urban design and other types of on site detention/ retention facilities and the conservation of natural waterways ☑ Minimise the impact of development on the existing local flood levels and waterway networks by maintaining the existing flow, velocity and flood storage parameters and control of peak flows ☑ Improve water quality at the receiving waters at minimum cost ☑ Utilise a system of regional and local on site detention facilities to minimise the adverse impact of peak run off for the full range of events from Q1 to Q100 ☑ Minimise adverse impacts from flooding ☑ Reduce potential sediments and impacts of scour ☑ Maintain public safety <p>Table 1-37 Minimum Post-Development Flood Immunity</p> <p>Recreation Facilities</p> <p>Category >Q5 >Q50 >Q100</p> <p>Local Recreation 25% 75% 0%</p> <p>District Recreation 0% 90% 10%</p> <p>City Recreation 50% 40% 10%</p> <p>District Sport 0% 90% 10%</p>

	<p>City Sport 50% 40% 10%</p> <p>Community Facilities 0% 0% 100%</p> <p>Outdoor Recreation 50% 40% 10%</p> <p>c) Road Cross-Culverts:</p> <p>Road cross-culverts are required to convey floodwaters to ensure that they provide adequate flood immunity to the road. The approach to develop the Stormwater Infrastructure Charges Schedule includes a Like Catchment assessment for road cross-culverts based upon the finding of several catchment reports.</p>
Other Info	

LGA	Goondiwindi
Planning Scheme	Goondiwindi
Adopted	13/06/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme- - State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide Only);
Mapped Q100 / DFE	No
Details	maximum recorded flood may be adopted as an indication of flood level for development
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural Zone Code / Low Density Residential Zone / Urban Zone / Commercial Zone / Industrial Zone / Open Space and Recreation Zone / Purpose: (h) is located and designed in ways that minimise the need for flood mitigation, and to protect people and premises from such natural events; PC@ Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS@ Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1. PC@ Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.(No AS) Note: To assist an applicant to demonstrate compliance with PC, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	Reconfiguration of a Lot Code Purpose: (e) minimises the need for flood mitigation, and protects people and premises from such natural events; and PC8 Layout and Design The reconfiguring of lots: (a) ensures safe and liveable communities; (No AS) PC14 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS14 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request For Development / Works / RoL: (a) known or determined flood levels.
Other	No
Details	
Op Works Code	Yes
Details	Rural Zone Code / Rural Residential Zone Code / Urban Zone Code / Commercial Zone Code / Industrial Zone Code / Open Space and Recreation Code Filling & Excavataion PC@ “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS@ A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request For Development / Works / RoL: (a) known or determined flood levels.
Other	No
Details	
Other Info	Exempt Development: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Goondiwindi
Planning Scheme	Inglewood
Adopted	27/10/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme- - State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide Only);
Mapped Q100 / DFE	No
Details	maximum recorded flood may be adopted as an indication of flood level for development
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural Zone Code / Rural Residential Zone Code / Urban Zone Code / Commercial Zone Code / Industrial Zone Code / Open Space and Recreation Code (except purpose) Purpose: development is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; PC@ Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS@ Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1. PC@ Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. (No AS) Note To assist an applicant to demonstrate compliance with PC@, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	Reconfiguring a Lot Code Purpose: (e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events. (3) “Reconfiguring a lot” protects:(c) the integrity of the Condamine flood plain. PC8 Layout and Design The reconfiguring of lots: (a) ensures safe and liveable communities; (No AS) PC14 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS14 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request For Development / Works / RoL: (a) known or determined flood levels.
Other	No
Details	
Op Works Code	Yes
Details	Rural Zone Code / Rural Residential Zone Code / Urban Zone Code / Commercial Zone Code / Industrial Zone Code / Open Space and Recreation Code Filling & Excavation PC4 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request For Development / Works / RoL: (a) known or determined flood levels.
Other	No
Details	
Other Info	Exempt Development: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Goondiwindi
Planning Scheme	Waggamba
Adopted	20/06/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme- - State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide Only);
Mapped Q100 / DFE	No
Details	maximum recorded flood may be adopted as an indication of flood level for development
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural Zone / Low Density Residential Zone / Small Town Zone / Urban Zone / Industrial Zone / Mixed Use Zone / Open Space and Recreation Zone Purpose: (j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; PC@ Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS@ Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1. PC@ Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. (No AS) Note: To assist an applicant to demonstrate compliance with PC, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	Reconfiguration of a Lot Code Purpose: (e) minimises the need for flood mitigation, and protects people and premises from such natural events. PC9 Layout and Design The reconfiguring of lots: (a) ensures safe and liveable communities; (No AS) PC15 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS15 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request For Development / Works / RoL: (a) known or determined flood levels.
Other	No
Details	
Op Works Code	Yes
Details	Rural Zone / Low Density Residential Zone / Open Space and Recreation Zone PC@ “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS@ A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Small Town Zone / Urban Zone / Industrial Zone / Mixed Use Zone PC24 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS24 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request For Development / Works / RoL: (a) known or determined flood levels.
Other	No
Details	
Other Info	Exempt Development: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	Gympie
Planning Scheme	Cooloola
Adopted	14/03/2005
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme- - State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide Only);
Mapped Q100 / DFE	No
Details	1:50 year for Gympie - Minimum Ground Level / Floor Level for existing Residential Areas - Rainbow Beach / Rainbow Shores / Cooloola Cove / Tin Can Bay Floor levels based on flooding and stormsurge - Balance of Shire Min Habitable Floor levels based on highest recorded flood - New Residential subdivision in Gympie 1:100 Years - Further mapping in relation to flooding yet to be undertaken
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p><u>Gympie Planning Area</u> Overall Outcome (m) exposure of developed areas, infrastructure and persons to the harmful effects of natural hazards including flood and bushfire is limited. Central Business Zone / Commercial Zone SO@ Development maintains the safety of people from floods PS@ For non-residential development, either: a. the floor levels of buildings are at or above the 1:50 ARI flood level; or b. there is at least one evacuation route that remains passable for emergency evacuations during all floods up to and including the 1:50 ARI flood; or c. the premises are located in an area where there is sufficient flood warning time to enable safe evacuation; or d. a safe refuge is available for people within the development site. Community Zone / Housing Zone / Rural Zone / Rural Residential Zone SO@ Buildings are appropriately sited with respect to protection from flood events. PS@ The minimum floor levels of : a. residential buildings comply with Schedule 6 Minimum Floor Levels; and b. non-residential buildings - no AS. Industry Zone SO-8 Public Safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk. PS8 Either: a. the manufacture or storage in bulk of hazardous materials takes place above the 1:100 ARI or b. buildings and structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of floodwaters. SO-13 Development Maintains the safety of people from floods PS-13 For non-residential development, either: a. the floor levels of buildings are at or above the 1:50 ARI flood level; or b. there is at least one evacuation route that remains passable for emergency evacuations during all floods up to and including the 1:50 ARI flood; or c. the premises are located in an area where there is sufficient flood warning time to enable safe evacuations; or d. a safe refuge is available for people within the development site.</p> <p><u>Cooloola Coast Planning Area</u> Overall Outcome (i) exposure of developed areas, infrastructure and persons to the harmful effects of natural hazards including flood and bushfire is limited. Community Zone / Housing Zone / Rural Zone / Rural Residential Zone SO@ Buildings are appropriately sited with respect to protection from flood events. PS@ The minimum floor levels of : a. residential buildings comply with Schedule 6 Minimum Floor Levels; and b. non-residential buildings - no AS. Rural Planning Area Community Zone / Housing Zone / Rural Zone / Rural Residential Zone / Village Zone Purpose: (j) exposure of developed areas, infrastructure and persons to the harmful effects of natural hazards including flood and bushfire is limited. SO@ Buildings are appropriately sited with respect to protection from flood events. PS@ The minimum floor levels of : a. residential buildings comply with Schedule 6 Minimum Floor Levels; and b. non-residential buildings - no AS.</p>
Use Codes	Yes
Details	<p>Accommodation Premises Code / Multiple Residential Code SO-7 Buildings and Caravans are adequately protected from flood events. PS-7 (a) floor levels for residential buildings comply with Schedule 6 Minimum Floor Levels; and (b) levels of caravan sites comply with Column 2 of for residential Schedule 6 Minimum Floor Levels. Dwelling House Code: SO-3 buildings are appropriately sited to provide protection from flood events.</p>

	<p>PS-3 Minimum floor levels of residential buildings comply with Schedule 6 Minimum Floor Levels.</p> <p>Intensive Animal Husbandry Code:</p> <p>SO-2 The site has an adequate level of flood immunity for all buildings, pens, ponds, other structures and waste disposal areas.</p> <p>PS-2 All Buildings, pens, ponds, other structures and waste disposal areas are located above the highest known flood level.</p> <p>Planning Scheme Building Matters Code</p> <p>(4) For building work associated with accomdoation premises, dwelling house or multiple residential - minimum floor levels comply wiht Schedule 6 Minimum Floor Levles</p>
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code:</p> <p>SO-17 Each new lot or part of a lot intennded tof primarily resientail uses has sufficient useable area to allow for the erection of a dwelling in a location that minimises the risk to life and property from Flooding; or landslide ; or bushfire.</p> <p>PS-17 In relation to Floodin:</p> <p>(a) flooding, each new lot or part of a lot has a building area that;</p> <p>(i) complies wiht the minimum building areas and diemsnions in Schedule Table 7; and</p> <p>(ii) is (A) in aras where the 1:100 ARI flood level is known - at or above the known 1:100 ARI Flood Level.</p> <p>(B) if in Tin Can Bay or Cooloola Cove - at or above RL2.2 AHD; or</p> <p>(C) if in Rainabow Beach - at or above RL2.75 AHD;</p> <p>(D) if in Rainbow Shores Precinct - at or above RL 4.0 AHD; or</p> <p>(E) in areas where the 1:100 ARI flood level is not known - at or above the highest known flood level in the locality; and</p> <p>(iii) has existing or constructed access above 1:2 ARI flood level linking to a Dedicated road.</p> <p>SO-18 New lots intended for non-residential use maintains the safety of people and minimises the potential damage to property from flooding.</p> <p>PS-18 Either (a) all land within the boundaries of each new lot is at or above the 1:100 ARI flood level; or</p> <p>(b) there is no increase in the number of people living or working on land below 1:100 ARI flood level, except wher the premises are occupied on a short termor intermittent basis; or</p> <p>(c) each lot provides for building floor levels to be located at or above the 1:100 ARI filood level; or</p> <p>(d) each lot has at least one evacuation route that remains passable for emergency evacuations durign all flood events up to and including the 1:100 ARI flood level; or</p> <p>(e) Lots are located in an area where there is sufficient flood warning time to enable safe evacuation; or</p> <p>(f) each lot contains a safe refuge.</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Schedule 6: Table 6 Minimum Floor Levels:</p> <p>Gympie Defined Flood Area:</p> <p>60.38m AHD At the Kidd Bridge (non-habitable)</p> <p>62.15m AHD at Kidd Bridge (Accommodation Premise & Multiple Residential - Habitable)</p> <p>60.68m AHD at the Kidd Bridge (Not Acc Premises / Multiple Residential habitable floors)</p> <p>Rainbow Beach Township</p> <p>2.75m AHD (Non Habitable)</p> <p>2.75m AHD (Habitable)</p> <p>Rainbow Shores Stage 1</p> <p>4.0m AHD (non-habitable)</p> <p>4.5m AHD (habitable)</p> <p>Tin Can Bay</p> <p>2.20m AHD (non- habitable)</p> <p>2.50m AHD (habitable)</p> <p>Cooloola Cove</p> <p>2.20m AHD (non-habitable)</p> <p>2.50m AHD (habitable)</p> <p>Tinana Creek Catchment</p> <p>Highest level of the february 1992 Flood (non-habitable)</p> <p>0.3m above the highest level of the February 1992 Flood (habitable)</p> <p>Other Areas</p> <p>Highest level of the highest known flood (non-habitable)</p> <p>0.3m above the highest level of the highest known flood (habitable).</p>
Op Works Code	Yes
Details	<p>Cooloola Cove - Cut and Fill Code:</p> <p>Overall Outcomes 2 (a) excavation or cutting of the natural ground level does not result in surface run-off water flooding dwelling, outbuildings or adjacent areas</p> <p>SO-1 Dwellings and outbuildings are protected from the discharge from existing and future stormwter drainage infrastructrue adn overland flooding.</p> <p>PS-1 Filling and Excavation works for dwellings and outbuildings are carried out so that any sirface run-off water: (a) is dercted away from dwellings and outbuildings; and (b) is disposed of on the lot so as not to cause any scour or damage on any adjoining lot.</p> <p>Filling and Excavation Code:</p> <p>Overall Outcomes (c) does not result in a significant risk of flooding or drainage problems.</p> <p>So-3 Filling or excavation: (b) result in a no worsening of existing flooding or drainage patters:</p> <p>PS-3 (b) surface water is directed away from neighbouring properties; or discharged into a stormwater drainage sustem design and constructed in accordacen with AS3500 Section 3.2.</p>
Overlay Code	No
Details	
PSPs	No
Details	

Other	No
Details	
Other Info	

LGA	Gympie
Planning Scheme	Kilkivan
Adopted	23/11/2007
Flood Amendments	No
SPP Compliance	No
Details	Not Stated.
Mapped Q100 / DFE	No
Details	Q100/Highest Know in Codes
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Locality:</p> <p>04 Lots are located, designed and constructed with sufficient area and suitable road frontage, shape and proportions to: (j) minimise any adverse affects of flooding, salinity, erosion, land slip and bushfire on people, property, economic activities and the evironment (No AS),</p> <p>010 Fences and walls are located, designed and of a form and construction so: (g) local ecology, drainage, flooding, geotechnical and micro-climatic conditions are maintained. (No AS)</p> <p>012 Development is located, designed and constructed to function effectively and in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including: (f) the propensity for any natural hazard related to flooding, land slip and bushfire to adversely affect people, property, economic activities and the environment.</p> <p>S12 (vii) for storage areas, vehicle movement areas, enclosures, compounds, essential on-site infrastructure, treated effluent disposal areas and buildings and structures, they are located at ground level to be at least:</p> <ul style="list-style-type: none"> • for habitable buildings - above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known, • for Major utilities or Special uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, where known, • for buildings and structures where (c)(i) and (ii) do not apply - 300mm above the highest known flood event, or • for other uses and works – 100mm above the highest known flood event, <p>(viii) areas outside stormwater discharge points, overland flow paths, watercourses and natural drainage features, and</p> <p>015 Filling, draining, grading or excavation of land provides for compacted, finished levels which secure flood free, stable and free draining building and infrastructure sites appropriate to the intended use and minimising impacts to an acceptable level within and off the site regarding: (c) flooding and drainage flow rates, volumes and natural flood storage capacity,</p> <p>Rural Residential Locality:</p> <p>04 Lots are located, designed and developed so that useable lots with sufficient area and suitable shape and proportions to (b) provide appropriately for local topography so flood immune, stable and free draining building areas,(No AS)</p> <p>011 Fences and walls are located, designed and of a form and construction so: (g) local ecology, drainage, flooding, geotechnical and micro-climatic conditions are maintained. (no AS).</p> <p>013 Development is located, designed and constructed to function effectively in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including:</p> <p>S13. Habitable buildings and on-site disposal areas for treated effluent for Caretakers residence, Dwelling house or Multiple dwelling unit (for two dwelling units) are contained in a building area of no less than 2500sqm with a minimum dimension of 50 metres. Development within the building area and for any other uses or works on a site are confined to:</p> <p>(i) for habitable buildings:</p> <p>(A) above land inundated by the 1% Annual Exceedance Probability (EAP) flood event where known, or</p> <p>(B) 300mm above the highest known flood,</p> <p>(ii) for Major utilities or Special uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or</p> <p>(iii) for other uses and works – 100mm above the highest known flood event,</p> <p>(d) areas outside stormwater discharge points, overland flow paths, watercourses and natural drainage features, and</p> <p>Earthworks - Rural / Rural Residential / Urban Locality</p> <p>O@ Filling, drainage, grading or excavation of land is undertaken so that: (c) cut or fill is setback at least 2 metres from:</p> <p>(i) lands below the highest known flood level;</p> <p>(ii) lands used for local or major utilities; or</p> <p>(iii) overland flow paths.</p> <p>(f) works do not:</p> <p>(i) involve any physical alteration to a watercourse,</p> <p>(ii) result in net filling exceeding 50 cubic metres, or</p> <p>S@ Where the excavation and/or filling is intended to or causes the retention of water (such as a dam):</p> <p>(a) the structure will safely withstand the hydraulic loading;</p> <p>(b) a spillway for overflow is provided in a position to ensure scour damage or nuisance to adjacent lots does not occur; and</p> <p>(c) no adverse impact or interference is made on local flow patterns.</p> <p>Urban Locality</p> <p>04 Lots are located, designed and developed so that useable lots with sufficient area and suitable shape and proportions: (b) provide appropriately for local topography so flood immune, stable and free draining building areas,(No AS).</p> <p>017 Development is located , designed and constructed to function effectively in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including:(e) the propensity for any natural hazard related to flooding, landslip and bushfire to adversely affect people, property, economic activity and the environment.</p> <p>S17. Uses and associated works are confined to:(c) for storage areas, vehicle movement areas, essential infrastructure, and buildings and structures, they are located at ground level to be at least:</p> <p>(i) for habitable buildings:</p> <p>(A) above land inundated by the 1% Annual Exceedance Probability (EAP) flood event where known, or</p> <p>(B) 300mm above the highest known flood,</p> <p>(ii) for Major utilities or Special uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or</p> <p>(iii) for other uses and works – 100mm above the highest known flood event,</p>

	<p>(d) areas outside stormwater discharge points, overland flow paths, watercourses and natural drainage features.</p> <p>TABLE S4.1A – DESIGN PARAMETERS FOR RECONFIGURING A LOT IN THE RESIDENTIAL ZONE</p> <p>Conventional Lots: (e) Lots with minimum area and dimensions to enable:</p> <p>(i) a 10 metres by 15 metres building area measured 6 metres from the frontage of the site at ground level 300mm above the highest known flood and on slopes of 10% or less, and</p>
Use Codes	Yes
Details	<p>Dwelling House, Annexed Unit and Caretakers Residence Code</p> <p>O2 Areas susceptible to hazards associated with erosion, land slide, mass movement, flooding, drainage problems, salinity and instability are maintained in a state which minimises the following relative to the site and its setting: (5) unacceptable change to local flooding and drainage characteristics.</p> <p>S2.2 Buildings, structures and works (including areas for on-site disposal of treated effluent) occur: (5) on free draining land so that:</p> <ol style="list-style-type: none"> habitable rooms within a building are: <ul style="list-style-type: none"> (i) above the 1% Annual Exceedance Probability (AEP) flood event, where known; or (ii) 300mm above the highest known flood level non-habitable rooms within a building as well as carports, on-site areas for disposal of treated effluent and approved property accesses are 100mm above the highest known flood. <p>Bed and Breakfast and Small Scale Tourist Facility Code</p> <p>O13 Areas susceptible to hazards associated with erosion, land slip, mass movement, flooding, drainage problems, salinity and the like are maintained in a state which minimises the following relative to the site and its setting:</p> <ol style="list-style-type: none"> potential for significant adverse effects on habitats, water quality and landscape values, unacceptable risks to public safety, potential damage to property and essential service infrastructure, and adverse impacts on the capacity to use land and upon the economic value of water and land resources. <p>S13.2 Buildings, structures and works (including areas for the disposal of treated effluent) occur:</p> <ol style="list-style-type: none"> on cleared land, outside overland flow paths, gullies or other drainage paths, including stormwater discharge points, at least the following from the top bank of a river, creek, stream, or wetland: <ol style="list-style-type: none"> 50 metres in the Rural Locality, and 20 metres in other Localities, at least 200 metres from the full supply level for any referable dam³, and on free draining land so that: <ol style="list-style-type: none"> habitable rooms within a building are 300 mm above the highest known flood level, and non-habitable rooms within a building as well as carports, on site areas for disposal of treated effluent and approved property accesses are 100 mm above the highest known flood. <p>Extractive Industry & Borrow Pit Code</p> <p>O3 On-site control measures for managing erosion, sediment movement and drainage are provided so that during set-up and thereafter: (6) flood characteristics are maintained or restored so uses on-site and in the surrounds have adequate flood immunity, and</p> <p>S3.2 (6) so water storages, extraction pits and settlement ponds are above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, and</p> <p>(7) so processing areas, areas with improvements and accesses to roads are located:</p> <ol style="list-style-type: none"> above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or otherwise 300mm above the highest known flood level on the property. <p>Home Based Business</p> <p>O2 A Home-based business is located and of a scale, design and appearance so:</p> <ol style="list-style-type: none"> it is visually unobtrusive in the setting, and the character of the residential premise on the site is not altered when viewed from the street frontage(s). <p>S2.1 Any:</p> <ol style="list-style-type: none"> commercial vehicle garaging, stored equipment or materials/goods, public display of goods, or outdoor activity areas, are located and treated so that they are: where involving outdoor handling and storage of goods or materials, located 100mm above the highest known flood level. <p>Child Care Centres Code</p> <p>O3 The premises are located and designed so they are not exposed to unacceptable levels of hazards, environmental harm or nuisance.</p> <p>S3.1 The premises are located on a site where:</p> <ol style="list-style-type: none"> ground level is located 300mm above the highest known flood or above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known. <p>Farming Code</p> <p>S6.2 Compounds, on-farm processing and any cultivated areas (associated with irrigation services) are located on:</p> <ol style="list-style-type: none"> land which is 100mm above the highest known flood level, land outside overland flow paths, watercourses, gullies or other natural drainage paths, including stormwater discharge paths. <p>Forestry Business Code</p> <p>S7.2 Log dumps, on-farm processing, buildings and structures and vehicle movement areas are located on:</p> <ol style="list-style-type: none"> land which is 100mm above the highest known flood level.
ROL Code	No
Details	
Overlay Codes	No

Details	
PSPs	Yes
Details	<p>Planning Scheme Policy No.1 – Information Requests – General Assessment of Development Applications</p> <p>Development</p> <p>(3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <ul style="list-style-type: none"> a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners). <p>(8) for all development applications – a Proposal Plan that:</p> <ul style="list-style-type: none"> c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas, <p>Earthworks</p> <p>For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant:</p> <ul style="list-style-type: none"> (1) existing site levels, vegetation and drainage, (2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard to proposed buildings and infrastructure, <p>RoL</p> <p>(17) the affect on drainage and flooding having regard to catchment drainage over the land, and</p> <p>Planning Scheme Policy No.2 – Information Requests - Development Applications Affected by a SMOA</p> <p>(2) on lands subject to flooding or major stormwater flows on SMOA map 2B - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <ul style="list-style-type: none"> a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners). <p>Planning Scheme Policy No.10 – Rural Subdivisions below 200ha</p> <p>Land Capability and Environmental Assessment Report - Susceptibility of flooding to be addressed.</p>
Other	Yes
Details	<p>Schedule 2 – Internal, Connecting and External Infrastructure – Design and Construction Standards</p> <p>(b) Road Flooding: In accordance with Queensland Urban Drainage Manual – Volume 1: Text – Section 5.00.</p>
Op Works Code	Yes
Details	<p>Earthworks - Rural / Rural Residential / Urban Locality</p> <p>O@ Filling, drainage, grading or excavation of land is undertaken so that: (c) cut or fill is setback at least 2 metres from:</p> <ul style="list-style-type: none"> (i) lands below the highest known flood level; (ii) lands used for local or major utilities; or (iii) overland flow paths. <p>(f) works do not:</p> <ul style="list-style-type: none"> (i) involve any physical alteration to a watercourse, (ii) result in net filling exceeding 50 cubic metres, or <p>S@ Where the excavation and/or filling is intended to or causes the retention of water (such as a dam):</p> <ul style="list-style-type: none"> (a) the structure will safely withstand the hydraulic loading; (b) a spillway for overflow is provided in a position to ensure scour damage or nuisance to adjacent lots does not occur; and (c) no adverse impact or interference is made on local flow patterns.
Overlay Code	No
Details	
PSPs	Yes
Details	<p>Planning Scheme Policy No.1 – Information Requests – General Assessment of Development Applications</p> <p>Development</p> <p>(3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <ul style="list-style-type: none"> a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners). <p>(8) for all development applications – a Proposal Plan that:</p> <ul style="list-style-type: none"> c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas, <p>Earthworks</p> <p>For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant:</p> <ul style="list-style-type: none"> (1) existing site levels, vegetation and drainage, (2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard

	to proposed buildings and infrastructure,
Other	No
Details	
Other Info	

LGA	Gympie
Planning Scheme	Tiaro
Adopted	20/10/2005
Flood Amendments	Yes
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the Scheme Reflects SPP1/03 for landslide and bushfire only . Flood Provision of SPP1/03 Remain in effect.
Mapped Q100 / DFE	No
Details	Q100 / Highest Know adopted by Provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone SO(b) (ii) Development does not:- - Establish in flood prone areas AS (ii) Buildings and ancillary structures are constructed - with floor levels 300mm above the Q100 flood for the locality . - 100 m from the level of the highest astronomical tide (HAT) in all tidal areas.</p> <p>Rural Residential Zone SO (ii) Development does not establish in flood prone areas. AS (ii) Buildings and ancillary structures are constructed with floor levels - 300mm above the Q100 flood for the locality.</p> <p>Residential Zone SO (ii) Residential uses are established in localities: - where amenity is high and not endangered from natural hazards or from deterioration due to inadequate development standards. AS (ii) New residential areas are developed on land which has the following characteristics. Above the highest available flood level in the locality or the Q100 flood whichever is higher and • 100 m from the level of the highest astronomical tide (HAT) in all tidal areas</p> <p>Industry Zone SO (a) General Values (i) Development occurs in localities with level or gently sloping land with safe public access. AS (i) New industrial estate are established on land with the following characteristics:- - Well drained without flooding by Q100 flood or higher or any part of the land. Allotments are free draining at all times without creating pondage on adjoining land. SO (ii) Development does not establish in flood prone areas AS (ii) Buildings and ancillary structures are constructed - with floor levels at least 300 mm above the highest known flood for the locality and at least 50 m from the top bank of all water courses and storages and - at least 100 m from the level of the highest astronomical tide (HAT) in tidal areas.</p> <p>Green Space Zone SO (ii) Separation is provided between the development and natural watercourses and water storages and to prevent degradation and effects of floods. AS (ii) Buildings and ancillary structures are constructed with - floor levels 300mm above the Q100 flood for the locality and - at least 50 m from the top bank of all water courses and storages and - at least 100 m from the level of the highest astronomical tide (HAT) in tidal areas.</p> <p>Community Use Zone SO(ii) Separation is provided between the development and natural watercourses and water storages and to prevent degradation and effects of floods. AS(ii) Buildings and ancillary structures are constructed: - With floor levels 300 mm above the Q 100 flood for the locality and at least 50 m from the top bank of all water courses and storages and - 100 mm from the level of the highest astronomical tide (HAT) in all tidal areas.</p>
Use Codes	Yes
Details	<p>Caravan Park Code SO (a) Caravan parks are located (i) on land with sufficient area and with gradients to ensure minimal risk from natural hazards AS (a) (i) The minimum area of land is 2ha with slopes not exceeding 2% on 90% of the site and be above the maximum recorded flood level for the area.</p> <p>Child Care Code SO (b) The development is located to minimise: (i) safety risks from heavy traffic (ii) introduction of non-local traffic into minor residential streets (iii) flood damage or hazard AS (b) The development is not located: (i) on roads carrying more than 3,000 vehicles per day or (ii) on major arterial roads or on minor residential streets (iii) on a site subject to flooding.</p> <p>Dwelling Code (c) Buildings and associated structures are sited to minimise the effects of flood inundation on the structure and its contents (c) (i) Floor levels for habitable living areas are: - a minimum of 300 mm above the highest recorded flood level on the allotment, or the Q100 flood level whichever is higher, and - at least 100 m from the level of the highest astronomical tide (HAT) in all tidal areas.</p> <p>General Development Code (iii) Access and Drainage All developments ensure access to and drainage are:</p>

	<ul style="list-style-type: none"> • designed and constructed to the best current practice, and • designed to provide safe travel, and • flood free and with systems that ensure all lots are free draining.²³ <p>(iii) No probable solution proposed.</p> <p>23 Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP3</p> <p>Holiday Cabin Code</p> <p>SO (a) Developments provide areas for visitors to experience natural resources of the area in accommodation compatible with the natural environment.</p> <p>AS (a) (iii) The sites are flood free and not subject to the likelihood of landslip or bush fire risk.</p> <p>Intensive Rural Use Code</p> <p>SO (e) Lots are not constrained by; (ii) Floods</p> <p>AS (ii) Below the highest recorded flood level or Q100 flood level for the locality, whichever is higher. Note: Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP3.</p>
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Tidal Areas</p> <p>(a) Development is sited on land that -would not be subject to flooding during a 1:100 year flood event and is located at least 100m from the highest astronomical tide (HAT) in all tidal areas</p> <p>(b) Works do not involve: (i) any physical alteration to a major watercourse floodway or foreshore including vegetation clearing; or (ii) net filling exceeding 100 cubic metres.</p> <p>(c) The manufacture or storage in bulk of hazardous materials takes place at least 100 m from the HAT or above the level of associated floods OR Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event or at least 100m from the HAT</p> <p>(d) Components of the infrastructure that are likely to fail or may result in contamination are –</p> <p>(i) located above the level of a 1:100 year flood event associated with tidal surges or</p> <p>(ii) are designed and constructed to exclude water inundation or infiltration and resist hydrostatic and hydrodynamic forces as a result of inundation.</p> <p>(e) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide Guideline</p>
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 3 : ENVIRONMENTAL MANAGEMENT PLANS (EMP).</p> <p>(g) Flood Studies</p> <p>A flood study will include the following minimum information:</p> <ul style="list-style-type: none"> - The highest recorded flood level in the locality and its likely impacts on the proposal or the Q100 flood whichever is the highest and - The likely impacts of the development on flood levels in the area, and - Proposals to demonstrate that all parts of the development are above the highest flood level and all residential floor levels are at least 300mm above the highest flood level
Other	No
Details	
Op Works Code	Yes
Details	<p>Operational Works Code</p> <p>Overall Outcomes: (b) Filling or excavation does not adversely impact on the local environment and adjacent properties having regard for,</p> <ul style="list-style-type: none"> - the natural features of the area - the local watercourses and water quality - flooding, surface flows, and siltation on adjoining property. <p>AS (a) Excavation or filling on all land,</p> <p>(i) Does not exceed 1m deep or 1.5m high,</p> <p>(iv) Ensures no ponds develop on adjacent land at any time.</p> <p>(vii) Ensures works are a minimum 100m from wetlands and major watercourses.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Hinchinbrook
Planning Scheme	Hinchinbrook Shire Planning Scheme
Adopted	15-Dec-05
Flood Amendments	No
SPP Compliance	Yes
Details	The Minister for Environment, Local Government, Planning and Women has identified the following State Planning Policies as having being appropriately reflected in the planning scheme - - SPP1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	Yes
Details	Natural Hazard Overlay - Natural Feature (Maps 6-6f) -Map 6 - Flooding and Inundation - 1% AEP Flood Event - Hinchbrook -Map 6a - Flooding and Inundation - 1% AEP Flood Event - Ingham - Map 6b - Flooding and Inundation - 1% AEP Flood Event -Trebonne - Map 6c - Flooding and Inundation - 1% AEP Flood Event - Halifax -Map 6d - Flooding and Inundation - 1% AEP Flood Event -Macknade -Map 6e - Flooding and Inundation - 1% AEP Flood Event - Toobanna -Map 6f - Flooding and Inundation - 1% AEP Flood Event - Blackrock Natural Hazard Overlay - Natural Feature (Maps 7-7c) - Map 7a Storm Tide Flooding and Inundation - Allingham- - Map 7b Storm Tide Flooding and Inundation - Taylors Beach - Map 7a Storm Tide Flooding and Inundation - Lucinda
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	6.8 Residential Zone Code Overall Outcomes (2) The overall outcomes sought for the Residential Zone Code is the following: a range of housing types are available in Hinchinbrook Shire to meet community needs, the design and siting of housing considers the location, flooding potential, the surrounding land uses and the intensity of the proposed use. Village Zone Code Specific Outcomes and Probable Solutions Trebonne O19. Residential uses are located in appropriate locations with a proven over-riding need and community benefit. S19 New residential development is created free of inundation of flood waters and other drainage arising from a 1% probability storm event. Aquaculture Code Specific Outcomes and Probable Solutions O4 Pond based aquaculture facilities are constructed to prevent the escape of aquaculture product in a flood event. S4 Bunds are constructed to a level above the 1% AEP flood level (100 year) to minimise the escape of aquaculture product. Intensive Agriculture Code O2 Access to Intensive agriculture is safe functional and efficient and properly designed to: -avoid flooding or drainage impacts on roads in the local catchment. S2 None specified.
Use Codes	No
Details	
ROL Code	Yes
Details	6.18 Reconfiguring A Lot Code Overall Outcomes The overall outcomes sought for the Reconfiguring a Lot Code is the following: (d) if reconfiguring a lot opens a new road, the subdivision design is consistent with - (e) additional flood free residential land is made available through urban infill in appropriate locations of Ingham, Allingham / Forest Beach, Lucinda, and Taylors Beach and the reconfiguring of existing residential lots to permit dual occupancy residential development in appropriate locations;
Overlay Codes	Yes
Details	Flooding and Inundation Overlay Assessment Categories - MCU Defined Use All uses except road Assessment Category - Self Assessable if the site area is located in a flooding and inundation area (except a high hazard floodway) identified in Schedule 2. - Code assessable if the site area is located in a high hazard floodway within a flooding and inundation area identified in Schedule 2. Assessment Categories - Other Development Defined Use Building work and operational work (for excavation and filling) Assessment Category - Self Assessable if the site area is located in a flooding and inundation area (except a high hazard floodway), or storm tide flooding and inundation area. - Code assessable if the site area is located in a high hazard floodway within a flooding and inundation area identified in Schedule 2. Defined Use Reconfiguring a Lot

	<p>Assessment Category</p> <p>- Code assessable if the site area is located in a residential, village or commercial zone in a flooding and inundation area identified in Schedule 2.</p> <p>6.19 Flooding and Inundation Code</p> <p>(1) Overall Outcomes are the purpose of the Flooding and Inundation Code.</p> <p>(2) The overall outcomes sought for the Flooding and Indundation Code is to ensure that development and personal safety are not at unreasonable risk from flooding while maintaining environmental values and flood conveyance of waterways.</p> <p>Specific Outcomes and Probable Solutions</p> <p>O1 Development on land affected by flooding and inundation as indicated in Natural Features Maps 6, 6a, 6b, 6c, 6d, 6e & 6f has reasonable flood immunity such that person and property are not placed at unreasonable risk of injury or damage caused by flooding or inundation.</p> <p>S1.1 For areas outside of high hazard floodways</p> <p>-Development on land affected by flooding and inundation is undertaken in accordance with the following applicable control measures:</p> <p>(i) All habitable floor levels of habitable buildings to be greater than or equal to the 1% ARP flood level (100 year) plus 300mm; and</p> <p>(ii) All floor levels of buildings used for commercial and insudtry purposes to be greater than or equal to the 1% AEP flood level (100 year)</p> <p>S1.2 For areas in high hazard floodways</p> <p>Development that is redsidential (including community facilities), commercial or industrial in nature is not located on land classified as high hazard floodway.</p> <p>O2 Development on land affected by flooding and Inundation as indicated in Natural Feature Maps 6, 6a, 6b, 6c, 6d, 6e & 6f does not result in adverse flood impact elsewhere in the vicinity of the development.</p> <p>S2.1 For areas outside of high hazard floodways.</p> <p>-Non Specified.</p> <p>S2.2 For areas in high hazard floodways</p> <p>- Development that is residential (including community facilities), commercial or industrial in nature is not located on land classified as high hazard floodway.</p> <p>O3 Land that is within a residential, village or commercila zone and subject to flooding as identified in flooding and inundation area maps 6, 6a, 6b, 6c, 6d, 6e & 6f has a reasonable flood immunity such that persons and property are not placed at unreasonable risk of injury or damage caused by flooding or inundation.</p> <p>S3.1 For areas outside of high hazard floodways</p> <p>-Minimum fill level to be equal to the 1% AEP flood level (100 year) for the land.</p> <p>S3.2 For areas in high hazard floodways</p> <p>-No filling of land classified as high hazard floodway.</p> <p>(2) The Overall Outcomes sough for the Flooding and Inundation Code is to ensure that development and personal safety are not at reasonable risk from flooding while maintaining environmental values and flood conveyance of waterways.</p> <p>6.2 Coastal Processes Code</p> <p>Overall Outcomes for Coastal Processes Code</p> <p>(2) The overall outcomes sought for the Coastal Processes Code is to ensure that the coastal zone and coastal processes are recognised and accommodated in development and to ensure that development and personal safety are not at reasonable risk from flooding and inundation caused by storm tide.</p> <p>Specific Outcomes and Probable Solutions</p> <p>O1. Development on land affected by storm tide flooding and inundation in Natural Feature Maps 7A, 7B & C - Storm Tide Flooding and Inundation has a reasonable flood immunity such that persons and property are not places at unreasonable risk of injury or damage caused by storm tide flooding or inundation.</p> <p>S1 Development ensures that all habitable floor levels are equal to or greater than the minimum floor level identified in Natural Features Maps 7a, 7b & 7c for the particular site location.</p>
PSPs	No
Details	
Other	Yes
Details	<p>1.4 Strategy Framework</p> <p>The strategy framework is based on four shire-wide strategies that are relevant to the whole of the Shire and relate to:</p> <p>i) Flooding and coastal processes.</p> <p>Strategy 1 - Flooding and Coastal Processes</p> <p>New development is protected from inundation by flood waters, particularly in Ingham and the designated villages. Council has adopted the 1% AEP (100 year) as the defined flood event for the Shire.</p> <p>Outcomes</p> <p>a) Development (material change of use and reconfiguring of a lot) is located to avoid detrimental inundation by floodwaters or water from storm surge and accommodates the dynamic relationship between river catchments and the coastal processes.</p> <p>b) New development in Ingham and the villages is in flood-free areas;</p> <p>c) Any development adjacent to the Shire's waterways or adjacent to the coast is sited to maximise the potential for inundation through floodwaters or storm surge; and</p> <p>d) Development impacts on existing flood flows in the Herbert River system.</p> <p>Part 3 Desired Environmental Outcomes</p> <p>3.3 Efficient, Flexible Urban Development and Infrastructure</p> <p>A Shire where development is:</p> <p>(ii) generally free from the constraining effects of flooding or inundation by floodwaters, tidal surge or other storm events;</p> <p>(vii) conducted in a manner which minimises the potential impacts of flood, bushfire and landslide on people, property and the environment.</p> <p>3.5 Biodiversity and Conservation</p> <p>A Shire where biodiversity values and outstanding natural and cultural heritage values are protected and maintained through:</p> <p>(vi) the recognition and accommodation of ecological and geomorphological processes including coastal processes, flooding, storm surge, erosion, and sediment movement.</p>
Op Works Code	Yes
Details	<p>Operational Works (Filing and Excavation) Code</p> <p>Specific Outcomes and Probable Solutions</p> <p>O3. Excavation and filing does not create any intensification of flooding and drainage problems.</p> <p>S3.1 Filing is shaped do that runoff from the subject land does not flow onto adjacent privately owned land and where the level of dill required at the rear or side boundaries of the premises exceeds the level of adjoining premises by more than 100mm, a retaining wall is provided with at</p>

	<p>least a 50mm parapet above the fill to ensure water is not diverted onto adjoining premises.</p> <p>S3.2 Drainage lines are established so that runoff is discharged in graded drains to the table drain or to the kerbbing and channelling in the frontage streets, as applicable.</p> <p>S3.3 Upstream drainage is intercepted and conveyed to an approved point of discharge.</p> <p>S3.4 Where applicable, the development provides for upstream neighbour's allotments to drain.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	Yes
Details	
Other Info	<p>Definitions</p> <p>High hazard depth</p> <p>Areas where the floodwaters are deep (>1m) but are not flowing with a high velocity with damage only to building contents.</p> <p>High hazard floodway</p> <p>Typically areas where there is deep water flowing with a high velocity and possible structural damage to light framed houses and high risk to life.</p> <p>Highest Astronomical Tide (HAT)</p> <p>The highest level of water which can be predicted to occur under any combination of astronomical conditions. This level may not be reached every year.</p> <p>Storm tide inundation</p> <p>Flooding along coastal areas and the tidal reaches of waterbodies associated with intense storm events.</p>

LGA	Ipswich
Planning Scheme	Ipswich
Adopted	14/12/2005
Flood Amendments	Yes
SPP Compliance	Yes
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme—</p> <p>4. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p>
Mapped Q100 / DFE	Yes
Details	DFE
Structure Plans (Etc)	Yes
Details	<p>Part 14—Springfield Structure Plan</p> <p>2.2.3.3 Requirements for a Precinct Plan</p> <p>(e) The location of the 10 and 100 year ARI stormwater/flood event design flood levels (pre and postdevelopment, including any areas to be filled), drainage corridors and the location of any water bodies. A report may be necessary to accompany a Precinct Plan demonstrating the affect (if any) any proposed land filling will have on stormwater drainage and/or floodplain management. Also, it is important that the environmental sustainability/physical integrity of the waterways and creekline open space areas are maintained. This may necessitate additional creek protection works due to the potential erosion that may result due to the increased frequency of minor discharges. This aspect will need to be investigated as part of the Precinct Plan.</p> <p>Part 15 - Ripley Valley Master Planned Area Structure Plan</p> <p>15.3.3 Specific Outcomes for the Ripley Valley Master Planned Area Structure Plan Area as a Whole (1) Preferred Pattern of Development</p> <p>(12) With further detailed Neighbourhood Master Planning and consequential flooding, drainage and mining (geotechnical) assessments, the final location of structural elements and land use patterns will be determined.</p> <p>(4) Neighbourhoods Specific Outcomes</p> <p>(b) Neighbourhoods—</p> <p>(ii) have an average residential density of 15 dwellings per hectare, except where development constraints (e.g. flooding, steep slope or undermining) dictates a lower density.</p> <p>(5) Functional Valley</p> <p>Specific Outcomes</p> <p>(a) The Ripley Valley provides an integrated water cycle management solution that protects, maintains and enhances the natural functions and environmental, social and economic values of the area's waterways, wetlands, riparian corridors and floodplains.</p> <p>(b) An effective, efficient and integrated water cycle management solution ensures that—</p> <p>(i) there is no worsening of flooding downstream of catchments;</p> <p>(6) Natural Valley</p> <p>Specific Outcomes</p> <p>(g) Watercourse Corridors</p> <p>(iii) Vegetated open space buffers are established to watercourses that, at a minimum, provide for the retention, or if required the rehabilitation, of native vegetation on land within—</p> <p>(B) the natural flood plain of the watercourse (i.e. land below the Q100 flood line);</p> <p>15.4.2 Overall Outcomes for the Future Urban Zone</p> <p>NOTE 15.4.2C</p> <p>(1) The land within the Future Urban Zone is affected by development constraints, including flooding and drainage issues, mining, steep slopes and significant native vegetation.</p> <p>(8) Neighbourhood Master Plans</p> <p>Specific Outcomes</p> <p>(e) The Neighbourhood Master Plan provides supporting documentation describing—</p> <p>(v) the implementation of Integrated</p> <p>Water Cycle Management, including—</p> <p>(B) identification of the 1 in 20 flood level and 1 in 100 year ARI stormwater/flood event design flood levels (pre and post-development, including any areas to be filled), drainage corridors and the location of any water bodies;</p> <p>NOTE 15.4.3D</p> <p>(1) There is sufficient capacity within the redefined flow path of Bundamba Creek to ensure that in-stream measures can be incorporated into the design of the catchment, however development is to ensure that there is no net loss in flood capacity.</p> <p>Refer Table 2: Referral Agency Jurisdiction - Participating Agency</p> <p>15.5.1 Conservation (T1) Zone</p> <p>NOTE 15.5.2B</p> <p>(2) Some of the land within the Conservation (T1) Zone is affected by development constraints, particularly bushfire hazard and flooding.</p> <p>(3) Building Design and Placement</p> <p>Specific Outcome</p> <p>(c) buildings are not significantly affected by flooding or stormwater drainage;</p> <p>15.6.1 Rural/Constrained (T2) Zone</p> <p>NOTE 15.6.2B</p> <p>(1) Some of the land within the Rural/Constrained</p> <p>(T2) Zone is affected by development constraints, particularly flooding, mining, steep slopes and matters associated with noise impacts from the operations of the RAAF Base Amberley.</p> <p>15.12.1 Recreation Zone</p> <p>iv) buildings are not significantly affected by flooding or stormwater drainage;</p> <p>NOTE 15.12.2C</p> <p>(1) Some of the land within the Recreation Zone is affected by development constraints, particularly flooding, mining and cultural heritage.</p> <p>15.13.1 Special Uses Zone</p> <p>NOTE 15.13.2B</p> <p>(1) Some of the land within the Special Uses Zone is affected by development constraints, particularly flooding, mining, steep slopes and Department of Defence building height controls</p>

Local Area Plans	Yes
Details	<p>Part 5—City Centre</p> <p>5.9 Overall Outcomes for CBD Primary Retail Zone</p> <p>NOTE 5.9B</p> <p>(1) Some of the land within the CBD Primary Retail Zone is affected by development constraints, including flooding and cultural heritage features.</p> <p>5.13 Overall Outcomes for CBD North – Secondary Business Zone</p> <p>NOTE 5.13B</p> <p>(1) Some of the land within the CBD North – Secondary Business Zone is affected by constraints including flooding and cultural heritage features.</p> <p>Part 6—Regionally Significant Business Enterprise and Industry Areas</p> <p>(4) Swanbank New Chum – Preferred Development Outcomes</p> <p>NOTE 6.7C</p> <p>(2) The area is constrained by:</p> <p>(b) flooding;</p> <p>(5) Swanbank New Chum – Preferred Pattern of Development</p> <p>NOTE 6.7D</p> <p>(7) With further detailed flooding, drainage and mining (geotechnical) assessments, final locations of structural elements and land use patterns will be determined.</p> <p>(d) Business Park</p> <p>Specific Outcomes</p> <p>(ii) Infrastructure services and buildings are designed to withstand potential subsidence and flooding events.</p> <p>(g) Regional Business and Industry Investigation Areas</p> <p>NOTE 6.7J</p> <p>(2) These areas are subject to extensive and significant impacts from mining and are further constrained by flooding and existing and planned residential areas to the east, west, north and south.</p> <p>Part 6, Div 4—Regional Business and Industry Zone</p> <p>6.9 Overall Outcomes for the Regional Business and Industry Zone</p> <p>(2) The overall outcomes sought for the Regional Business and Industry Zone are the following—</p> <p>NOTE 6.9B</p> <p>(1) Some of the land within the Regional Business and Industry Zone is affected by development constraints, including flooding and mining activity.</p> <p>2) Sub Area RB2 – Bundamba/Riverview – Low Impact Business and Industry (RB2L) and Medium Impact Business and Industry (RB2M)</p> <p>NOTE 6.11C</p> <p>(2) Various parts of the area may involve site constraints (e.g. relating to mining, flooding and drainage problems) which may influence their end use and value for business and industry activities.</p> <p>Part 7—Amberley Area, Div 4—Amberley Air Base and Aviation Zone</p> <p>(2) The overall outcomes for the Amberley Air Base and Aviation Zone are the same as those set out for the Amberley Area (refer section 7.6).</p> <p>NOTE 7.8B</p> <p>(3) Some of the land within the Amberley Air Base and Aviation Zone is affected by development constraints, particularly flooding and the operational requirements of the Amberley Air Base.</p> <p>Integrated Planning, Uses and Works</p> <p>(vii) incorporates flood immunity levels, relative to the details of the type of use proposed;</p> <p>Part 8—Rosewood Area</p> <p>NOTE 8.6B</p> <p>(1) Outlying areas surrounding Rosewood are constrained by a number of factors, including past mining activities, future mining resources areas, areas of ecological significance, good quality agricultural land and areas of poor drainage, some of which are also flood prone.</p> <p>Employment and Economic Development</p> <p>NOTE 8.6C</p> <p>(2) Owing to multiple constraints (such as mining, drainage and flooding) expansion of the township is severely limited, therefore, increased residential densities are important to the expansion of the town’s population catchment.</p> <p>Part 8—Rosewood Area, Div 4 – Town Centre Zone</p> <p>NOTE 8.9B</p> <p>(1) Some of the land within the Town Centre Zone is affected by development constraints, including flooding and cultural features.</p> <p>Part 8—Rosewood Area, Div 7 – Residential Low Density Zone</p> <p>Residential Uses – Density and Character</p> <p>(1) Specific Outcomes</p> <p>(b) Buildings on stumps/piers are provided in preference to slab on ground construction, particularly in areas which are subject to flooding/drainage issues and past undermining and which contain significant vegetation.</p> <p>(2) Sub Area RLB (Greenfield Areas)</p> <p>(a) Specific Outcomes</p> <p>(iii) Future residential and other urban uses and works are developed to ensure minimisation of the impact of undermining activities and flooding and drainage issues.</p> <p>Part 8—Rosewood Area, Div 9 – Urban Investigation Zone</p> <p>NOTE 8.32B</p> <p>(1) The land within the Urban Investigation Zone is affected by development constraints, including flooding and drainage issues and mining.</p> <p>Uses and Works – Density and Character</p> <p>(2) Specific Outcomes</p> <p>(c) Buildings on stumps/piers are provided in preference to slab on ground construction, particularly in areas which are subject to flooding/drainage issues and past undermining or which contain significant vegetation.</p> <p>8.34 Effects of Development within Sub Areas</p> <p>(1) Sub Area UIA1 – South West Urban Investigation Area</p> <p>(3) The land in this Sub Area is constrained by significant flooding and drainage issues, with evidence suggesting that a portion of the south-western corner of the site lies below the 1974 flood line, making it unsuitable for residential uses and works.</p> <p>(4) Any proposals will be required to undertake extensive flooding and drainage investigations to ensure that all residential uses and works are</p>

	<p>above the adopted flood level and incorporate appropriate drainage.</p> <p>Probable Solutions – for sub-section (a)</p> <p>(b) Residential uses and works are situated above the adopted flood level.</p> <p>(2) Sub Area UIA2 – Southern Urban Investigation Area</p> <p>Specific Outcomes</p> <p>(4) Approval of uses and works are subject to detailed investigation and resolution of flooding and drainage issues.</p> <p>Probable Solutions – for sub-section (a)</p> <p>(b) Residential uses and works are situated above the adopted flood level.</p> <p>(3) Sub Area UIA3 – South East Urban Investigation Area</p> <p>NOTE 8.34D</p> <p>(3) Evidence suggests that a portion of the land is below the 1974 flood level, and that the majority of the land is subject to ponding during periods of high rainfall.</p> <p>(8) Approval of uses and works are subject to detailed investigation and resolution of flooding and drainage issues.</p> <p>Specific Outcomes</p> <p>(a) Residential and other urban uses and works in the Sub Area are developed in a manner which—</p> <p>Probable Solutions – for sub-section (a)</p> <p>(e) Residential uses and works are situated above the adopted flood level.</p> <p>Part 8—Rosewood Area, Div 10 – Recreation Zone</p> <p>NOTE 8.37B</p> <p>(1) Some of the land within the Recreation Zone is affected by development constraints, particularly flooding, mining and heritage places.</p> <p>8.38 Effects of Development – General Building Design and Placement</p> <p>(1) Specific Outcomes</p> <p>(iv) buildings are not significantly affected by flooding or stormwater drainage;</p> <p>Part 8—Rosewood Area, Div 11 – Special Uses Zone</p> <p>NOTE 8.42B</p> <p>(1) Some of the land within the Special Uses Zone is affected by development constraints, particularly flooding constraints.</p> <p>(5) Sub Area SU61 – Cabanda/Rosewood Rail Line Transport Link/Tourist Attraction</p> <p>(a) Uses and Works are designed and located such that—</p> <p>(iii) any buildings will not be significantly affected by flooding and stormwater damage;</p>
Zone Codes	Yes
Details	<p>Part 4—Urban Areas, Div 4—Large Lot Residential Zone</p> <p>4.4.2 Overall Outcomes for Large Lot Residential Zone</p> <p>NOTE 4.4.2B</p> <p>(1) Some of the land within the Large Lot Residential Zone is affected by development constraints, particularly flooding and mining.</p> <p>Part 4—Urban Areas, Div 5—Residential Low Density Zone</p> <p>4.5.2 Overall Outcomes for Residential Low Density Zone</p> <p>NOTE 4.5.2B</p> <p>(1) Some of the land within the Residential Low Density Zone is affected by development constraints, particularly flooding and mining.</p> <p>Part 4—Urban Areas, Div 6—Residential Medium Density Zone</p> <p>4.6.2 Overall Outcomes for Residential Medium Density Zone</p> <p>NOTE 4.6.2B</p> <p>(1) Some of the land within the Residential Medium Density Zone is affected by development constraints, particularly flooding and mining.</p> <p>Part 4—Urban Areas, Div 7—Character Areas – Housing Zone</p> <p>4.7.2 Overall Outcomes for the Character Areas – Housing Zone</p> <p>NOTE 4.7.2C</p> <p>(1) Some of the land within the Character Areas – Housing Zone is affected by development constraints, particularly flooding and mining.</p> <p>Part 4 -Urban Areas, Div 8 - Future Urban Zone</p> <p>4.8.2 Overall Outcomes for the Future Urban Zone</p> <p>NOTE 4.8.2B</p> <p>(1) The land within the Future Urban Zone is affected by development constraints, including flooding and drainage issues, mining, steep slopes and significant native vegetation.</p> <p>4.8.5A Effects of Development within Sub Area FU2—South Redbank Plains</p> <p>(5) The Land Use Concept Master Plan (LUCMP) (Figure 4.8.2A) establishes the outer limits of the future urban development “footprint” having regard to—</p> <p>(d) areas affected by flooding;</p> <p>NOTE 4.8.5AC</p> <p>(7) With further detailed flooding, drainage and mining (geotechnical) assessments, final locations of structural elements and land use patterns will be determined.</p> <p>NOTE 4.8.5AD</p> <p>(1) This Land Use Designation includes land constrained by past mining activities, flooding and drainage and land that adjoins designated wildlife corridors.</p> <p>NOTE 4.8.5AG</p> <p>(1) This Land Use Designation includes land constrained by past mining activities, flooding and drainage and land that adjoins designated wildlife corridors.</p> <p>(iii) South Redbank Plains Local Neighbourhood Centres (LN1 and LN2) and Other Local, Convenience Shopping.</p> <p>Probable Solutions</p> <p>(iii) Corridor linkages (including major drainage paths and creek side open space) should be –</p> <p>(C) with allowances for increased width (ie. beyond 100 metres) to incorporate flood plain areas (below 1 in 100 average recurrence interval) or stands of significant vegetation, including old growth trees with hollows.</p> <p>(d) Open Space and Recreation Facilities</p> <p>Probable Solutions</p> <p>(iv) The following land is not accepted as part of the parkland contributions—</p> <p>(A) land below the post Q10 ARI flood/stormwater event unless those areas are useable and stable;</p> <p>(f) Stormwater Management</p>

Specific Outcomes

(ii) Stormwater drainage works ensure the conveyance through the site of stormwater runoff for rainfall events up to and including the adopted flood level event in a manner which minimises flood nuisance and the potential for erosion, taking into account local discharges.

NOTE 4.8.5CB

(5) The Land Use Concept Master Plan (LUCMP) (Figure 4.8.2) establishes the outer limits of the future urban development “footprint” having regard to - (f) areas affected by flooding;

(2) Walloon Thagoona—Preferred Pattern of Development

NOTE 4.8.5CC

(6) The proposed structural elements are shown in a conceptual way based on the present level of planning and knowledge of constraints, and for these reasons the locations must not be regarded as final.

(b) Residential Low Density

NOTE 4.8.5CD

(2) Some of the land within the Residential Low Density Land Use Designation is affected by development constraints and is subject to further detailed flooding, drainage and mining investigation.

(c) Residential Medium Density

NOTE 4.8.5CE

(1) This Land Use Designation includes land constrained by past mining activities, Australian Noise Exposure Forecast (ANEF) overlays, flooding and drainage and land that adjoins designated wildlife corridors.

(f) Stormwater Management

Specific Outcomes

(ii) Stormwater drainage works ensure the conveyance through the site of stormwater runoff for rainfall events up to and including the adopted flood level event in a manner which minimises flood nuisance and the potential for erosion, taking into account local discharges.

(h) Special Opportunity Areas

Special Opportunity Area 1

Specific Outcomes

(ii) Future uses may include—

(D) possible residential uses on land outside of drainage problem areas (subject to detailed assessment of flooding and drainage impacts).

Special Opportunity Area 2

(iii) This land is significantly affected by flooding and drainage issues, the proposed Western Ipswich Bypass and the railway corridor.

Specific Outcomes

(iv) Future uses may include—

(C) recreational uses that must address drainage/flooding problems and highway/rail noise;

Part 4—Urban Areas, Div 9—Major Centres Zone

(i) Goodna Primary Business Area (MC4P2) Goodna Rail Station Transit Oriented Development Precinct

(r) Goodna Secondary Business Area (MC4S9) – Mill Street

Specific Outcomes

(i) This precinct is significantly affected by flood events.

(ii) Development is to address the flooding impacts and shall minimise adverse impacts on the development and surrounding land uses.

(iii) Development proposals that can satisfactorily address the flooding impacts shall have minimal development footprints and shall have a strong visual impact on the street frontage through quality building design.

(iv) Commercial uses are encouraged at the lower floor levels owing to the flooding impacts, with residential above.

(d) Open Space and Recreation Facilities

Probable Solutions

(iv) The following land is not accepted as part of the parkland contributions—

(A) land below the post Q10 ARI flood/stormwater event unless those areas are useable and stable;

(f) Stormwater Management

(ii) Stormwater drainage works ensure the conveyance through the site of stormwater runoff for rainfall events up to and including the adopted flood level event in a manner which minimises flood nuisance and the potential for erosion, taking into account local discharges.

(5) Sub Area MC5 – Redbank Plaza Primary Business Area (MC5P) and Secondary Business Area (MC5S)

NOTE 4.9.4O

(1) The centre is heavily constrained by the Ipswich Motorway to the north, steep topography to the west, residential development to the south and flooding and undermining to the east.

Part 4—Urban Areas, Div 10—Local Retail and Commercial Zone

NOTE 4.10.2B

(1) Some of the land within the Local Retail and Commercial Zone is affected by development constraints, including flooding and cultural features.

Part 4—Urban Areas, Div 11—Local Business and Industry Zone

4.11.2 Overall Outcomes for Local Business and Industry Zone

NOTE 4.11.2B

(1) Some of the land within the Local Business and Industry Zone is affected by development constraints, including flooding, mining activity and cultural features.

4.12.2 Overall Outcomes for Local Business and Industry Investigation Zone

(2) The overall outcomes sought for the Local Business and Industry Investigation Zone are the following—

Land Use Mix

(a) Uses and works within the Local Business and Industry Investigation Zone provide local business and employment opportunities subject to resolution of applicable constraints such as mining, flooding and availability of services.

NOTE 4.12.2B

(1) Much of the land within the Local Business and Industry Investigation Zone is affected by development constraints, including flooding, mining activity and cultural features.

(2) Sub Area LBIA2 – North Tivoli

(2) The area is subject to extensive and significant impacts from undermining and is further constrained by flooding.

Business Mix

(h) Specific Outcomes

(i) The Sub Area supports uses which -
(c) are compatible with the flood plain of the Bremer River and Sandy Creek, including provision for a riparian open space corridor.

Part 4—Urban Areas, Div 12—Local Business and Industry Investigation Zone
Land Use Mix
(a) Uses and works within the Local Business and Industry Investigation Zone provide local business and employment opportunities subject to resolution of applicable constraints such as mining, flooding and availability of services.

NOTE 4.12.2B
(1) Much of the land within the Local Business and Industry Investigation Zone is affected by development constraints, including flooding, mining activity and cultural features.

Part 4—Urban Areas, Div 13—Local Business and Industry Buffer Zone
NOTE 4.13.2C
(1) Some of the land within the Local Business and Industry Buffer Zone is affected by development constraints, including flooding and mining activity.

Part 4—Urban Areas, Div 14—Character Areas – Mixed Use Zone
NOTE 4.14.2D
(1) Some of the land within the Character Areas – Mixed Use Zone is affected by development constraints, particularly flooding and mining.

Part 4—Urban Areas, Div 16—Bundamba Racecourse Stables Area Zone
4.16.1 Bundamba Racecourse Stables Area Zone
NOTE 4.16.2B
(1) Some of the land within the Bundamba Racecourse Stables Area Zone is affected by development constraints, particularly flooding and mining.

Part 4—Urban Areas, Div 17—Recreation Zone
NOTE 4.17.2C
(1) Some of the land within the Recreation Zone is affected by development constraints, particularly flooding, mining and cultural heritage.

Building Design and Placement
(2) Specific Outcomes
(a) The design and placement of buildings ensures—
(iv) buildings are not significantly affected by flooding or stormwater drainage;

Part 4—Urban Areas, Div 18—Conservation Zone
4.18.2 Overall Outcomes for Conservation Zone
NOTE 4.18.2B
(2) Some of the land within the Conservation Zone is affected by development constraints, particularly bushfire hazard and flooding.

4.18.3 Effects of Development – General
Building Design and Placement
(3) Specific Outcomes
The design and placement of buildings ensures—
(c) buildings are not significantly affected by flooding or stormwater drainage;

Part 4—Urban Areas, Div 19—Limited Development (Constrained) Zone
4.19.2 Overall Outcomes for the Limited Development (Constrained) Zone
The overall outcomes sought for the Limited Development (Constrained) Zone are the following—
(b) Such constraints upon development may include—
(iii) areas unsuitable for urban purposes as a result of flooding;

NOTE 4.19.2B
(1) The land within the Limited Development (Constrained) Zone is affected by development constraints, particularly flooding, mining, defence requirements, Motorsport buffers, Wastewater Treatment Plant buffers, and Swanbank Power Station buffer.

Part 4—Urban Areas, Div 20—Special Uses Zone
4.20.2 Overall Outcomes for Special Uses Zone
NOTE 4.20.2B
(1) Some of the land within the Special Uses Zone is affected by development constraints, particularly flooding, mining, steep slopes and Department of Defence building height controls.

Part 4—Urban Areas, Div 21—Special Opportunity Zone
NOTE 4.21.2B
(1) Some of the land within the Special Opportunity Zone is affected by development constraints, particularly flooding, mining, steep slopes and matters associated with the Amberley Air Base.
(2) Sub Area SA2 - North Ipswich Railyards
(iii) Precinct 3 - Riverside Residential Precinct
(D) The precise location of the boundary between the Riverside Open Space Precinct (Precinct 5) and the Riverside Residential Precinct (Precinct 3) is to be determined by the extent of fill permitted of the site to raise ground levels above the Q100 flood level (and subject to satisfactorily addressing site contamination and flood modelling requirements).
(F) Should filling of the site not be approved, subject to detailed assessment, then the location of the boundary will be determined relative to the position of Q100 flood level and the location of the road and pedestrian/cycle path to be located on the Mihi Railway alignment (refer to the Indicative Connectivity Plan - Figure 4.21.1).
(v) Precinct 5 - Riverside Open Space Precinct (C) The precise location of the boundary between the Riverside Open Space Precinct (Precinct 5) and the Riverside Residential Precinct (Precinct 3) is to be determined by the extent of fill permitted on the site to raise ground levels above the Q100 flood level (and subject to satisfactorily addressing site contamination and flood modelling requirements).
(E) Should filling of the site not be approved, subject to detailed assessment, then the location of the boundary will be determined relative to the position of Q100 flood level and the location of the road and pedestrian/cycle path to be located on the Mihi Railway alignment (refer to the Indicative Connectivity Plan - Figure 4.21.1).
(vi) Precinct 6 - Drainage/Open Space Precinct
(A) New uses and works are determined on the basis of satisfactorily addressing site contamination, flooding and drainage issues.

(18) Sub Area SA18 – Tivoli (area generally bounded by Harris Street, Mt Crosby Road, Church Street and Bremer River)
NOTE 4.21.4M
(2) The area is extensively affected by past mining activities, flooding and impacts associated with the operations of the Tivoli Wastewater Centre.

(20) Sub Area SA20 – Brassall (area generally bounded by the Brassall Major Centre Zone, former Railway Corridor/Collins Street and existing

	<p>community uses fronting Hunter Street)</p> <p>Specific Outcome</p> <p>(a) Uses which may be appropriate include community or other uses which support the Brassall Major Centre and are able to withstand flooding impacts.</p> <p>(21) Sub Area SA21 – East Ipswich (north of Jacaranda Street in the area defined by Nathan and Merrell Streets)</p> <p>NOTE 4.21.4P</p> <p>The Sub Area is extensively affected by flooding and drainage problems.</p> <p>Specific Outcomes</p> <p>(a) Future activities are compatible with the area’s flooding and drainage problems.</p> <p>(c) Residential uses are generally discouraged owing to the flooding and drainage impacts.</p> <p>(26) Sub Area SA26 – Bundamba (north east of Hanlon and Andrew Street)</p> <p>Specific Outcomes</p> <p>(a) Future uses—</p> <p>(iii) where involving dwellings—</p> <p>(B) are designed and located to minimise flooding and mining impacts and to provide emergency egress;</p> <p>(28) Sub Area SA28 – Ebbw Vale (north of Brisbane Road, to the north east of Ebbw Vale Station)</p> <p>NOTE 4.21.4U</p> <p>(1) The Sub Area includes vacant lands with drainage and flooding problems.</p> <p>Specific Outcomes</p> <p>(b) Future uses—</p> <p>(i) resolve drainage and flooding issues;</p> <p>(32) Sub Area SA32 – Redbank (South) – YUPI Site (bounded by Six Mile Creek, Bailey Street and Dunlop Street)</p> <p>NOTE 4.21.4X</p> <p>The site is affected by past mining activities and flooding, and contains a place of cultural heritage significance.</p> <p>(b) Appropriate uses for this Sub Area include—</p> <p>(c) Future uses and works—(ii) give due regard to the flooding and mining constraints.</p> <p>(39) Sub Area 39 – Pocket of Land Bounded by North Station Road, Bremer River and Bundamba Creek, North Booval</p> <p>NOTE 4.21.4Z</p> <p>(1) This area is significantly affected by major flooding events.</p> <p>Specific Outcomes</p> <p>(a) New uses and works are designed, constructed and located to—</p> <p>(iii) provide flood free or emergency access;</p> <p>(b) New residential buildings are concentrated in areas above the adopted flood level.</p> <p>(c) Large residential lots may include land below the adopted flood level, however building envelopes are located on land above the adopted flood level.</p> <p>(d) Suitable uses for the area may include—</p> <p>(i) a golf course on the flood prone land with an associated, low to medium density residential cluster on the land</p> <p>(41) Sub Area SA41 – Naomai and Emma Streets, Blackstone/Bundamba</p> <p>NOTE 4.21.4BB</p> <p>(1) This area is significantly affected by undermining, flooding and drainage constraints – refer to Overlay Maps and Part 11.</p> <p>Specific Outcomes</p> <p>(a) New uses and works are designed, constructed and located to—</p> <p>(i) be compatible with the site’s mining, flooding and drainage constraints and nearby residential uses;</p> <p>(43) Sub Area SA43 – Ipswich Turf Club Lands fronting Brisbane Road, Bundamba</p> <p>NOTE 4.21.4DD</p> <p>(1) This area is significantly affected by undermining and flooding constraints – refer to overlay maps and Part 11.</p> <p>Specific Outcomes</p> <p>(a) New uses and works are designed, constructed and located to—</p> <p>(iv) be compatible with the site’s flooding and mining constraints;</p> <p>(44) Sub Area SA44 – Woogaroo Street, Goodna</p> <p>Specific Outcomes</p> <p>(a) New uses and works are designed, constructed and located to—</p> <p>(iv) be compatible with the site’s flooding constraints;</p>
Use Codes	Yes
Details	<p>Part 12, Div 6—Residential Code</p> <p>Site Suitability and Amenity</p> <p>(12) Specific Outcomes</p> <p>(d) Habitable rooms in dwellings are situated above the adopted flood level.</p> <p>Advertising Signs</p> <p>(e) Probable Solutions – for subsection (4)(d)</p> <p>(ii) There is no use of bunting, flashing, animated or rotating signs or floodlighting.</p> <p>Site Amalgamation</p> <p>Site Suitability and Amenity</p> <p>(12) Specific Outcomes</p> <p>(d) Habitable rooms in dwellings are situated above the adopted flood level.</p> <p>Part 12, Div 7—Commercial and Industrial Code</p> <p>(c) Where there is potential for stored material to escape and pollute nearby waters—</p> <p>(ii) outdoor storage areas are located above the adopted flood level;</p> <p>Effects of Development – Specific Industrial Uses</p> <p>(1) FUEL DEPOT</p> <p>(e) Where there is potential for stored material to escape and pollute nearby waters, the use is designed so that—</p> <p>(ii) outdoor storage areas are above the adopted flood level;</p> <p>Part 12, Div 8—Intensive Animal Husbandry Code</p> <p>Site Requirements</p>

	<p>(3) Specific Outcomes Uses and works for Intensive Animal Husbandry are located on a site which—</p> <p>(d) is not subject to flooding within the areas used for buildings and the main animal enclosures;</p> <p>(4) Probable Solutions – for sub-section (3)</p> <p>The area of land used for buildings and the main animal enclosures for Intensive Animal Husbandry are located on land which—</p> <p>(b) is not subject to flooding at an annual exceedance probability of greater than 2%;</p> <p>Drainage</p> <p>(37) Probable Solutions – for sub-section (36)</p> <p>(a) All stormwater drainage design is in accordance with the requirements of the Institute of Engineers, Australia, 1987: "Australian Rainfall and Runoff: A Guide to Flood Estimation", Volume 1, for a two year return period.</p> <p>Building Design, Height and Placement</p> <p>(8) Specific Outcomes</p> <p>(a) The design, placement and height of buildings and other structures ensures—</p> <p>(iv) buildings are not significantly affected by flooding or stormwater drainage;</p> <p>Part 12, Div 12—Community Use Code</p> <p>(2) The overall outcomes sought for the Community Use Code are the following—</p> <p>(a) Community uses—</p> <p>(iv) where possible, avoid areas prone to flooding, bushfires or landslip;</p> <p>Part 12, Div 15—Earthworks Code</p> <p>(2) The overall outcomes sought for the Earthworks Code are the following—</p> <p>(a) Earthworks ensure—</p> <p>(ii) there is no adverse impact on flooding of upstream, downstream and adjoining land;</p> <p>Flooding and Drainage</p> <p>(8) Specific Outcomes</p> <p>(a) Earthworks are avoided below the adopted flood level.</p> <p>(b) Earthworks —</p> <p>(i) do not cause any increase in flooding or drainage problems;</p> <p>(ii) do not cause an impediment to flood waters; or</p> <p>(iii) do not adversely impact adjoining, upstream or downstream properties.</p> <p>Notification of Adjoining Owners</p> <p>(19) Specific Outcome</p> <p>Affected property owners are notified in writing if earthworks are—</p> <p>(c) likely to cause drainage or flooding impacts on adjoining land.</p>
ROL Code	Yes
Details	<p>Part 12, Div 5—Reconfiguring a Lot Code</p> <p>Table 12.5.1: Specific Outcomes and Probable Solutions for Minor Subdivisions</p> <p>Specific Outcomes</p> <p>Lot Layout and Design</p> <p>(1) Lots (including hatchet lots) have the appropriate area and dimensions to—</p> <p>(f) overcome site constraints (e.g. undermining, flooding, drainage, bushfire risk, buffers to incompatible land uses etc);</p> <p>Public Open Space</p> <p>Probable Solution</p> <p>(5) In those lot reconfigurations adjoining a river or creek system where it is proposed that linear or waterside parkland be secured—</p> <p>(c) the extent of the parkland correlates with the adopted flood level or is a minimum width of 30 metres (measured from the banks of the watercourse) or as much in addition to the 30 metres to achieve at least a 10 metre width with slopes less than 1 in 20 (5%) to enable construction of a walking/bicycle path and to facilitate maintenance;</p> <p>Specific Outcome</p> <p>Stormwater Drainage</p> <p>(8) All lots are located above the adopted flood level to provide protection of property in accordance with the accepted level of risk.</p> <p>Probable Solution</p> <p>Stormwater Drainage</p> <p>(8) (a) All Cottage Lots, Courtyard Lots, Traditional Lots, Hillside Lots and Dual Occupancy Lots are located above the adopted flood level.</p> <p>(c) All multiple residential lots, commercial lots, mixed business and industry lots and industrial lots are located above the adopted flood level for the respective zone or Sub Area.</p> <p>NOTE 12</p> <p>(1) Those areas of residential lots below the adopted flood level for the applicable zone or Sub Area which are affected by a 'significant flood flow' are to be subject to a drainage easement.</p> <p>Table 12.5.2: Specific Outcomes and Probable Solutions for Major Subdivisions</p> <p>Specific Outcomes</p> <p>Lot Layout and Design</p> <p>(2) Lots (including hatchet lots) have the appropriate area and dimensions to—</p> <p>(f) overcome site constraints (e.g. undermining, flooding, drainage, bushfire risk, buffers to incompatible land uses etc);</p> <p>Public Open Space</p> <p>Probable Solution</p> <p>(26) (B) the extent of the parkland correlates with the adopted flood level or is a minimum width of 30 metres (measured from the banks of the watercourse) or as much in addition to the 30 metres to achieve at least a 10 metre width with slopes less than 1 in 20 (5%) to enable construction of a walking/bicycle path and to facilitate maintenance;</p> <p>Stormwater Drainage</p> <p>Specific Outcome</p> <p>28) The major stormwater drainage system—</p> <p>(c) is to maximise community benefit through the retention of natural streams and vegetation wherever practicable, the incorporation of parks and other less flood-sensitive land uses into the drainage corridor and the placement of detention basins for amenity and function.</p> <p>(29) All lots are located above the adopted flood level to provide protection of property in accordance with the accepted level of risk.</p> <p>Probable Solution</p> <p>(29) (a) All Cottage Lots, Courtyard Lots, Traditional Lots, Hillside Lots and Dual Occupancy Lots are located above the adopted flood level.</p>

	<p>(c) All multiple residential lots, commercial lots, mixed business and industry lots and industrial lots are located above the adopted flood level for the respective zone or Sub Area.</p> <p>NOTE 35</p> <p>(1) Those areas of residential lots below the adopted flood level for the applicable zone or Sub Area which are affected by a 'significant flood flow' are to be subject to a drainage easement.</p> <p>Table 12.5.3: Specific Outcomes and Probable Solutions for Minor Rural Subdivisions</p> <p>Specific Outcome</p> <p>Lot Layout and Design</p> <p>(1) Lots (including hatchet lots) have the appropriate area and dimensions to—</p> <p>(e) overcome site constraints (e.g. undermining, flooding, drainage, bushfire risk, buffers to incompatible land uses etc);</p> <p>Specific Outcome</p> <p>Stormwater Drainage</p> <p>(9) A flood free dwelling site is located above the adopted flood level to provide protection of property in accordance with the accepted level of risk.</p> <p>Probable Solution</p> <p>Stormwater Drainage</p> <p>(9) Each proposed lot is to contain an area which is suitable for a building platform comprising at least 2000m² and located above the adopted flood level. Also, an additional area is to be available on each lot that is suitable to treat and dispose of effluent on-site in compliance with the Standard Sewerage Law and the On-Site Sewerage Code.</p> <p>Table 12.5.4: Specific Outcomes and Probable Solutions for Moderate Rural Subdivisions</p> <p>Specific Outcome</p> <p>Lot Layout and Design</p> <p>(1) Lots (including hatchet lots) have the appropriate area and dimensions to—</p> <p>(e) overcome site constraints (e.g. undermining, flooding, drainage, bushfire risk, buffers to incompatible land uses etc);</p> <p>Public Open Space</p> <p>(26) (B) the extent of the parkland correlates with the adopted flood level or is a minimum width of 30 metres (measured from the banks of the watercourse) or as much in addition to the 30 metres to achieve at least a 10 metre width with slopes less than 1 in 20 (5%) to enable construction of a walking/bicycle path and to facilitate maintenance;</p> <p>Specific Outcome</p> <p>Stormwater Drainage</p> <p>(18) A flood free dwelling site is located above the adopted flood level to provide protection of property in accordance with the accepted level of risk.</p> <p>Stormwater Drainage</p> <p>Probable</p> <p>(18) Each proposed lot is to contain an area which is suitable for a building platform comprising at least 2000m² and located above the adopted flood level. Also, an additional area is to be available on each lot that is suitable to treat and dispose of effluent on-site in compliance with the Standard Sewerage Law and the On-Site Sewerage Code.</p> <p>3. Criteria For On-Site Land Dedication</p> <p>2) Land dedications should satisfy the provisions of Planning Scheme Policy 5—Infrastructure relating to quantity, quality, flexibility and equity of distribution along with the following site specific characteristics—</p> <p>(e) encumbrances such as flood susceptibility, services easements etc;</p> <p>Refer Table 1: Flood Level Parameters for Integration with Linear and Waterside Parks and</p>
Overlay Codes	Yes
Details	<p>Part 11—Overlays, Div 4—Development Constraints Overlays</p> <p>11.4.7 Flooding and Urban Stormwater Flow Path Areas</p> <p>(1) Specific Outcomes</p> <p>(a) Land Situated Below the 1 in 20 Development Line – Residential Uses</p> <p>(i) The intensification of residential uses within flood affected areas is minimised.</p> <p>(ii) Additional dwellings or lot reconfigurations are avoided within areas affected by significant flood flows (i.e. one metre or more in depth).</p> <p>(iii) Where a development commitment, based on former zoning provisions, allows additional dwellings to be sited within areas affected by significant flood flows, such dwellings are designed to be capable of withstanding the static and dynamic loads, including debris loads, applicable to a flood event of 1 in 100 Average Recurrence Interval (ARI).</p> <p>(iv) Where possible, the floor levels of any habitable rooms of a proposed building are a minimum of 250mm above the adopted flood level, whilst having regard to—</p> <p>(A) the level of consistency with adjoining buildings and other buildings in the area;</p> <p>(B) the visual and amenity impacts, associated with any significant raising of floor levels; and</p> <p>(C) avoiding being lower than the existing floor level predominant in the streetscape.</p> <p>(v) The design and layout of residential buildings provides for—</p> <p>(A) parking and other low intensive, non habitable uses at ground level (e.g. temporary storage of readily removable items); and</p> <p>(B) habitable rooms above, to increase flood immunity.</p> <p>(vi) Building materials used below the 1 in 20 development line are resistant to water damage.</p> <p>(vii) Where possible, buildings and other structures are sited on the highest part of the site to increase flood immunity.</p> <p>(viii) Electrical installations below the 1 in 20 development line are designed and constructed to withstand submergence in flood water.</p> <p>(ix) Access routes are designed or alternative emergency evacuation routes are provided so that in the event of a</p>

serious incident occupants can escape to a safe and secure area.

(x) The development does not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within a flood plain.

(xi) Filling of land below the 1 in 20 development line and the clearing of native vegetation within the stream banks are avoided.

(b) Land Situated Below the 1 in 20 Development Line – Commercial, Industrial and Other Non Residential Uses

(i) Where possible, the design and layout of buildings provides for—

(A) parking, or other low intensive, or non habitable uses at ground level; and

(B) retail, commercial and work areas above the parking areas, to increase flood immunity.

(ii) Expensive plant and equipment and stock are located in the area of the site or building with the greatest flood immunity.

(iii) Building materials used below the 1 in 20 development line are resistant to water damage.

(iv) Electrical installations are sited in the area of greatest flood immunity.

(v) Electrical installations below the 1 in 20 development line are designed and constructed to withstand submergence in flood water.

(vi) Access routes are designed or alternative emergency evacuation routes are provided so that in the event of a serious incident occupants can escape to a safe and secure area.

(vii) The concentration of people in flood affected areas, particularly within areas affected by significant flood flows (i.e. one metre or more in depth), is minimised.

(viii) Buildings are located to avoid areas affected by significant flood flows (i.e. one metre or more in depth), or alternatively, buildings are designed to be capable of withstanding the static and dynamic loads, including debris loads, applicable to a flood event of 1 in 100 Average Recurrence Interval (ARI).

(ix) Materials stored on-site—

(A) are those that are readily able to be moved in a flood event;

(B) are not hazardous or noxious, or comprise materials that may cause a deleterious effect on the environment if discharged in a flood event; and

(C) where capable of creating a safety hazard by being shifted by flood waters, are contained in order to minimise movement in times of flood.

(x) The development does not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within a flood plain.

(xi) Filling of land below the 1 in 20 development line and the clearing of native vegetation within the stream banks are avoided.

(c) Land Situated Between the 1 in 20 Development Line and the 1 in 100 Flood Line – Residential Uses

(i) The planning scheme acknowledges development commitments, based on former zonings or current approvals, for continued residential use, particularly one dwelling per existing lot.

(ii) Lot reconfigurations which create sites for additional dwellings are avoided in areas situated below the 1 in 100 flood line.

(iii) Special dispensation may be obtained to erect a second dwelling to house family members on land situated between the 1 in 20 development line and the 1 in 100 flood line.

(iv) Where a development commitment, based on former zoning provisions, allows a multiple residential use to be sited within areas affected by significant flood flows, such dwellings are designed to be capable of withstanding the static and dynamic loads, including debris loads, applicable to a flood event of 1 in 100 Average Recurrence Interval (ARI).

(v) Where possible, the floor levels of any habitable rooms of a proposed building are a minimum of 250mm above the 1 in 100 flood level, whilst having regard to—

(A) the level of consistency with adjoining buildings and other buildings in the area;

(B) the visual and amenity impacts, associated with any significant raising of floor levels; and

(C) avoiding being lower than the existing floor level predominant in the streetscape.

(vi) The design and layout of residential buildings provides for—

(A) parking and other low intensive, non habitable uses at ground level (e.g. temporary storage of readily removable items); and

(B) habitable rooms above, to increase flood immunity.

(vii) Building materials used below the adopted flood level are resistant to water damage.

(viii) Where possible, buildings and other structures are sited on the highest part of the site to increase flood immunity.

(ix) Access routes are designed or alternative emergency evacuation routes are provided so that in the event of a serious incident occupants can escape to a safe and secure area.

(x) The development does not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within a flood plain.

(xi) Clearing of native vegetation within the stream banks is avoided.

(xii) Filling is avoided unless:

(A) the land is located within the 1 in 100 flood line designated 'indicative and subject to further detailed assessment' on Overlay Map OV5 - Flooding and Urban Stormwater Flow Path Areas; and

(B) such filling results in the rehabilitation and repair of the hydrological network and the riparian ecology of the waterway; and

	(C) an assessment, undertaken by a suitably qualified consultant, demonstrates that the reforming of the land does not adversely impact on the overall hydrology and flood capacity of the waterway.
PSPs	Yes
Details	<p>Planning Scheme Policy 2 - Information Local Government May Request</p> <p>(c) in respect of land affected by underground mining—</p> <p>(i) factual information, regarding—</p> <p>(J) whether the workings are dry or flooded;</p> <p>Flooding and Stormwater Flow Paths</p> <p>(8) if an application involving land which is subject to flooding or major stormwater flows, information and an assessment which identifies—</p> <p>(b) the likely impact of the proposed development, including any associated earth works, both upstream and downstream from the site, particularly in terms of changes to the depth, duration or velocity of flood waters and the duration of warning time;</p> <p>(e) recommendations for—</p> <p>(i) the use of flood resistant materials and construction techniques able to withstand relevant debris loads;</p> <p>(ii) the location and height of means of ingress and egress, including possible flood escape routes;</p> <p>(viii) relevant management practices, including flood warning and evacuation measures;</p> <p>Earthworks (25)</p> <p>(25) if an application involving earthworks (including lot filling) as per the Earthworks Code—</p> <p>(b) a hydraulic study including details regarding flood levels and impact on adjoining, upstream or down stream properties;</p> <p>NOTE 22E</p> <p>Refer to Part 11 “Overlays” of this planning scheme and to section (1) “Difficult Topography”, (3) “Mining Subsidence”, (6) “Wildlife Habitat”, (7) “Flooding and Stormwater Flow Paths”, (9) “Bushfire Risk Areas” and (10) “Defence Facilities” of this Planning Scheme Policy.</p> <p>Reconfigurations</p> <p>(x) all land below the adopted flood level;</p> <p>NOTE 36</p> <p>Refer to section (8) ‘Flooding Impact Assessment’ of this Planning Scheme Policy.</p> <p>(cc) report providing the following information—</p> <p>(xiii) for urban subdivisions—</p> <p>(A) demonstrating that consideration has been given to the drainage requirements for the adopted flood level;</p> <p>NOTE 44</p> <p>(2) Refer to section 1(h) ‘Flooding Impact Assessment’ of this Planning Scheme Policy.</p> <p>NOTE 51</p> <p>(3) Any additional calculations in support of overland flow path capacities, weir flows over kerbs, flood fill studies, etc are to be submitted.</p> <p>Refer Table 5.1.1: Desired Standard of Service for: Sportsgrounds/Courts, Table 5.1.2: Desired Standard of Service for Recreation Parks (including formal parks and gardens, play and picnic parks, plazas, squares and other hard urban spaces), Table 5.1.3: Desired Standard of Service for: Waterside Parks, Table 5.1.4: Desired Standard of Service for: Linear Parkland,</p>
Other	Yes
Details	<p>Division 3—Strategic Framework</p> <p>(9) Future Investigation Areas are—</p> <p>(d) designed to avoid significant development constraints (including steep land, potential landslip, bushfire risk areas, former mining land, key mining/quarrying resource and buffer areas, flood liable land) and the buffers associated with significant economic infrastructure (including Swanbank Power Station, Purga Rifle Range, Amberley Airbase, Wastewater Treatment Centres,</p> <p>(11) Commercial uses are—</p> <p>(c) located and designed—</p> <p>(i) to avoid or mitigate, where relevant, the potential impact of identified development constraints (including former mining land and flood liable land);</p> <p>(13) Open Space and Recreation uses are—</p> <p>(d) located and designed—</p> <p>(i) to avoid or mitigate, where relevant, the potential impact of identified development constraints (including steep land, potential landslip, bushfire risk areas, former mining land, key mining resource areas and flood liable land);</p> <p>(18) Except for existing development or current existing approvals or relevant previously zoned land, the majority of uses are to be generally located outside the areas of steep land, potential landslip, bushfire risk areas, mining/quarrying key resources and buffers, former mining land, the buffers associated with significant economic infrastructure (including Swanbank Power Station, Purga Rifle Range, Amberley Airbase, Wastewater Treatment Centres, Ipswich Motorsport Precinct and Tivoli Raceway) and flood liable land.</p> <p>(19) Uses located within the areas of identified development constraint (including steep land, potential landslip, bushfire risk areas, former mining land, key mining/quarrying resource and buffer areas, flood liable land) and the buffers associated with significant economic infrastructure (including Swanbank Power Station, Purga Rifle Range, Amberley Airbase, Wastewater Treatment Centres, Ipswich Motorsport Precinct and Tivoli Raceway) are -</p> <p>(a) to take into account siting and building design issues to reduce the impact of the constraints; and</p> <p>(b) to be designed to avoid creating conflicts or hazards for the operation of significant economic infrastructure.</p> <p>1.7 Township Areas Strategy</p> <p>(5) Township Residential uses are—</p> <p>(d) with the exception of existing development or current existing approvals or relevant previously zoned land, generally located in areas to avoid identified development constraints (including flood liable land);</p> <p>(6) Town Business Uses are—</p> <p>(d) located and designed—</p> <p>(i) to avoid or mitigate, where relevant, the potential impact of identified development constraints (including flood liable land);</p> <p>(7) Open Space and Recreation uses are—</p> <p>(b) located and designed—</p> <p>(i) to avoid or mitigate, where relevant, the potential impact of identified development constraints (including flood liable land);</p> <p>(8) Except for existing development or current existing approvals or relevant previously zoned land, the majority of uses are to be located outside the areas of flood liable land.</p> <p>(9) Any uses located within flood liable land are to take into account siting and building issues designed to reduce the impact of flooding.</p> <p>1.8 Rural Areas Strategy</p> <p>(7) Rural housing is—</p>

(b) located to avoid identified development constraints (including steep land, potential landslip, bushfire risk areas, former mining land, key mining/quarrying resource and buffer areas, flood liable land) and the buffers associated with significant economic infrastructure (including Purga Rifle Range, Amberley Airbase, Wastewater Treatment Centres and Ipswich Motorsport Precinct) the key mining and extractive industry resource and buffer areas; the nature conservation areas;

(10) Except for existing development or current existing approvals or relevant previously zoned land, the majority of uses are to be generally located outside the areas of steep land, potential landslip, bushfire risk areas, former mining land, mining/quarrying key resources and buffers, flood liable land and infrastructure buffers (including Purga Rifle Range, Amberley Airbase, Wastewater Treatment Centres, Ipswich Motorsport Precinct).

(11) Uses located within the areas of development constraint (including steep land, potential landslip, bushfire risk areas, former mining land, key mining/quarrying resource and buffers, flood liable land) and the buffers associated with significant economic infrastructure (including Purga Rifle Range, Amberley Airbase, Wastewater Treatment Centres, Ipswich Motorsport Precinct)—

(a) take into account siting and building design issues to reduce the impact of the constraint; and

(b) are designed to avoid creating conflict/hazards for aircraft operations.

3.1 Desired Environmental Outcomes

(3) The desired environmental outcomes for the Local Government area are as follows—

(i) the adverse effects from natural and other hazards, including flooding, land subsidence, bush fires, ordnance explosions and aircraft operations, are minimised;

Part 9—Township Areas

9.6 Overall Outcomes for Township Areas

(2) The overall outcomes sought for the Township Areas are the following—

NOTE 9.6B

(1) The areas surrounding the towns of Harrisville, Peak Crossing, Grandchester and Calvert are constrained by a number of factors, including mining activities, good quality agricultural land, areas of ecological significance, flood prone land and areas of poor drainage.

9.8 Overall Outcomes for Township Residential Zone

NOTE 9.8B

(1) Some of the land within the Township Residential Zone is affected by development constraints, particularly flooding.

9.10 Effects of Development within Sub Areas

Sub Area TR1 – land at William and James Streets, Marburg, Queen and George Streets, Marburg, Lawrence and Edward Streets, Marburg

(1) Specific Outcomes

(b) Residential Uses are sited on the land to take into account the location of any development constraints, particularly flooding and drainage.

Part 9—Township Areas, Div 5 – Township Character Housing Zone

NOTE 9.13C

(4) Some of the land within the Township Character Housing Zone is affected by development constraints, particularly flooding.

9.15 Effects of Development within Sub Areas

Sub Area TCH1 – land at Pollock Street, Harrisville, Queen Street, Harrisville and off Post Office Lane, Harrisville

(1) Specific Outcomes

(b) Residential Uses are sited on the land to take into account the location of any development constraints, particularly flooding and drainage.

Part 10—Rural Areas, Div 4—Rural A (Agricultural) Zone

NOTE 10.8B

(1) Much of the land within the Rural A (Agricultural) Zone is affected by development constraints, particularly flooding.

Part 10—Rural Areas, Div 5—Rural B (Pastoral) Zone

NOTE 10.12C

(1) Some of the land within the Rural B (Pastoral) Zone is affected by development

Part 10—Rural Areas, Div 7—Rural D (Conservation) Zone

NOTE 10.21B

(1) Some of the land within the Rural D (Conservation) Zone is affected by development constraints, particularly bushfire risks and flooding.

Schedule 1—Dictionary

“Adopted Flood Level” means the flood level which has been selected as the basis for planning purposes bwithin the City, which unless otherwise specifically stated is based on a defined flood event of 1 in 100 average recurrence interval (ARI).

“Average Recurrence Interval (ARI)”

(1) “Average Recurrence Interval (ARI)” is a statistical estimate of the probability of a flood of a given size occurring, e.g. 1 in 100 equates to an annual exceedence probability of 1%.

(2) The ARI of a flood event does not predict when a flood of that size will occur next.

“Significant Flood Flow” means inundation of land by water which is one (1) metre or more in depth.

Schedule 8 - Exempt Earthworks

The following are the criteria for exempt Earthworks.

(1) Earthworks which—

(f) are not undertaken in a natural gully or overland flow path or below the adopted flood level;

IMPLEMENTATION GUIDELINE

NO. 5

Amberley Air Base & Aviation Precinct

Further Issues

The ongoing development of the Amberley Air Base and Aviation Precinct will require further consideration of a wide range of issues. Whilst this Implementation Guideline establishes Council’s support for the precinct and its future development, further detailed planning is required to address these issues, which include—

- flood immunity levels;

IMPLEMENTATION GUIDELINE

NO. 9

Bellbird Park Planning Study

1. Key Planning Issues (Constraints and Opportunities)

(1) Urban Stormwater Flow Path

The study area is affected by the Flooding and Urban Stormwater Flow Path Areas Overlay Map (OV5). An urban stormwater flow path known as Happy Jack Gully, traverses properties along the eastern portion of the study area.

IMPLEMENTATION GUIDELINE

	<p>NO. 15 Brassall Planning Study (f) Flooding The study area is effected by the 1 in 100 flood line overlay and affects properties along Ironpot Creek to the west. The 1 in 20 development line overlay affects properties to the south and east of the study area.</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	<p>Part 11 (Flood Code) CONT.</p> <p>(d) Land Situated Between the 1 in 20 Development Line and the 1 in 100 Flood Line – Commercial, Industrial and Other Non Residential Uses</p> <p>(i) Where possible, the design and layout of buildings provides for—</p> <p>(A) parking, or other low intensive, or non habitable uses at ground level; and</p> <p>(B) retail, commercial and work areas above the parking areas, to increase flood immunity.</p> <p>(ii) Expensive plant and equipment and stock are located in the area of the site or building with the greatest flood immunity.</p> <p>(iii) Building materials used below the adopted flood level are resistant to water damage.</p> <p>(iv) Access routes are designed or alternative emergency evacuation routes are provided so that in the event of a serious incident occupants can escape to a safe and secure area.</p> <p>(v) Buildings are located to avoid areas affected by significant flood flows (i.e. one metre or more in depth), or alternatively, buildings are designed to be capable of withstanding the static and dynamic loads, including debris loads, applicable to a flood event of 10 in 100 Average Recurrence Interval (ARI).</p> <p>(vi) Materials stored on-site—</p> <p>(A) are those that are readily able to be moved in a flood event;</p> <p>(B) are not hazardous or noxious, or comprise materials that may cause a deleterious effect on the environment if discharged in a flood event; and</p> <p>(C) where capable of creating a safety hazard by being shifted by flood waters, are contained in order to minimise movement in times of flood.</p> <p>(vii) The development does not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within a flood plain.</p> <p>(viii) Clearing of native vegetation within the stream banks is avoided.</p> <p>(ix) Filling is avoided unless:</p> <p>(A) the land is located within the 1 in 100 flood line designated 'indicative and subject to further detailed assessment' on Overlay Map OV5 Flooding and Urban Stormwater Flow Path Areas; and</p> <p>(B) such filling results in the rehabilitation and repair of the hydrological network and the riparian ecology of the waterway; and</p> <p>(C) an assessment, undertaken by a suitably qualified consultant, demonstrates that the reforming of the land does not adversely impact on the overall hydrology and flood capacity of the waterway.</p> <p>(e) Urban Stormwater Flow Path Areas</p> <p>(i) Access routes are designed or alternative evacuation routes are provided so that in the event of a serious incident occupants can escape to a safe and secure area.</p> <p>(ii) Adequate stormwater drainage infrastructure and suitable overland flow paths are provided to carry the 1 in 100 Average Recurrence Interval (ARI) stormwater flow through the property while providing a freeboard of 250mm on the floors of all habitable areas and minimising damage owing to scouring from excessive flow velocities.</p> <p>(iii) Buildings and other works are designed and located so that nearby properties are not affected by any surcharge/afflux generated as a result of the buildings or other works.</p> <p>(iv) Buildings and other works are designed and located to accommodate existing and proposed stormwater drainage infrastructure and overland flow paths.</p> <p>(v) Any damage to existing stormwater drainage infrastructure and overland flow paths resulting from building and other works are rectified prior to the commencement of the new use.</p> <p>(f) Community Infrastructure</p> <p>(i) Key elements of community infrastructure are able to function effectively during and immediately after flood hazard events.</p> <p>(2) Probable Solutions</p> <p>(a) Electrical Installations</p> <p>(i) The incoming power supply, including all metering equipment is, where possible, located above the adopted flood level.</p> <p>(ii) All wiring, power outlets and switches are, to the maximum extent possible, located above the adopted flood level.</p> <p>(iii) All conduits located below the adopted flood level are installed so that they will be self-draining.</p> <p>(iv) Heating and air conditioning systems are, to the maximum extent possible, located above the adopted flood level.</p> <p>(b) Structural Adequacy</p> <p>(i) Building are designed to provide the following minimum safety factors when subjected to significant flood flows (i.e. one metre or more in depth)—</p> <p>(A) 1.5 against failure by sliding or over turning; and</p> <p>(B) 1.33 against flotation.</p> <p>(ii) Footings and foundations are designed to take account of any reduced bearing capacity on account of submerged soil.</p> <p>(c) Evacuation Routes</p> <p>(i) At least one road access will remain passable for the performance of emergency evacuations at a level of no more than 300mm below the</p>

	<p>adopted flood level.</p> <p>(d) Earthworks</p> <p>(i) Earthworks do not detrimentally affect flood storage capacity or flood conveyance characteristics through the importation of fill to the site, or any alteration to a watercourse or floodway or other earthworks affecting more than 10m³ of soil.</p> <p>(e) Clearing of Vegetation</p> <p>(i) Clearing of vegetation does not involve the removal of native vegetation from land within a Designated Watercourse or land within 30m of a Designated Watercourse or within 10 metres of the top of the bank of a Designated Watercourse where the slope of the bank exceeds 15% (refer Figure 11.4.12).</p> <p>(f) Community Infrastructure</p> <p>(i) Key elements of community infrastructure are sited and designed to achieve the levels of flood immunity as set out in the State Planning Policy and associated Guidelines for Natural Disaster Mitigation</p>
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LGA	Isaac
Planning Scheme	Belyando
Adopted	20-Jan-09
Flood Amendments	No
SPP Compliance	No
Details	the Minister for Infrastructure and Planning has advised that approval to adopt this planning scheme is conditional upon the continued operation and effect of: 1. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide - flood component only.
Mapped Q100 / DFE	No
Details	the maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Urban/Commercial/Industrial/Open Space and Recreation Zone The following outcomes are the purpose of the code: - Within the Rural “Zone”, “development”: (i) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria and Acceptable Solutions PC Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. AS - No acceptable solution is prescribed.
Use Codes	No
Details	
ROL Code	Yes
Details	Reconfiguring a Lot Code The following outcomes are the purpose of the code: (d) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events;
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 - Information Council May Request: 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient details should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels; Planning Scheme Policy 3 - Structure Planning Guidelines A structure plan will be an integral part of a preliminary approval for development, as it is Council’s formal mechanism for facilitating the process under Section 3.1.6 of the Act. A structure plan should indicate the following: – balance achieved between development, buffering, floodways, conservation and other open space; 2.1.1 Step 1—Site and context assessment Prior to preparing the structure plan an assessment of the site and its context should be undertaken and a site description of the land prepared, supported by a map containing the following features (as a minimum): - topography and flood liability – contours and levels; 2.1.2 Step 2—Identification of constraints As a minimum, land with the following constraints must be identified, mapped and considered in the design of the overall development. -flood affected land; -major stormwater flow paths;
Other	Yes
Details	Schedule 1 - Design and Constructions Standards Division 5: Standards for Stormwater Drainage (1) Stormwater drainage is in accordance with: Queensland Urban Drainage Design Manual (Volume 1 Text, Volume 2 Design Charts) Australian Rainfall and Run-off (Volume 1 A Guide to Flood Estimation)
Op Works Code	Yes
Details	Rural/Urban/Commercial/Industrial/Open Space and Recreation Zone "Operational work" where not associated with a "material change of use" PC2 Excavation or Filling Excavating or filling of land: (a) ensures safety and amenity for the users of the “premises” and nearby land; (b) minimises soil erosion and instability of surrounding areas; AS30.7 Any excavation or filling occurs more than 25 metres from the “defining bank” of any “watercourse” or “lake”.

Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	<p>1.4 General Assessment Provisions</p> <p>(2) Exempt Development</p> <p>(a) The following “development” is exempt development within the local government area:</p> <p>(v) “development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;</p>

LGA	Isaac
Planning Scheme	Broadsound
Adopted	21-Sep-05
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme— (d) State Planning Policy 1/03 –Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire and Landslide only);
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Part 4—Assessment Criteria for Code Assessment— the Broadsound Development Code</p> <p>4.1 Broadsound Development code</p> <p>4.3 Overall outcomes for the Broadsound Development code</p> <p>(1) The overall outcomes constitute the purpose of the Broadsound Development Code.</p> <p>(2) The overall outcomes are the following—</p> <p>(z) Uses and works, including roads and other works associated with reconfiguration of lots, are located, designed and managed so that they are safe. Safe evacuation routes are provided and exposure to natural hazards is managed, including by avoiding places subject to bushfire, erosion, flood or landslide; vulnerability to sea level rise and storm tide inundation.</p> <p>4.14 Specific Outcomes and Probable Solutions</p> <p>(a) Uses are not established and lots are not reconfigured to expose people and works to natural or introduced hazards, including permanent or temporary occupation of, or access to, areas subject to—</p> <ul style="list-style-type: none"> - erosion - flood - landslide - storm tide inundation - subsidence <p>Probable Solution</p> <ul style="list-style-type: none"> -uses and works are not located within an area subject to storm tide inundation, erosion, flood and subsidence, apart from uses that may be only temporarily affected, such as park or public utility, in an area that may be flooded. - the floor level of a habitable room is 300 mm above the highest flood level recorded or expected by the local government. - the floor level of a habitable room is 300 mm above 6.45m AHD in areas within 1 kilometre of high watermark.
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Desired Environmental Outcomes</p> <p>(k) High standards of public health and safety are maintained, avoiding or minimising adverse effects associated with the natural and built environments, including erosion, flood, storm tide inundation, fire and traffic hazards, together with safe domestic water supply and responsible waste disposal practice.</p>
Op Works Code	Yes
Details	<p>4.6 Specific outcomes and probable solutions—land maintenance</p> <p>(c) Filling or excavation does not change the water run off characteristics of a site to its detriment or to adversely affect nearby land.</p> <p>(1) The filling or excavation does not cause water to lie on the site or on adjacent land.</p> <p>(2) The filling or excavation does not increase the quantity or velocity of water flowing across the site or to other land, including to overland flow paths and watercourses.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Isaac
Planning Scheme	Nebo
Adopted	17-Jan-08
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire and Landslide Only)
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Urban Locality Code 010 The safety of residents and property from the effects of natural and other hazards is maximised. S10.1 Uses, works and lots are not located in an overland flow path. Rural Locality Code Overall Outcome (s) Uses and works minimise the potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment (Section 4.2.12 and 4.2.13). SO Development in the vicinity of a watercourse is that any loss, disturbance or fragmentation of vegetation associated with the banks of watercourses is minimised. PS Development is located more than 50m from the top of the bank of the watercourse, and riparian vegetation within the 50m distance is maintained in its natural state. Residential Services in the Rural Locality O3 Residential Uses have safe, all-weather, flood-free vehicular access. S3.1 Residential uses have a direct access, in a safe location having regard to the available sight lines and speed environment, from a local government or a state-controlled road.
Use Codes	Yes
Details	Dwelling House Code O2 Dwelling house and site access is not subject to flooding. S2.1 Dwelling house and site access are not located in overland flow paths.
ROL Code	Yes
Details	O6 Lots have parks to meet the needs of the occupiers of the lots. S6.1 10% of the area to be reconfigured, transferred to Council for park of land that is: (a) above localised flood level
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	DEOS Cultural, Economic, Physical and Social Well being, of people and Communities (19) The Safety of the communities is maintained by ensuring development does not occur in areas prone to bushfire, flood and / or landslide.
Op Works Code	Yes
Details	Filling and Excavation Code Overall Outcomes The overall outcomes of the Filling and Excavation Code area to avoid (c) an increase in flooding or drainage problems. O8 Filling or excavation does not: a) cause any increase in adverse flooding, including on upstream flood levels in all floods; b) Cause unacceptable changes to runoff characteristics (hydrograph volume, peak and time to peak) for storm events; c) adversely affect the stream velocities of any adjacent watercourses; d) Adversely affect the flow of water in any overland flow path; and e) Cause ponding on the site or any nearby land S8.1 Filling or excavation is not in an area: a) subject to inundation; and b) with an overland flow path.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Lockyer Valley
Planning Scheme	Gatton
Adopted	20/06/2007
Flood Amendments	No
SPP Compliance	No
Details	SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, for bushfire and landslide matters only.
Mapped Q100 / DFE	No
Details	Includes specific heights for localities but not mapped.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Open Space and Recreation Code SO(h) Uses and works are located, designed and managed to minimise adverse effects on landscape and environmental values, (including significant natural vegetation values, water quality or other features of significance) and avoid constraints and hazards such as flooding or drainage problems, potential unstable land, erosion and bushfire risk.</p> <p>Community Use Zone SO(e) New community facilities are located and sited to ensure they are able to function during and immediately after flood events.</p>
Use Codes	Yes
Details	<p>Earthworks Code The purpose of this code is to ensure that earthworks, including that not associated with a material change of use or building work: (2) minimise and ameliorate any potential adverse impacts on the environment and surrounding land, particularly in relation to drainage; (3) avoid risk to human life and property from contaminated fill, structural instability of excavations and fill, and flooding; and (4) ensure excavation and/or filling does not adversely affect utility infrastructure.</p> <p>P1. Earthworks do not: (a) cause environmental harm; (b) impact adversely on the visual amenity or privacy of surrounding premises including public places; (c) impact unreasonably on natural landforms or drainage patterns; (d) cause instability on site when earthworks is completed; and (e) adversely impact visual significance of the site.</p> <p>A1.2 An Environmental Management Plan is prepared and implemented and includes: (b) a description of the site's natural drainage patterns, water bodies, wetlands, floodplains and seasonally wet areas etc;</p> <p>P6. Any potential adverse affects on: (a) any property, watercourse or stormwater drainage works in the vicinity; or (b) any watercourse on the site, due to the alteration of overland flow paths, volumes, capacities or velocities are prevented or adequately ameliorated.</p> <p>A6.1 No Probable Solution is provided - Note: As a guide, it will be necessary to demonstrate that the development: (a) does not cause ponding on the site or on any nearby land; (b) does not cause any increase in flooding that will adversely affect the value, safety or use of any land in the vicinity; (c) minimises the environmental impacts of any change to run-off characteristics for storm events up to at least 1 in 2 year design storm; and (d) ameliorates any potential adverse affect on the existing drainage of the area including - (i) the area available in any natural or artificial watercourse for either present or estimated future flood flows; (ii) the flow of water in any overland flow path; and (iii) the volume within a flood plain available for the storage of flood waters.</p> <p>P7. The environmental values of receiving watercourses are protected from impacts which may result from earthworks on the site.</p> <p>A7.1 Earthworks are not carried out within 100m of the high bank of the waterway in any of the Rural and Emerging Communities Zones and within 50m of the high bank of the waterway in all other zones.</p> <p>Service and Infrastructure Code A2.2 Where Council's reticulated sewerage service is not available: (c) the proposed on-site effluent disposal system is located on land which: (iii) is situated above the Q10 flood level; (iv) is above the level of 5 metre AHD; Note - Matters to be taken into account when considering solutions for the design of drainage systems, will include: (a) the scope for on-site stormwater retention, including the collection of water for re-use, and the use of communal car parks for stormwater retardation; (b) the scope for on-site infiltration and the potential for ponding for prolonged periods; (c) the downstream capacity; (d) any downstream demand; (e) the need for a stormwater system that can be economically maintained; (f) the protection of downstream water quality and drainage systems; (g) potential for accumulation of silts and blockages by debris; (h) the safety of pedestrians, cyclists and vehicles; (i) location of discharge; (j) provision for land which falls away from the road; (k) whether any buildings, structures or paving up to site boundaries may block or concentrate natural flow paths. (l) the potential impacts on downstream road crossings and the maintenance of flood immunity.</p> <p>Residential Use Code P3. An acceptable level of flood immunity is provided for new accommodation units and dual occupancy units. A3.1 Within the Gatton town area, the habitable floor level is RL 102 plus 300mm.</p>

	<p>A3.2 Within the Helidon town area, the habitable floor level is RL 135 AHD plus 300mm.</p> <p>A3.3 Within the Withcott town area, the habitable floor level is RL235m AHD plus 300mm.</p> <p>Dwelling House Code</p> <p>Purpose: The purpose of the code is to ensure a dwelling house is developed such that it: (3) is located to minimise the impact of flooding;</p> <p>Annexed Unit Code / Caretakers Residence Code / Dwelling House Code / Motel Code / Small Lot House Code / Commercial Developments Code / Service Station and Car Wash Code / Industrial Development Code / Reconfiguration of a Lot Code /</p> <p>P@. An acceptable level of flood immunity is provided for @.</p> <p>A@.1 Within the Gatton town area, the habitable floor level is RL 102 AHD plus 300mm.</p> <p>A@.2 Within the Helidon town area, the habitable floor level is RL 135 AHD plus 300mm.</p> <p>A@.3 Within the Withcott town area, the habitable floor level is RL235m AHD plus 300mm.</p> <p>A@.4 Within the Murphys Creek village area, the habitable floor level is RL250m AHD plus 300mm.</p> <p>A@.5 Within the Grantham village area, a level not less than the level of the closest land listed in the table below, plus 300mm (Specific Site in Table)</p> <p>Lot 1 RP150034 - 50 Anzac Avenue: 116.16</p> <p>Lot 1 RP92488 Gatton-Helidon Road 116.221</p> <p>Lot 3 RP108240 9 Anzac Avenue 117.324</p> <p>Lot 7 RP25735 3 Harris Street 117.995</p> <p>Lot 8 RP25736 8 Harris Street 117.843</p> <p>Lots 15-16 RP25732 35 Harris Street 118.4</p> <p>A@.6 Otherwise, no probable solution is provided.</p> <p>Relocatable Home Park</p> <p>P3. The site is reasonably level, well drained, hazard free, unlikely to significantly disturb or fragment a conservation area, and capable of providing pleasant micro-climatic conditions.</p> <p>A3.1 A site provides for all residential buildings and structures and access to them, on stable and flood free land away from scenically or environmentally sensitive areas.</p> <p>Intensive Animal Industries, Animal Product Processing Industries, Kennels and Catteries Code</p> <p>P2. Facilities are developed on a site which: (d) is not subject to flooding,</p> <p>A2.1 Facilities are developed on a site which: (b) is not on land subject to flooding at a frequency of greater than 1 in 50 years;</p>
ROL Code	Yes
Details	<p>Reconfiguration of a Lot Codes</p> <p>P1. An acceptable level of flood immunity is provided for Residential Lots.</p> <p>A@.1 Within the Gatton town area, the habitable floor level is RL 102 AHD plus 300mm.</p> <p>A@.2 Within the Helidon town area, the habitable floor level is RL 135 AHD plus 300mm.</p> <p>A@.3 Within the Withcott town area, the habitable floor level is RL235m AHD plus 300mm.</p> <p>A@.4 Within the Murphys Creek village area, the habitable floor level is RL250m AHD plus 300mm.</p> <p>A@.5 Within the Grantham village area, a level not less than the level of the closest land listed in the table below, plus 300mm (Specific Site in Table)</p> <p>Lot 1 RP150034 - 50 Anzac Avenue: 116.16</p> <p>Lot 1 RP92488 Gatton-Helidon Road 116.221</p> <p>Lot 3 RP108240 9 Anzac Avenue 117.324</p> <p>Lot 7 RP25735 3 Harris Street 117.995</p> <p>Lot 8 RP25736 8 Harris Street 117.843</p> <p>Lots 15-16 RP25732 35 Harris Street 118.4</p> <p>A@.6 Otherwise, no probable solution is provided.</p> <p>P3 New lots respond appropriately to the physical characteristics of the land and, and minimise risk to life and property as a result of any potential natural hazards. Relevant considerations include (ii). flooding; (no AS)</p> <p>P19. Water supply and waste water treatment and disposal systems on new lots are designed to:</p> <p>(a) meet the needs of users;</p> <p>(b) ensure health, safety and convenience of the community;</p> <p>(c) be cost-effective over their life cycle;</p> <p>(d) minimise adverse impacts to the environment in the short and long term; and</p> <p>(e) contain waste water within the lot on which it originates..</p> <p>A19.4 Where connection to Council's reticulated sewerage service is not available: (b) II. is situated above the Q10 flood level;</p> <p>P37. In addition to provisions at P14 and P15, the major drainage network has the capacity to control stormwater flows under normal, and minor system blockage conditions for a 1 in 100 year rainfall event so that:</p> <p>(a) no dwelling is inundated during a 1 in 100 year flood,</p> <p>(b) habitable rooms have floor levels 250 mm above the estimated flood level resultant from a 1 in 100 year flood are protected,</p> <p>(c) floodways are restricted to areas where there is minimal risk of damage to life or property, and</p> <p>(d) runoff is directed to a lawful point of discharge through competently designed and constructed outlet works</p> <p>A37.1 The major drainage network complies with the design requirements of the "Queensland Urban Drainage Manual" (QUDM).</p> <p>Boundary Alignment</p> <p>P42. The boundaries of existing lots may be rearranged where this would:</p> <p>(c) respond to site characteristics and potential hazards, including soil erosion and bushfire risk, flood liability; and</p> <p>A42.1 Boundaries of existing lots are arranged to:</p> <p>(a) consist of the same number of titles or fewer titles in which good quality agricultural land is situated;</p> <p>(b) provide access to land locked parcels or improve the frontage of the new lots; or</p> <p>(c) provide improved access to each proposed lot from a bitumen sealed road; and</p> <p>(d) achieve the standards set out in published guidelines for separating agriculture and urban land uses,</p> <p>(e) allow the maximum grade of access to the lot of 12.5%; and</p> <p>(f) do not fragment good quality agricultural land</p>

	<p>P43. The size and shape of all lots resulting from the proposed realignment are appropriate for the use of the land.</p> <p>A43.1 New lots resulting from the realignment have a minimum area of 1.0 hectare, and contain:</p> <ul style="list-style-type: none"> (a) flood free building sites; (b) slopes less than 20%; (c) effluent disposal areas; and (d) maintain a viable land size for ongoing agricultural use if on good quality agricultural land. <p>Table 6.107.4 Minimum Lot Sizes and Dimensions</p> <p>Provides minimum areas for Urban Residential, Village and Rural Residential building areas above Q100.</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PSP No. 3 - Preparation of Management Plans</p> <p>Where an land or environmental management plan is requested to support a development application or required as a condition of development approval, the plan should address, but need not be limited to, the following:</p> <ul style="list-style-type: none"> (b) A description of the site's natural drainage patterns, water bodies, wetlands, floodplains and seasonally wet areas etc and the fisheries values of these features; <p>PSP No. 9 - FLOODING AND STORMWATER FLOW PATHS</p> <p>1.2 This planning scheme policy applies throughout the whole of the Shire of Gatton, where an application is made for land which is subject to flooding or major stormwater flows.</p> <p>2. IMPLEMENTATION</p> <p>Information and an assessment is required which identifies—</p> <ul style="list-style-type: none"> 2.1 the likely probability, depth, volume and velocity of flows (including the submission of relevant computer software model data files which are compatible with the Local Government's software to enable checking of data) across the site; 2.2 the likely impact of the proposed development, including any associated earth works, both upstream and downstream from the site, particularly in terms of changes to the depth, duration or velocity of flood waters and the duration of warning time; 2.3 likely impacts in terms of watercourse bank stability; 2.4 preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows; 2.5 recommendations for— <ul style="list-style-type: none"> a) the use of flood resistant materials and construction techniques able to withstand relevant debris loads; b) the location and height of means of ingress and egress, including possible flood escape routes; c) the location and height of buildings, particularly habitable floor areas; d) structural design, including the design of footings and foundations to take account of static and dynamic loads (including debris loads and any reduced bearing capacity owing to submerged soils); e) the location and design of plant and equipment, including electrical fittings; f) the storage of materials which are likely to cause environmental harm if released as a result of inundation or stormwater flows; g) the appropriate treatment of water supply and sanitation systems and other relevant infrastructure; and h) relevant management practices, including flood warning and evacuation measures; 2.17 location of areas of wildlife habitat within the land being subdivided (if applicable); 2.18 the location of all buildings and structures on the land being developed and within ten (10) metres on adjoining land; 2.19 the location of all watercourses, waterholes or swampy land, dams and creeks on the land being reconfigured and within thirty (30) metres on adjoining lands; 2.20 the lines of all existing sewers and drains, on-site effluent disposal systems and all existing pipes or mains for the supply of water, gas, electricity or other services; 2.21 the contours of the ground as related to Australian Height Datum at an interval to adequately indicate the topography of the area to be reconfigured; 2.22 location, width and purpose of all proposed easements and utility services; 2.23 all land below the adopted flood level; 2.24 location of tree groupings and significant trees (where applicable), any landscape features, any prominent ridgelines and places of cultural significance or streetscape value; 2.25 for larger subdivisions – <ul style="list-style-type: none"> a) provide road truncations; b) location of internal roads (each numbered) showing hierarchical status, width, design grades, design speeds and depth of any cut and fill; c) type and treatment of intersections; d) demonstrate feasibility and conforming grades. <p>PSP No. 23 - STORMWATER DRAINAGE WORKS CONTRIBUTIONS</p>
Other	Yes
Details	<p>DEOs</p> <ul style="list-style-type: none"> (i) Planning and design takes into account the potential adverse effects from natural hazards such as bushfire, landslip or flooding.
Op Works Code	Yes
Details	<p>Earthworks Code</p> <p>The purpose of this code is to ensure that earthworks, including that not associated with a material change of use or building work:</p> <ul style="list-style-type: none"> (2) minimise and ameliorate any potential adverse impacts on the environment and surrounding land, particularly in relation to drainage; (3) avoid risk to human life and property from contaminated fill, structural instability of excavations and fill, and flooding; and (4) ensure excavation and/or filling does not adversely affect utility infrastructure. <p>P1. Earthworks do not:</p> <ul style="list-style-type: none"> (a) cause environmental harm; (b) impact adversely on the visual amenity or privacy of surrounding premises including public places; (c) impact unreasonably on natural landforms or drainage patterns; (d) cause instability on site when earthworks is completed; and (e) adversely impact visual significance of the site. <p>A1.2 An Environmental Management Plan is prepared and implemented and includes: (b) a description of the site's natural drainage patterns, water bodies, wetlands, floodplains and seasonally wet areas etc;</p> <p>P6. Any potential adverse affects on:</p>

	<p>(a) any property, watercourse or stormwater drainage works in the vicinity; or</p> <p>(b) any watercourse on the site, due to the alteration of overland flow paths, volumes, capacities or velocities are prevented or adequately ameliorated.</p> <p>A6.1 No Probable Solution is provided - Note: As a guide, it will be necessary to demonstrate that the development:</p> <p>(a) does not cause ponding on the site or on any nearby land;</p> <p>(b) does not cause any increase in flooding that will adversely affect the value, safety or use of any land in the vicinity;</p> <p>(c) minimises the environmental impacts of any change to run-off characteristics for storm events up to at least 1 in 2 year design storm; and</p> <p>(d) ameliorates any potential adverse affect on the existing drainage of the area including -</p> <p>(i) the area available in any natural or artificial watercourse for either present or estimated future flood flows;</p> <p>(ii) the flow of water in any overland flow path; and</p> <p>(iii) the volume within a flood plain available for the storage of flood waters.</p> <p>P7. The environmental values of receiving watercourses are protected from impacts which may result from earthworks on the site.</p> <p>A7.1 Earthworks are not carried out within 100m of the high bank of the waterway in any of the Rural and Emerging Communities Zones and within 50m of the high bank of the waterway in all other zones.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PSP No. 6 - EARTHWORKS</p> <p>1.1 This planning scheme policy applies throughout the whole of the Shire of Gatton where an application involves earthworks (including lot filling) as per the Earthworks Code.</p> <p>2.2 a hydraulic study including details regarding flood levels and impact on adjoining, upstream or down stream properties;</p> <p>PSP No. 9 - FLOODING AND STORMWATER FLOW PATHS</p> <p>1.2 This planning scheme policy applies throughout the whole of the Shire of Gatton, where an application is made for land which is subject to flooding or major stormwater flows.</p> <p>2. IMPLEMENTATION</p> <p>Information and an assessment is required which identifies—</p> <p>2.1 the likely probability, depth, volume and velocity of flows (including the submission of relevant computer software model data files which are compatible with the Local Government's software to enable checking of data) across the site;</p> <p>2.2 the likely impact of the proposed development, including any associated earth works, both upstream and downstream from the site, particularly in terms of changes to the depth, duration or velocity of flood waters and the duration of warning time;</p> <p>2.3 likely impacts in terms of watercourse bank stability;</p> <p>2.4 preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows;</p> <p>2.5 recommendations for—</p> <p>a) the use of flood resistant materials and construction techniques able to withstand relevant debris loads;</p> <p>b) the location and height of means of ingress and egress, including possible flood escape routes;</p> <p>c) the location and height of buildings, particularly habitable floor areas;</p> <p>d) structural design, including the design of footings and foundations to take account of static and dynamic loads (including debris loads and any reduced bearing capacity owing to submerged soils);</p> <p>e) the location and design of plant and equipment, including electrical fittings;</p> <p>f) the storage of materials which are likely to cause environmental harm if released as a result of inundation or stormwater flows;</p> <p>g) the appropriate treatment of water supply and sanitation systems and other relevant infrastructure; and</p> <p>h) relevant management practices, including flood warning and evacuation measures;</p> <p>2.17 location of areas of wildlife habitat within the land being subdivided (if applicable);</p> <p>2.18 the location of all buildings and structures on the land being developed and within ten (10) metres on adjoining land;</p> <p>2.19 the location of all watercourses, waterholes or swampy land, dams and creeks on the land being reconfigured and within thirty (30) metres on adjoining lands;</p> <p>2.20 the lines of all existing sewers and drains, on-site effluent disposal systems and all existing pipes or mains for the supply of water, gas, electricity or other services;</p> <p>2.21 the contours of the ground as related to Australian Height Datum at an interval to adequately indicate the topography of the area to be reconfigured;</p> <p>2.22 location, width and purpose of all proposed easements and utility services;</p> <p>2.23 all land below the adopted flood level;</p> <p>2.24 location of tree groupings and significant trees (where applicable), any landscape features, any prominent ridgelines and places of cultural significance or streetscape value;</p> <p>2.25 for larger subdivisions –</p> <p>a) provide road truncations;</p> <p>b) location of internal roads (each numbered) showing hierarchical status, width, design grades, design speeds and depth of any cut and fill;</p> <p>c) type and treatment of intersections;</p> <p>d) demonstrate feasibility and conforming grades.</p> <p>PSP No. 23 - STORMWATER DRAINAGE WORKS CONTRIBUTIONS</p>
Other	No
Details	
Other Info	

LGA	Lockyer Valley
Planning Scheme	Laidley
Adopted	12/03/2003
Flood Amendments	No
SPP Compliance	No
Details	Not Specifically Stated. Does include a Flood Map and requires Residential development to be above Q100 + 300m. Considered Compliant.
Mapped Q100 / DFE	Yes
Details	Q100 Flood Line (Overlay Code Map)
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Urban Residential Area Specific Outcomes: (1) The specific outcomes sought for the Urban Residential Area are the following; · Residential development is not located in areas subject to flood inundation, bushfire risk, or where there are steep slopes, dispersible soils, or the potential to increase land degradation;
Use Codes	Yes
Details	Residential Use Code SO3. The dwelling is protected from flooding and does not interfere with the passage or storage of stormwater, or the natural functioning of a waterway; and AS3.1 Where an overland flow path traverses a lot, a house and/or ancillary structures, any earthworks are outside the overland flow path; and SO4. Habitable rooms have acceptable levels of flood immunity; and AS4.1 Where a lot is on floodable land, the minimum flood level for habitable rooms is 300mm above the Q100 flood line on the allotment; and SO8. The establishment of any residential use does not detrimentally impact upon the adjoining properties or infrastructure resulting from stormwater runoff. AS8.1 Design and construction of drainage works complies with the requirements set out in Schedule 2 - Stormwater Drainage. Filling and Excavation Code SO8. Filling and excavation activities do not result in any increase of flooding or drainage problems; and AS8.1 No filling or excavation is located: (a) in any waterway corridor as shown on Overlay Maps E1 and E2; (b) in any wetland as shown on Overlay Map K and as defined in the definitions; and AS8.2 Filling and excavation does not result in ponding on the site or on nearby land; and AS8.3 Filling and excavation does not interrupt water-flow in any overland flow path; and AS8.4 Any changes to run-off characteristics resulting from filling for storm events are minimised in an ecologically sensitive manner; and On Site Effluent Disposal Code SO2. The lot size, configuration and location of the system or systems allow for the efficient disposal of domestic effluent in such a way that: · any adverse impacts on nearby sensitive receiving environments are minimised; and · any health risks are limited during a system failure; and · the existing water quality and/or proposed water supplies remain unaffected; and · sustainable disposal of domestic effluent is ensured. AS2.2 The proposed on-site effluent disposal system is located on land above the Q20 flood levels; and
ROL Code	Yes
Details	Reconfiguration of a Lot Code SO5. Flooding and over-flow of stormwater is minimised. (No AS)
Overlay Codes	Yes
Details	Natural and Environmental Significance Overlay Code SO 1. Buildings and development are protected from potential conflict, such as: bushfire, steep or unstable land, remnant vegetation – regeneration, high visual quality, erosion, dryland salinity, wetlands, floodprone land, water quality, permanent or intermittent streams, major drainage lines, wildlife corridors. Flood Inundation Area SO9. People, property and the environment are not subjected to unacceptable risks to health or safety. AS9.1 All dwellings and other habitable buildings shall be constructed with a building platform level at least 300mm above the Q100 floodline. Development Constraints Overlay Code Existing and Proposed Rail Corridor SO5. Stormwater runoff does not compromise the flood immunity of the existing rail corridor; and
PSPs	No
Details	
Other	Yes
Details	DEOs k. The adverse effects from natural and other hazards, including flooding and bushfires are minimised.
Op Works Code	Yes
Details	Filling and Excavation Code SO8. Filling and excavation activities do not result in any increase of flooding or drainage problems; and AS8.1 No filling or excavation is located: (a) in any waterway corridor as shown on Overlay Maps E1 and E2; (b) in any wetland as shown on Overlay Map K and as defined in the definitions; and AS8.2 Filling and excavation does not result in ponding on the site or on nearby land; and AS8.3 Filling and excavation does not interrupt water-flow in any overland flow path; and

	AS8.4 Any changes to run-off characteristics resulting from filling for storm events are minimised in an ecologically sensitive manner; and
Overlay Code	Yes
Details	<p>Natural and Environmental Significance Overlan Code SO 1. Buildings and development are protected from potential conflict, such as: bushfire, steep or unstable land, remnant vegetation – regeneration, high visual quality, erosion, dryland salinity, wetlands, floodprone land, water quality, permanent or intermittent streams, major drainage lines, wildlife corridors.</p> <p>Flood Innundation Area SO9. People, property and the environment are not subjected to unacceptable risks to health or safety. AS9.1 All dwellings and other habitable buildings shall be constructed with a building platform level at least 300mm above the Q100 floodline. Development Constraints Overlay Code</p> <p>Existing and Proposed Rail Corridor SO5. Stormwater runoff does not compromise the flood immunity of the existing rail corridor; and</p>
PSPs	No
Details	
Other	Yes
Details	Schedule 2 QUDM Requirements For Stormwater Drainage Design.
Other Info	No

LGA	Logan
Planning Scheme	Beaudesert Planning Scheme
Adopted	30-Mar-07
Flood Amendments	No
SPP Compliance	Yes
Details	
Mapped Q100 / DFE	Yes
Details	<p>Defined Flood Event (DFE) means the flood event adopted by the Local Government for the management of development on flood prone land being—</p> <p>(e) the 1% AEP flood in those streams or part of the streams not shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D; or</p> <p>(f) in those streams or part of the streams shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D, the following flood events—</p> <p>(i) Logan River (1974 and 1991 flood events, whichever is higher); or</p> <p>(ii) Albert River (1974 flood event); or</p> <p>(iii) Oxley River (1974 flood event); or</p> <p>(iv) Burnett Creek (1974 flood event); or</p> <p>(v) Cannon Creek (1974 flood event).</p>
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>Mt Lindesay Corridor Zone / Rural Zone / Kooralbyn / Bromelton / Beaudesert and Canungra Townships Zone / Tamborine Mountain Zone</p> <p>SO@ Development is not to exacerbate or be adversely affected by flood events</p> <p>S@ Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% AEP flood.</p> <p>S@ Development ensures that uses, which are required to operate located above a 0.2% AEP flood.</p> <p>SO@ Development is sympathetic to natural hazard constraints.</p> <p>S@ Development avoids flood prone, steep slope and high bushfire hazard areas.</p> <p>S@ Development provides for building envelopes where lots are constrained by environmental factors.</p>
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Division 10 Forestry Code</p> <p>SO2 Development—</p> <p>(a) retains—</p> <p>(i) significant species of vegetation; and</p> <p>(ii) wildlife corridors; and</p> <p>(iii) creek corridors; and</p> <p>(iv) habitat areas; and</p> <p>(b) minimises land degradation; and</p> <p>(c) avoids—</p> <p>(i) steep and unstable land; and</p> <p>(ii) land below the 10% AEP flood level; and</p> <p>(iii) land subject to high bushfire risk.</p> <p>S2.1 No Solution is prescribed.</p> <p>Division 21 Poultry Farm Code</p> <p>SO5 Development does not impede flood storage and flood and stormwater drainage flows.</p> <p>S5.1 No Solution is prescribed.</p>
ROL Code	Yes
Details	<p>Reconfiguration of a Lot Code</p> <p>5.4.3 Overall Outcomes for Reconfiguring a Lot</p> <p>Reconfiguring a Lot is to—</p> <p>(d) minimise the adverse effects from natural or other hazards including flooding, bushfire, slope instability, contaminated sites and sites producing significant levels of emissions; and</p> <p>SO10 Development provides for the protection of property in areas liable to flood inundation.</p> <p>S10.1 Development provides—</p> <p>(a) a Building platform located above the DFE; and</p> <p>(b) an additional area above the DFE of sufficient size for the treatment and disposal of effluent on site; and</p> <p>(c) access which is above the DFE.</p> <p>SO14 Development provides that an area of public open space has a size and shape and the physical attributes suitable for the intended use.</p> <p>S14.1 Development provides that an area of public open space has a minimum area of 0.5 hectares, a maximum slope of 5%, a regular usable shape and is located above a defined flood event;</p> <p>SO16 Development protects environmentally sensitive features and habitats and avoids natural hazards.</p> <p>S16.1 Development</p> <p>(e) avoids steep and unstable land, land below the 1% AEP flood level and land subject to severe bushfire risk; and</p>
Overlay Codes	Yes
Details	<p>Development Constraints Code</p> <p>4.4.7 Overall Outcomes for Development Constraints Code</p> <p>12) Development for the reconfiguration of a lot minimises the adverse effects from natural or other hazards including flooding, bushfire, slope instability, contaminated sites and sites producing significant levels of emissions.</p> <p>Natural Hazards Management – Flood</p> <p>SO1 Development is sited to avoid damage to life and property from flood impacts.</p>

	<p>S1.1 Development is located within an approved Building Envelope where an approved Building Envelope exists.</p> <p>S1.2 Development is located clear of the Defined Flood Event (DFE).</p> <p>S1.3 Development ensures that all habitable floor levels are a minimum of 500 millimetres above the DFE.</p> <p>S1.4 Development ensures that Filling does not occur below the DFE.</p> <p>SO2 Development is sited to enable access in the event of a flood.</p> <p>S2.1 Development ensures that all buildings have a trafficable access to a public road during the DFE, where located in the—</p> <p>(a) Mt Lindesay Corridor Zone; or</p> <p>(b) Rural Zone, where in the—</p> <p>(i) Village Precinct; or</p> <p>(ii) Rural Residential Precinct; or</p> <p>(iii) Rural Industry Precinct; or</p> <p>(iv) Active Recreation Precinct; or</p> <p>(v) Community Facilities Precinct; or</p> <p>(c) Kooralbyn Zone; or</p> <p>(d) Bromelton Zone; or</p> <p>(e) Beaudesert and Canungra Zone; or</p> <p>(f) Tamborine Mountain Zone.</p> <p>S2.2 Development ensures that the maximum permitted time for access to a dwelling to be flood effected and non-trafficable is 24 hours during the DFE, where located in the—</p> <p>(a) Rural Zone, where in the—</p> <p>(i) Conservation Precinct; or</p> <p>(ii) Countryside Precinct; or</p> <p>(iii) Equestrian Activities Precinct; or</p> <p>(iv) Future Dam Catchment Precinct; or</p> <p>(v) Passive Recreation Precinct.</p> <p>SO3 Development on flood-prone land—</p> <p>(a) does not alter the environmental values of soils, waterways and wetlands; and</p> <p>(b) does not constitute a public safety risk.</p> <p>S3.1 Development, involving the bulk storage or manufacture of hazardous material—</p> <p>(a) is not located on land below the level of the DFE; or</p> <p>(b) is constructed to prevent the intrusion of flood waters for any flood event.</p> <p>S3.2 Development, being a sewage treatment plant, is—</p> <p>(a) located above the level of the DFE; or</p> <p>(b) constructed to exclude floodwater intrusion, and to resist all hydrostatic and hydrodynamic forces resulting from flood inundation.</p> <p>SO4 Development provides that the functioning of essential services is maintained during a flood event.</p> <p>S4.1 Development, being a community or infrastructure use, provides that floor levels are not less than—</p> <p>(a) 0.2% Annual Exceedance Probability (AEP) for emergency services facilities; and</p> <p>(b) 0.5% AEP for emergency shelter; and</p> <p>(c) 0.5% AEP for a police station; and</p> <p>(d) 0.2% AEP for a hospital; and</p> <p>(e) 0.2% AEP for an electricity substation; and</p> <p>(f) 0.2% AEP for a water treatment plant; and</p> <p>(g) 0.5% AEP for a power station; and</p> <p>(h) 0.5% AEP for a major electrical switchyard; and</p> <p>(i) 0.5% AEP for a store for valuable records, or items of historic or cultural significance.</p> <p>SO5 Development, being the reconfiguration of a lot, creates lots that incorporate a flood free, Building Envelope.</p> <p>S5.1 No Solution is prescribed.</p> <p>Water Supply Catchment Areas and Water Supply Source and Buffer</p> <p>SO36 Development provides for the separation of development from Watercourses, lakes, springs and future planned water bodies to preserve riparian areas and their capacity to maintain water quality by filtering sediments, nutrients and other pollutants.</p> <p>S36.1 Development for other than urban activities is not to occur within—</p> <p>(a) 100 metres of the high bank of a designated Watercourse; or</p> <p>(b) 400 metres of the full supply level or flood margin reserve, whichever is greater, of a water storage or supply structure or proposed water storage or supply structure; or</p> <p>(c) 25 metres of each bank of other Watercourses.</p> <p>S36.2 Development for urban activities is not to occur within—</p> <p>(a) 100 metres of the high bank of a designated Watercourse, or the full supply level or flood margin reserve, whichever is greater, of a water storage or supply structure or proposed water storage or supply structure; or</p> <p>(b) 25 metres of each bank of other Watercourses.</p>
PSPs	Yes
Details	<p>Planning Scheme Policy 1</p> <p>Part 2 Building and Conservation Envelopes</p> <p>Building and Conservation Envelope information may be required by the Local Government for developments which require the restriction of development on part of any proposed Lot for reason of-</p> <p>(d) potential Flood Impacts;</p> <p>Planning Scheme Policy 2 - Information Council May Request</p> <p>Part 2 Applications for a Material Change of Use</p> <p>(p) the location of all Watercourses, waterholes and creeks and the highest known flood levels and the defined flood levels;</p> <p>ROL</p> <p>(n) areas of the land that:</p>

	<p>(ii) are located in a Natural Hazards Management Area (bushfire, landslide, flood);</p> <p>(xii) for urban subdivisions details-</p> <p>(A) demonstrating that consideration has been given to the drainage requirements for the adopted flood level;</p> <p>Part 11 Landscaping</p> <p>(j) location of 1 in 10, 1 in 50 and 1 in 100 Average Recurrence Interval (ARI) flood levels;</p> <p>Division 1 Natural Hazards Management Assessment</p> <p>Reports and Plans</p> <p>15.1.1 Natural Hazards Management - Flood</p> <p>Where an application requires assessment against the Development Constraints Overlay – Specific Outcomes for Natural Hazards Management – Flood (Section 4.4.8)-</p> <p>(a) An assessment is to be undertaken of the development’s potential to generate changes to flood characteristics on or outside the subject land which may increase the risks to existing persons, property or the interests of other landowners.</p> <p>(b) To demonstrate the nature of potential changes, a hydraulic and hydrologic assessment report prepared by a registered professional engineer with specialist expertise in such assessment, should be provided to the Assessment Manager. The report should examine any changes to flood depths, flood duration, flood velocities, flood warning times, flood storage, and flow paths generated by the development for the Defined Flood Event (DFE). Such a technical report should use recognised and locally accepted data and design methodologies, and use calculations for flood modelling which include options based on a vegetated riparian Zone, including ground cover, understorey, and canopy vegetation.)</p> <p>Part 18 Extractive Industry</p> <p>18.1.1 Extractive Industry Report</p>
Other	Yes
Details	<p>2.1.3 Desired Environmental Outcomes</p> <p>(1) Environment—The environment is conserved such that—(d) the landscape features of the Shire including its mountain ranges, valleys, specific views from Tamborine Mountain and other locations, waterways, floodplain, vegetation and rural farming areas are protected and managed to maintain their unique character and appeal; and</p> <p>(3) Social—Development provides that—</p> <p>(b) adverse effects of natural or other hazards including flooding, bushfire, slope stability, contaminated sites and sites producing significant levels of emissions are minimised; and</p> <p>2.2.5 Broad Strategies for the Shire</p> <p>(17) Development is located, designed and managed to minimise the risk from natural hazards including flooding, bushfire and landslide.</p>
Op Works Code	Yes
Details	<p>Construction and Infrastructure Code</p> <p>Impacts on Flood Levels</p> <p>SO3 Development is sited to avoid damage to life and property from flood impacts.</p> <p>Note: Information on the flood level affecting a property can be obtained from Council where records are held. Records held include 1974 and 1991 flood events where mapped as Flood Hazard on the Development Constraints Overlay and in limited other locations the calculated 1% AEP flood.</p> <p>S3.1 Development ensures that where a Building Envelope is provided Building Work and Operational Work occurs within the Building Envelope.</p> <p>S3.2 Development ensures that where Building Work and Operational Work occurs outside of a Building Envelope it is located clear of the DFE.</p> <p>S3.3 Development provides for Buildings to be sited having a minimum freeboard of 300 millimetres and habitable Buildings 500 millimetres above the DFE.</p> <p>S3.4 Development provides an access from the Building platform to the street frontage which is above the DFE.</p> <p>SO12 Driveways and crossovers are located to avoid flood prone areas or areas with high water flows.</p> <p>S12.1 Where Self-assessable, development provides that driveways and crossovers are not located below the DFE.</p> <p>S12.2 Where other than Self-assessable, development provides that driveways and crossovers are not located below the DFE unless no other location is suitable in accordance with SO11.</p> <p>S12.3 Development provides that, where located on the lower side of the road, the driveway or crossover must be designed so that stormwater at the level of the top of the kerb cannot penetrate into the Lot.</p> <p>Earthworks, Excavation and Filling</p> <p>Impact on Flood Levels</p> <p>S14.1 Development ensures that Filling does not occur below the DFE.</p> <p>SO14 Development is sited to avoid damage to life and property from flood impacts.</p> <p>S14.2 Development, which is not clear of the DFE or access is not available which is above the DFE, ensures that—</p> <p>(a) Buildings are only located within the area affected by the DFE if—</p> <p>(i) they are nonhabitable Buildings (eg sheds or garages); or</p> <p>(ii) there is an overriding need for the development in the public interest and no other site is suitable and reasonably available for the development; and</p> <p>(iii) they are located in an area where flow depths are a maximum 1.5 metres in a 1%AEP flood and the flow velocity multiplied by the depth is less than 0.6 as per QUDM table 5.08.1; and</p> <p>(b) a trafficable access is available from the earthworks platform directly to the road network or a flood free access route is available across adjoining land to the road network; or</p> <p>(c) where a flood freeaccess route is to be utilised, access over this route in the event of a flood must be guaranteed; and</p> <p>(d) where a trafficable access is not available from the Building site, which is clear of the DFE, then the access shall be designed so that it is only inundated up to a maximum of 0.6 metres and the flow velocity multiplied by the depth does not exceed 0.6 metres as specified in Table 5.08.1 of the Queensland Urban Drainage Manual; and</p> <p>(e) all fill required to construct the earthworks platform and access is sourced from the development site below the flood level to provide compensation for the flood storage volume occupied by the earthworks with any borrow pits created being self draining.</p> <p>SO15 Filling or Excavation does not result in increased flood levels for upstream or downstream properties.</p>

	<p>S15.1 Development does not result in the raising of flood levels on downstream properties by way of decreasing the downstream time of concentration or moving the point of discharge.</p> <p>S15.2 Development does not result in the raising of flood levels on upstream properties by way of the blockage of flow paths.</p> <p>S15.3 Development provides that flood levels are determined in accordance with the method identified in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Standards of Service for Flooding</p> <p>SO28 The stormwater network is designed to provide flood immunity tailored to the specific purpose the land is utilised for and in order to maintain the operational effectiveness of infrastructure during a flood event.</p> <p>S28.1 Development is undertaken in accordance with the standards in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Design and Appearance</p> <p>SO29 Development provides for stormwater infrastructure to be designed and constructed in accordance with natural channel design principles instead of a constructed floodway where there is no natural flow path.</p> <p>S29.1 No Solution is prescribed.</p> <p>Major Drainage Flow Paths</p> <p>SO32 The stormwater network is designed to not locate major overland flow paths in Building areas where in rural or rural residential areas.</p> <p>S32.1 Development provides for flood flows to be managed such that the 1% AEP flood event does not encroach onto a Building Envelope, or where no Building Envelope has been determined, within 30 metres of a Building or Building area.</p> <p>Stormwater Infiltration</p> <p>S45.1 Development provides that sewer mains are located above the DFE.</p> <p>S45.2 Development provides that sewer manholes are not located in areas subject to flooding or where bolt down lids are required.</p> <p>SO45 Development is designed to limit stormwater infiltration into the sewerage system.</p> <p>S45.3 Development provides that pump stations are located above the DFE.</p> <p>Pavement Drainage</p> <p>SO66 Pavement drainage is provided to prevent pooling of water on a pavement in other than a major flood event.</p> <p>S66.1 Development provides crossfalls, gully inlets, table drains, longitudinal gradients, stormwater drainage and flood immunity levels in accordance with the standards in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Access in Floodable Areas</p> <p>Safety</p> <p>SO139 Development is sited to enable access in the event of a flood in non-rural areas.</p> <p>S139.1 Development ensures that all Buildings have a trafficable access to a Major Transport Route during the DFE, where located in the—</p> <p>(a) Mt Lindesay Corridor Zone; or</p> <p>(b) Rural Zone, where in the—</p> <p>(i) Village Precinct; or</p> <p>(ii) Rural Residential Precinct; or</p> <p>(iii) Rural Industry Precinct; or</p> <p>(iv) Active Recreation Precinct; or</p> <p>(v) Community Facilities Precinct; or</p> <p>(c) Kooralbyn Zone; or</p> <p>(d) Bromelton Zone; or</p> <p>(e) Beaudesert and Canungra Townships Zone; or</p> <p>(f) Tamborine Mountain Zone.</p> <p>SO140 Development is sited to enable access in reasonable time in the event of a flood in rural areas.</p> <p>S140.1 Development ensures that access in a Precinct not mentioned in S139.1 is available to a habitable Building in a 50% AEP flood event and within 24 hours of the loss of access in a 1% AEP flood event.</p>
Overlay Code	Yes
Details	<p>Development Constraints Code</p> <p>4.4.7 Overall Outcomes for Development Constraints Code</p> <p>12) Development for the reconfiguration of a lot minimises the adverse effects from natural or other hazards including flooding, bushfire, slope instability, contaminated sites and sites producing significant levels of emissions.</p> <p>Natural Hazards Management – Flood</p> <p>SO1 Development is sited to avoid damage to life and property from flood impacts.</p> <p>S1.1 Development is located within an approved Building Envelope where an approved Building Envelope exists.</p> <p>S1.2 Development is located clear of the Defined Flood Event (DFE).</p> <p>S1.3 Development ensures that all habitable floor levels are a minimum of 500 millimetres above the DFE.</p> <p>S1.4 Development ensures that Filling does not occur below the DFE.</p> <p>SO2 Development is sited to enable access in the event of a flood.</p> <p>S2.1 Development ensures that all buildings have a trafficable access to a public road during the DFE, where located in the—</p> <p>(a) Mt Lindesay Corridor Zone; or</p> <p>(b) Rural Zone, where in the—</p> <p>(i) Village Precinct; or</p> <p>(ii) Rural Residential Precinct; or</p> <p>(iii) Rural Industry Precinct; or</p> <p>(iv) Active Recreation Precinct; or</p> <p>(v) Community Facilities Precinct; or</p> <p>(c) Kooralbyn Zone; or</p> <p>(d) Bromelton Zone; or</p> <p>(e) Beaudesert and Canungra Zone; or</p> <p>(f) Tamborine Mountain Zone.</p> <p>S2.2 Development ensures that the maximum permitted time for access to a dwelling to be flood effected and non-trafficable is 24 hours during the DFE, where located in the—</p>

	<p>(a) Rural Zone, where in the—</p> <p>(i) Conservation Precinct; or</p> <p>(ii) Countryside Precinct; or</p> <p>(iii) Equestrian Activities Precinct; or</p> <p>(iv) Future Dam Catchment Precinct; or</p> <p>(v) Passive Recreation Precinct.</p> <p>SO3 Development on flood-prone land—</p> <p>(a) does not alter the environmental values of soils, waterways and wetlands; and</p> <p>(b) does not constitute a public safety risk.</p> <p>S3.1 Development, involving the bulk storage or manufacture of hazardous material—</p> <p>(a) is not located on land below the level of the DFE; or</p> <p>(b) is constructed to prevent the intrusion of flood waters for any flood event.</p> <p>S3.2 Development, being a sewage treatment plant, is—</p> <p>(a) located above the level of the DFE; or</p> <p>(b) constructed to exclude floodwater intrusion, and to resist all hydrostatic and hydrodynamic forces resulting from flood inundation.</p> <p>SO4 Development provides that the functioning of essential services is maintained during a flood event.</p> <p>S4.1 Development, being a community or infrastructure use, provides that floor levels are not less than—</p> <p>(a) 0.2% Annual Exceedence Probability (AEP) for emergency services facilities; and</p> <p>(b) 0.5% AEP for emergency shelter; and</p> <p>(c) 0.5% AEP for a police station; and</p> <p>(d) 0.2% AEP for a hospital; and</p> <p>(e) 0.2% AEP for an electricity substation; and</p> <p>(f) 0.2% AEP for a water treatment plant; and</p> <p>(g) 0.5% AEP for a power station; and</p> <p>(h) 0.5% AEP for a major electrical switchyard; and</p> <p>(i) 0.5% AEP for a store for valuable records, or items of historic or cultural significance.</p> <p>SO5 Development, being the reconfiguration of a lot, creates lots that incorporate a flood free, Building Envelope.</p> <p>S5.1 No Solution is prescribed.</p> <p>Water Supply Catchment Areas and Water Supply Source and Buffer</p> <p>SO36 Development provides for the separation of development from Watercourses, lakes, springs and future planned water bodies to preserve riparian areas and their capacity to maintain water quality by filtering sediments, nutrients and other pollutants.</p> <p>S36.1 Development for other than urban activities is not to occur within—</p> <p>(a) 100 metres of the high bank of a designated Watercourse; or</p> <p>(b) 400 metres of the full supply level or flood margin reserve, whichever is greater, of a water storage or supply structure or proposed water storage or supply structure; or</p> <p>(c) 25 metres of each bank of other Watercourses.</p> <p>S36.2 Development for urban activities is not to occur within—</p> <p>(a) 100 metres of the high bank of a designated Watercourse, or the full supply level or flood margin reserve, whichever is greater, of a water storage or supply structure or proposed water storage or supply structure; or</p> <p>(b) 25 metres of each bank of other Watercourses.</p>
PSPs	Yes
Details	<p>PSP 2 Information Council May Request</p> <p>Part 9 Earthworks</p> <p>Division 1 Earthworks Plan</p> <p>9.1.1 Earthworks Plan</p> <p>If an application involves development that requires earthworks (including Lot Filling) as per the Construction and Infrastructure Code (Section 5.3.6), the following details shall be submitted:</p> <p>(a) A site analysis plan showing;</p> <p>(b) A hydraulic study including details regarding flood levels and impact on adjoining, upstream or downstream properties;</p> <p>Planning Scheme Policy 7</p> <p>Standards for Construction and Infrastructure Beaudesert Shire Planning Scheme – March 2007</p> <p>Part 4 Standards for Earthworks, Excavation and Filling</p> <p>Division 1 Determining Flood Levels</p> <p>4.1.1 Applicability</p> <p>The standards in this Division provide solutions for development assessed against Specific Outcome SO15 in Table 5.3.9 of the Construction and Infrastructure Code.</p> <p>4.1.2 Determining Flood Levels using Local Rainfall Data</p> <p>(1) Calculation of flood levels shall be undertaken in accordance with the Queensland Urban Drainage Manual Section 5 (Urban Drainage).</p> <p>(2) The rainfall intensities used in determining flood levels shall be based on Design Rainfall Intensity Diagrams for Canungra, Logan Village and Jimboomba issued by the Australian Bureau of Meteorology and dated 1997.</p>
Other	No
Details	
Other Info	<p>Defined Flood Event (DFE) means the flood event adopted by the Local Government for the management of development on flood prone land being—</p> <p>(e) the 1% AEP flood in those streams or part of the streams not shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D; or</p> <p>(f) in those streams or part of the streams shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D, the following flood events—</p> <p>(i) Logan River (1974 and 1991 flood events, whichever is higher); or</p> <p>(ii) Albert River (1974 flood event); or</p> <p>(iii) Oxley River (1974 flood event); or</p>

	(iv) Burnett Creek (1974 flood event); or (v) Cannon Creek (1974 flood event).
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LGA	Logan
Planning Scheme	Gold Coast Planning Scheme 2003
Adopted	current version (1.2) adopted 15-Oct-2010
Flood Amendments	No
SPP Compliance	Yes
Details	The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme: c) State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
Mapped Q100 / DFE	Yes
Details	
Structure Plans (Etc)	Yes
Details	<p>Beenleigh District Structure Plan</p> <p>7.3.1 Planning Context</p> <p>Beenleigh is situated at the confluence of the Logan and Albert Rivers. With an early history of river transport this location has been influential in its development as a service centre. It has also been a major constraint in terms of flood hazard. As a result, potential for expansion of the urban areas is limited to the flood free lands to the west and south west of the town centre.</p> <p>Implementation</p> <p>a) Buffer areas are identified along the Structure Plan's wetland areas to provide visual, environmental and flood protection. Buffers are also identified between conflicting land uses and adjacent to the Regional Transport Corridors.</p> <p>7.4.2 Rural Purpose</p> <p>Rural areas include and protect cane land, agriculture areas and areas intended to be used for rural pursuits. It may also include land that is flood prone, physically difficult to develop, has significant environmental value and/or is relatively remote from urban services.</p> <p>8.0 Albert Corridor A: Ormeau Structure Plan</p> <p>8.6.4 Rural Areas Role and Character</p> <p>Rural areas include and protect caneland, agriculture areas and areas intended to be used for rural pursuits. It may also include land, which is flood prone, physically difficult to develop, has significant environmental value, and/or is relatively remote from urban services.</p> <p>Implementation</p> <p>c) Subject to the satisfactory resolution of any flooding issues, Council may consider applications for residential or other urban uses on land which is suitable for cane production, where that land is relinquished and released by the Rocky Point Mill and documentary evidence is furnished from the Rocky Point Mill and the Rocky Point Canegrowers Committee that such land is no longer required for cane growing purposes or for other viable agricultural purposes.</p> <p>d) Further to (c) above, Council may consider applications for development of a residential, park living or community nature within the designated rural areas only where:</p> <ul style="list-style-type: none"> - such a proposal would not cause unacceptable flooding impacts upon neighbouring properties. <p>8.6.5 Open Space and Buffer</p> <p>Buffer areas are identified along the Structure Plan's wetland areas to provide visual, environmental and flood protection.</p> <p>8.6.6 Conservation and Landscape Protection Role and Character</p> <p>The Conservation and Landscape Protection designation forms an overlay to other designations, and includes the flood plains of rivers and creeks and areas with slopes of 20% or greater.</p> <p>9.0 Albert Corridor B: Upper Coomera Structure Plan</p> <p>9.6.3 Rural Areas Role and Character</p> <p>Rural areas include and protect agricultural areas and areas intended for rural pursuits. It may also include land, which is flood prone, physically difficult to develop, has significant environmental value and/or is relatively remote from urban services.</p> <p>c) Council may consider applications for development of a residential, park living or community nature within the designated rural areas only where:</p> <ul style="list-style-type: none"> ☐ such a proposal would not cause unacceptable flooding impacts upon neighbouring properties. <p>9.6.4 Conservation and Landscape Protection Role and Character</p> <p>The Conservation and Landscape Protection designation forms an overlay to other designations, and includes the flood plains of rivers and creeks and areas with slopes of 20% or greater. The Conservation and Landscape Protection designation also includes other areas for reasons of their high visibility or environmental value.</p> <p>10.0 Albert Corridor D: South Helensvale Structure Plan</p> <p>10.5.2 Open Space and Buffer Areas Role and Character</p> <p>Buffer areas are identified along the Structure Plan area's wetland areas to provide visual, environmental and flood protection. Buffers are also identified between conflicting land uses and adjacent to the regional transport corridors.</p> <p>12.0 Gilston Structure Plan</p> <p>Water quality of the Nerang River in the Gilston area is relatively good. Council's flooding information reveals that this section of the Nerang River is prone to flooding. However, due to topography, the inundation is restricted to those properties in close proximity to the river and mouth of Bridge Creek.</p> <p>13.0 Reedy Creek Structure Plan</p> <p>b) The open space areas will have a primary role in retaining the areas of natural environment. These areas will also assist in defining preferred development patterns and enhancing the character of the place, as defined by this Structure Plan. In particular, the areas nominated as open space will:</p> <ul style="list-style-type: none"> ☐ serve floodway and drainage functions; <p>Inter-Urban Break Structure Plan</p> <p>14.5.2 Small Lot Rural Precinct Purpose</p>

	<p>The following criteria are applied in determining areas for inclusion in the Small Lot Rural Precinct:</p> <ul style="list-style-type: none"> ☐ areas not subject to flooding;
Local Area Plans	Yes
Details	<p>Beenleigh Town Centre</p> <p>4.4.1 Urban Areas</p> <p>Potential for expansion of urban areas is limited to the flood free lands to the west and south west of the town centre. Parts of these areas are identified on Planning Strategy Map PS3 – Conservation Strategy Plan.</p> <p>Intent for Parklands and Recreation:</p> <p>The precinct also includes attractively vegetated land parcels and land affected by flooding, in particular, areas extending north from James Street and Hamel Park and sites adjacent to Bougainville Street between Manila and Kokoda Streets.</p> <p>Intent for Education:</p> <p>The western part of the precinct, accommodating the private school, church and community facilities, contains extensive building complexes. It is traversed by a major creek, and has a significant area of low lying land that is flood prone. The integrity of the creek system should be maintained, and the filling of land and/or location of buildings on flood prone land is not supported.</p> <p>Intent for Town Centre Mixed Residential: New housing is not supported on flood-prone land.</p> <p>Coomera Local Area Plan</p> <p>4.3 Development Considerations</p> <p>A number of development constraints are evident within the LAP area. These constraints have been mapped (refer Coomera LAP Map 9.5 – Constraints), and include slopes above 16%, significant vegetation and habitat corridors, agricultural land, land subject to flooding, land difficult to service with physical infrastructure, and land affected by major transport corridors. The proposed development form has recognised these constraints, and any proposed development is to recognise and/or address the identified constraints.</p> <p>(a) Location Criteria for District Level/Major Facilities</p> <p>In the Coomera LAP, the criteria for location of these facilities are to:</p> <ul style="list-style-type: none"> - allow for all built facilities to be located above the Q100 flood level; <p>Coomera Town Centre LAP</p> <p>5.1 Precinct 1 Coomera Activity Centre Intent</p> <p>Any development within this precinct shall demonstrate that the environmental qualities and flood regimes of Oakey Creek and its environs are not negatively impacted. An adequate creek corridor shall be retained as part of the open space network and well integrated with development in Precinct 1.</p> <p>5.8 Precinct 8 Dreamworld Intent / 5.9.3 Sub-precinct 9c Environmental/ Open Space Corridor</p> <p>Any development in the vicinity of Oakey Creek will provide for flood mitigation, allow for natural movement in the alignment of Oakey Creek, protect and maintain the existing ecological values of Oakey Creek and provide a movement path for fauna.</p> <p>Jurisdiction For Master Plan Applications: Department of Community Safety</p> <ul style="list-style-type: none"> - Planning for and management of development as provided under the State Planning Policy 1/03 <p>Mitigating the Adverse Impacts of Bushfire, Flooding and Landslide</p> <p>Eagleby LAP</p> <p>Land Use Development:</p> <p>Urban development has occurred almost entirely in the south western ‘quadrant’ of Eagleby, due to land liable to inundation during major flooding events, as well as proximity to Beenleigh and the Pacific Motorway. The majority of the urban area has developed in a series of land subdivisions extending from Logan, Fryar, River Hills and Herses Roads. Flood prone land limits the expansion of the existing urban area, but considerable opportunities exist for future new development, as well as infill redevelopment of larger existing low density allotments.</p> <p>5.1 Precinct 1 Intent for Low Density Residential</p> <p>Expansion of the existing urban area is limited by risks of flooding.</p> <p>LDR2 contains relatively large allotments, some of which have frontage to the Albert River.</p> <p>Development in this sub-precinct is to accord with the following principles:</p> <ul style="list-style-type: none"> a) current lot sizes are maintained in areas subject to flooding and to provide diversity of housing types and density; b) areas not subject to flooding are suitable for low density residential development subject to the dedication to open space of land within 30 metres of the High Water Mark of the Albert River. <p>LDR5 comprises a number of areas located on the periphery of the current urban settlement. Some parts are flood prone and provide important open space connections. Development in this sub-precinct is to provide public open space, proposed open space/nature links and access links (Eagleby LAP Maps 12.5a and 12.5b – Open Space Network and Eagleby LAP Map 12.6 – Movement Network).</p> <p>LDR6 contains land which is flood prone. The extent of development that may be appropriate in this sub-precinct will be subject to a satisfactory management of flooding issues and the provision of open space and access links shown on (Eagleby LAP Maps 12.5a and 12.5b – Open Space Network and Eagleby LAP Map 12.6 – Movement Network).</p> <p>LDR8 comprises a cluster of residential dwellings located on Curlew Crescent. Development in this sub-precinct is to accord with the following principles:</p> <ul style="list-style-type: none"> a) current lot sizes are maintained in areas subject to flooding. This will also provide diversity in housing types and density; b) areas not subject to flooding are suitable for low density residential development, subject to the dedication to open space of land within 30 metres of the high water mark of the Logan River. <p>5.4 Precinct 4 Intent for Public Open Space</p> <p>Specifically, it is intended that:</p> <ul style="list-style-type: none"> - areas of ecological significance, such as the riparian corridors, flood plains, overland flow areas, wetlands and open space linkages between significant remaining habitats, are protected and rehabilitated (Eagleby LAP Maps 12.5a and 12.5b – Open Space Network); <p>Precincts 4 and 6</p> <p>PC25 All sites must be designed and managed to maintain natural watercourses and to protect and enhance environmental water quality.</p>

	AS25 Where land is flood liable, provision is made for major flow paths and storage areas to be preserved, without interference with building and other infrastructure.
Zone Codes	Yes
Details	Public Open Space Domain Intent: f) protection of areas that perform important environmental management functions including riparian corridors, flood plains, overland flow areas and permanent wetlands;
Use Codes	Yes
Details	Child Care Centre Code PC8 The development must be located to minimise: a) the hazards of heavy traffic; b) introduction of additional traffic into minor residential streets; c) flood damage or hazard. AS8.1 The development is not located: a) on arterial roads; b) on minor residential streets; c) on a site subject to flooding in a Q5 storm event or within a Flood Regulation Line; or d) adjacent to a railway. AS8.2 Overland flow paths are not impeded by buildings, structures, fences or landscaping, unless acceptable alternative paths are provided.
ROL Code	Yes
Details	Reconfiguration of a Lot Code PC1 Lots must have the appropriate area and dimensions to enable: b) siting and construction of buildings to minimise risk of soil erosion, flooding and bushfire; AS1.1.2 Allotments created on steep slopes in the Village, Detached Dwelling, or Residential Choice domains that are intended to be used for residential purposes provide a minimum private outdoor area of 30m ² , with the following criteria: a) ratio 2:1 (length to width) maximum; b) gradient less than 5%; c) adjoining proposed building envelope; d) flood free for the 1 in 5 ARI. PC16 All lots created have sufficient area that is flood free to safely and adequately accommodate their intended use and development. AS16.1 Every lot must be adequately filled and drained, without adverse environmental impact, so that it can be used for its intended purpose. The minimum area available, above the planning flood level for each lot, is in accordance with this Table to Acceptable Solutions. AS16.2 Any filling to be undertaken to provide the minimum area above the planning flood level required by AS16.1 is in accordance with Specific Development Code 11 – Changes to Ground Level and Creation of New Waterbodies and Constraint Code 9 – Flood Affected Areas and Constraint Code 10 – Natural Wetland Areas and Natural Waterways. AS16.3 Residential lots contain a rectangle above the planning flood level measuring nine metres by 15 metres and clear of all statutory boundary setbacks. AS16.4 Residential lots with an area less than 300m ² are square or rectilinear in shape. AS16.5 The flood free area provided in accordance with AS16.1 has access to a road frontage that is flood free. AS16.6 Flood modelling, if required, assumes that 100% of the lots are filled to a level above the 1 in 100 year flood line in the Village, Detached Dwelling, Residential Choice, Residential and Tourist, Integrated Business, Local Business and Fringe Business Domains and their LAP precinct equivalents. Domain: Minimum Area that is Flood Free Rural 1,000m ² plus additional area required for effluent disposal Park Living 1,000m ² plus additional area required for effluent disposal Village 450m ² Detached Dwelling 450m ² Residential Choice 100% of allotment Residential and Tourist 800m ² Integrated Business 800m ² Local Business 800m ² Fringe Business 800m ² Industry 1 1,000m ² Industry 2 800m ² Extractive Industry n/a Marine Industry 800m ² Community Purposes 450m ² Conservation n/a Private Open Space n/a Public Open Space 1,000m ² or 10% of the total site area, whichever is the greater. Emerging Communities 450m ² , except where an adopted structure plan provides for a greater flood free area to be provided. PC21 Land intended for public open space must be of a physical standard and condition that permits use of the land for its intended purpose. AS21.3 At least 10% of the total open space provision is exclusive of flood inundation of below the 1 in 100 ARI level (or Q100) or the highest recorded flood level, whichever is the greatest. PC23 An environmental open space network must be protected to: a) ensure the retention of significant vegetation, wetlands, waterways, and other habitat areas, their associated buffer and linkages/corridors and natural and cultural features; and b) facilitate appropriate measures for stormwater and flood management and care of valuable environmental resources; c) be cost effective to maintain. AS23 No acceptable solution provided.
Overlay Codes	Yes
Details	Constraint Codes Canals and Waterways PC3 All buildings and structures must provide for setbacks from the waterway which ensure the efficient use of the site, respond to the waterside location, and have minimal impact on adjoining properties, whilst having regard to:

d) hydraulic performance (flood storage, flood flow paths);
AS3 No acceptable solution provided.
PC8 The development must not adversely affect the waterbody or bank, and must have regard to the:
d) hydraulic performance (flood storage, flood flow paths);
AS8 No acceptable solution provided.

Chapter 8 Flood Affected Areas

1.0 Purpose
To ensure that, where premises within flood affected areas are to be developed, adequate measures are taken to:

- ☐ ensure that the development does not cause, or have the cumulative potential to cause, real damage (as defined below);
- ☐ provide standards for development in these areas that will ensure that the runoff from land and/or premises does not create any adverse environmental impacts.

Key objectives include:

- a) avoiding, if practicable, or otherwise lessening, the adverse impacts of flooding;
- b) maintaining or improving the City's counter disaster response efforts during a flood emergency;
- c) equitably sharing development constraints and development potential within a single river catchment and its sub catchments;
- d) equitably sharing the costs and benefits of flood mitigation infrastructure within a river catchment and its sub-catchments;
- e) protecting the flood storage function of the City's flood plains;
- f) protecting the flood discharge capacity of the City's rivers, streams and canals;
- g) achieving and maintaining a best practice approach to flood plain management;
- h) protecting ocean beaches and the shores and banks of estuaries, lakes, canals, rivers, streams and other waterbodies from erosion.

This code seeks to manage the effects of flooding on flood prone land, where it relates to new and existing development, infrastructure and ecosystems, by requiring:

- ☐ certified engineering hydraulic management plans or studies;
- ☐ specific design criteria for certain types of land uses.

All such proposals for development will be fully evaluated against the following criteria:

- ☐ real damage: whether the development is likely to cause damage that would adversely affect land and/or premises to an extent likely to be actionable;
- ☐ cumulative impact: whether the cumulative impact of development is likely to cause real damage;
- ☐ flood hazard: whether the development is likely to cause or worsen flood hazard;
- ☐ risks: whether the risks associated with the development are fully known, quantifiable and capable of being dealt with to Council's satisfaction, without any uncertainties; and
- ☐ flood mitigation: whether flood mitigation works, intended to reduce flood risk, hazard and damage, do so without adversely impacting upon other land and/or premises.

2.0 Application

2.1 This code applies to development that is indicated as self, code or impact assessable in the Table of Development to the domain or Local Area Plan (LAP) within which the development is proposed. In particular, this code applies to any site that is located within a Flood Affected Area*, defined as follows:

- ☐ flood prone land; or
- ☐ premises where access would be adversely affected during a range of floods, up to and including the designated flood. *Refer to Overlay Map OM17 – Natural Hazard (Flood) Management Areas sheets 1-35.

2.2 This code does not apply to Class 1 or Class 10 buildings as defined in the Building Code of Australia, except where Council has declared an area to be flood liable under Section 53 of the Queensland Building Regulations. However, this code provides recommendations for minimum floor levels for Class 1 and Class 10 buildings within flood prone land.

2.3 Note that where Operational Work is being undertaken within flood affected areas that results in a disturbance to the surface of the land, Specific Development Code 11 – Changes to Ground Level and Creation of New Waterbodies and Constraint Code 14 – Sediment and Erosion Control are also relevant.

2.4 Performance Criteria PC1-PC14 apply to all code and impact assessable development subject to this code. For development identified as self assessable in the relevant domain or LAP, only the acceptable solutions to Performance Criteria PC1-PC4 apply.

PC1 All development activity conducted on land below the designated flood level must not detrimentally affect the flood storage capacity of the catchment and the drainage regime.

AS1 The flood storage volume on the site is maintained up to the Designated Flood Level. Note: The Designated Flood Level can be obtained from Council's Flood Search.

PC2 Building floor levels of habitable rooms must be raised to provide an allowance for the hydraulic gradient above the main floodway, so as to meet the requirements of the Standard Building Regulation and Building Code of Australia.

AS2.1.1 An allowance of at least 300mm is added to the Designated Flood Level for habitable rooms, or other allowance amount specified in a Local Area Plan. OR

AS2.1.2 Damaged residential buildings are reconstructed to have a Design Floor Level at or above the level that existed prior to the building's damage, provided that the building work is limited to reinstatement.

AS2.2 Where the building has been destroyed by flood, the reconstructed floor level accords with AS2.1.1.

PC3 Building floor levels of garages and non habitable rooms must be constructed at a height that reflects an acceptable flood risk for their purpose.

Note: PC3 does not apply to:

- a) extensions to existing buildings;
- b) structures detached from a dwelling, for which the use is ancillary to that of a dwelling, provided that use is not listed in column 1 of Table to Acceptable Solution AS7.1.

AS3.1 Building floor levels of garages and non habitable rooms, constructed at approximately the same level as, and attached to, the main dwelling, is constructed at a height above the Designated Flood Level, except where the dwelling has a suspended floor, constructed one metre or more above ground, or where the building is to be constructed within a Rural Domain.

AS3.2 Non-habitable rooms and garages, detached from the fabric but within the curtilage of a building, that are not for the storage of goods are constructed above or below the Designated Flood Level.

	<p>PC4 Building work must not provide obstructions to the free passage of stormwater through a property.</p> <p>AS4 Overland flowing stormwater is allowed free passage between the street and any waterway at the rear of the property, in accordance with the provisions of the Building Code of Australia.</p> <p>PC5 Development in flood affected areas must not cause, or have the cumulative potential to cause, real damage, must not increase the level of risk to life, or be to the detriment of flood evacuation procedures.</p> <p>AS5 Development does not:</p> <ul style="list-style-type: none"> a) increase the number of people calculated to be at risk from flooding; b) increase the number of people likely to need evacuation; c) shorten flood warning times; d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes, or as identified within Council's Counter Disaster Plan (flooding); e) place additional burdens on Council's resources or emergency services; f) increase the duration of flooding, unless that increase is part of a Council approved flood mitigation strategy. <p>PC6 Development with plans for earthworks in a floodplain on or over a water body or within a flood affected area below the Designated Flood Level must allow for the maintenance of flood storage, and flood conveyance of flood and drainage channels and overland flow paths.</p> <p>AS6.1 Provide flood storage calculations that demonstrate that flood storage volume, over the site below the Designated Flood Level, is maintained or increased.</p> <p>AS6.2 A certified hydraulic study (and, if necessary, a hydrologic study) is prepared by a suitably qualified and experienced engineer to investigate the hydraulic characteristics of both the undeveloped and developed site and make comparisons between them. Proposed developments in, on or over a water body, or within a flood affected area, must be tested for:</p> <ul style="list-style-type: none"> a) the 50%, 20%, 10%, 5%, 2% and 1% Annual Exceedance Probability (AEP) for local flood events; b) the 5%, 2%, and 1% AEP floods and the designated flood and design flood AEP (as specified in Table to Acceptable Solution AS7.1) for riverine flood events, c) any resultant afflux or increase in flood velocities <p>sufficient to cause real damage to premises. The Assessment Manager may also require the development to be assessed against rarer floods.</p> <p>AS6.3 The Assessment Manager may decide that a hydraulic and/or hydrological study is not necessary if in the Assessment Manager's opinion:</p> <ul style="list-style-type: none"> a) a relevant study, that is not outdated, demonstrates there are no significant flooding impacts that were not covered in the relevant study; or b) the flooding impact of the approval, in relation to the development, is minor, c) in which event the Assessment Manager must provide a written notice to that effect to the applicant. <p>PC7 Development listed in Table to Acceptable Solution</p> <p>AS7.1 must allow for flood events and be constructed at a level above most floods.</p> <p>AS7.1 Development is designed for the Design Flood AEP, as specified in Table to Acceptable Solution AS7.1.</p> <p>Note: The designated flood level for residential buildings in general is a 1% flood level except for:</p> <ul style="list-style-type: none"> a) Broadwater – the 1% AEP storm surge level, plus an allowance of 0.27 metres, to account for sea level rise resulting from climate change; b) Logan and Albert Rivers – the designated flood is based, in part, on rainfall that occurred during the January 1974 flood and assumptions made regarding the ultimate level of development, in accordance with the relevant local planning instruments; and c) Historical flood level is the only information available to be specified designated flood level. <p>AS7.2 Development is constructed at or above the Design Flood Reclamation Level, shown in the Table to Acceptable Solution AS7.1, where the Designated Flood is the 1% AEP flood event, except as follows:</p> <ul style="list-style-type: none"> a) Broadwater: the 1% AEP storm surge level, plus an allowance of 0.27 metres, to account for sea level rise resulting from climate change; b) Logan and Albert Rivers: the designated flood is based, in part, on rainfall that occurred during the January 1974 flood and assumptions made regarding the ultimate level of development, in accordance with the relevant local planning instruments; and c) Coomera River: the designated flood is based on the modelled 1% AEP flood event or historic levels, whichever is the higher. <p>Table to Acceptable Solution AS7.1</p> <p>Land Use Design Flood</p> <p>Disaster management facilities 0.2% AEP</p> <p>Hospitals 0.2% AEP</p> <p>Major electrical switchyards, power stations, water treatment plants 0.2% AEP</p> <p>Fire/police stations 0.5% AEP</p> <p>Places of refuge 0.5% AEP</p> <p>Electricity substations 0.5% AEP</p> <p>Sewage treatment plants 0.5% AEP</p> <p>Homes for the aged, hospice 0.5% AEP</p> <p>Regional fuel storage 0.5% AEP</p> <p>Food storage warehouses 0.5% AEP</p> <p>Hotel residential Designated flood</p> <p>Educational facilities Designated flood</p> <p>Residential buildings Designated flood</p> <p>Camping grounds, caravan parks and relocatable homes reclamation levels Designated flood</p> <p>Commercial Designated flood</p> <p>Light industrial/warehousing Designated flood</p> <p>Theme parks Not specified, but users should not be subjected to any more than high hazard conditions in the designated flood, as specified in AS10.1</p> <p>Clubs/non-habitable buildings associated with enjoyment of public open space</p> <p>Not specified, but users should not be subjected to any more than high hazard conditions in the designated flood, as specified in AS10.1</p> <p>Car parking below buildings Not specified, but users should not be subjected to any more than high hazard conditions in the designated flood, as specified in AS10.1</p> <p>Open space Not specified, but ancillary structures are subject to appropriate hazard conditions in the designated flood, as specified in AS10.1</p> <p>Rural Not specified</p>
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	<p>PC8 Development must consider hydrologic and hydraulic impacts of development in flood affected areas with regard to future climate change.</p> <p>AS8 No acceptable solution provided.</p>
PSPs	No
Details	
Other	Yes
Details	<p>Introduction</p> <p>1.3 Merrimac/Carrara Flood Plain Structure Plan and Hydraulic Master Plan</p> <p>This project was initiated to provide an integrated approach for planning and future management of the remaining undeveloped areas of the Merrimac/Carrara Floodplain. These remaining areas are critical in providing for large open space uses, significant flood storage and the appropriate distribution of floodwaters along major flow paths. The resulting planning policies achieve an appropriate balance between the interests of landowners and the broader environmental considerations. Amongst other things, they address environmental, land use and hydraulic issues to provide a unique opportunity for limited development within a planned 'green heart' to the city.</p> <p>The outcomes of the Merrimac/Carrara Flood Plain Structure Plan are reflected directly in DEOs Ecol.1, Ecol.2, Econ.4, Soc.1 and Soc.7 and in the Natural Hazards Mitigation Strategy and the Flood Plain Management – Merrimac/Carrara Land Use Theme. They have also directly influenced the codes for Flood Affected Areas, Canals and Waterways, Natural Wetland Areas and Natural Waterways and Changes to Ground Level, as well as the provisions of the Guragunbah LAP.</p> <p>7.0 DEO Soc.7</p> <p>The location and design of development to minimise the potential risk to life and property from known natural hazards.</p> <p>7.1 Explanation</p> <p>Steep slopes, flood prone areas, acid sulfate soils and bushfire hazard areas are examples of areas subject to natural hazards that require careful assessment prior to any development activity. For development to proceed in such areas, the measures needed to effectively mitigate the identified hazard should be carefully appraised against the capacity of the local environment to accommodate those measures in a sustainable manner.</p> <p>7.2 Planning Objectives to Support DEO Soc.7</p> <p>Soc.7.1 to ensure that development is located away from areas where the risk to life and property from the impact of natural hazards is unacceptable, in terms of either the likely cost of damage or the measures needed to effectively mitigate the risk.</p> <p>Soc.7.2 to ensure that development is designed to mitigate the risk to life and property from known natural hazards.</p> <p>Soc.7.3 to facilitate cost effective counter disaster and emergency procedures.</p> <p>7.3 Planning Measures to Support DEO Soc.7</p> <p>This DEO is further addressed in the Key Strategy for Natural Hazards. It is important to the Key Strategy for Infrastructure Provision and Sequencing. It is related to development in all Land Use Themes, domains and LAPs. It also has particular relevance to the Flood Plain Management – Merrimac/Carrara Land Use Theme and to the Guragunbah and Hope Island LAPs.</p> <p>It will be largely achieved through the following provisions of this Planning Scheme:</p> <ul style="list-style-type: none"> § Specific Development Codes for Changes to Ground Level and Creation of New Waterbodies and Reconfiguring a Lot; § Constraint Codes for Bushfire Management Areas, Flood Affected Areas, Ocean Front Land and Steep Slopes or Unstable Soils; § relevant provisions of Part 8 - Infrastructure; and § Planning Scheme Policies for Land Development Guidelines, Management of Activities Located within Areas of Acid Sulfate Soils, Site Analysis and Guidelines for Preparing Fire Management Plans during the Development Process. <p>Performance Indicators</p> <p>SOC7 No increase in number of dwellings subject to floods greater than 1 in 100 frequency.</p> <p>Key Strategies</p> <p>GM 2.6 to discourage very low density residential development in urban areas, unless such development is: § adjacent to flood prone land;</p> <p>NR 4.5 to ensure that natural in-stream flows (including flooding and drainage patterns) are maintained within natural aquatic systems.</p> <p>CI 1.6 to maintain the natural function and distinctive character of floodplain areas.</p> <p>2.0 Natural Hazards Mitigation Policies</p> <p>2.1 NH Policy 1</p> <p>Ensuring that further development in areas prone to natural disasters is restricted, unless it can be acceptably designed to minimise risk to life and property.</p> <p>2.1.1 Explanation</p> <p>The introduction of new development into areas subject to natural disasters such as flood or bushfire is unwise. It may be possible to minimise risk with appropriate design and through environmental management measures. This option can be supported where there is no long term detrimental impact on the environment and the risk to life and property is known and accepted.</p> <p>2.1.2 Planning Objectives to Support NH Policy 1</p> <p>NH 1.1 to accurately identify areas that are vulnerable to natural hazards, including flood, bushfire, landslip and storm surge, and to protect such areas from inappropriate development.</p> <p>NH 1.2 to avoid development in high potential bushfire hazard areas where environmental constraints preclude necessary risk reduction measures, such as clearing and provision of adequate access (these constraints may include high nature conservation values, high scenic amenity, steep slopes and unstable soils).</p> <p>NH 1.3 to identify and assess the development of future Council infrastructure that may be vulnerable to damage from natural hazards, so that this may be designed to minimise risk of failure during an event.</p> <p>2.2 NH Policy 2</p> <p>Reducing the risk of damage to life and property from natural hazards in existing developed areas.</p> <p>2.2.1 Explanation</p> <p>Planning and development measures can be taken to improve the situation of existing developed areas in terms of risk of damage from flood, fire and other natural hazards. These measures may be implemented where redevelopment of existing areas is proposed, or where improvements to infrastructure and facilities are proposed which can have a positive impact on the risk exposure of the local area.</p> <p>2.2.2 Planning Objectives to Support NH Policy 2</p> <p>NH 2.1 to identify existing populations and developments that are vulnerable to damage from natural hazards and to improve existing methods of disaster management.</p>

	NH 2.2 to identify existing Council infrastructure, vital for public health and safety, that might be vulnerable to damage from natural hazards. NH 2.3 to protect the functional safety of important existing services, such as power and gas supplies and telecommunications, so that these services can be maintained during or soon after natural hazard events.
Op Works Code	Yes
Details	<p>Chapter 11 Changes to Ground Level and Creation of New Waterbodies</p> <p>1.0 Purpose: This code seeks to ensure that changes to existing ground levels, including the creation of new waterbodies, do not adversely affect other properties or the general amenity of the locality in which the works are occurring. Ground level changes must be geotechnically and ecologically sound and, where a flood affected site is proposed to be developed, adequate measures will be taken to ensure that the development achieves no increase in risk of flood damage to life or to property for existing and proposed residential dwellings. The code also seeks to prevent any increase in runoff that might occur from development that would increase the rate of runoff or the magnitude of the flood volume that would run off during a flood emergency.</p> <p>PC2 Development must not cause adverse stormwater drainage impacts on areas external and internal to the site.</p> <p>AS2.1 The change to ground level maintains flood storage volume over the site for the 20 year ARI storm event.</p> <p>AS2.2 The change in ground level does not involve filling below Q100.</p> <p>AS2.3 The change in ground level does not impound or divert rainfall runoff.</p> <p>PC9 Any change to the level of the land must not have an adverse flooding impact on the flooding and drainage characteristics of external sites and/or premises.</p> <p>AS9 As demonstrated by a hydraulic report prepared in accordance with Council's Hydraulic Report Requirements, the filling or excavation does not:</p> <ul style="list-style-type: none"> a) cause ponding on the site or nearby land; b) increase flooding which adversely affects the safety or use of any land upstream and downstream; c) adversely affect the flow of water in any overland flow path; or otherwise d) contravene the intent of Constraint Code 8 - Flood Affected Areas. <p>PC10 Development upstream of areas with over floor flooding shall not increase the contribution of floodwater from the catchment. Over floor flooding occurs adjacent to:</p> <ul style="list-style-type: none"> a) Currumbin Creek, downstream of weir near Stackpole Street; b) Tallebudgera Creek, downstream of Benardon Court; c) Mudgeeraba Creek, downstream of Berrigans Road; d) Nerang River, east of the Pacific Motorway; e) Coomera River, east of the Oxenford - Tamborine Road; f) Coombabah Creek, downstream of the Pacific Highway; g) Saltwater Creek, downstream of its crossing by Kopps Road. <p>AS10.1 Flood storage detention facilities are provided, where possible, on public land, of sufficient capacity to retain runoff such that the total peak runoff rate and volume released during the flood is not greater than would have been the case prior to development.</p> <p>AS10.2 A certified hydraulic study (and, if necessary, a hydrologic study) is prepared by a suitably qualified and experienced engineer to investigate the characteristics of both the undeveloped and developed site, and determines to the satisfaction of the Assessment Manager that a detention storage is not required, and a contribution is made by the developer to a Council sponsored community flood detention facility.</p> <p>PC16 All development must have a finished surface level which is free draining and free from flooding.</p> <p>AS16.1.1 The development is free draining and the surface gradient of the fill and/or excavated area is within the range 0.5% to 1.5%.OR</p> <p>AS16.1.2 The development includes steep surface gradients, which achieve integration with the surrounding topography, and the finished profile does not interrupt or materially change the surface water drainage, from or onto adjoining land.</p>
Overlay Code	Yes
Details	Flood Code
PSPs	No
Details	
Other	Yes
Details	<p>Priority Infrastructure Area</p> <p>Table 1-30 Stormwater Network Planning Criteria</p> <p>Measure Desirable Outcomes</p> <ul style="list-style-type: none"> ☑ Collect and convey stormwater flows (both low flows and Q100 flows) to a lawful point of discharge in a safe manner that minimises nuisance, the inundation of habitable rooms and protects life ☑ The free and safe drainage of existing and future urban land ☑ Maximise the ecological health of waterways and minimise the economic cost of stormwater run-off from development ☑ Ensure protection of habitable rooms ☑ Ensure trunk infrastructure takes into account the use of water sensitive urban design and other types of on site detention/ retention facilities and the conservation of natural waterways ☑ Minimise the impact of development on the existing local flood levels and waterway networks by maintaining the existing flow, velocity and flood storage parameters and control of peak flows ☑ Improve water quality at the receiving waters at minimum cost ☑ Utilise a system of regional and local on site detention facilities to minimise the adverse impact of peak run off for the full range of events from Q1 to Q100 ☑ Minimise adverse impacts from flooding ☑ Reduce potential sediments and impacts of scour ☑ Maintain public safety <p>Table 1-37 Minimum Post-Development Flood Immunity</p> <p>Recreation Facilities</p> <p>Category >Q5 >Q50 >Q100</p> <p>Local Recreation 25% 75% 0%</p> <p>District Recreation 0% 90% 10%</p> <p>City Recreation 50% 40% 10%</p> <p>District Sport 0% 90% 10%</p>

	<p>City Sport 50% 40% 10%</p> <p>Community Facilities 0% 0% 100%</p> <p>Outdoor Recreation 50% 40% 10%</p> <p>c) Road Cross-Culverts:</p> <p>Road cross-culverts are required to convey floodwaters to ensure that they provide adequate flood immunity to the road. The approach to develop the Stormwater Infrastructure Charges Schedule includes a Like Catchment assessment for road cross-culverts based upon the finding of several catchment reports.</p>
Other Info	

LGA	Logan
Planning Scheme	Logan City Planning Scheme
Adopted	17-Mar-06
Flood Amendments	No
SPP Compliance	Yes
Details	<p>3 State Planning Policies</p> <p>The Planning Scheme is to be read in conjunction with state planning policies, other than the following state planning policies, which are appropriately reflected in the planning scheme—</p> <p>(d) State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide; and</p>
Mapped Q100 / DFE	Yes
Details	DFE Overlay Map
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Residential Locality</p> <p>O17 Development for—</p> <p>(a) a hospital and associated institutions and local emergency services facilities, has a ground floor level which is above the 0.2% annual exceedance probability (AEP) flood; and</p> <p>(b) strategic community infrastructure not specified in paragraph (a), has a ground floor level which is above the 0.5% annual exceedance probability (AEP) flood.</p> <p>S17.1 None applicable.</p> <p>O9 Development protects regional corridors for animals by, retaining areas on the site which function as a wildlife corridor to other significant areas of bushland and the dedication of land for park, having regard to—</p> <p>(a) the location of a waterway; and</p> <p>(b) the location of land in the flood plain management area; and</p> <p>(c) existing plant cover and the ability to rehabilitate the land; and</p> <p>(d) the ability to connect the land into the open space network.</p> <p>S9.1 None applicable.</p> <p>Specific outcomes and prescribed solutions for the R5000-1 sub-area of the Residential 5000 zone</p> <p>Centres Locality</p> <p>O17 Development for—</p> <p>(a) a hospital and associated institutions and local emergency services facilities, has a ground floor level which is above the 0.2% annual exceedance probability (AEP) flood; and</p> <p>(b) strategic community infrastructure not specified in paragraph (a), has a ground floor level which is above the 0.5% annual exceedance probability (AEP) flood.</p> <p>S17.1 None applicable.</p> <p>Non Urban and Conservation Locality</p> <p>Overall outcomes for the non urban and conservation locality</p> <p>(1) The non urban and conservation locality relates to premises which are subject to the—</p> <p>(a) South East Queensland Regional Plan, which—</p> <p>(i) identifies the premises in the non urban and conservation locality—</p> <p>(A) located along the Logan River and other waterways in the local government area as being in the Urban Footprint but otherwise unsuitable for urban development for a range of reasons including constraints such as flooding and protection of biodiversity values; and</p> <p>O15 Development for—</p> <p>(a) a hospital and associated institutions and local emergency services facilities, has a ground floor level which is above the 0.2% annual exceedance probability (AEP) flood; and</p> <p>(b) strategic community infrastructure not specified in paragraph (a), has a ground floor level which is above the 0.5% annual exceedance probability (AEP) flood.</p> <p>S15.1 None applicable.</p> <p>Specific outcomes and prescribed solutions for the NU2 subarea of the Non Urban zone</p> <p>O7 Development protects the flood plain characteristics of the Logan River, water quality, a nature conservation area, a public recreation area and habitat for native animals.</p> <p>S7.1 None applicable.</p> <p>Part 5 – Investigation Locality</p> <p>O15 Development for—</p> <p>(a) a hospital and associated institutions and local emergency services facilities, has a ground floor level which is above the 0.2% annual exceedance probability (AEP) flood; and</p> <p>(b) strategic community infrastructure not specified in paragraph (a), has a ground floor level which is above the 0.5% annual exceedance probability (AEP) flood.</p> <p>S15.1 None applicable.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Table 5.3.23 Specific outcomes and prescribed solutions for stormwater infrastructure</p> <p>O2 Development provides stormwater infrastructure for the drainage of the premises so as to not cause—</p> <p>(a) the ponding of stormwater on the premises; or</p> <p>(b) a hazard to personal health and safety or property.</p> <p>S2.1 Development provides for roof water and surface water to be</p>

	<p>conveyed to—</p> <p>(a) the kerb and channel; or</p> <p>(b) an inter-allotment drainage system which—</p> <p>(i) complies with AS 3500.3.1-1998: National plumbing and drainage – Stormwater drainage –Performance requirement where it is not possible to convey the roof water and the surface water to the kerb and channel; and</p> <p>(ii) discharges to a legal point of discharge; or</p> <p>(c) a soakage trench or rubble pit which complies with Part 6.4 and Part 6.5 of AS/NZS 3500.3.2:1998: National plumbing and drainage – Stormwater drainage – acceptable solutions where—</p> <p>(i) it is not possible to convey the roof water and the surface water to the kerb and channel or an inter-allotment drainage system; and</p> <p>(ii) the premises exceeds 2,000m²; and</p> <p>(iii) the stormwater installation will accommodate roof water and surface water for a rainfall intensity of at least the 2 year ARI statistical flood; or</p> <p>(d) a legal point of discharge.</p> <p>O3 Development provides that the natural flow of surface water from the premises or adjoining premises is not altered so as to cause a risk to personal health and safety or property.</p> <p>S3.1 Development provides that the natural flow of surface waters from the premises or adjoining premises is not concentrated onto other premises.</p>
Overlay Codes	Yes
Details	<p>Part 3 Flood plain management area</p> <p>Table 4.3.8 Overall outcomes for the flood plain management area</p> <p>Protection and enhancement of personal health and safety and property, protection and enhancement of counter disaster response, equity in development within a flood plain, protection and enhancement of ecosystems, protection of natural physical processes and protection and enhancement of nature conservation values</p> <p>(1) The flood plain management area is to protect and enhance personal health and safety and the property of the community from flooding.</p> <p>(2) The flood plain management area is to protect and enhance the local government’s counter disaster response efforts during flooding.</p> <p>(3) The flood plain management area provides for development which is to equitably share with other development the development constraints and development potential within a flood plain.</p> <p>(4) The flood plain management area is to protect the natural processes and systems of a flood plain in particular the flood storage function and the flood discharge capacity of a flood plain.</p> <p>(5) The flood plain management area is to protect the natural hydrological processes of the flood plain including wetlands and waterways.</p> <p>(6) The flood plain management area is to protect and enhance the ecosystems and nature conservation values of the flood plain management area.</p> <p>Protection and enhancement of personal health and safety and property, protection and enhancement of counter disaster response, equity in development within a flood plain, protection and enhancement of ecosystems, protection of natural physical processes and protection and enhancement of nature conservation values</p> <p>O1 Development does not—</p> <p>(a) in combination with the access area and with existing and proposed development and access areas on adjacent land—</p> <p>(i) in the defined flood event—</p> <p>(A) cause an afflux greater than the allowable afflux; or</p> <p>(B) divert a flood flow from its normal flow path onto land which is not the subject of the normal flow path; or</p> <p>(C) result in an increase in the flood flow velocity; or</p> <p>(D) provides that the normal flow of surface waters from the premises or adjoining premises is not concentrated; and</p> <p>(ii) an extreme event, create a sudden change in the distribution of a flood flow, the flood level or the flood flow velocity that could result in—</p> <p>(A) the breaking of a levee; or</p> <p>(B) the establishment of a blockage or a breakout; or</p> <p>(C) excessive scour; or</p> <p>(D) the realignment of a waterway; or</p> <p>(E) sedimentation; or</p> <p>(F) worsening of an emergency access or an evacuation route from the development; or</p> <p>(G) an increased flood hazard; and</p> <p>(b) cause or have the cumulative potential to cause flood damage; and</p> <p>(c) increase the level of risk to health and safety; and</p> <p>(d) adversely impact on flood evacuation procedures, flood evacuation routes or counter disaster procedures or systems; and</p> <p>(e) increase the number of people calculated to be at risk from a flood; and</p> <p>(f) increase the number of people likely to need evacuation during a flood; and</p> <p>(g) shorten the warning time of a flood; and</p> <p>(h) impact on the ability of traffic to use an evacuation route during a flood; and</p> <p>(i) unreasonably increase traffic volumes on an evacuation route during a flood; and</p> <p>(j) place an additional burden on the local government’s resources and emergency services during a flood.</p> <p>S1.1 The ground level of the site and any access to the development is above the level of the defined flood event applicable to the premises.</p> <p>O2 Development for a residential use is constructed on fill which is above the level of the defined flood event except where the site is classified as a low flood hazard.</p> <p>S2.1 None applicable.</p> <p>O3 Development provides access to a road which is—</p> <p>(a) above the level of the defined flood event; or</p> <p>(b) below the level of the defined flood event where the road—</p> <p>(i) has a low flood hazard; and</p> <p>(ii) remains serviceable and trafficable having regard to the likely traffic densities and loads until another road access to the development may be restored; and</p> <p>(iii) connects to a road which is above the defined flood event that provides access to the road network.</p> <p>S3.1 None applicable.</p> <p>O4 Development provides that the access area to a building or a fill area upon which a building is to be constructed is classified as a low flood</p>

hazard in the defined flood event.

S4.1 None applicable.

O5 Development provides that the floor level of a building is at or above the design floor level other than—

(a) a parking space in respect of—

(i) a building for a residential use existing at the 27 February 1998 being the date of commencement of Local Law No. 6 (Flood Plain Management) 1998 which was repealed upon the commencement of the Logan Planning Scheme 2006; or

(ii) a proposed building for a house or a caretaker's dwelling on a premises where the use of adjacent land is for a residential use which is a lawful use and the parking space is at a similar level to the parking space of existing buildings for a residential use on adjacent land; or

(iii) a premises not referred to in paragraphs (i) and (ii) where the parking space is at or above the minimum parking level; and

(b) a building for a residential use which has been constructed at or above the level of a previous building for a residential use on the premises which was damaged or destroyed (other than as a result of a flood); and

(c) a room which is not a habitable room where any increase in the plan dimension presented to the flood flow does not have an adverse impact on the structural integrity of the building; and

(d) an addition to an existing building which is a lawful use where—

(i) the addition to the existing building does not increase in the case of—

(A) a residential use, the habitable floor area of the total building by more than 40 per cent; and

(B) a non-residential use (other than a recreation use), the GLA of the total building by more than 40 per cent; and

(ii) any increase in the plan dimension presented to the flood flow does not have an adverse impact on the structural integrity of the building; and

(iii) the existing building has not been previously extended; and

(iv) the floor level of the addition is at the floor level of the existing building; and

(e) in the case of a building for a recreation activity, a room such as a change room and a store room, a patio, a covered seating area and that part of the building used for the sport where—

(i) there are no fixtures connected to the sewerage system other than fixtures which are designed to prevent the entry of flood waters to the sewerage system;

(ii) any increase in the plan dimension presented to the flood flow does not have an adverse impact on the structural integrity of the building; and

(f) in the case of a class 10 or a class 10a building an addition where—

(i) the floor level of the addition is approximately at the existing ground level; and

(ii) there is no significant increase in the plan dimension presented to the flood flow.

S5.1 None applicable.

O6 Development is carried out such that—

(a) the building is adequately attached to its foundations in order to prevent flotation during a flood; and

(b) the foundations of the building are adequately protected from scour during flood; and

(c) the part of the building which is located below the design floor level—

(i) is constructed of flood resistant material such as masonry, concrete, concrete blockwork or steel; and

(ii) in the case of a building or structure ancillary to the use, is constructed with adequate bracing and connectivity such that the building or structure will not disintegrate in the event of a log impact; and,

(d) the building is designed to withstand—

(i) stream flow forces based on the flood flow velocity; and

(ii) a debris loading based on a 1 metre debris mat at the flood level and at any other critical level in a flood; and

(e) the structural integrity of any addition to an existing building is not compromised by any lack of structural capability of the existing building to withstand stream flow forces or debris loads or vice versa; and

(f) a structural design certificate in respect of the building work is provided by an experienced registered professional engineer and is based on—

(i) the depth of flood flows where the depths are determined by survey; and

(ii) the flood flow velocities of the defined flood event applicable to the building work.

S6.1 None applicable.

O7 Development being filling is limited to—

(a) filling in the floodway fringe which is imported filling or compensated filling; or

(b) filling in the floodway which—

(i) is compensated filling where the as constructed surface level of the land following filling which forms the top of a retaining wall or a fill batter adjoins other land which is above the defined flood event; and

(ii) ensures that there is an allowance in the volume of cut to all a fill batter to be filled at a later date to the vertical face as illustrated in Figure 4.3.3 (Examples of filling and excavation); or

(c) filling in the floodway which—

(i) is isolated from land which is above the defined flood event; and

(ii) creates an area upon which a building or a structure is to be constructed only for a house, a rural use (other than forestry) or a recreation activity (other than indoor entertainment), which is consistent development in the zone and sub-area; and

(iii) is imported filling or compensated filling; and

(iv) is on premises which is fully within the floodway; and

(v) does not exceed 1000m² in area measured at its base; and

(vi) has a base area that does not exceed 20 percent of the area of the premises; and

(vii) is located on premises not less than 5000m² in area; and

(viii) provides a minimum width of 3 metres around the external extremities of the building; and

(ix) is located on premises classified as—

(A) a low flood hazard; or

(B) a high flood hazard where the minimum effective warning time is exceeded;

and

(x) ensures that there is an allowance in the volume of cut to allow fill batter to be filled at a later date to the vertical face as illustrated in Figure 4.3.3 (Examples of filling and excavation).

S7.1 None applicable.

O8 Development being excavation—

(a) is limited to—

	<p>(i) compensated filling; or</p> <p>(ii) the construction of a dam as a water storage; or</p> <p>(iii) a lawful use which is an extractive industry; and</p> <p>(b) in the case of compensated filling, does not result in the removal of excavated material from the flood plain unless the material is—</p> <p>(i) unsuitable for filling and replaced by suitable material from outside the flood plain which is placed within the flood plain; or</p> <p>(ii) surplus to the filling requirements on the premises; and</p> <p>(c) in the case of the construction of a dam as a water storage, the volume of the dam does not exceed 500m³.</p> <p>S8.1 None applicable.</p> <p>O9 Development being filling and excavation is carried out such that—</p> <p>(a) the as constructed surface level of the land following filling which forms the top of a retaining wall or a fill batter is at or above the prescribed fill level; and</p> <p>(b) the as constructed surface gradient of any fill and excavation area is—</p> <p>(i) in the range of 0.5% to 1.5% such that the area is free draining; or</p> <p>(ii) steeper than that specified in paragraph (b)(i) if the as constructed surface profile achieves better integration with the surrounding topography; and</p> <p>(c) excavation only takes place below the defined limit where there is no adverse impact on a wetland and riparian habitat; and</p> <p>(d) a grass cover of up to 80% of the site area and batters is to be achieved within 6 months of the completion of the construction activities.</p> <p>S9.1 None applicable.</p> <p>O10 Development does not—</p> <p>(a) adversely impact on the flood storage capacity of a flood plain drainage channel, an overland flow path and a waterway, and</p> <p>(b) adversely impact on the hydraulic performance of a flood channel; and</p> <p>(c) increase or have the cumulative potential to increase the allowable afflux; and</p> <p>(d) adversely impact on the natural hydrological systems of a flood plain; and</p> <p>(e) adversely impact on a wetland, a waterway and riparian habitat.</p> <p>S10.1 None applicable.</p>
PSPs	Yes
Details	<p>PSP 1 Information Council May Request</p> <p>Reconfiguration of a Lot</p> <p>(j) a flood report with a hydraulic analysis that determines the Q10 and Q50 levels where there is a waterway on the premises.</p> <p>3.3.4 Flood plain management area</p> <p>For the purposes of section 2.1.1(1)(b) (Information that may be requested in respect of a development application) of this planning scheme policy, the local government may request the additional information identified in Planning Scheme Policy No. 6 (Standards for flood plain management area) in respect of a development in the flood plain management area.</p> <p>Proposal Plans:</p> <p>(viii) the drainage pattern, catchment area and, if applicable, the flood level specified by the local government in respect of the premises; and</p> <p>Site base SWMP:</p> <p>(f) evidence of agreement with key stakeholders with respect to constraints and opportunities, including—</p> <p>(iv) the existing or known flooding problems; and</p> <p>4.18.1 Survey information</p> <p>For the purposes of Part 3 (Prescribed information) of this planning scheme policy, survey information is to be—</p> <p>(a) determined by an experienced registered surveyor; and</p> <p>(b) prescribed on a plan that shows—</p> <p>(i) the contour levels at an interval of—</p> <p>(A) 0.25m to AHD for land below the level of the defined flood event; and</p> <p>(B) 0.5m to AHD for land higher than the level of the defined flood event; and</p> <p>PSP 2</p> <p>Division 3 Additional prescribed information required for particular overlays and defined areas</p> <p>3.3.1 Flood plain management area</p> <p>For the purposes of section 2.1.1(1)(b) (Information that may be requested in respect of a development application) of this planning scheme policy, the local government may request the information identified in Planning Scheme Policy No. 6 (Standards for flood plain management area) 2006 in respect of a development in the flood plain management area.</p> <p>Part 4 Information to be included in requested reports and plans Division 1 Engineering and landscape drawings</p> <p>(d) an earthworks plan must include—</p> <p>(ix) the level of the defined flood event if relevant; and</p> <p>POLICY NUMBER 4 (DEFINED AREA MAPS) 2006</p> <p>DA Map 4 (Defined flood map).</p> <p>The boundary of the defined flood event and the encroachment line identified on the defined area map are to be determined by surveying the level of the defined flood event and the level of the encroachment line.</p> <p>POLICY NUMBER 5 (DESIGN AND CONSTRUCTION OF WORK) 2006</p> <p>Includes: Design Requirements for Parks and SW Infrastructure.</p> <p>before and after the filling; and</p> <p>(c) in the case of a development, involving compensated filling, with or without imported filling, in an area where an encroachment line has already been set by the local government—</p> <p>(i) details of any imported filling to be placed on the premises; and</p> <p>PSP 6</p> <p>Planning Scheme Policy No. 6 (Standards for flood plain management area) 2006</p> <p>Division 2 Purpose of the planning scheme policy</p> <p>1.2.1 Purpose of the planning scheme policy</p> <p>The purpose of the planning scheme policy is to assist with the implementation of the Logan Planning Scheme 2006 by specifying—</p> <p>(a) standards in respect of assessable development in the flood plain management area; and</p> <p>(b) further information the local government may, pursuant to section 3.3.6 (Information requests to applicant (generally)) of the Integrated</p>

Planning Act 1997, ask the applicant to give to assess a development in the flood plain management area; and
(c) the hydraulic model to be used in determining compliance with the standards in the flood plain management area code.

Part 2 Standards for flood plain management area

2.1.1 Defined flood event

(1) For the purposes of the definition of defined flood event in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the defined flood event—

(a) for the prescribed flood district, is the higher of—

(i) the highest recorded flood; or

(ii) the 50 year ARI statistical flood; and

(b) for a district other than the prescribed flood district, is the level of the defined flood event applicable to the premises specified in column 2 in the table applicable to the district in Schedule 1 (Standards for districts other than the prescribed flood district) of this planning scheme policy.

(2) The defined flood event for a district other than the prescribed flood district, is identified on DA Map 4 in Planning Scheme Policy No. 4 (Defined area maps) 2006.

2.1.2 Encroachment line

(1) For the purposes of the definition of encroachment line in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the encroachment line—

(a) for the prescribed flood district, is the level of fill which would not create an afflux greater than the allowable afflux; and

(b) for a district other than the prescribed flood district, is the level of the encroachment line applicable to the premises specified in column 3 in the table applicable to the district in Schedule 1 (Standards for districts other than the prescribed flood district) of this planning scheme policy.

(2) The encroachment line for a district other than the prescribed flood district, is identified on DA Map 4 in Planning Scheme Policy No. 4 (Defined area maps) 2006.

2.1.3 Prescribed fill level

For the purposes of the definition of prescribed fill level in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the prescribed fill level—

(a) for the prescribed flood district, is the defined flood event plus the allowable afflux; and

(b) for a district other than the prescribed flood district, is the level applicable to the premises specified in column 4 in the table applicable to the district in Schedule 1 (Standards for districts other than the prescribed flood district) of this planning scheme policy.

2.1.4 Design floor level

For the purposes of the definition of design floor level in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the design floor level—

(a) for the prescribed flood district, is the 100 year ARI statistical flood plus 300mm; and

(b) for a district other than the prescribed flood district, is the design floor level applicable to the premises specified in column 5 in the table applicable to the district in Schedule 1 (Standards for districts other than the prescribed flood district) of this planning scheme policy.

2.1.5 Minimum parking level

For the purposes of the definition of minimum parking level in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the minimum parking level—

(a) for the prescribed flood district, is the level of the defined flood event applicable to the premises; and

(b) for a district other than the prescribed flood district, is the level of the 50 year local ARI statistical flood applicable to the premises specified in column 6 in the table applicable to the district in Schedule 1 (Standards for districts other than the prescribed flood district) of this planning scheme policy.

2.1.6 Defined limit

For the purposes of the definition of defined limit in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the defined limit—

(a) for the prescribed flood district, is the level of the defined flood event applicable to the premises; and

(b) for a district other than the prescribed flood district, is the level applicable to the premises specified in column 7 in the table applicable to the district in Schedule 1 (Standards for districts other than the prescribed flood district) of this planning scheme policy.

2.1.7 Allowable afflux

For the purposes of the definition of allowable afflux in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the allowable afflux—

(a) for the prescribed flood district, is an afflux which—

(i) is not greater than 100mm measured anywhere in an applicable flood plain of the prescribed flood district; and

(ii) does not cause an afflux external to the applicable flood plain of the prescribed flood district; and (b) for a district other than the prescribed flood district, is the afflux applicable to the premises specified in column 8 in the table applicable to the district in Schedule 1 (Standards for districts other than the prescribed flood district) of this planning scheme policy.

2.1.8 Minimum effective warning time

For the purposes of the definition of minimum effective warning time in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the minimum effective warning time is 6 hours.

2.1.9 Depth-velocity relationship figure for flood waters

For the purposes of the definition of depth-velocity relationship figure for flood waters in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the depth-velocity relationship figure for flood waters is Figure 2.1.9 (Depth-velocity relationship figure for flood waters) of this planning scheme policy.

Figure 2.1.9 Depth-velocity relationship figure for flood waters

2.1.10 Maximum duration of flooding

For the purposes of the definition of maximum duration of flooding in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the maximum duration of flooding is 24 hours.

2.1.11 Maximum rate of rise of flood waters

For the purposes of the definition of maximum rate of rise of flood water in section 4.3.3 (Definitions in Part 3) of Chapter 4 (Assessment provisions for overlays, districts and sub-districts) of the Logan Planning Scheme 2006, the maximum rate of rise of flood waters is 100mm per hour.

Part 3 Information that may be requested in respect of a development application

3.1.1 Information that may be requested in respect of a development application

For the purposes of section 3.3.6 (Information requests to applicant (generally)) of the Integrated Planning Act 1997, the local government may ask an applicant for development in the flood plain management area to give further information needed to assess the development being—

(a) in the case of a development, involving imported filling only, in an area where an encroachment line has already been set by the local government, a surveyed contour plan of the premises which shows the following—

	<p>(i) the existing contours at 0.25 metre intervals in the area of the proposed filling and at intervals of not more than 0.5 metres over the remainder of the premises; and</p> <p>(ii) the alignment of the toe of the batter slope which is proposed to retain the filling; and</p> <p>(iii) the grading of the proposed filled surface; and</p> <p>(iv) the alignment of the encroachment line determined by the correlation of the levels thereof provided by the local government, with the surveyed existing contours; and</p> <p>(v) the boundary of inundation by the defined flood event; and (vi) details of any adverse effects on the conveyance of tributary flood discharges into the main floodplain system; and</p> <p>(b) in the case of a development, involving imported filling only, in an area considered by the local government to be a significant area of the flood plain management area and in which an encroachment line has not already been set by the local government—</p> <p>(i) a hydrodynamic modelling study; and</p> <p>(ii) a detailed description of the flood modelling undertaken; and</p> <p>(iii) a surveyed contour plan of the premises which shows the following—</p> <p>(A) the existing contours at 0.25 metre intervals in the area of the proposed filling and at intervals of not more than 0.5 metres over the remainder of the premises; and</p> <p>(B) the alignment of the toe of the batter slope which is proposed to retain the filling; and</p> <p>(C) the grading of the proposed filled surface; and</p> <p>(D) the alignment of the permissible limit of imported filling; and</p> <p>(E) the proposed boundary of the imported filling; and</p> <p>(F) the boundary of inundation by the defined flood event</p>
Other	No
Details	
Op Works Code	No
Details	
Overlay Code	Yes
Details	<p>Part 3 Flood plain management area</p> <p>Table 4.3.8 Overall outcomes for the flood plain management area</p> <p>Protection and enhancement of personal health and safety and property, protection and enhancement of counter disaster response, equity in development within a flood plain, protection and enhancement of ecosystems, protection of natural physical processes and protection and enhancement of nature conservation values</p> <p>(1) The flood plain management area is to protect and enhance personal health and safety and the property of the community from flooding.</p> <p>(2) The flood plain management area is to protect and enhance the local government's counter disaster response efforts during flooding.</p> <p>(3) The flood plain management area provides for development which is to equitably share with other development the development constraints and development potential within a flood plain.</p> <p>(4) The flood plain management area is to protect the natural processes and systems of a flood plain in particular the flood storage function and the flood discharge capacity of a flood plain.</p> <p>(5) The flood plain management area is to protect the natural hydrological processes of the flood plain including wetlands and waterways.</p> <p>(6) The flood plain management area is to protect and enhance the ecosystems and nature conservation values of the flood plain management area.</p> <p>Protection and enhancement of personal health and safety and property, protection and enhancement of counter disaster response, equity in development within a flood plain, protection and enhancement of ecosystems, protection of natural physical processes and protection and enhancement of nature conservation values</p> <p>O1 Development does not—</p> <p>(a) in combination with the access area and with existing and proposed development and access areas on adjacent land—</p> <p>(i) in the defined flood event—</p> <p>(A) cause an afflux greater than the allowable afflux; or</p> <p>(B) divert a flood flow from its normal flow path onto land which is not the subject of the normal flow path; or</p> <p>(C) result in an increase in the flood flow velocity; or</p> <p>(D) provides that the normal flow of surface waters from the premises or adjoining premises is not concentrated; and</p> <p>(ii) an extreme event, create a sudden change in the distribution of a flood flow, the flood level or the flood flow velocity that could result in—</p> <p>(A) the breaking of a levee; or</p> <p>(B) the establishment of a blockage or a breakout; or</p> <p>(C) excessive scour; or</p> <p>(D) the realignment of a waterway; or</p> <p>(E) sedimentation; or</p> <p>(F) worsening of an emergency access or an evacuation route from the development; or</p> <p>(G) an increased flood hazard; and</p> <p>(b) cause or have the cumulative potential to cause flood damage; and</p> <p>(c) increase the level of risk to health and safety; and</p> <p>(d) adversely impact on flood evacuation procedures, flood evacuation routes or counter disaster procedures or systems; and</p> <p>(e) increase the number of people calculated to be at risk from a flood; and</p> <p>(f) increase the number of people likely to need evacuation during a flood;</p> <p>and</p> <p>(g) shorten the warning time of a flood; and</p> <p>(h) impact on the ability of traffic to use an evacuation route during a flood; and</p> <p>(i) unreasonably increase traffic volumes on an evacuation route during a flood; and</p> <p>(j) place an additional burden on the local government's resources and emergency services during a flood.</p> <p>S1.1 The ground level of the site and any access to the development is above the level of the defined flood event applicable to the premises.</p> <p>O2 Development for a residential use is constructed on fill which is above the level of the defined flood event except where the site is classified as a low flood hazard.</p> <p>S2.1 None applicable.</p> <p>O3 Development provides access to a road which is—</p> <p>(a) above the level of the defined flood event; or</p>

(b) below the level of the defined flood event where the road—

- (i) has a low flood hazard; and
- (ii) remains serviceable and trafficable having regard to the likely traffic densities and loads until another road access to the development may be restored; and
- (iii) connects to a road which is above the defined flood event that provides access to the road network.

S3.1 None applicable.

O4 Development provides that the access area to a building or a fill area upon which a building is to be constructed is classified as a low flood hazard in the defined flood event.

S4.1 None applicable.

O5 Development provides that the floor level of a building is at or above the design floor level other than—

- (a) a parking space in respect of—
 - (i) a building for a residential use existing at the 27 February 1998 being the date of commencement of Local Law No. 6 (Flood Plain Management) 1998 which was repealed upon the commencement of the Logan Planning Scheme 2006; or
 - (ii) a proposed building for a house or a caretaker's dwelling on a premises where the use of adjacent land is for a residential use which is a lawful use and the parking space is at a similar level to the parking space of existing buildings for a residential use on adjacent land; or
 - (iii) a premises not referred to in paragraphs (i) and (ii) where the parking space is at or above the minimum parking level; and
- (b) a building for a residential use which has been constructed at or above the level of a previous building for a residential use on the premises which was damaged or destroyed (other than as a result of a flood); and
- (c) a room which is not a habitable room where any increase in the plan dimension presented to the flood flow does not have an adverse impact on the structural integrity of the building; and
- (d) an addition to an existing building which is a lawful use where—
 - (i) the addition to the existing building does not increase in the case of—
 - (A) a residential use, the habitable floor area of the total building by more than 40 per cent; and
 - (B) a non-residential use (other than a recreation use), the GLA of the total building by more than 40 per cent; and
 - (ii) any increase in the plan dimension presented to the flood flow does not have an adverse impact on the structural integrity of the building; and
 - (iii) the existing building has not been previously extended; and
 - (iv) the floor level of the addition is at the floor level of the existing building; and
 - (e) in the case of a building for a recreation activity, a room such as a change room and a store room, a patio, a covered seating area and that part of the building used for the sport where—
 - (i) there are no fixtures connected to the sewerage system other than fixtures which are designed to prevent the entry of flood waters to the sewerage system;
 - (ii) any increase in the plan dimension presented to the flood flow does not have an adverse impact on the structural integrity of the building; and
 - (f) in the case of a class 10 or a class 10a building an addition where—
 - (i) the floor level of the addition is approximately at the existing ground level; and
 - (ii) there is no significant increase in the plan dimension presented to the flood flow.

S5.1 None applicable.

O6 Development is carried out such that—

- (a) the building is adequately attached to its foundations in order to prevent flotation during a flood; and
- (b) the foundations of the building are adequately protected from scour during flood; and
- (c) the part of the building which is located below the design floor level—
 - (i) is constructed of flood resistant material such as masonry, concrete, concrete blockwork or steel; and
 - (ii) in the case of a building or structure ancillary to the use, is constructed with adequate bracing and connectivity such that the building or structure will not disintegrate in the event of a log impact; and,
- (d) the building is designed to withstand—
 - (i) stream flow forces based on the flood flow velocity; and
 - (ii) a debris loading based on a 1 metre debris mat at the flood level and at any other critical level in a flood; and
- (e) the structural integrity of any addition to an existing building is not compromised by any lack of structural capability of the existing building to withstand stream flow forces or debris loads or vice versa; and
- (f) a structural design certificate in respect of the building work is provided by an experienced registered professional engineer and is based on—
 - (i) the depth of flood flows where the depths are determined by survey; and
 - (ii) the flood flow velocities of the defined flood event applicable to the building work.

S6.1 None applicable.

O7 Development being filling is limited to—

- (a) filling in the floodway fringe which is imported filling or compensated filling; or
- (b) filling in the floodway which—
 - (i) is compensated filling where the as constructed surface level of the land following filling which forms the top of a retaining wall or a fill batter adjoins other land which is above the defined flood event; and
 - (ii) ensures that there is an allowance in the volume of cut to all a fill batter to be filled at a later date to the vertical face as illustrated in Figure 4.3.3 (Examples of filling and excavation); or
- (c) filling in the floodway which—
 - (i) is isolated from land which is above the defined flood event; and
 - (ii) creates an area upon which a building or a structure is to be constructed only for a house, a rural use (other than forestry) or a recreation activity (other than indoor entertainment), which is consistent development in the zone and sub-area; and
 - (iii) is imported filling or compensated filling; and
 - (iv) is on premises which is fully within the floodway; and
 - (v) does not exceed 1000m² in area measured at its base; and
 - (vi) has a base area that does not exceed 20 percent of the area of the premises; and
 - (vii) is located on premises not less than 5000m² in area; and
 - (viii) provides a minimum width of 3 metres around the external extremities of the building; and

	<p>(ix) is located on premises classified as—</p> <p>(A) a low flood hazard; or</p> <p>(B) a high flood hazard where the minimum effective warning time is exceeded;</p> <p>and</p> <p>(x) ensures that there is an allowance in the volume of cut to allow fill batter to be filled at a later date to the vertical face as illustrated in Figure 4.3.3 (Examples of filling and excavation).</p> <p>S7.1 None applicable.</p> <p>O8 Development being excavation—</p> <p>(a) is limited to—</p> <p>(i) compensated filling; or</p> <p>(ii) the construction of a dam as a water storage; or</p> <p>(iii) a lawful use which is an extractive industry; and</p> <p>(b) in the case of compensated filling, does not result in the removal of excavated material from the flood plain unless the material is—</p> <p>(i) unsuitable for filling and replaced by suitable material from outside the flood plain which is placed within the flood plain; or</p> <p>(ii) surplus to the filling requirements on the premises; and</p> <p>(c) in the case of the construction of a dam as a water storage, the volume of the dam does not exceed 500m³.</p> <p>S8.1 None applicable.</p> <p>O9 Development being filling and excavation is carried out such that—</p> <p>(a) the as constructed surface level of the land following filling which forms the top of a retaining wall or a fill batter is at or above the prescribed fill level; and</p> <p>(b) the as constructed surface gradient of any fill and excavation area is—</p> <p>(i) in the range of 0.5% to 1.5% such that the area is free draining; or</p> <p>(ii) steeper than that specified in paragraph (b)(i) if the as constructed surface profile achieves better integration with the surrounding topography; and</p> <p>(c) excavation only takes place below the defined limit where there is no adverse impact on a wetland and riparian habitat; and</p> <p>(d) a grass cover of up to 80% of the site area and batters is to be achieved within 6 months of the completion of the construction activities.</p> <p>S9.1 None applicable.</p> <p>O10 Development does not—</p> <p>(a) adversely impact on the flood storage capacity of a flood plain drainage channel, an overland flow path and a waterway, and</p> <p>(b) adversely impact on the hydraulic performance of a flood channel; and</p> <p>(c) increase or have the cumulative potential to increase the allowable afflux; and</p> <p>(d) adversely impact on the natural hydrological systems of a flood plain; and</p> <p>(e) adversely impact on a wetland, a waterway and riparian habitat.</p> <p>S10.1 None applicable.</p>
PSPs	Yes
Details	PSP1, PSP2. PSP 6
Other	No
Details	
Other Info	<p>PSP 6 Continued</p> <p>(iii) a surveyed contour plan of the premises which shows the following—</p> <p>(A) the existing contours at 0.25 metre intervals in the area of the proposed filling and at intervals of not more than 0.5 metres over the remainder of the premises; and</p> <p>(B) the alignment of the toe of the batter slope which is proposed to retain the filling; and</p> <p>(C) the grading of the proposed filled surface; and</p> <p>(D) the alignment of the permissible limit of imported filling; and</p> <p>(E) the proposed boundary of the imported filling; and</p> <p>(F) the boundary of inundation by the defined flood event before and after the filling; and</p> <p>(c) in the case of a development, involving compensated filling, with or without imported filling, in an area where an encroachment line has already been set by the local government—</p> <p>(i) details of any imported filling to be placed on the premises; and</p> <p>(ii) a hydrodynamic model study of the flood plain, based on a detailed topographic survey of the flood plain management area on the premises including a survey of the underwater topography in an adjoining waterway, where appropriate; and</p> <p>(iii) the hydraulic design of the development, including an assessment of its hydraulic impact on the 10 year, 20 year, 50 year and 100 year floods and the defined flood event; and</p> <p>(iv) a detailed description of the flood modelling undertaken; and</p> <p>(v) a surveyed contour plan of the premises including survey details of the underwater topography in an adjoining waterway, where appropriate which shows the following—</p> <p>(A) the existing contours at 0.25 metre intervals in the area of the proposed filling and the borrow areas and at intervals of not more than 0.5 metres over the remainder of the premises; and</p> <p>(B) the alignment of the toe of the batter slope which is proposed to retain the filling; and</p> <p>(C) the alignment of the encroachment line determined by correlation of the levels thereof provided by the local government with the surveyed existing contours; and</p> <p>(D) the boundary of inundation of the defined flood event; and</p> <p>(E) the borrow area; and</p> <p>(vi) topographic details from the flood plain modelling study in HECRAS format and including a suitable sensitivity analysis; and</p> <p>(vii) details of any adverse effects on the conveyance of tributary flood discharges into the main floodplain system; and</p> <p>(d) in the case of a development, involving compensated filling or both imported filling and compensated filling, in an area considered by the local government to be a significant area of the flood plain management area, and in which an encroachment line has not already been set by the local government—</p> <p>(i) a hydrodynamic modelling study; and</p> <p>(ii) the matters set out in section 3.1.1(a) (Information that may be requested in respect of a development application) of this planning scheme</p>

policy; and

(iii) a version of the floodplain model which includes imported filling to the encroachment lines at every cross-section and storage node within the model (version A); and

(iv) a version of the floodplain model which is derived by modifying version A to represent the details of the actually approved topographic changes within previous development approvals (version B); and

(v) a detailed description of the flood modelling undertaken; and

(vi) a surveyed contour plan of the premises which shows the following—

(A) the existing contours at 0.25 metre intervals in the area of the proposed filling and at intervals of not more than 0.5 metres over the remainder of the premises; and

(B) the alignment of the toe of the batter slope which is proposed to retain the filling; and

(C) the grading of the proposed filled surface; and

(D) the alignment of the permissible limit of imported filling; and

(E) the proposed boundary of the imported filling; and

(F) the demarcation line between any imported filling and any compensated filling; and (G) the boundary of inundation by the defined flood event before and after the filling; and

(e) in the case of a development, involving imported filling, compensated filling or both imported filling and compensated filling, in an area that is not considered by the local government to be a significant area of the flood plain management area—

(i) an investigation of the permissible limits of filling, using a steady flow hydraulic model such as the HECRAS model in the case of open channel waterways, or using normal hydraulic grade-line calculations accompanied by overland surcharge calculations in the case of major underground drainage systems; and

(ii) an investigation of similar filling on other premises along an appropriate reach of the relevant waterway; and

(iii) a detailed description of the flood modelling undertaken; and

(iv) a surveyed contour plan of the premises which shows the following—

(A) the existing contours at 0.25 metre intervals in the area of the proposed filling and in any proposed borrow areas, and at intervals of not more than 0.5 metres over the remainder of the premises; and

(B) the alignment of the toe of the batter slope which is proposed to retain the filling; and

(C) the grading of the proposed filled surface; and

(D) the demarcation line between any imported filling and any compensated filling; and

(E) the boundary of inundation by the defined flood event before and after filling; and (f) in the case of a development, involving imported filling in any area of the flood plain management area—

(i) a hydraulic design of the development, using topographic data which includes at least one surveyed cross-section of the floodway aligned through the proposed fill pad; and

(ii) an investigation of the joint effects of other similar developments, in combination with the development; and

(iii) a detailed description of the flood modelling undertaken; and

(iv) a surveyed contour plan, showing both the existing and proposed contours at an interval of 0.25 metres; and

(g) details of any adverse effects on the behaviour of a flood in excess of the defined flood event; and

(h) a survey setting out the existing and finished surface level contours to AHD of the premises; and

(i) section drawings and a plan with level notations which note the line of the defined flood event and the encroachment line of any proposed area of filling and excavation; and

(j) details of the proposed batter slopes and retaining walls on the premises; and

(k) details regarding the provision of stormwater run-off from any proposed area of filling and excavation; and

(l) details of how the natural drainage of adjacent premises has been catered for; and

(m) if the assessable development involves building work, a plan of the building work showing the proposed design floor levels to AHD; and

(n) a visual assessment as specified in Planning Scheme Policy No. 1 (Development application for a material change of use or reconfiguring a lot) 2006 and Planning Scheme Policy No. 2 (Development application for work) 2006; and (o) an existing vegetation protection plan as specified in Planning Scheme Policy No. 1 (Development application for a material change of use or reconfiguring a lot) 2006 and Planning Scheme Policy No. 2 (Development application for work) 2006; and

(p) an ecological impact assessment report or an environmental assessment report as specified in Planning Scheme Policy No. 1 (Development application for a material change of use or reconfiguring a lot) 2006 and Planning Scheme Policy No. 2 (Development application for work) 2006.

Part 4 Determining compliance with standards

4.1.1 Determining compliance with standards

(1) For the purposes of determining compliance with a standard of the flood plain management area code, a level and an afflux is to be—

(a) determined by the use of a hydraulic model which—

(i) is approved by the local government; and

(ii) in the case of premises in a district other than the prescribed flood district, has the model layout that is specified in DA Map 4 in Planning Scheme Policy No. 4 (Defined area maps) 2006; and

(b) reported to the nearest 0.01 metre such that values of 0.005 metres and greater are rounded up and values of 0.004 metres and less are rounded down.

(2) In this section hydraulic model means a model of water flow in a waterway in particular the evaluation of flow parameters such as storage and velocity.

LGA	Longreach
Planning Scheme	Ilfracombe
Adopted	16-Oct-06
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Highest recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural Zone / Small Town Zone / Industrial Zone / Open Space and Recreation Zone (4) Within the Rural “Zone”, “development”: (k) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; PC34 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. AS34: No acceptable solution is prescribed. Note: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events; and
Overlay Codes	No
Details	
PSPs	Yes
Details	PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	(2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	Yes
Details	PC5 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS5 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	Yes
Details	PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration

	of a lot. The following information should be provided: (j) details of any known flood levels;
Other	No
Details	
Other Info	

LGA	Longreach
Planning Scheme	Isisford
Adopted	12-Jun-06
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Highest recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural Zone / Small Town Zone / Open Space and Recreation Zone (4) Within the Rural “Zone”, “development”: (k) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events; PC34 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. AS34: No acceptable solution is prescribed. Note: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events; and
Overlay Codes	No
Details	
PSPs	Yes
Details	PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	(2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	Yes
Details	PC4 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.
Overlay Code	No
Details	
PSPs	Yes
Details	PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration

	of a lot. The following information should be provided: (j) details of any known flood levels;
Other	No
Details	
Other Info	

LGA	Longreach
Planning Scheme	Longreach
Adopted	9-Nov-06
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme –</p> <p>2. The bushfire and landslide components of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p> <p>The Minister for Local Government and Planning has advised the Integrated Development assessment System trigger for Department of Main Roads, and the flood provisions of State Planning Policy 1/03 continue to have effect.</p>
Mapped Q100 / DFE	No
Details	Highest recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone / Rural Residential Zone / Urban Zone / Commercial Zone / Industrial Zone / Mixed Use / Open Space and Recreation / “development”:</p> <p>(k) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC@ Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.</p> <p>AS@ No acceptable solution is prescribed.</p> <p>Note: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code</p> <p>5.2 Code Purpose</p> <p>(1) “Reconfiguring a lot”:</p> <p>(e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events; and</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(j) details of any known flood levels;</p>
Other	Yes
Details	<p>(2) Exempt Development</p> <p>(a) The following “Development” is exempt development within the local government area:</p> <p>(v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;</p> <p>Division 5: Standards For Stormwater Drainage</p> <p>5.1 Standards for Stormwater Drainage</p> <p>(1) Stormwater Drainage is in accordance with:</p> <p>Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council</p> <p>Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT</p>
Op Works Code	Yes
Details	<p>PC4 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p>

	2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	No
Details	
Other Info	

LGA	Mackay
Planning Scheme	Mackay
Adopted	15/12/2010
Flood Amendments	Yes
SPP Compliance	Yes
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme:</p> <p>4. Mitigating the Adverse Impacts of Flood, Bushfire & Landslide – SPP 1/03</p>
Mapped Q100 / DFE	Yes
Details	The data represents indicative limits of Riverine Flooding, generally based on the 1% AEP (100 year ARI) flood level. It is based on Digital Terrain Model information derived from aerial photography taken in 2004. This DTM was then hydraulically modelled to provide flooding information.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 6 Overall Outcomes for the Mackay City Centre Locality</p> <p>(g) all residential buildings are designed and constructed with floor levels in accordance with the Flood and Inundation Management Overlay Code.</p> <p>(4) Additional overall outcomes sought for the Wharf Precinct are the following:</p> <p>(f) flooding and levee bank issues are taken into consideration in the design and establishment of new uses, such that the importance of reducing the impacts of flooding are considered while recognising opportunities for new uses, such as a marina, to co-exist with the river's characteristics.</p> <p>Division 13 Overall Outcomes, Specific Outcomes and Probable and Acceptable Solutions for the Waterfront Zone</p> <p>(2) The overall outcomes for the Waterfront zone are the following:</p> <p>(i) The levee wall is integrated within the redevelopment of the zone (in development sites or in the River Street promenade) to provide flood mitigation to the CBD and minimise physical disruptions to River Street.</p> <p>Division 14 Overall Outcomes, Specific Outcomes and Probable and Acceptable Solutions for the Mixed Use Zone</p> <p>Specific Outcomes</p> <p>P3 Dwelling units are constructed above known flood heights.</p> <p>Acceptable/Probable Solutions</p> <p>S3 No habitable rooms are at or below ground floor.</p> <p>Division 6 Overall Outcomes for the Mackay Frame Locality</p> <p>(2) The overall outcomes for the Mackay Frame Locality are the following:</p> <p>e) urban development, other than for open space and some water-based recreation purposes, does not increase the risk of loss of life or property damage due to flooding or tidal inundation in major climatic events.</p> <p>Division 11 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Village Zone in the Mackay Frame Locality</p> <p>(2) The overall outcomes for the Village zone are:</p> <p>(c) Village lots are located on land known to be clear of flooding or inundation in climatic events with more than a 1 in 100 year return interval. Alternatively, land is able to be filled to achieve immunity from flooding or inundation, provided there are no adverse consequences on flooding in other parts of the City.</p> <p>Division 12 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Rural Zone in the Mackay Frame Locality</p> <p>(2) The overall outcomes for the Rural zone are:</p> <p>(3) The specific outcomes and acceptable/probable solutions for the Rural Zone in the Mackay Frame Locality are as follows:</p> <p>Specific Outcomes</p> <p>P1 The use of rural zoned land for rural purposes is sustainable over the long term by:</p> <p>(ii) using the land according to industry best practice, including:</p> <p>-risk reduction for natural hazards such as bushfire, flooding, land slips and soil erosion;</p> <p>Division 16 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Industry (High Impact) Zone in the Mackay Frame Locality</p> <p>(2) The overall outcomes for the Industry (High Impact) zone are the following.</p> <p>(d) Industrial developments have finished floor levels above the flood and inundation level of an event with a return probability greater than 1 in 100 years.</p> <p>Division 17 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Industry (Low Impact) Zone in the Mackay Frame Locality</p> <p>(2) The overall outcomes for the Industry (Low Impact) zone are the following.</p> <p>(d) Industrial developments have finished floor levels above the flood and inundation level of an event with a return probability greater than 1 in 100 years.</p> <p>Division 6 Overall Outcomes for the Mackay Hinterland Locality Code</p> <p>(2) The overall outcomes for the Mackay Hinterland Locality are the following:</p> <p>c) urban development, particularly for residential purposes, is limited to land unconstrained by excessive slope, inundation by flooding, high risk of land slip or bushfire hazard, proximity to major infrastructure and high impact activity areas including major transport routes and infrastructure.</p> <p>(4) In addition, overall outcomes for the Pioneer River & Southern Streams precinct are:</p> <p>f) intensification of land use in the villages and the coastal and rural settlements occurs only where serviced with appropriate development infrastructure including:</p> <p>(iii) sealed, flood-free road access;</p> <p>(5) In addition, overall outcomes for the O'Connell River & Northern Streams precinct are:</p> <p>(c) intensification of land use in the villages and the coastal and rural settlements occurs only where serviced with appropriate development infrastructure including:</p> <p>(iii) sealed flood-free road access</p> <p>(d) further to (c) above, the villages of Midge Point and Seaforth expand beyond the Village zone only where:</p> <p>(iii) additional lots created are free from inundation by flood waters</p> <p>Division 9 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Higher Density Residential Zone in the Mackay Hinterland Locality</p>

	<p>(3) The specific outcomes and acceptable/probable solutions for the Higher Density Residential Zone in the Mackay Hinterland Locality are as follows:</p> <p>Specific Outcomes</p> <p>P4 Any works undertaken in the Bakers Creek floodplain do not increase the height, alter the flow</p> <p>Acceptable/Probable Solutions</p> <p>S4 No solution specified.</p> <p>(3) The specific outcomes and acceptable/probable solutions for the Higher Density Residential Zone in the Mackay Hinterland Locality are as follows:</p> <p>Specific Outcomes</p> <p>P4 Any works undertaken in the Bakers Creek floodplain do not increase the height, alter the flow path or alter the velocity of flows of flood waters in Walkerston</p> <p>Acceptable / Probable Solutions</p> <p>S4 No solution specified.</p> <p>Division 10 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Urban Residential Zone in the Mackay Hinterland Locality</p> <p>Acceptable / Probable Solutions</p> <p>S1.3 Dwelling houses do not exceed two storeys in height after allowing for increased floor heights to accommodate flood heights.</p> <p>Division 13 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Rural Zone in the Mackay Hinterland Locality</p> <p>(3) The specific outcomes and acceptable/probable solutions for the Rural Zone in the Mackay Hinterland Locality are as follows:</p> <p>Specific Outcomes</p> <p>P1 The use of land within the Rural Zone for rural purposes is sustainable over the long term by:</p> <p>(ii) using the land according to industry best practice, including:</p> <p>(a) risk reduction for natural hazards such as bushfire, flooding, land slips and soil erosion;</p> <p>Division 14 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Village Zone in the Mackay Hinterland Locality</p> <p>(2) The overall outcomes for the Village zone are the following.</p> <p>(c) Village lots are located on land known to be clear of flooding or inundation in climatic events in accordance with the DFE. Alternatively, the land is filled to achieve immunity from flooding or inundation, provided there are no consequences on flooding in other parts of the City.</p> <p>(3) The overall outcomes for the Village zone in the Pioneer and Southern Streams precinct are:</p> <p>(c) Development in Bakers Creek occurs only where:</p> <p>(i) situated on land above the highest known flood and inundation levels for Bakers Creek;</p> <p>(6) The specific outcomes and acceptable/probable solutions for the Village Zone in the Mackay Hinterland Locality are as follows:</p> <p>Specific Outcome</p> <p>Pioneer River & Southern Streams Pre</p> <p>P1 Development in Baker's Creek occurs only where it can be situated above the known flood levels and are located so as not to adversely affect existing agricultural and industrial uses in the vicinity, or the water quality of Baker's Creek itself.</p> <p>Acceptable / Probable Solutions</p> <p>S1 Development in Baker's Creek:</p> <p>(i) is situated above the highest known flood and inundation levels for Baker's Creek;</p> <p>(ii) is a minimum of 250m from nearby agricultural or industrial uses; and</p> <p>(iii) is a minimum of 100m from the banks of Baker's Creek.</p> <p>Division 16 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Industry (High Impact) Zone in the Mackay Hinterland Locality</p> <p>(2) The overall outcomes for the Industry (High Impact) zone are the following.</p> <p>(c) Industry (High Impact) developments have finished floor levels above the flood and inundation level as defined in the Flood and Inundation Management Overlay Code.</p> <p>(d) Where additional drainage and filling works are provided the impact of flooding and inundation is not made worse as a consequence of such works.</p> <p>Division 17 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Industry (Low Impact) Zone in the Mackay Hinterland Locality</p> <p>(2) The overall outcomes for the Industry (Low Impact) zone are the following.</p> <p>d) Industry (Low Impact) developments have finished floor levels above the flood and inundation level as defined in the Flood and Inundation Management Overlay Code.</p> <p>e) Where additional drainage and filling works are provided the impact of flooding and inundation is not made worse as a consequence of such works.</p> <p>Division 19 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Public Purposes Zone in the Mackay Hinterland Locality</p> <p>(2) The overall outcome for the Public Purposes zone is:</p> <p>(a) Land set aside for public purposes continues to be:</p> <p>(ii) redeveloped with a floor clearance of flooding and inundation as defined in the Flood and Inundation Management Overlay Code.</p> <p>Division 8 Overall & Specific Outcomes and Probable & Acceptable Solutions for the Off-Shore Islands Locality - Special Activities (Tourism) Zone</p> <p>(2) The overall outcomes for the Special Activities (Tourism) zone are:</p> <p>(a) Tourist facilities:</p> <p>(b) Tourist accommodation and related facilities are designed and sited to minimise the risk of property damage or loss through flooding, inundation or bushfire hazard.</p> <p>Specific Outcome</p> <p>P3 Any accommodation component of tourist related developments is protected from the adverse consequences of flooding and inundation hazards.</p> <p>Acceptable / Probable Solutions</p> <p>S3 No solution specified.</p>
Use Codes	Yes
Details	<p>Division 2 Animal Husbandry Code</p> <p>Site Suitability</p> <p>Acceptable / Probable Solutions</p> <p>S4 Sites on which premises are located have the following characteristics:</p> <p>(i) slopes less than 10%;</p> <p>(ii) not subject to flooding at a frequency of greater than 1 in 50 years;</p>

	<p>P4 Premises used or developed for Intensive Animal Husbandry, Kennel and Stockyards: (iv) are free of flooding;</p> <p>Division 6 Child Care Centre Code</p> <p>Table 9-5 Specific Outcomes and Acceptable & Probable Solutions for the Child Care Centre Code</p> <p>Site Suitability</p> <p>Specific Outcomes</p> <p>P3 The premises are located: (iii) free from flooding, tidal surge or tidal inundation.</p> <p>Division 8 Dwelling House Code</p> <p>Table 9-7 Specific Outcomes and Acceptable and Probable Solutions for Dwelling House Code</p> <p>Building Flood Levels</p> <p>Specific Outcomes</p> <p>P6 A Dwelling House is provided on a floor level which has flood immunity such that persons and property are not placed at unreasonable risk of injury or damage caused by flooding or inundation.</p> <p>Acceptable / Probable Solutions</p> <p>S6 Building Floor Levels are provided in accordance with the minimum building floor levels as provided in Acceptable Solutions S1.1 – S1.5 of the Flood and Inundation Overlay code.</p> <p>Division 9 Environment and Infrastructure Code</p> <p>9.38 Overall Outcomes for the Environment and Infrastructure Code</p> <p>(i) the risk to life and property resulting from flooding and storm surge inundation is minimised;</p> <p>Table 9-8 Specific Outcomes and Acceptable & Probable Solutions for the Environment and Infrastructure Code</p> <p>Infrastructure</p> <p>Drainage Works</p> <p>Specific Outcome</p> <p>P8 In urban areas, the major drainage network is designed and constructed with the capacity to control stormwater flows under normal and minor system blockage conditions for the DFE applicable to drainage so that:</p> <p>(i) floodways are restricted to areas where there is no damage to property or hazards for motorists,</p> <p>Flooding</p> <p>Specific Outcome</p> <p>P1 Premises subject to risk of inundation or damage through flood are provided with immunity to that risk in order to reduce potential property damage and to ensure public safety.</p> <p>Acceptable/Probable Solutions</p> <p>S1.1 Development is sited on land that would not be subject to flooding during a DFE; or</p> <p>S1.2 For development comprising a residential element, the floors of all habitable rooms are located 300mm above the DFE; or</p> <p>S1.3 For non residential development or development involving temporary or moveable residential structures (e.g. caravan parks):</p> <p>(i) buildings are located and designed so that floor levels (except areas used for car parking) are 300mm above the DFE; or</p> <p>(ii) there is at least one evacuation route that remains passable for emergency evacuations during all floods up to and including the DFE.</p> <p>Specific Outcomes</p> <p>P2 There is no increase in the number of people living or working on a flood prone site, except where the premises are occupied on a short term or intermittent basis.</p> <p>Specific Outcome</p> <p>Acceptable/Probable Solutions</p> <p>S2 No solution specified</p> <p>P3 Development does not result in adverse impacts for the safety of people or the capacity to use land within a floodplain and does not involve:</p> <p>(i) Any physical alteration to a watercourse; or</p> <p>(ii) Net filling of 50 cubic metres; or</p> <p>(iii) The proposed works either:</p> <p>(A) avoid any reductions of on-site flood storage capacity and contain within the subject site any changes in depth/duration/velocity in flood waters of all floods up to and including the DFE; or</p> <p>(B) do not change the flood characteristics at the DFE outside the subject site in ways that result in:</p> <ul style="list-style-type: none"> - loss of flood storage; - loss of / changes to flow paths; - acceleration or retardation of flows; or - any reduction of flood warning times elsewhere on the floodplain. <p>Acceptable/Probable Solutions</p> <p>S3 No solution specified.</p> <p>Specific Outcome</p> <p>P3 Development does not result in adverse impacts for the safety of people or the capacity to use land within a floodplain and does not involve:</p> <p>(i) Any physical alteration to a watercourse; or</p> <p>(ii) Net filling of 50 cubic metres; or</p> <p>(iii) The proposed works either:</p> <p>(A) avoid any reductions of on-site flood storage capacity and contain within the subject site any changes in depth/duration/velocity in flood waters of all floods up to and including the DFE; or</p> <p>(B) do not change the flood characteristics at the DFE outside the subject site in ways that result in:</p> <ul style="list-style-type: none"> - loss of flood storage; - loss of / changes to flow paths; - acceleration or retardation of flows; or - any reduction of flood warning times elsewhere on the floodplain. <p>Acceptable/Probable Solutions</p> <p>S3 No solution specified.</p> <p>Specific Outcome</p> <p>P4 Storage and handling of hazardous substances on sites that are subject to risk of inundation or damage through flood, ensures that persons and property are not placed at unreasonable risk.</p> <p>Acceptable/Probable Solutions</p>
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	<p>S4 Storage or handling of substances that may be a hazard to the environment or human safety by the risk of contamination due to flooding:</p> <p>(i) is undertaken in accordance with a risk assessment; and</p> <p>(ii) provides for the storage of any hazardous substances above or securely isolated from the DFE level.</p> <p>Undefined Flood and Inundation Areas</p> <p>P6 Where flood limits are not identified, development is undertaken such that there is no adverse affects on flood levels or flows on the site or up-stream and down-stream of the site</p> <p>Acceptable/Probable Solutions</p> <p>S6 No solution specified.</p> <p>Signage</p> <p>Specific Outcome</p> <p>P2 In urban areas, the major drainage network is designed and constructed with the capacity to control stormwater flows under normal and minor system blockage conditions for a DFE (for industrial uses) so that:</p> <p>(i) floodways are restricted to areas where there is no damage to property or hazards for motorists, and</p> <p>(ii) runoff is directed to a lawful point of discharge through competently designed and constructed outlet works.</p> <p>Acceptable/Probable Solutions</p> <p>S2 No solution specified.</p> <p>Table 9-1 Specific Outcomes and Acceptable and Probable Solutions for the Animal Husbandry Code</p> <p>Specific Outcomes</p> <p>P4 Premises used or developed for Intensive Animal Husbandry, Kennel and Stockyards:</p> <p>(i) are located on gently undulating or flat terrain;</p> <p>(ii) are elevated to facilitate ventilation and drainage;</p> <p>(iii) have adequate vehicle access;</p> <p>(iv) are free of flooding;</p> <p>(v) are supplied with a reliable, potable water supply.</p> <p>Acceptable /Probable Solutions</p> <p>S4 Sites on which premises are located have the following characteristics:</p> <p>(i) slopes less than 10%;</p> <p>(ii) not subject to flooding at a frequency of greater than 1 in 50 years;</p> <p>Acceptable / Probable Solutions</p> <p>S4 Sites on which premises are located have the following characteristics:</p> <p>(i) slopes less than 10%;</p> <p>(ii) not subject to flooding at a frequency of greater than 1 in 50 years;</p>
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Assessment Criteria for the Flood and Inundation Management Overlay Code</p> <p>8.41 Overall outcomes for the Flood and inundation Management Overlay Code</p> <p>(1) The overall outcomes are the purpose of the Flood and Inundation Management Overlay Code.</p> <p>(2) The overall outcomes sought for the Flood and Inundation Management Overlay Code are to ensure development:</p> <p>(a) protects the safety of people and property from unreasonable risk from flooding and inundation hazard;</p> <p>(b) minimises damage and loss of property due to flooding and inundation;</p> <p>(c) restricts development encroaching into the flood plain;</p> <p>(d) provides a clear corridor for the conveyance of floodwaters;</p> <p>(e) storage of hazardous substances is undertaken having regard to public safety; and</p> <p>(f) protects the ecological functions of watercourses in the City.</p> <p>“Defined Flood Event (DFE)” means the flood event adopted by Mackay City Council for the management of development in a particular locality which for the purposes of this Planning Scheme is the 1% AEP (100 year ARI) flood event.</p> <p>- The DFE (Riverine Flooding) is shown on the Flooding and Inundation Management Overlay Map.</p> <p>- The DFE (Local Flooding) is used for the management of development in the following localities:</p> <p>(i) The Goodseponds and Jane Creek;</p> <p>(ii) Certain areas of Paget; and</p> <p>(iii) McCrearys Creek catchment.</p> <p>Where the DFE is different to this definition it will be expressed as either a % AEP or as a Reduced Level (RL). “Minimum Level” means the level corresponding to the 1 in 100 year frequency tidal surge plus an allowance factor for safety, stormwater drainage freeboard and minor wave effects. This level is as listed for the locations in the following table:</p> <p>Mackay Urban Area (‘Existing Areas’) RL 5.4 AHD</p> <p>Ball Bay / Haliday Bay / Seaforth RL 5.3 AHD</p> <p>Midge Point RL 5.0 AHD</p> <p>Building Floor Levels</p> <p>P1 Development maintains the safety of people on premises from all floods up to and including the DFE, or the defined “Minimum Level”, whichever is the greater.</p> <p>S1.1 Development is located on land above the level of flooding during the DFE, or the defined “Minimum Level”, whichever is the greater; or</p> <p>S1.2 Where development is located on land below the level of flooding during the DFE, or the defined “Minimum Level”:</p> <p>a) there is no increase in the number of people living or working on the site except on a short-term or intermittent basis (e.g. by construction workers, seasonal agricultural and forestry workers); and</p> <p>b) for all premises listed in Table 8-11, the minimum building floor level is the greater of:</p> <p>(i) at least 300mm above the DFE; or</p> <p>(ii) the defined ‘Minimum Level’ for the location of the site.</p> <p>c) in addition to the above requirements, the building floor level shall be a minimum of 225mm above natural ground level and will be sufficient to allow for relevant plumbing fixtures and minimum floor levels noted above.</p> <p>d) in addition to the above requirements, the building floor level shall be a minimum of 300mm above the top of the kerb level or crown of the adjacent bitumen road, whichever is greater.</p> <p>e) in addition to the above requirements, an allowance of an additional 600mm is made for higher wave effects and run up in the foreshore area.</p> <p>The foreshore area shall be taken as extending inland for a minimum of 100 metres from the toe of the frontal dune or HAT whichever is the</p>

	<p>highest.</p> <p>f) buildings are located and designed so that there is at least one evacuation route that remains passable for emergency evacuations during all floods up to and including the DFE.</p> <p>S1.3 Where new residential premises are proposed to be located on land in an existing area that is below the level of flooding, during the DFE, or the defined “Minimum Level”, the minimum building floor level is the greater of:</p> <p>a) at least 300mm above the DFE; or</p> <p>b) the defined “Minimum Level” for the location of the site.</p> <p>S1.4 Where existing residential premises, located on land below the level of flooding during the DFE, or the defined “Minimum Level”, are proposed to be extended by the addition of a Habitable Room (or rooms), the minimum building floor level of the new “Habitable Room” (or rooms) is the greater of:</p> <p>a) at least 300mm above the DFE; or</p> <p>b) the defined “Minimum Level” for the location of the site.</p> <p>S1.5 Where the filling of more than 400mm above the natural ground level is required to achieve the minimum floor levels, forms of construction other than “slab on ground” are provided.</p> <p>Ground Levels for Lots</p> <p>P1 Reconfiguring a lot where located in an area identified in the Flood and Inundation Management Overlay Map, provides that each lot created has a ground level which has flood immunity such that persons and property are not placed at unreasonable risk of injury or damage caused by flooding or inundation.</p> <p>S1.1 The minimum finished ground level for lots in new areas is the greater of;</p> <p>(i) at or above the DFE, or</p> <p>(ii) not less than 400mm below the defined ‘Minimum Level’ for the location of the site.</p> <p>S1.2 For lots in existing areas the existing ground level is not altered outside the existing building footprint.</p> <p>S1.3 For lots in new areas, filling levels ensure that there is no net loss of floodplain storage.</p> <p>S1.4 In the Rural and Rural Residential zone, lots are:</p> <p>(i) immune from inundation by flooding during the DFE; or</p> <p>(ii) include at least 1000m² within each lot above the DFE level and there is access to the elevated area constructed with a 50 year ARI trafficability.</p> <p>Operational Works (Earthworks)</p> <p>P2 Development does not result in adverse impacts on people’s safety or the capacity to use land within the flood plain.</p> <p>S2.1 Development:</p> <p>(i) complies with any applicable development criteria set out in a floodplain management plan; or</p> <p>(ii) where a floodplain management plan does not exist, either:</p> <p>(a) minimises reductions of on-site flood storage capacity and contains within the subject site any changes to depth/duration/velocity of floodwaters of all floods up to and including the DFE; or</p> <p>(b) does not change the flood characteristics of the DFE outside the subject site in ways that result in:</p> <p>(1) loss of flood storage</p> <p>(2) loss of/change to flow paths;</p> <p>(3) acceleration or retardation flows; or</p> <p>(4) reduction in flood warning times elsewhere on the floodplain.</p> <p>S2.2 In the Industry (High Impact) and Industry (Low Impact) Zones, hard-standing and outdoor storage areas are constructed to finished levels at least the height of an inundation or flood event with a 2% AEP (50 year ARI), provided that these works do not cause an increased risk of inundation in other parts of the City.</p> <p>P3 Where located on land identified in the Flood and Inundation Management Overlay Map, the existing ground level is not altered outside the footprint of a building by the excavation or filling of land.</p> <p>S3 No solution specified.</p> <p>P4 Public safety and stream flows in areas identified in the Flood and Inundation Management Overlay Map are maintained by limiting the extent and nature of development.</p> <p>S3 No solution specified.</p> <p>P5 Essential Services infrastructure, such as on-site electricity, gas, water supply, sewerage and telecommunications maintain their functions during a DFE.</p> <p>S5.1 Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood waters (e.g. electrical switch gear and motors, water supply pipeline air valves) are:</p> <p>(i) located above the DFE and/or</p> <p>(ii) designed and constructed to exclude floodwater intrusion and infiltration.</p> <p>S5.2 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the DFE.</p> <p>Hazardous Materials</p> <p>P6 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk on the site.</p> <p>S6.1 The manufacture of hazardous materials takes place above the DFE flood levels.</p> <p>S6.2 Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of flood waters.</p> <p>S6.3 The storage of hazardous materials is contained within a bunded area where the bund wall has a height of 300mm or more above the DFE, or the defined ‘Minimum Level’ for the location of the site, whichever is the greater, provided that these works do not cause an increased risk for the inundation in other parts of the City.</p> <p>Building Floor Levels</p> <p>P7 A Dwelling House is provided on a floor level which has flood immunity such that persons and property are not placed at unreasonable risk of injury or damage caused by flooding or inundation.</p> <p>S7 Building Floor Levels are provided in accordance with the minimum building floor levels as provided in Acceptable Solutions S1.1 to S1.5 of the Flood and Inundation Overlay Code.</p>
PSPs	Yes
Details	<p>TITLE: FLOOD & INUNDATION MANAGEMENT POLICY NO. 8</p> <p>Purpose of the Policy</p> <p>(1) The purpose of the Flood & Inundation Management Planning Scheme Policy is to provide guidance for proponents making a development application over land which is subject to flooding or tidal inundation.</p> <p>(2) In particular, this Policy provides guidance with respect to the extent of filling in the vicinity of the flood corridor limits (reclamation limits) and</p>

	<p>establishes information to be provided with any application involving development on flood/tidal inundation affected land.</p> <p>Supporting Information</p> <p>(1) Council may require information which includes:</p> <p>(a) A hydraulic study for nominated flood events and subsequent hydraulic analysis where suitable historic flood data is not available;</p> <p>(b) A flood frequency analysis of the available historical data to indicate a likely AEP of the recorded events with consideration of any changes to the flood plain that may affect run-off and flow rates; and</p> <p>(c) Where an existing suitable flood study exists for an area then, the data can be used as basis for further studies.</p> <p>Pioneer River, Gooseponds Creek, Janes Creek and Bakers Creek</p> <p>The following information is provided to assist applicants.</p> <p>Sections of the Pioneer River, Gooseponds/Janes Creek and Bakers Creek at Walkerston are under the Control of Pioneer River Improvement Trust (PRIT).</p> <p>Flood Level Assessment</p> <p>(1) Floor level assessments have been carried out for various AEP for the different streams within the Mackay Urban area. This is a continuing process and flood levels will be the subject of review from time to time as more land development occurs, further information becomes available and more details are sought.</p> <p>(2) In general the following flood level information is available for stream sections referred to herein:</p> <p>(a) Pioneer River: 1% AEP (100 year ARI)</p> <p>(b) Gooseponds/Jane Creek:</p> <p>(i) 2% AEP (50 year ARI)</p> <p>(ii) 1% AEP (100 year ARI)</p> <p>(c) Bakers Creek at Walkerston</p> <p>(i) 2% AEP (50 year ARI)</p> <p>(ii) 1% AEP (100 year ARI)</p> <p>Additional Stream Information</p> <p>Different circumstances apply to each stream and the following information relates to each stream.</p> <p>Pioneer River</p> <p>(1) The majority of the Pioneer River Section referred to in this Policy is provided with or is proposed in the future to be provided with some limited protection from a levee bank system.</p> <p>(2) Development levels for filling and building floor levels will vary depending on location and circumstances of the particular development.</p> <p>Gooseponds/Jane Creek</p> <p>The lower section of the Gooseponds from a location downstream of Willetts Road is provided with or proposed to be provided with a levee bank system. Development levels for filling and building floor levels in this section will vary depending on location and circumstances of the particular development. Upstream of Willetts Road a levee system will not apply.</p> <p>Bakers Creek at Walkerston</p> <p>Walkerston has been the subject of major flooding in the past wherein major areas of the town have been inundated. This is also expected to occur on future occasions.</p> <p>Advice from PRIT</p> <p>Where appropriate, Council will seek the comments of the Pioneer River Improvement Trust (PRIT).</p>
Other	Yes
Details	<p>3.1 Desired Environmental Outcomes</p> <p>(3) The Desired Environmental Outcomes for the City of Mackay area are as follows.</p> <p>(iv) community safety and buildings, structures and other physical infrastructure are not jeopardised by unacceptable risks due to natural hazards such as bushfire, excessive erosion and land slippage, disturbance of acid sulfate soils, or inundation by flood waters.</p>
Op Works Code	Yes
Details	<p>Division 17 Operational Works (Earthworks) Code</p> <p>9.77 Overall Outcomes for the Operational Works (Earthworks) Code</p> <p>(2) The overall outcome of the Operational Works (Earthworks) Code is to ensure that development involving excavation and filling minimises:</p> <p>(a) risk of property damage or loss of life by flooding or inundation on-site or off-site;</p>
Overlay Code	Yes
Details	<p>Assessment Criteria for the Flood and Inundation Management Overlay Code</p> <p>8.41 Overall outcomes for the Flood and inundation Management Overlay Code</p> <p>(1) The overall outcomes are the purpose of the Flood and Inundation Management Overlay Code.</p> <p>(2) The overall outcomes sought for the Flood and Inundation Management Overlay Code are to ensure development:</p> <p>(a) protects the safety of people and property from unreasonable risk from flooding and inundation hazard;</p> <p>(b) minimises damage and loss of property due to flooding and inundation;</p> <p>(c) restricts development encroaching into the flood plain;</p> <p>(d) provides a clear corridor for the conveyance of floodwaters;</p> <p>(e) storage of hazardous substances is undertaken having regard to public safety; and</p> <p>(f) protects the ecological functions of watercourses in the City.</p> <p>“Defined Flood Event (DFE)” means the flood event adopted by Mackay City Council for the management of development in a particular locality which for the purposes of this Planning Scheme is the 1% AEP (100 year ARI) flood event.</p> <p>- The DFE (Riverine Flooding) is shown on the Flooding and Inundation Management Overlay Map.</p> <p>- The DFE (Local Flooding) is used for the management of development in the following localities:</p> <p>(i) The Goodseponds and Jane Creek;</p> <p>(ii) Certain areas of Paget; and</p> <p>(iii) McCreadys Creek catchment.</p> <p>Where the DFE is different to this definition it will be expressed as either a % AEP or as a Reduced Level (RL). “Minimum Level” means the level corresponding to the 1 in 100 year frequency tidal surge plus an allowance factor for safety, stormwater drainage freeboard and minor wave effects. This level is as listed for the locations in the following table:</p> <p>Mackay Urban Area (‘Existing Areas’) RL 5.4 AHD</p> <p>Ball Bay / Haliday Bay / Seaforth RL 5.3 AHD</p> <p>Midge Point RL 5.0 AHD</p> <p>Building Floor Levels</p> <p>P1 Development maintains the safety of people on premises from all floods up to and including the DFE, or the defined “Minimum Level”,</p>

whichever is the greater.

S1.1 Development is located on land above the level of flooding during the DFE, or the defined “Minimum Level”, whichever is the greater; or

S1.2 Where development is located on land below the level of flooding during the DFE, or the defined “Minimum Level”:

a) there is no increase in the number of people living or working on the site except on a short-term or intermittent basis (e.g. by construction workers, seasonal agricultural and forestry workers); and

b) for all premises listed in Table 8-11, the minimum building floor level is the greater of:

(i) at least 300mm above the DFE; or

(ii) the defined ‘Minimum Level’ for the location of the site.

c) in addition to the above requirements, the building floor level shall be a minimum of 225mm above natural ground level and will be sufficient to allow for relevant plumbing fixtures and minimum floor levels noted above.

d) in addition to the above requirements, the building floor level shall be a minimum of 300mm above the top of the kerb level or crown of the adjacent bitumen road, whichever is greater.

e) in addition to the above requirements, an allowance of an additional 600mm is made for higher wave effects and run up in the foreshore area. The foreshore area shall be taken as extending inland for a minimum of 100 metres from the toe of the frontal dune or HAT whichever is the highest.

f) buildings are located and designed so that there is at least one evacuation route that remains passable for emergency evacuations during all floods up to and including the DFE.

S1.3 Where new residential premises are proposed to be located on land in an existing area that is below the level of flooding, during the DFE, or the defined “Minimum Level”, the minimum building floor level is the greater of:

a) at least 300mm above the DFE; or

b) the defined “Minimum Level” for the location of the site.

S1.4 Where existing residential premises, located on land below the level of flooding during the DFE, or the defined “Minimum Level”, are proposed to be extended by the addition of a Habitable Room (or rooms), the minimum building floor level of the new “Habitable Room” (or rooms) is the greater of:

a) at least 300mm above the DFE; or

b) the defined “Minimum Level” for the location of the site.

S1.5 Where the filling of more than 400mm above the natural ground level is required to achieve the minimum floor levels, forms of construction other than “slab on ground” are provided.

Ground Levels for Lots

P1 Reconfiguring a lot where located in an area identified in the Flood and Inundation Management Overlay Map, provides that each lot created has a ground level which has flood immunity such that persons and property are not placed at unreasonable risk of injury or damage caused by flooding or inundation.

S1.1 The minimum finished ground level for lots in new areas is the greater of;

(i) at or above the DFE, or

(ii) not less than 400mm below the defined ‘Minimum Level’ for the location of the site.

S1.2 For lots in existing areas the existing ground level is not altered outside the existing building footprint.

S1.3 For lots in new areas, filling levels ensure that there is no net loss of floodplain storage.

S1.4 In the Rural and Rural Residential zone, lots are:

(i) immune from inundation by flooding during the DFE; or

(ii) include at least 1000m² within each lot above the DFE level and there is access to the elevated area constructed with a 50 year ARI trafficability.

Operational Works (Earthworks)

P2 Development does not result in adverse impacts on people’s safety or the capacity to use land within the flood plain.

S2.1 Development:

(i) complies with any applicable development criteria set out in a floodplain management plan; or

(ii) where a floodplain management plan does not exist, either:

(a) minimises reductions of on-site flood storage capacity and contains within the subject site any changes to depth/duration/velocity of floodwaters of all floods up to and including the DFE; or

(b) does not change the flood characteristics of the DFE outside the subject site in ways that result in:

(1) loss of flood storage

(2) loss of/change to flow paths;

(3) acceleration or retardation flows; or

(4) reduction in flood warning times elsewhere on the floodplain.

S2.2 In the Industry (High Impact) and Industry (Low Impact) Zones, hard-standing and outdoor storage areas are constructed to finished levels at least the height of an inundation or flood event with a 2% AEP (50 year ARI), provided that these works do not cause an increased risk of inundation in other parts of the City.

P3 Where located on land identified in the Flood and Inundation Management Overlay Map, the existing ground level is not altered outside the footprint of a building by the excavation or filling of land.

S3 No solution specified.

P4 Public safety and stream flows in areas identified in the Flood and Inundation Management Overlay Map are maintained by limiting the extent and nature of development.

S3 No solution specified.

P5 Essential Services infrastructure, such as on-site electricity, gas, water supply, sewerage and telecommunications maintain their functions during a DFE.

S5.1 Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood waters (e.g. electrical switch gear and motors, water supply pipeline air valves) are:

(i) located above the DFE and/or

(ii) designed and constructed to exclude floodwater intrusion and infiltration.

S5.2 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the DFE.

Hazardous Materials

P6 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk on the site.

S6.1 The manufacture of hazardous materials takes place above the DFE flood levels.

S6.2 Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of flood waters.

	<p>S6.3 The storage of hazardous materials is contained within a bunded area where the bund wall has a height of 300mm or more above the DFE, or the defined 'Minimum Level' for the location of the site, whichever is the greater, provided that these works do not cause an increased risk for the inundation in other parts of the City.</p> <p>Building Floor Levels</p> <p>P7 A Dwelling House is provided on a floor level which has flood immunity such that persons and property are not placed at unreasonable risk of injury or damage caused by flooding or inundation.</p> <p>S7 Building Floor Levels are provided in accordance with the minimum building floor levels as provided in Acceptable Solutions S1.1 to S1.5 of the Flood and Inundation Overlay Code.</p>
PSPs	Yes
Details	<p>TITLE: FLOOD & INUNDATION MANAGEMENT POLICY NO. 8</p> <p>Purpose of the Policy</p> <p>(1) The purpose of the Flood & Inundation Management Planning Scheme Policy is to provide guidance for proponents making a development application over land which is subject to flooding or tidal inundation.</p> <p>(2) In particular, this Policy provides guidance with respect to the extent of filling in the vicinity of the flood corridor limits (reclamation limits) and establishes information to be provided with any application involving development on flood/tidal inundation affected land.</p> <p>Supporting Information</p> <p>(1) Council may require information which includes:</p> <p>(a) A hydraulic study for nominated flood events and subsequent hydraulic analysis where suitable historic flood data is not available;</p> <p>(b) A flood frequency analysis of the available historical data to indicate a likely AEP of the recorded events with consideration of any changes to the flood plain that may affect run-off and flow rates; and</p> <p>(c) Where an existing suitable flood study exists for an area then, the data can be used as basis for further studies.</p> <p>Pioneer River, Gooseponds Creek, Janes Creek and Bakers Creek</p> <p>The following information is provided to assist applicants.</p> <p>Sections of the Pioneer River, Gooseponds/Janes Creek and Bakers Creek at Walkerston are under the Control of Pioneer River Improvement Trust (PRIT).</p> <p>Flood Level Assessment</p> <p>(1) Floor level assessments have been carried out for various AEP for the different streams within the Mackay Urban area. This is a continuing process and flood levels will be the subject of review from time to time as more land development occurs, further information becomes available and more details are sought.</p> <p>(2) In general the following flood level information is available for stream sections referred to herein:</p> <p>(a) Pioneer River: 1% AEP (100 year ARI)</p> <p>(b) Gooseponds/Jane Creek:</p> <p>(i) 2% AEP (50 year ARI)</p> <p>(ii) 1% AEP (100 year ARI)</p> <p>(c) Bakers Creek at Walkerston</p> <p>(i) 2% AEP (50 year ARI)</p> <p>(ii) 1% AEP (100 year ARI)</p> <p>Additional Stream Information</p> <p>Different circumstances apply to each stream and the following information relates to each stream.</p> <p>Pioneer River</p> <p>(1) The majority of the Pioneer River Section referred to in this Policy is provided with or is proposed in the future to be provided with some limited protection from a levee bank system.</p> <p>(2) Development levels for filling and building floor levels will vary depending on location and circumstances of the particular development.</p> <p>Gooseponds/Jane Creek</p> <p>The lower section of the Gooseponds from a location downstream of Willetts Road is provided with or proposed to be provided with a levee bank system. Development levels for filling and building floor levels in this section will vary depending on location and circumstances of the particular development. Upstream of Willetts Road a levee system will not apply.</p> <p>Bakers Creek at Walkerston</p> <p>Walkerston has been the subject of major flooding in the past wherein major areas of the town have been inundated. This is also expected to occur on future occasions.</p> <p>Advice from PRIT</p> <p>Where appropriate, Council will seek the comments of the Pioneer River Improvement Trust (PRIT).</p>
Other	No
Details	
Other Info	No

LGA	Mackay
Planning Scheme	Mirani
Adopted	14/10/2009
Flood Amendments	Yes
SPP Compliance	No
Details	State Planning Policies The Minister for Infrastructure and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme: 2. Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire Only) – SPP 1/03
Mapped Q100 / DFE	No
Details	Q100 Adopted by Provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>TABLE 4-1 SPECIFIC OUTCOMES AND PROBABLE SOLUTIONS FOR THE URBAN LOCALITY CODE</p> <p>Safety and Amenity O14 The safety of residents and property from the effects of natural hazards is maximised S14.1 Uses, works and lots have a minimum flood immunity of Q100.</p> <p>Infrastructure O20 Development has safe, all-weather, flood-free vehicle access.</p> <p>Hazards O26 The safety of people, property and hazardous materials from all floods up to and including a Q100 flood is maintained. S26.1 Development is not sited on land subject to flooding during a Q100 flood event. AND S26.2 Works do not involve any physical alteration to a watercourse or flood way, including vegetation clearing or net filling exceeding 50m³.AND S26.3 The manufacture or storage in bulk of hazardous materials is located above the Q100 flood level. AND S26.4 Infrastructure is located above the Q100 flood level, or is designed, constructed and operated to prevent damage or intrusion by flood waters.</p> <p>4.2 RURAL LOCALITY CODE</p> <p>TABLE 4-2 SPECIFIC OUTCOMES AND PROBABLE SOLUTIONS FOR THE RURAL LOCALITY CODE</p> <p>O20 Development has safe, all-weather, flood-free vehicle access. O26 The safety of people, property and hazardous materials from all floods up to and including a Q100 flood is maintained. S26.1 Development is not sited on land subject to flooding during a Q100 flood event. AND S26.2 Works do not involve any physical alteration to a watercourse or flood way, including vegetation clearing or net filling exceeding 50m³.AND S26.3 The manufacture or storage in bulk of hazardous materials is located above the Q100 flood level. AND S26.4 Infrastructure is located above the Q100 flood level, or is designed, constructed and operated to prevent damage or intrusion by flood waters.</p>
Use Codes	Yes
Details	<p>5.1 ACCOMMODATION UNITS, MULTIPLE DWELLING UNITS OR TOURIST ACCOMMODATION CODE</p> <p>Specific Outcomes O3 The site is topographically suitable for use for accommodation units, multiple dwelling units or tourist accommodation. S3.2 The site is well drained and has a minimum flood immunity of Q100.</p> <p>5.3 CARAVAN PARK CODE</p> <p>Site Suitability O7 Caravan park and site access is not subject to flooding. S7.1 The areas of the site used for accommodation have a minimum flood immunity of Q100 and are not located in an overland flow path. AND S7.2 Site access has a flood immunity of at least Q5.</p> <p>5.4 DWELLING HOUSE CODE</p> <p>Specific Outcome O2 Dwelling house and site access is not subject to flooding. Specific Outcome O3 Dependant person's accommodation and site access is not subject to flooding. Specific Outcome O7 Premises are not subject to flooding. S7.1 Areas of the site accessed by residents and staff, including all buildings, access, circulation and parking facilities, useable open space areas, utility areas and the like, have a minimum flood immunity of Q100.</p> <p>6.2 INDUSTRIAL USE CLASS CODE</p> <p>S8.2 The storage of potentially contaminating substances, and areas where potentially contaminating substances are used, are contained within a building having a minimum floor level above the Q100 flood level.</p>
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY NO. 3 (DEVELOPER CONTRIBUTIONS FOR PARKLAND)</p> <p>Council may, at its sole discretion, accept the dedication of land within an approved development, and/or the provision of associated parkland works, as part of the contribution for that development. In all such cases, any such land to be dedicated shall be fully useable for its intended purpose as parkland, flood free (unless Council agrees otherwise) and suitably located within the approved development, to Council's</p>

	<p>satisfaction. Where land is accepted in lieu of part of the monetary contribution, such land shall be dedicated to Council in fee simple and at no cost to Council.</p> <p>Planning Scheme Policy No. 4 (Engineering Design and Construction Manual)</p> <p>1.3 SITE AND ROAD LAYOUT (ROADS AND STREETS)</p> <p>1.3.1 General</p> <p>The factors to be taken into consideration when designing new subdivisions are as follows:- Flooding and ponding.</p> <p>1.4 Earthworks</p> <p>1.4.4 Batter Treatments</p> <p>Cut and fill batters shall not straddle allotment or road reserve boundaries or extend into existing parkland reserves unless approved by Council. Where filling is required to meet flood level criteria the filling may extend onto the adjoining land with the owner's written approval. This filling shall have a 1m wide strip at a slope of between 1:200 and 1:20 outside the property line and a batter with a maximum slope of 1:5.</p> <p>1.4.5 Allotment Levels and Access</p> <p>Levels</p> <p>The final allotment levels shall be above the minimum development levels detailed in the Council's Planning Scheme. These development levels make allowance for:-</p> <ul style="list-style-type: none"> -River and stream flooding. -Local flooding. <p>Stormwater Drainage</p> <p>1.5.9 Detention Basins</p> <p>Design Standards</p> <p>The design of the detention basin shall be checked for its performance during floods resulting from the probable maximum precipitation to ensure that sudden catastrophic failure will not occur, and that escape routes for excess discharge are provided at locations where public safety will not be endangered.</p> <p>Water Reticulation</p> <p>1.8.16 Pump Stations</p> <p>Construction Generally</p> <p>A pump station shall generally include provision for the following:-</p> <ul style="list-style-type: none"> - Floor of building to be above 1 in 100 year flood level. <p>1.9 Sewer Reticulation</p> <p>1.9.13 Pump Stations</p> <p>Construction Generally</p> <p>All pump stations shall include the following:-</p> <ul style="list-style-type: none"> Top of pump station to be 300mm above 1 in 50 year flood level.
Other	Yes
Details	<p>2.2 DESIRED ENVIRONMENTAL OUTCOMES</p> <p>2.2.3 Cultural, Economic, Physical and Social Well Being of People and Communities</p> <p>(26) The safety of the communities is maintained by ensuring development does not occur in areas prone to bushfire, flood and/or landslide.</p>
Op Works Code	Yes
Details	<p>7.1 FILLING AND EXCAVATION CODE</p> <p>7.1.3 Overall Outcomes and Purpose of the Code</p> <p>(2) The overall outcomes sought by the Filling and Excavation Code are to avoid:</p> <p>(c) an increase in flooding or drainage problems;</p> <p>Specific Outcome</p> <p>O9 Filling or excavation does not:</p> <p>a) cause any reduction in upstream or downstream flood immunity;</p> <p>Specific Outcome</p> <p>S9.2 On-site flood mitigation measures, such as detention basins, are provided.</p> <p>In partial fulfilment of O10:</p> <p>Lots in the Residential Zone are located within 400 metres safe and convenient walking distance of a local urban park: that:</p> <p>b) is entirely above the Q100 flood level</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Mackay
Planning Scheme	Sarina
Adopted	26/04/2005
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Environment, Local Government, Planning and Women has identified the following State Planning Policies (SPPs) as having been appropriately reflected in the planning scheme:</p> <p>-SPP 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p>
Mapped Q100 / DFE	No
Details	<p>Q100 Used in Provisions</p> <p>Storm Surge Mapped</p> <p>Riverine Flooding Not Mapped</p>
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 2—Assessment Criteria for Open Space Zone</p> <p>4.6 Overall Outcomes for Open Space Zone Code</p> <p>(2) The overall outcomes sought for the Open Space Zone are the following:</p> <p>Natural flood and drainage processes;</p> <p>Division 6—Assessment Criteria for Rural Residential Zone</p> <p>4.26 Overall Outcomes for the Rural Residential Zone</p> <p>(2) The overall outcomes sought for the Rural Residential Zone are as follows:</p> <p>(h) Rural residential development occurs on land with a slope less than 15%, and on land free from flooding.</p> <p>Division 8—Assessment Criteria for Town Zone</p> <p>4.38 Specific Outcomes</p> <p>(1) The specific outcomes sought for each precinct in the Town Zone are the following:</p> <p>(h) Rural Precinct:</p> <p>(i) Residential expansion occurs in areas adjacent to and consolidates existing residential areas and; lots are above the 1 in 100 year flood event levels.</p>
Use Codes	Yes
Details	<p>PART 6 ASSESSMENT PROVISIONS FOR DEVELOPMENT OF A STATED PURPOSE OR A STATED TYPE</p> <p>Division 2—Building Matters</p> <p>6.9 Specific Outcomes and Probable Solutions</p> <p>Specific Outcome</p> <p>SO4 Buildings and structures are located to minimise impacts from natural disasters including flooding.</p> <p>Probable Solution</p> <p>PS4.1 Buildings and structures are constructed at least 0.3m above 5.0AHD in coastal communities in the Town Zone as identified on Zoning Map ZM3 and the Village Zone on Zoning Maps ZM1c, ZM1d & ZM1e or 0.3m above the 100 Year ARI (including 100 Year ARI and 50 Year ARI) identified on Overlay Map NHOM3 or 0.3m above the 1 in 100 year flood event for other parts of the Shire.</p> <p>Division 4—Commercial Development</p> <p>6.17 Specific Outcomes and Probable Solutions</p> <p>Specific Outcomes</p> <p>SO2 The buildings and structures are located to minimise impacts from natural disasters.</p> <p>Probable Solution</p> <p>PS2.1 Buildings and structures are constructed at least 0.3m above 5.0 AHD in coastal communities in the Town Zone as identified on Zoning Map ZM3 and the Village Zone on Zoning Maps ZM1c, ZM1d & ZM1e or 0.3m above the 100 Year ARI (including 100 Year ARI and 50 Year ARI) identified on Overlay Map NHOM3 in coastal communities or 0.3m above the 1 in 100 year flood event for other parts of the Shire.</p> <p>Division 8—House</p> <p>6.33 Specific Outcomes and Probable Solutions</p> <p>Specific Outcomes</p> <p>SO2 Buildings and structures are located to minimise impacts from natural disasters including flooding and bushfires.</p> <p>Probable Solutions</p> <p>PS2.1 Buildings and structures are constructed at least 0.3m above 5.0AHD in coastal communities in the Town Zone as identified on Zoning Map ZM3 and the Village Zone on Zoning Maps ZM1c, ZM1d & ZM1e or 0.3m above the 100 Year ARI (including 100 Year ARI and 50 Year ARI) identified on Overlay Map NHOM3 or 0.3m above the 1 in 100 year flood event for other parts of the Shire.</p> <p>Division 9—Industrial Development</p> <p>6.37 Specific Outcomes and Probable Solutions</p> <p>Probable Solutions</p> <p>PS2.3 The building:</p> <p>(i) has a building height that does not exceed 8.5m; and</p> <p>(ii) is constructed at least 0.3m above 5.0AHD in coastal communities in the Town Zone as identified on Zoning Map ZM3 and the Village Zone on Zoning Maps ZM1c, ZM1d & ZM1e or 0.3m above the 100 Year ARI (including 100 Year ARI and 50 Year ARI) identified on Overlay Map NHOM3 or 0.3m above the 1 in 100 year flood event for other parts of the Shire;</p> <p>Division 10—Intensive Animal Industry</p> <p>6.41 Specific Outcomes and Probable Solutions</p> <p>Specific Outcomes</p> <p>SO5 The site area has acceptable flood immunity.</p> <p>Probable Solutions</p> <p>PS5.1 The site area is located above the 1 in 100 year flood event.</p> <p>Division 11—Multiple Dwelling and Motel</p>

	6.45 Specific Outcomes and Probable Solutions Specific Outcomes SO9 Buildings and structures are located to minimise impacts from natural disasters including flooding and bushfires. PS9.1 Buildings or structures are constructed at least 0.3m above 5.0AHD in coastal communities in the Town Zone as identified on Zoning Map ZM3 and the Village Zone on Zoning Maps ZM1c, ZM1d & ZM1e or 0.3m above the 100 Year ARI (including 100 Year ARI and 50 Year ARI) identified on Overlay Map NHOM3 or 0.3m above the 1 in 100 year flood event for other parts of the Shire;
ROL Code	Yes
Details	Division 12—Reconfiguring a Lot 6.49 Specific Outcomes and Probable Solutions PART A: Provisions Applicable to Reconfiguration of Lots in the Rural Zone Probable Solutions PS1.1 Lot boundaries relate to natural features such as ridges or other catchment boundaries, drainage lines or flood flows, or remnant stands of vegetation; Specific Outcome SO2 The reconfiguration of lots provides for protection of life and property from risk of flooding. PART B: Provisions Applicable to Reconfiguration of Lots in the Rural Residential Zone Specific Outcomes Lot Size and Configuration SO4 Rural residential lots are located and designed such that they: (iii) provide for a high level of residential amenity, access to services and facilities, and safety from risk of natural hazards such as flooding, land slip and bushfire; Specific Outcomes SO6 The reconfiguration of lots provides for protection of life and property from risk of flooding. Probable Solutions PS6.1 Lots are located at a level of RL 5.0AHD or above, or above the 1 in 100 year flood event, whichever is the higher; and PS6.2 Existing patterns and levels of upstream and downstream drainage are maintained. PART C: Provisions Applicable to Reconfiguration of Lots in Other Zones Specific Outcomes Lot Layout and Design SO11 The reconfiguration of lots provides for protection of life and property from risk of flooding. PS11.1 Lots are located at a level of RL 5.0AHD or above, or above the 1 in 100 year flood event, whichever is the higher; and PS11.2 Existing patterns and levels of upstream and downstream drainage are maintained.
Overlay Codes	Yes
Details	Division 6 – Assessment Criteria for the Natural Hazards Management Areas Overlay Storm Surge SO3 Life and property is protected from the risk of storm surge PS3.1 Buildings or structures are constructed at least a minimum of 0.3m above 5.0AHD in coastal communities in the Town Zone as identified on Zoning Map ZM3 and the Village Zone on Zoning Maps ZM1c, ZM1d & ZM1e or 0.3m above the 100 Year ARI (including 100 Year ARI and 50 Year ARI) identified on Overlay Map NHOM3.
PSPs	Yes
Details	PLANNING SCHEME POLICY 5—Standards for Property Access Design and Construction 6.0 ACCESS VIA UNIMPROVED ROAD RESERVE 6.3 The standard of road will be dependent on the traffic volume to be carried. The minimum standard for a low volume traffic road is: (iii) Drainage: minor – Q5 under-road drainage major – Q1 under-road drainage/floodway
Other	Yes
Details	Division 2—Strategic Framework 1.6 Strategies for Beach Communities and Koumala (4) Residential expansion at all beachside communities is relatively modest and restricted to ensure development does not occur in areas subject to flooding, storm surge, or areas of ecological value.
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Maranoa
Planning Scheme	Bendemere
Adopted	26/05/2006
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme: 3. State Planning Policy 1/03-Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, except for Flood Assessment provisions.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Overall Outcomes for Town Zone Code (2) The code seeks to ensure that development within the Town Zone: (l) is located and designed in ways that minimise the need for flood and landscape mitigation, and to protect people and premises from such natural events; PC 13 Flooding Premises are designed and located so as: (a) not to adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact of the extent and magnitude of flooding. Acceptable Solution AS 13.1 No solution specified.</p> <p>Overall Outcomes for Rural Zone Code 2) The code seeks to ensure that development within the rural zone: (k) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation and to protect people and premises from such natural events; PC 15 Flooding Premises are designed and located so as: (a) not to adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact of the extent and magnitude of flooding AS 15.1 No solution specified.</p>
Use Codes	Yes
Details	<p>5.3 Filling and Excavation Code PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS FOR THE FILLING AND EXCAVATION CODE PC 3 Drainage Existing drainage or flood flows, either upstream or downstream of the site, are maintained. AS 3.1 Filling or excavation does not cause ponding on the site or on nearby land. AS 3.2 Filling and excavation does not interrupt water-flow in any overland flow path. AS 3.3 The works do not impact on the take of runoff water controlled under the provisions of a Water Resources Plan approved under the Water Act 2000.</p>
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>7.0 PART 7 - PLANNING SCHEME POLICIES Planning Scheme Policy 1 - Information Council May Request 2.5 Infrastructure (1) Sufficient detail should be provided to enable Council to accurately assess infrastructure requirements. The following information should be provided: - known or determined flood levels; 2.10 Reconfiguring A Lot (1) Sufficient detail should be provided to enable Council to accurately assess proposed reconfiguration of a lot. The following information should be provided: details of any known flood levels; Information Applicants should be aware of Applicants should be aware of the following pieces of legislation, plans or State Planning Policies (SPP), which may be used in assessing their application: - SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide and Guideline for SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Other	Yes
Details	<p>Division 3 – Planning Scheme Structural Elements 1.12 Assessment Provisions (1) Exempt Development (v) development involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply and sewerage treatment plants; Schedule 6 - Standards for Stormwater Drainage</p>

	<p>Standards for Stormwater Drainage are in accordance with:</p> <p>(2) Australian Rainfall and Runoff (Volume 1 A guide to Flood Estimation).</p> <p>Schedule 8 - Environmental Management Plan Guidelines</p> <p>(3) Environmental Management Plan:</p> <p>i. An Environmental Management Plan shall be submitted with an application that conserves and protects areas identified by and/or considered by Council to be subjected to, or potentially subject to landslip, erosion, erosive flooding, salinity or any other form of land degradation; or for areas where building work may impact on the environment and amenity of the neighbourhood.</p> <p>ii. The Environmental Management Plan is required to address only the environmental issues relevant to the particular application. For example, if only flooding was identified for the application, the Environmental Management Plan will then only be required to address issues such as flooding and water quality.</p> <p>(m) Flooding</p> <p>Analyse inundation problems and proposes solutions acceptable to Council, that do not detrimentally impact upon adjacent landowners, natural water courses or flood levels in the general area.</p> <p>(n) Remedial Measures</p> <p>Detail remedial action to be taken in cases where natural watercourses, land or flood levels are adversely effected by the proposal.</p>
Op Works Code	Yes
Details	<p>5.3 Filling and Excavation Code</p> <p>PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS FOR THE FILLING AND EXCAVATION CODE</p> <p>PC 3 Drainage</p> <p>Existing drainage or flood flows, either upstream or downstream of the site, are maintained.</p> <p>AS 3.1 Filling or excavation does not cause ponding on the site or on nearby land.</p> <p>AS 3.2 Filling and excavation does not interrupt water-flow in any overland flor path.</p> <p>AS 3.3 The works do not impact on the take of runoff water controlled under the provisions of a Water Resources Plan approved under the Water Act 2000.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Maranoa
Planning Scheme	Booringa
Adopted	27/10/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Maximum Recorded Flood
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>4.1 Rural “Zone”</p> <p>4.1.3.3 Code Purpose</p> <p>(4) Within the Rural “Zone”, “development”:</p> <p>(j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events;</p> <p>4.1.3.4 Performance Criteria, Acceptable Solutions and Self Assessable Applicability – “Material change of Use”</p> <p>PC34 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.*</p> <p>*To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.</p> <p>4.2 Small Town “Zone”</p> <p>4.2.3.3 Code Purpose</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(5) Within the Small Town “Zone”, “development”:</p> <p>h) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC32 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding</p> <p>4.3.3 Urban “Zone” Code</p> <p>4.3.3.3 Code Purpose</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(4) Within the Urban “Zone”, “development”:</p> <p>(h) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC32 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding</p> <p>4.4.3 Commercial “Zone” Code</p> <p>4.4.3.3 Code Purpose</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(4) Within the Commercial “Zone”, “development”:</p> <p>(h) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC27 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.</p> <p>4.5.3 Industrial “Zone” Code</p> <p>4.5.3.3 Code Purpose</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(g) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC28 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property;</p> <p>and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.</p> <p>4.6.3 Open Space and Recreation “Zone” Code</p> <p>4.6.3.3 Code Purpose</p>

	The following outcomes are the Purpose of the Code: (4) “Development” in areas other than protected areas: (i) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events;
Use Codes	No
Details	
ROL Code	Yes
Details	PART 5 RECONFIGURING A LOT CODE 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events;
Overlay Codes	No
Details	
PSPs	Yes
Details	PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	PART 1 INTRODUCTION 1.4 General Assessment Provisions (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Maranoa
Planning Scheme	Bungil
Adopted	24/11/2006
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme:</p> <p>3. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, except for Flood assessment provisions Approval to adopt this planning scheme is conditional upon the continued operation and effect of:</p> <p>2. Flood assessment provisions State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Mapped Q100 / DFE	No
Details	Highest Recorded
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Overall Outcomes for Town Zone Code</p> <p>(2) The code seeks to ensure that development within the Town Zone:</p> <p>(l) is located and designed in ways that minimise the need for flood and landscape mitigation, and to protect people and premises from such natural events;</p> <p>Performance Criteria</p> <p>PC 15 Flooding</p> <p>Premises are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact of the extent and magnitude of flooding.*</p> <p>*One way an applicant can demonstrate compliance with PC15 is to adopt the maximum recorded flood as an indication of flood level.</p> <p>Overall Outcomes for Rural Zone Code</p> <p>(2) The code seeks to ensure that development within the rural zone:</p> <p>(k) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation and to protect people and premises from such natural events;</p> <p>Performance Criteria</p> <p>PC 15 Flooding</p> <p>Premises are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact of the extent and magnitude of flooding</p>
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PART 7 PLANNING SCHEME POLICIES</p> <p>Planning Scheme Policy 1 - Information Council May Request</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable Council to accurately assess infrastructure requirements. The following information should be provided:</p> <p>- known or determined flood levels;</p> <p>2.0 Information Requirements</p> <p>2.10 Reconfiguring A Lot</p> <p>(1) Sufficient detail should be provided to enable Council to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>details of any known flood levels;</p> <p>Information Applicants should be aware of Applicants should be aware of the following pieces of legislation, plans or State Planning Policies (SPP), which may be used in assessing their application:</p> <p>SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide and Guideline for SPP</p> <p>1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p>
Other	Yes
Details	<p>PART 1 - INTRODUCTION</p> <p>1.12 Assessment Provisions</p> <p>(1) Exempt Development</p> <p>(a) The following is exempt development within the local government area of Bungil:</p> <p>(vi) development involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply and sewerage treatment plants;</p> <p>Schedule 7 - Standards for Stormwater Drainage</p> <p>(1) Standards for Stormwater Drainage are in accordance with:</p> <p>Australian Rainfall and Runoff (Volume 1 A guide to Flood Estimation).</p> <p>Schedule 9 - Environmental Management Plan Guidelines</p> <p>(3) Environmental Management Plan:</p>

	<p>i. An Environmental Management Plan shall be submitted with an application that conserves and protects areas identified by and/or considered by Council to be subjected to, or potentially subject to landslip, erosion, erosive flooding, salinity or any other form of land degradation, or for areas where building work may impact on the environment and amenity of the neighbourhood.</p> <p>(m) Flooding Analyse inundation problems and propose solutions acceptable to Council, that do not detrimentally impact upon adjacent landowners, natural water courses or flood levels in the general area.</p> <p>(n) Remedial Measures Detail remedial action to be taken in cases where natural watercourses, land or flood levels are adversely effected by the proposal.</p>
Op Works Code	Yes
Details	<p>PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS FOR THE FILLING AND EXCAVATION CODE</p> <p>PC 3 Drainage - Existing drainage or flood flows, either upstream or downstream of the site, are maintained.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Maranoa
Planning Scheme	Roma
Adopted	22/11/2006
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme:</p> <p>3. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, except for Flood assessment provisions</p> <p>Approval to adopt this planning scheme is conditional upon the continued operation and effect of:</p> <p>2. Flood assessment provisions State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p>
Mapped Q100 / DFE	Yes
Details	Q100 Overlay Map
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Overall Outcomes for Urban Area Code</p> <p>PC 20 Flooding</p> <p>Premises are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent and magnitude of flooding. *</p> <p>* To assist the applicant to demonstrate compliance with PC 20, the maximum recorded flood may be adopted as an indication of flood level, as identified on Map R6 - 1 in 100 Year Flood Event.</p> <p>Overall Outcomes for Rural Area</p> <p>(2) The specific outcomes sought for the Rural Area are to ensure development:</p> <p>(j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation and to protect people and premises from such natural events;</p> <p>Rural Area Code (Includes the whole of Roma Town outside the area of the Urban Area shown on Map P1)</p> <p>PC 21 Flooding</p> <p>Premises are designed and located so as:</p> <p>a) not to adversely impacted upon by flooding;</p> <p>b) to protect life and property; and</p> <p>c) not to have an undesirable impact of the extent and magnitude of flooding*</p> <p>*To assist the applicant to demonstrate compliance with PC 21, the maximum recorded flood may be adopted as an indication of flood level.</p>
Use Codes	Yes
Details	<p>PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS FOR THE FILLING AND EXCAVATION CODE</p> <p>Performance Criteria</p> <p>PC 3 Existing drainage or flood flows, either upstream or downstream of the site, are maintained.</p>
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PART 7 - PLANNING SCHEME POLICIES</p> <p>Planning Scheme Policy 1 - Information Council May Request</p> <p>2.0 Information Requirements</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable Council to accurately assess infrastructure requirements. The following information should be provided: known or determined flood levels;</p> <p>2.10 Reconfiguring A Lot</p> <p>(1) Sufficient detail should be provided to enable Council to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>details of any known flood levels;</p> <p>Information Applicants should be aware of</p> <p>Applicants should be aware of the following pieces of legislation, plans or State Planning Policies (SPP), which may be used in assessing their application:</p> <p>SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide and Guideline for</p> <p>SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Other	Yes
Details	<p>Division 2 – Strategic Framework</p> <p>1.4 Strategic Framework</p> <p>(1) Residential development will be located in the Residential Zone clear of the flood inundated area of the 1 in 100 year event.</p> <p>(1) Exempt Development</p> <p>(a) The following is exempt development within the local government area of Roma:</p> <p>(v) Development involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply and sewerage treatment plants;</p> <p>Schedule 6 – Standards for Stormwater Drainage</p> <p>(1) Standards for Stormwater Drainage are in accordance with:</p> <p>Qld Urban Drainage Manual (Volume1 text, Volume 2 Design Charts) Australian Rainfall and Runoff (Volume 1 A guide to Flood Estimation).</p> <p>Schedule 8 - Environmental Management Plan Guidelines</p>

	<p>(3) Environmental Management Plan:</p> <p>i. An Environmental Management Plan shall be submitted with an application that conserves and protects areas identified by and/or considered by Council to be subjected to, or potentially subject to landslip, erosion, erosive flooding, salinity or any other form of land degradation; or for areas where building work may impact on the environment and amenity of the neighbourhood.</p> <p>ii. The Environmental Management Plan is required to address only the environmental issues relevant to the particular application. For example, if only flooding was identified for the application, the Environmental Management Plan will then only be required to address issues such as flooding and water quality.</p> <p>(m) Flooding Analyse inundation problems and proposes solutions acceptable to Council, that do not detrimentally impact upon adjacent landowners, natural water courses or flood levels in the general area.</p> <p>(n) Remedial Measures Detail remedial action to be taken in cases where natural watercourses, land or flood levels are adversely effected by the proposal.</p>
Op Works Code	Yes
Details	<p>PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS FOR THE FILLING AND EXCAVATION CODE</p> <p>Performance Criteria</p> <p>PC 3 Existing drainage or flood flows, either upstream or downstream of the site, are maintained.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Maranoa
Planning Scheme	Warroo
Adopted	27/09/2004
Flood Amendments	No
SPP Compliance	Yes
Details	<p>State planning policies</p> <p>The Minister for the Department of Local Government, Planning, Sport and Recreation has identified the following State planning policies as having been appropriately reflected in the planning scheme:</p> <p>2. STATE PLANNING POLICY 1/03- Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>4.4 Rural Code</p> <p>4.4.3 Specific Outcomes and Acceptable Solutions</p> <p>natural flood and drainage processes and /or patterns are maintained;</p> <p>Flooding and Drainage</p> <p>S26 The major drainage network has the capacity to control stormwater flows under normal, and minor system blockage conditions for a 1 in 100 year rainfall event.</p> <p>A26 The major drainage network complies with the design requirements of the Queensland Urban Drainage Manual (QUDM). AND</p> <ul style="list-style-type: none"> - no dwelling is inundated during a 1 in 100 year flood; - habitable rooms have floor levels 250mm above the estimated flood level resultant from a 1 in 100 year flood are protected; - flood ways are restricted to areas where there is minimal risk of damage to life or property; and - runoff is directed to a lawful point of discharge.
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>Planning Scheme Policy 5 – Information Local Government May Request</p> <p>2. Information that may be required</p> <p>Flooding and Storm water Flow Paths</p> <p>a. if an application involving land which is subject to flooding or major stormwater flows, information and an assessment which identifies—</p> <ul style="list-style-type: none"> i. the likely probability, depth, volume and velocity of flows; ii. the likely impact of the proposed development, including any associated earth works, both upstream and downstream from the site, particularly in terms of changes to the depth, duration or velocity of flood waters and the duration of warning time; iii. likely impacts in terms of watercourse bank stability; iv. preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows; v. recommendations for — <ul style="list-style-type: none"> -the use of flood resistant materials and construction techniques able to withstand relevant debris loads; -the location and height of means of ingress and egress, including possible flood escape routes; -the location and height of buildings, particularly habitable floor areas; -structural design, including the design of footings and foundations to take account of static and dynamic loads(including debris loads and any reduced bearing capacity owing to submerged soils); -the location and design of plant and equipment, including electrical fittings; -the storage of materials which are likely to cause environmental harm if released as a result of inundation or stormwater flows; -the appropriate treatment of water supply and sanitation systems and other relevant infrastructure; and -relevant management practices, including flood warning and evacuation measures. <p>Reconfigurations</p> <p>a. if an application involving the reconfiguration of land, the application is to be accompanied by</p> <p>a proposal plan, drawn to an appropriate metric scale and accurately plotted with the north point towards the top of the page, clearly indicating the following information —</p> <ul style="list-style-type: none"> xxi. All land below the adopted flood level. <p>6. Performance Indicators</p> <p>Table 6.1: Performance Indicators</p> <p>Desired Environmental Outcome</p> <p>h. Development is located and operated in a manner that minimises risks and hazards, such as bushfire and flooding and impacts on surrounding uses.</p> <p>Performance Indicator</p> <p>Amount and type of development that occurred after the commencement of this planning scheme that was impacted by risks and hazards, such as bushfire and flooding.</p> <p>Ecological and Natural Systems</p> <p>b. Development at a catchment level is undertaken in a sustainable and integrated manner:</p> <ul style="list-style-type: none"> v. flood plains have been managed to ensure natural drainage regimes are conserved and flooding risks are minimised.
Other	Yes
Details	<p>2.2 Desired Environmental Outcomes</p> <p>2.2.2 Cultural, Economic, Physical and Social Well-being</p>

	<p>The Cultural, Economic, Physical and Social Well-being Desired Environmental Outcomes are:</p> <p>h. Development is located and operated in a manner that minimises risks and hazards, such as bushfire and flooding and impacts on surrounding uses.</p> <p>2.2.3 Ecological and Natural Systems</p> <p>v. flood plains have been managed to ensure natural drainage regimes are conserved and flooding risks are minimised.</p> <p>4.2.4 Specific Outcomes and Acceptable Solutions</p> <p>Flooding and Drainage</p> <p>Specific Outcomes</p> <p>S7 The major drainage network has the capacity to control stormwater flows under normal, and minor system blockage conditions for a 1 in 100 year rainfall event.</p> <p>Acceptable Solutions/Probable Solutions</p> <p>A7 ☐ no dwelling is inundated with flood waters during a 1 in 100 year flood; ☐ habitable rooms have floor levels 250mm above the estimated flood level resultant from a 1 in 100 year flood; and ☐ flood ways are restricted to areas where there is minimal risk of damage to life or property.</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	McKinlay
Planning Scheme	McKinlay
Adopted	12-Dec-05
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>2.1.1 DEO 1 The Shire's valuable natural and cultural features, built environment and land use patterns create a distinct sense of place and local identity, and are vibrant, safe and healthy, with access to community and cultural facilities and services.</p> <p>2.1.2 SHIRE STRATEGIES DEO 1 is intended to be achieved by -</p> <ul style="list-style-type: none"> (a) facilitating development that complements rather than conflicts with the natural and cultural features of the Shire; (b) ensuring places, areas or sites identified as being susceptible to land degradation, (including contamination, erosion, salinity and landslip or flood areas) are protected and further degradation is minimised; (c) development in the Shire will minimise the potential impacts of flood, bushfire and landslide on people, property and the environment; and (d) ensuring ecological sustainability is achieved by protecting ecological processes and natural systems within the Shire.
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Moreton Bay
Planning Scheme	Caboolture
Adopted	12/12/2005
Flood Amendments	Yes
SPP Compliance	No
Details	<p>STATE PLANNING POLICIES</p> <p>The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme:</p> <p>3. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide Only);</p>
Mapped Q100 / DFE	No
Details	Q100 Used in provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Table 5.2 District Industry Zone (Part 5 Division 5)</p> <p>Specific Outcome</p> <p>Flood Immunity</p> <p>SO7 Uses on created lots are not restricted by flooding</p> <p>Acceptable solution/Probable solution</p> <p>S7.1 Uses within the District Industry Zone situated in the vicinity of Nolan Drive, Morayfield are to be above the 100 year ARI flood level.</p>
Use Codes	Yes
Details	<p>Division 9 – Dwelling House</p> <p>7.32 Overall Outcomes of the Dwelling House Code</p> <p>(D) are immune from unacceptable risk from flood and tidal water hazard;</p> <p>Flood Immunity</p> <p>SO3 The dwelling house has an acceptable level of flood and tidal water immunity that does not endanger property or human life.</p> <p>Note: the QDC does not address flood immunity and therefore this provision is not an alternative provision.</p> <p>S3.1 For land affected by flood water:</p> <p>(a) the floor level of habitable rooms is not lower than the higher of:</p> <p>(i) 300mm above the highest recorded flood level as determined by Council or 300mm above the calculated 100 year ARI flood level where such level has been determined by Council, whichever is the greater;</p> <p>(b) the floor level of non-habitable buildings is at, below or above the highest recorded flood level as determined by Council.</p> <p>Note: Council must be consulted to determine whether land is affected by flood water.</p> <p>Note: the QDC does not address flood immunity and therefore this provision is not an alternative provision.</p> <p>S3.2 For land affected by tidal water:</p> <p>(a) the floor level of habitable rooms is not lower than RL 3.1 metres AHD;</p> <p>(b) the ground or floor level of non-habitable buildings is not lower than RL 2.8 metres AHD.</p> <p>Note: Council must be consulted to determine whether land is affected by flood water.</p> <p>Note: the QDC does not address flood immunity and therefore this provision is not an alternative provision.</p> <p>S3.3 For land in an area in which Council has determined fill levels in accordance with a master drainage scheme:</p> <p>(a) the floor level of habitable rooms is not lower than the recommended minimum height of 225mm above the determined fill level for the land;</p> <p>(b) the floor level of non-habitable rooms is at or above the determined fill level for the land.</p> <p>Note: Council must be consulted to determine whether land is affected by flood water. Note: the QDC does not address flood immunity and therefore this provision is not an alternative provision.</p> <p>Division 19- Stormwater</p> <p>7.70 Stormwater Code</p> <p>7.72 Overall Outcomes of the Stormwater Code</p> <p>(b) The overall outcome sought for the Stormwater Code is:</p> <p>(iv) stormwater is managed to minimise the impact of flooding; and</p> <p>(v) development occurs where the impact of flooding is minimised.</p> <p>Table 7.24 Stormwater Code (Part 7 Division 19)</p> <p>Quantity - Flood Storage</p> <p>SO6 Development that involves earthworks in a floodplain must result in no net loss of flood storage for all storm events up to and including a 1 in 100 year ARI event and adjoining properties must remain free draining with no resultant increase in flood levels.</p> <p>Note: A certified flood study may need to be prepared by an RPEQ.</p> <p>Quantity - Flood Levels</p> <p>Specific Outcome</p> <p>SO7 Building floor levels are constructed above the nominated flood contour.</p> <p>Probable Solution</p> <p>S7.1 Building floor levels are at least 300mm above the 100 year ARI flood level.</p> <p>S7.2 In areas affected by overland flow paths, building floor levels are at least 50mm above the depth of the flow during a 100 year ARI storm event.</p> <p>S7.3 For residential development, building floor levels of garages and nonhabitable rooms are constructed at a height above the 100 year ARI flood level.</p> <p>Quantity - Community Infrastructure</p> <p>Specific Outcomes</p> <p>SO8 Essential services infrastructure (eg in site electricity, gas, water supply, sewerage and telecommunications) maintains its function during a flood event.</p> <p>Specific Outcomes</p> <p>S8.1 Any components of essential service infrastructure that are likely to fail to function or may result in contamination when inundated by flood water (eg electrical switchgear and motors, water supply pipeline air valves) are:</p>

	<p>(a) Located above the 100 year ARI flood level; or</p> <p>(b) Designed and constructed to exclude floodwater intrusion/infiltration; and</p> <p>(c) Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by a flood event.</p> <p>Quantity - Health and Safety</p> <p>Specific Outcome</p> <p>SO9 Development does not result in any of the following:</p> <p>(a) Increase the number of people calculated to be at risk from flooding;</p> <p>(b) Increase the flood levels on any other property;</p> <p>(c) Increase the number of people likely to need evacuation;</p> <p>(d) Shorten flood warning times;</p> <p>(e) Negatively impact on the ability of traffic to use evacuation routes or unreasonably increase traffic volumes on evacuation routes;</p> <p>(f) Place additional burdens on Council's resources or emergency services;</p> <p>(g) Increase the duration of flooding, unless that increase is part of a Council approved flood mitigation strategy.</p> <p>Probable Solution</p> <p>S9.1 No solution provided.</p> <p>Note: The stormwater drainage system should be designed and constructed in accordance with Planning Scheme Policy No.4 – Design and Development Manual.</p> <p>Specific Outcome</p> <p>SO10 Development provides sufficient access to enable evacuation during a range of floods up to and including the 100 year ARI flood level.</p> <p>Specific Outcome</p> <p>S10.1 Development provides opportunities for evacuation by access that is a road constructed at the level greater than the 100 year ARI flood level less 200mm.</p> <p>Specific Outcome</p> <p>S10.2 The ingress or egress does not create, in the event of a flood, a sudden change in flow distributions, flood level or velocity that could result in:</p> <p>(a) the breaking of a levee;</p> <p>(b) the establishment of blockage of a breakout;</p> <p>(c) excessive scour;</p> <p>(d) sedimentation;</p> <p>(e) increased flood hazard.</p> <p>Quantity - Underground Drainage</p> <p>Probable Solution</p> <p>S15.5 Afflux of stormwater from any bridge or culvert does not cause flooding of upstream properties.</p> <p>Quantity - Water Flow</p> <p>Probable Solution</p> <p>S16.2 Outdoor storage areas are located above the 100 year ARI flood level.</p>
ROL Code	Yes
Details	<p>Division 16 – Reconfiguring a Lot</p> <p>Table 7.18 Reconfiguring a Lot Code (Part 7 Division 16)</p> <p>Flood Immunity</p> <p>SO3 Development on created lots is not restricted by flooding.</p> <p>S3.1 The minimum area required for each lot above the 100 year ARI flood level for each zone is set out in Table 7.20.</p> <p>Open Space</p> <p>SO22 Open space satisfies the following:</p> <p>(e) facilitates appropriate measures for stormwater and flood management and care of valuable environmental resources;</p> <p>Probable Solution</p> <p>S22.5 The dedicated park satisfies the following:</p> <p>(a) the area of dedicated park excludes:</p> <p>(i) land required for drainage purposes;</p> <p>(ii) land below the 20 year ARI flood level;</p> <p>(iii) land with an electricity transmission easement; and</p> <p>(iv) land for conservation significance that has minimal or no capacity to cater for active or passive recreation (other than pedestrian and cycle paths).</p> <p>(a) at least 50% of the dedicated park is above the 100 year ARI flood level;</p> <p>Refer Table 7.20 Minimum Requirements for Flood</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Administrative Definitions</p> <p>Designated Flood Levels - The 1 in 100 year flood level.</p> <p>Table 7.28 Water Sustainability Code (Part 7 Division 22)</p> <p>Rainwater tank overflow- point of discharge</p> <p>Specific Outcome</p> <p>SO9 Rainwater tank placement and tank overflow is designed to ensure stormwater does not pond under building floors or flood around foundations of buildings.</p>
Op Works Code	Yes
Details	<p>Division 5 - Dams, Filling and Excavation Code</p> <p>Table 7.7 Dams, Filling and Excavation Code (Part 7 Division 5)</p> <p>Hazards</p> <p>Specific Outcome</p> <p>SO9 The construction of dams takes flood levels into account.</p>

	<p>Probable Solution</p> <p>S9.1 Any dams beneath the 100 year ARI flood level do not include embankments.</p> <p>S9.2 No excavated material is placed below the 100 year ARI flood level.</p> <p>Health and Safety</p> <p>Specific Outcome</p> <p>SO12 The filling or excavation of land does not: (a) Redirect water away from existing</p> <p>Probable Solution</p> <p>S12.1 All fill material is placed above the 100 year ARI flood level or above a nominated 1 in 100 year flood level, whichever is the highest.</p> <p>S12.2 Filling or excavation of land does not obstruct the natural flow of stormwater.</p> <p>Note: All filling and excavation should be undertaken in accordance with design plans prepared by a Registered Professional Engineer (RPEQ) who has certified that the design complies with the specific outcomes of this code and is in accordance with sound engineering practices. The applicant should obtain written certification from a Registered Professional Engineer (RPEQ) that any compaction of filling will be carried out in accordance with Council's Design and Development Manual and that the construction will be undertaken in accordance with the certified design plans. Written letters of support should also be obtained from owners of all adjoining properties after viewing plans of the proposal.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Moreton Bay
Planning Scheme	Pine Rivers
Adopted	4/12/2006
Flood Amendments	Yes
SPP Compliance	Yes
Details	<p>STATE PLANNING POLICIES</p> <p>The Minister for Local Government, Planning and Sport has advised that the following State Planning Policies are appropriately reflected in the planning scheme:</p> <p>3. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Mapped Q100 / DFE	Yes
Details	Q100 Used in Provisions Flood Management Overlay Mapped
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Part 2 URBAN LOCALITY</p> <p>Division 1 General Provisions for the Urban Locality</p> <p>2.16 Overall Outcomes Sought for the Future Urban Zone</p> <p>(6) The form and nature of development is compatible with and reflects the physical characteristics of the land such as flooding, land slope, soil characteristics, visibility, views, existing significant vegetation and surrounding land uses.</p> <p>2.19 Overall Outcomes Sought for the Park and Open Space Zone</p> <p>(5) The role of Park and Open Space zoned land in accommodating major flood events is not diminished;</p> <p>Division 3 Specific Outcomes and Probable Solutions for the Urban Locality</p> <p>3.1 Assessment Criteria for Assessable Development in the Urban Locality</p> <p>Business and Industry Areas</p> <p>SO 12 Industrial lots may extend below the accepted flood level provided that each lot contains an adequate area for the construction of a building and associated facilities above the flood level.</p> <p>Environment</p> <p>SO 53 Development of estuarine floodplain land:-</p> <p>(1) does not involve significant changes to landform or vegetation by way of filling, excavating or clearing;</p> <p>(2) does not require high levels of flood immunity;</p> <p>(3) is effectively managed to avoid significant adverse impacts on hydrological conditions (both upstream and downstream) or water quality; and</p> <p>(4) is of a scale and character that maintains natural conditions and does not have adverse visual impacts.</p> <p>Division 17 Specific Outcomes and Probable Solutions for the Future Urban Zone</p> <p>17.1 assessment Criteria for Assessable Development in the Future Urban Zone</p> <p>Development of Greenfield Site to Create Neighbourhoods</p> <p>SO 6 The location, density and lot yield of reconfiguring a lot development reflects the environmental capacity and constraints of the site such as:-</p> <p>(1) significant vegetation;</p> <p>(2) acid sulfate soils;</p> <p>(3) flooding; and</p> <p>(4) waterways.</p> <p>Division 19 Specific Outcomes and Probable Solutions for the Conservation Zone</p> <p>19.1 Assessment Criteria for Assessable Development in the Conservation Zone</p> <p>Form and Nature of Development</p> <p>SO 5 The form and nature of development is low key, low intensity and compatible with the physical characteristics and valuable features of the site such as slope steepness and stability, visual prominence, views, landscape character, water courses, flooding, bush fire risk, soil type, existing vegetation and surrounding land uses.</p> <p>Division 20 Specific Outcomes and Acceptable/Probable Solutions for the Park and Open Space Zone</p> <p>20.1 Assessment Criteria for Self Assessable Development in the Park and Open Space Zone</p> <p>Site Layout</p> <p>AS 1.2 Sites do not include land which is:-</p> <p>(3) flood prone land below the Q20;</p> <p>Drainage/Water Management</p> <p>AS 3.2 The useability of the land and its environmental, visual or landscape values are not diminished by flooding.</p> <p>AS 3.3 Land to be set aside for buildings and facilities that are prone to flood damage is at or above Q100.</p> <p>PS 15.2 Sites do not include land which is:-</p> <p>(3) flood prone land below the Q20</p> <p>Drainage/Water Management</p> <p>SO 17 The designated function and values of park and open space and community purpose land are not diminished by stormwater run-off and flooding.</p> <p>PS 17.2 The useability of the land and its environmental, visual or landscape values are not diminished by flooding.</p> <p>PS 17.3 Land to be set aside for buildings and facilities that are prone to flood damage is at or above Q100.</p> <p>Part 3 MAJOR EMPLOYMENT CENTRES LOCALITY</p> <p>Division 1 General Provisions for the Major Employment Centres Locality</p> <p>Division 2 Overall Outcomes for the Major Employment Centres Locality</p> <p>2.11 Overall Outcomes Sought for the Future Urban Zone</p> <p>(5) The form and nature of development is compatible with and reflects the physical characteristics of the land such as flooding, land slope, soil characteristics, visibility, views, existing significant vegetation and surrounding land uses.</p> <p>2.13 Overall Outcomes Sought for the Park and Open Space Zone</p> <p>(5) The role of Park and Open Space zoned land in accommodating major flood events is not diminished;</p> <p>Public Health and Safety</p> <p>PS 5.1 The design of development incorporates adequate measures with respect to:-</p> <p>(5) flood immunity; and</p>

	<p>(6) minimising inundation of downstream properties.</p> <p>Division 11 Specific Outcomes and Probable Solutions for the Extractive Industry Zone</p> <p>11.1 Assessment Criteria for Assessable Development in the Extractive Industry Zone</p> <p>SO 7 The ultimate use of land after extraction and rehabilitation occurs is compatible with the character, and amenity of the surrounding area and the site conditions after rehabilitation having regard to:-</p> <p>Division 14 Specific Outcomes and Acceptable/Probable Solutions for the Park and Open Space Zone</p> <p>14.1 Assessment Criteria for Self Assessable Development in the Park and Open Space Zone</p> <p>AS 1.2 Sites do not include land which is:-</p> <p>(3) flood prone land below the Q20</p> <p>AS 3.2 The useability of the land and its environmental, visual or landscape values are not diminished by flooding.</p> <p>AS 3.3 Land to be set aside for buildings and facilities that are prone to flood damage is at or above Q100.</p> <p>Additional Outcomes for Parks</p> <p>PS 15.2 Sites do not include land which is:-</p> <p>(3) flood prone land below the Q20;</p> <p>Drainage/Water Management</p> <p>SO 17 The designated function and values of park and open space and community purpose land are not diminished by stormwater run-off and flooding.</p> <p>PS 17.2 The useability of the land and its environmental, visual or landscape values are not diminished by flooding.</p> <p>PS 17.3 Land to be set aside for buildings and facilities that are prone to flood damage is at or above Q100.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Reconfiguration of a Lot Code</p> <p>Division 2 Urban Residential Subdivision Design Code</p> <p>The overall outcomes sought by the Urban Residential Subdivision Design Code are the following:</p> <p>(4) Lot design and subdivision layout adequately protects people and the built environment from flooding;</p> <p>SO 4 Residential lots do not contain major drainage flow paths.</p> <p>PS 4 The residential lots do not contain overland flow paths for the 100 year ARI storm event.</p> <p>SO 5 Residential lots have adequate freeboard to major flood levels in rivers, creeks, watercourses and engineered open drains to facilitate dwelling construction without the need for levies or special dwelling design for flotation.</p> <p>PS 5 The residential lots are developed to the following finished surface levels:</p> <p>- Adjacent rivers, creeks and watercourses: Q100 flood level + 750mm, Min 2000m2 above Min Level. (where lot area is <2000m2, then the whole lot area).</p> <p>- Adjacent engineered channels Q100 flood level + 500mm, Min 2000m2 above Min Level (where lot area is <2000m2, then the whole lot area).</p> <p>SO 9 Residential lots are located outside flood prone land, flood plains, tidal areas and areas below storm tide levels.</p> <p>PS 9 The residential lots are not located below the ultimate (post development) Q100 flood level of natural drainage features including rivers, streams and watercourses. The residential lots are not located below the predicted 100 year storm tide surge level.</p> <p>SO 50 The major drainage system has the capacity to safely convey stormwater flows for the 100 year ARI storm event.</p> <p>SO 51 Overland flow paths conveying stormwater flows for the 100 year ARI storm event (and greater) do not pass through or encroach upon residential lots unless the lot contains an area not less than 2000m2 which has not less than 750mm freeboard to the 100 year ARI (fully developed catchment) storm flood level.</p> <p>PS 50 and PS 51 The roads, drainage pathways, drainage features and waterways safely convey the stormwater flows for the 100 year ARI storm event without allowing the flows to encroach upon residential lots.</p> <p>Overland flow paths (for any storm event) from roads and public open space areas do not pass through residential lots. Drainage pathways are provided to accommodate overland flows from roads and public open space areas.</p> <p>SO 72 Sealed and flood free road access during minor storms is available to the site from the nearest Major Road.</p> <p>PS 72 Sealed and flood free road access during minor storms is available to the site from the nearest Major Road.</p> <p>Division 3 Park Residential</p> <p>SO 1 Residential lots have appropriate area and dimensions for:-</p> <p>(1) siting and construction of a dwelling and ancillary outbuildings;</p> <p>(2) siting and construction of an on-site sewerage facility in accordance with the relevant standards;</p> <p>(3) the provision of private open space;</p> <p>(4) convenient and safe vehicle access; and</p> <p>(5) on site car parking.</p> <p>PS 1 All residential lots:-</p> <p>(1) contain a certified building area of 40m x 30m minimum dimensions which is 750mm above the 100 year ARI flood level and has maximum slope, before site works, of 1 (V) in 6 (H). The certified building area is setback from the toe of a cut batter or bottom of a bank of a waterway or gully a distance not less than that determined by projecting a line 1(V) in 1(H) from the toe of a cut batter or bottom of a bank of a waterway or gully to the finished ground level or 15m back from the top bank, whichever is the greater;</p> <p>SO 6 Certified building areas in residential lots are located outside flood prone land, flood plains, tidal areas and areas below storm tide levels.</p> <p>PS 6 The certified building areas in residential lots are not located below the ultimate (post development) Q100 flood level of natural drainage features including rivers, streams and watercourses. The certified building areas in residential lots are not located below the predicted 100 year storm tide surge level.</p> <p>SO 42 Sealed and flood free road access during minor storms is available to the site from the nearest Major Road.</p> <p>PS 42 Sealed (5.5m min. width) and flood free road access during minor storms (5 year ARI) is available to the site from the nearest Major Road.</p> <p>Division 4 Rural Residential</p> <p>SO 1 Residential lots have appropriate area and dimensions for:-</p> <p>(1) siting and construction of a dwelling and ancillary outbuildings;</p> <p>(2) siting and construction of an on-site sewerage facility in accordance with the relevant standards;</p> <p>(3) the provision of private open space;</p> <p>(4) provision of a small dam;</p> <p>(5) convenient and safe vehicle access; and</p> <p>(6) on site car parking.</p> <p>PS 1 All residential lots:-</p>

	<p>(1) contain a certified building area of 40m x 40m minimum dimensions which is 750mm above the 100 year ARI flood level and has maximum slope, before site works, of 1 (V) in 6 (H). The certified building area is setback from the toe of a cut batter or bottom of a bank of a waterway or gully a distance not less than that determined by projecting a line 1(V) in 1(H) from the toe of a cut batter or bottom of a bank of a waterway or gully to the finished ground level or 15m back from the top bank, whichever is the greater;</p> <p>SO 6 Certified building areas in residential lots are located outside flood prone land, flood plains, tidal areas and areas below storm tide levels.</p> <p>PS 6 The certified building areas in residential lots are not located below the ultimate (post development) Q100 flood level of natural drainage features including rivers, streams and watercourses. The certified building areas in residential lots are not located below the predicted 100 year storm tide surge level.</p> <p>SO 43 Sealed and flood free road access during minor storms is available to the site from the nearest Major Road.</p> <p>PS 43 Sealed (5.5m min. width) and flood free road access during minor storms (5 year ARI) is available to the site from the nearest Major Road.</p> <p>Division 5 Industrial</p> <p>SO 3 Industrial lots have adequate freeboard to major flow levels in rivers, creeks, watercourses and engineered open drains to facilitate building construction without the need for levies.</p> <p>PS 3 The industrial lots are developed to the following finished surface levels:-</p> <ul style="list-style-type: none"> - Adjacent rivers, creeks and watercourses Q100 flood level + 750mm Min 4000m2 above min level. (where lot area is <4000m2, then the whole lot area) - Adjacent engineered channels or open drains Q100 flood level + 750mm Min 4000m2 above Min Level. (where lot area is <4000m2, then the whole lot area) <p>SO 25 Sealed and flood free access during minor storms is available to the site from the nearest Major Road.</p> <p>PS 25 Sealed (5.5m min. width) and flood free road access during minor storms (5 year ARI) is available to the site from the nearest Major Road.</p> <p>Division 6 Commercial</p> <p>SO 3 Commercial lots have adequate freeboard to major flow levels in rivers, creeks, watercourses and engineered open drains to facilitate building construction without the need for levies.</p> <p>PS 3 The commercial lots are developed to the following finished surface levels:-</p> <ul style="list-style-type: none"> - Adjacent rivers, creeks and watercourses Q100 flood level + 750mm Min 2000m2 above Min Level (where lot area is <2000m2, then the whole lot area) <p>Adjacent engineered channels or open drains Q100 flood level + 750mm, Min 2000m2 above Min level (where lot area is <2000m2, then the whole lot area)</p> <p>SO 23 Sealed and flood free access during minor storms is available to the site from the nearest Major Road.</p> <p>PS 23 No solution provided.</p> <p>Division 7 Rural</p> <p>SO 1 Rural lots have appropriate area and dimensions for:-</p> <ol style="list-style-type: none"> (1) rural uses; (2) siting and construction of a dwelling and ancillary outbuildings; (3) siting and construction of an on-site sewerage facility in accordance with the relevant standards; and (4) convenient and safe vehicle access <p>PS 1 All residential lots:</p> <ol style="list-style-type: none"> (1) have a minimum area of 16ha; (2) contain a certified building area of 40m x 40m minimum dimensions which is 750mm above the 100 year ARI flood level and has maximum slope, before site works, of 1 (V) in 6 (H). The certified building area is setback from the toe of a cut batter or bottom of a bank of a waterway or gully a distance not less than that determined by projecting a line 1(V) in 1(H) from the toe of a cut batter or bottom of a bank of a waterway or gully to the finished ground level or 15m back from the top bank, whichever is the greater; <p>SO 5 Certified building areas in rural lots are located outside flood prone land, flood plains, tidal areas and areas below storm tide levels.</p> <p>PS 5 The certified building areas in residential lots are not located below the ultimate (post development) Q100 flood level of natural drainage features including rivers, streams and watercourses. The certified building areas in residential lots are not located below the predicted 100 year storm tide surge level.</p> <p>SO 24 Sealed and flood free road access during minor storms is available to the site from the nearest Major Road.</p> <p>PS 24 Sealed (5.5m min. width) and flood free road access during minor storms (5 year ARI) is available to the site from the nearest Major Road.</p> <p>Division 11 All Other Zones</p> <p>SO 5 There is sufficient area with appropriate freeboard to major flood events in rivers, creeks, watercourses and engineered open drains, contained within each lot, to facilitate the required uses on the land without the need for levies or specially designed floating structures.</p> <p>PS 5 The lots are developed to the following finished levels:-</p> <p>Special Residential (urban style), Neighbourhood Facilities, Home Industry and Future Urban</p> <ul style="list-style-type: none"> - Adjacent rivers, creeks and watercourses, Q100 flood level + 750mm, Min 2000m2 above Min level (where lot area is <2000m2, then the whole lot area) - Adjacent engineered channels Q100 flood level + 500mm Min 2000m2 above Min Level, (where lot area is <2000m2, then the whole lot area) <p>Special Residential (non-urban style)</p> <ul style="list-style-type: none"> - Adjacent rivers, creeks and watercourses, Q100 flood level + 750mm, Min 1500m2 above Min level, (where lot area is <1500m2, then the whole lot area) - Adjacent engineered channels, Q100 flood level + 500mm, min 1500m2 above min level, (where lot area is <1500m2, then the whole lot area) <p>Conservation, Park & Open Space, Sports & Recreation, Special Facilities and Special Purposes</p> <ul style="list-style-type: none"> - Adjacent rivers, creeks and watercourses, No solution provided - Adjacent engineered channels, No solution provided <p>SO 17 Sealed and flood free access during minor storms is available between the site and the nearest Major Road.</p> <p>PS 17 Sealed and flood free access during minor storms is available to the site from the nearest Major Road.</p>
Overlay Codes	Yes
Details	<p>Major Flood Events Overlay Code</p> <p>5.1 The overall outcomes are the purpose of this code.</p> <p>5.2 The overall outcomes sought by the Major Flood Events Overlay Code are the following:-</p> <ol style="list-style-type: none"> (1) Acceptable levels of flood immunity for people, buildings, structures, activities, essential services, community infrastructure and the manufacture, storage and handling of bulk hazardous materials are provided; and (2) The hydraulic capacity and effective functions of the Shire's waterways are maintained; and

(3) The design limits the reliance on assistance from emergency services in a flood event and assists in the response by emergency services to a flood threat; and

(4) The banks of waterways are protected from erosion by a flood event.

Acceptable Solutions for Self Assessable Development

Siting of Development

AS 1.1 Building floor levels of all habitable rooms are above the DFE flood level by the following heights:

(a) 750mm – where inundation area is an existing natural watercourse;

(b) 500mm – where inundation area is an engineered channel.

AND

AS1.2 Non-habitable rooms of dwelling units and other forms of residential accommodation are sited so that the floor levels are located above the DFE flood level.

AND

AS 1.3 Other buildings are located and designed so that floor levels (except areas used for car parking) are located above the DFE flood level. AND

AS 1.4 Buildings and structures used for the storage of non-hazardous material or equipment:-

(a) may be located below the DFE but above the 2% AEP; and

(b) do not cause erosion or scour problems. AND

AS 1.5 Works within the area of inundation for the DFE do not involve:-

(a) any physical alteration to a drainage feature affecting its flow capacity; or

(b) vegetation clearing; or

(c) any increase in the rate of release of stormwater runoff from the premises to the area of inundation for the DFE; or

(d) altering the existing surface levels to adversely impact flood immunity of surrounding properties.

Assessable Development

SO 1 Development is located to maintain the safety of people and to minimise the potential for damage to property from a defined flood event (DFE).

PS 1.1 Building floor levels of all habitable rooms are above the DFE flood level by the following heights:

(a) 750mm – where inundation area is an existing natural watercourse;

(b) 500mm – where inundation area is an engineered channel. AND

PS 1.2 Non-habitable rooms of dwelling units and other forms of residential accommodation are sited so that the floor levels are located above the DFE flood level. AND

PS 1.3 Other buildings are located and designed so that floor levels (except areas used for car parking) are located above the DFE flood level. AND

PS 1.4 The development incorporates at least 1 evacuation route within the site that:-

(1) is constructed to the standard prescribed for a "medium rigid vehicle" and

(2) remains passable by a 2 wheel drive vehicle at all times leading up to, during and immediately after the DFE.

SO 2 Buildings or structures used for storage of nonhazardous material or equipment are located to maintain the safety of people and to minimise the potential for damage to property from a DFE.

PS 2 Buildings and structures used for the storage of non-hazardous material or equipment:-

(1) may be located below the DFE but above the 2% AEP; and

(2) do not cause erosion or scour problems.

SO 3 Development does not result in adverse impacts on the hydraulic capacity of the waterway and floodplain or increase the extent of flood inundation on land other than the site beyond the designated inundation level for the DFE.

PS 3 Works within the area of inundation for the DFE do not involve:-

(1) any physical alteration to a drainage feature affecting its flow capacity; or

(2) vegetation clearing; or

(3) any increase in the rate of release of stormwater runoff from the premises to the area of inundation for the DFE; or

(4) altering the existing surface levels to adversely impact flood immunity of surrounding properties.

SO 5 Essential services infrastructure are fully functional during and immediately after a DFE.

PS 5 Any components of essential services infrastructure that are likely to fail to function at optimum design level or may result in environmental contamination when inundated by flood water, are:-

(1) located above the inundation level for the DFE; or

(2) designed and constructed to exclude floodwater intrusion and/or infiltration.

SO 6 Vital community infrastructure is able to function effectively during and immediately after flood events.

PS 6 Vital community infrastructure is not located below the Recommended Flood Level (RFL) specified for that vital community infrastructure in the following table:

- Emergency services 0.2% AEP
- Emergency shelters 0.5% AEP
- Police facilities 0.5% AEP
- Hospitals and associated facilities 0.2% AEP
- Stores of valuable records or items of historic or cultural significance (e.g. galleries, libraries).

	0.5% AEP - Power stations 0.2% AEP - Major switch yards 0.2% AEP - Substations 0.5% AEP - Sewage treatment plants DFE - Water treatment plants 0.5% AEP
PSPs	Yes
Details	<p>PSP17 - DEMONSTRATING COMPLIANCE WITH THE MAJOR FLOOD EVENTS OVERLAY CODE</p> <p>HEAD OF POWER</p> <p>This policy is a document that supports the PineRiversPlan and has been made by Council using the process prescribed in the Integrated Planning Act 1997.</p> <p>The obligation to make this policy is imposed by State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p> <p>OBJECTIVE</p> <p>Any application for development that is assessable against the Major Flood Events Overlay Code will need to demonstrate compliance with the applicable specific outcomes of that code.</p> <p>The purpose of this policy is to outline the information that would be required in order to properly assess a development application triggered by the Major Flood Events Overlay Code. Where these details are not supplied when the development application is made, they will be the subject of an information request under the Integrated Development Assessment System (IDAS).</p> <p>DEFINITIONS/APPLICATION</p> <p>Application</p> <p>This policy applies to all development for which an application is required under the Major Flood Events Overlay Code.</p> <p>Definitions</p> <p>Unless otherwise indicated in this policy, all terms used have the meanings prescribed in the PineRiversPlan.</p> <p>POLICY STATEMENT</p> <p>For development that triggers assessment under the Major Flood Events Overlay Code:-</p> <p>(1) a flood hazard assessment determining the nature and extent of the flood hazard across the site; and</p> <p>(2) a flood hazard mitigation report</p> <p>must be lodged with the application.</p> <p>All reports, assessments and plans prepared under this policy must be prepared by a suitably qualified and experienced person.</p> <p>Flood Hazard Assessment</p> <p>A flood hazard assessment should be prepared in accordance with the methodology prescribed in Appendix 2 of the State Planning Policy Guideline 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide. It will include –</p> <p>(1) a hydrologic study; and</p> <p>(2) a hydraulic analysis (including size and nature of the population exposed to the hazard, availability of evacuation routes, susceptibility of structures to flood damage).</p> <p>Flood Hazard Mitigation Report</p> <p>The flood hazard mitigation report is to –</p> <p>(1) assess the potential impacts of the development on the flood hazard; and</p> <p>(2) assess the potential impacts of the flood hazard on the development; and</p> <p>(3) recommend strategies to be incorporated into the proposed development to satisfy the outcomes of the Major Flood Events Overlay Code; and</p> <p>(4) describe and evaluate the impact of the proposed mitigation strategies on the existing and likely future use of land and buildings in proximity to the proposed development.</p> <p>The report will also address –</p> <p>(a) water quality;</p> <p>(b) waterways including bank stability;</p> <p>(c) impact on adjacent properties both upstream and downstream;</p> <p>(d) preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows;</p> <p>(e) the use of flood resistant materials and construction techniques able to withstand relevant hydraulic and debris loads where appropriate;</p> <p>(f) the location and height of means of ingress and egress, including possible flood-free escape routes;</p> <p>(g) the location and height of buildings, particularly habitable floor areas;</p> <p>(h) structural design, including the design of footings and foundations to take account of static and dynamic loads (including debris loads and any reduced bearing capacity owing to submerged soils);</p> <p>(i) the location and design of plant and equipment, including electrical fittings;</p> <p>(j) the storage of materials which are likely to cause environmental harm if released as a result of inundation or storm water flows;</p> <p>(k) the appropriate treatment of water supply, sanitation systems and other relevant infrastructure;</p> <p>(l) relevant management practices, including flood warning and evacuation measures;</p> <p>(m) details of any easements or reserves required for the storm water design; and</p> <p>(n) details of detention/retention storages.</p> <p>The level of detail required for a particular development application should be determined in consultation with Council's Development Services Department.</p>
Other	No
Details	

Op Works Code	No
Details	
Overlay Code	Yes
Details	<p>Major Flood Events Overlay Code</p> <p>AS 1.5 Works within the area of inundation for the DFE do not involve:-</p> <ul style="list-style-type: none"> (a) any physical alteration to a drainage feature affecting its flow capacity; or (b) vegetation clearing; or (c) any increase in the rate of release of stormwater runoff from the premises to the area of inundation for the DFE; or (d) altering the existing surface levels to adversely impact flood immunity of surrounding properties.
PSPs	Yes
Details	<p>PSP17 - DEMONSTRATING COMPLIANCE WITH THE MAJOR FLOOD EVENTS OVERLAY CODE</p> <p>HEAD OF POWER</p> <p>This policy is a document that supports the PineRiversPlan and has been made by Council using the process prescribed in the Integrated Planning Act 1997.</p> <p>The obligation to make this policy is imposed by State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p> <p>OBJECTIVE</p> <p>Any application for development that is assessable against the Major Flood Events Overlay Code will need to demonstrate compliance with the applicable specific outcomes of that code.</p> <p>The purpose of this policy is to outline the information that would be required in order to properly assess a development application triggered by the Major Flood Events Overlay Code. Where these details are not supplied when the development application is made, they will be the subject of an information request under the Integrated Development Assessment System (IDAS).</p> <p>DEFINITIONS/APPLICATION</p> <p>Application</p> <p>This policy applies to all development for which an application is required under the Major Flood Events Overlay Code.</p> <p>Definitions</p> <p>Unless otherwise indicated in this policy, all terms used have the meanings prescribed in the PineRiversPlan.</p> <p>POLICY STATEMENT</p> <p>For development that triggers assessment under the Major Flood Events Overlay Code:-</p> <ul style="list-style-type: none"> (1) a flood hazard assessment determining the nature and extent of the flood hazard across the site; and (2) a flood hazard mitigation report must be lodged with the application. <p>All reports, assessments and plans prepared under this policy must be prepared by a suitably qualified and experienced person.</p> <p>Flood Hazard Assessment</p> <p>A flood hazard assessment should be prepared in accordance with the methodology prescribed in Appendix 2 of the State Planning Policy Guideline 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide. It will include –</p> <ul style="list-style-type: none"> (1) a hydrologic study; and (2) a hydraulic analysis (including size and nature of the population exposed to the hazard, availability of evacuation routes, susceptibility of structures to flood damage). <p>Flood Hazard Mitigation Report</p> <p>The flood hazard mitigation report is to –</p> <ul style="list-style-type: none"> (1) assess the potential impacts of the development on the flood hazard; and (2) assess the potential impacts of the flood hazard on the development; and (3) recommend strategies to be incorporated into the proposed development to satisfy the outcomes of the Major Flood Events Overlay Code; and (4) describe and evaluate the impact of the proposed mitigation strategies on the existing and likely future use of land and buildings in proximity to the proposed development. <p>The report will also address –</p> <ul style="list-style-type: none"> (a) water quality; (b) waterways including bank stability; (c) impact on adjacent properties both upstream and downstream; (d) preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows; (e) the use of flood resistant materials and construction techniques able to withstand relevant hydraulic and debris loads where appropriate; (f) the location and height of means of ingress and egress, including possible flood-free escape routes; (g) the location and height of buildings, particularly habitable floor areas; (h) structural design, including the design of footings and foundations to take account of static and dynamic loads (including debris loads and any reduced bearing capacity owing to submerged soils); (i) the location and design of plant and equipment, including electrical fittings; (j) the storage of materials which are likely to cause environmental harm if released as a result of inundation or storm water flows; (k) the appropriate treatment of water supply, sanitation systems and other relevant infrastructure; (l) relevant management practices, including flood warning and evacuation measures; (m) details of any easements or reserves required for the storm water design; and (n) details of detention/retention storages. <p>The level of detail required for a particular development application should be determined in consultation with Council's Development Services Department.</p>
Other	No
Details	
Other Info	

LGA	Moreton Bay
Planning Scheme	Redcliffe
Adopted	12/12/2005
Flood Amendments	Yes
SPP Compliance	Yes
Details	<p>STATE PLANNING POLICIES</p> <p>The Minister for Local Government, Planning has advised that the following State Planning Policies are appropriately reflected in the planning scheme:</p> <p>3. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (For Flooding Only)</p>
Mapped Q100 / DFE	Yes
Details	Q100 Used in provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>3.2 Citywide Code</p> <p>(K) For sites located in the employment node identified on the Zoning Plan</p> <p>58 Environment Management</p> <p>SO141 Buildings are sited to minimise:</p> <p>a) risks from flooding; and</p> <p>b) the extent of filling; and</p> <p>c) to reinforce the legibility of the area.</p> <p>PS 141.1 All buildings have minimum floor levels, including servicing areas, 0.3m above the 100 year ARI flood level; and</p> <p>PS 141.2 Kerb levels are above the 100 year ARI flood level.</p> <p>SO143 Water treatment facilities are adequate and are installed to treat all run off entering the main drainage channels.</p> <p>PS 143.1 Stormwater channels accommodate the 100 year ARI flood flows.</p> <p>4.1 Low Density Residential Zone</p> <p>4.1.6 OVERALL OUTCOMES FOR LOW DENSITY RESIDENTIAL ZONE</p> <p>Preferred Use Area 1 – Future Residential</p> <p>I) Residential uses in Preferred Use Area 1 overcomes constraints of the existing environment with regard to flooding, and soil type and is compatible with adjacent land uses.</p> <p>4.1.7 ASSESSMENT CRITERIA</p> <p>(2) Assessment criteria for assessable development</p> <p>(C) WHERE DEVELOPMENT IS LOCATED IN PREFERRED USE AREA 1 – FUTURE RESIDENTIAL</p> <p>SO11 The form of development is appropriate for the area in regard to:</p> <p>e) potential flooding and stormwater drainage management</p> <p>(D) WHERE DEVELOPMENT IS LOCATED IN PREFERRED USE AREA 1A – FUTURE RESIDENTIAL</p> <p>SO15 There are adequate buffers between residential uses and tidal lands that minimise the adverse impacts from the location of the residential development adjacent to or proximate to tidal lands such as:</p> <p>b) storm surge and flood inundation on residential development and the natural environment;</p> <p>SO26 Development does not adversely affect the available floodplain volume to temporarily store floodwaters.</p> <p>4.9 – Open Space and Recreation Zone</p> <p>4.9.6 OVERALL OUTCOMES FOR THE OPEN SPACE AND RECREATION ZONE</p> <p>E) Linear systems of open space throughout the established part of the City assist the management of drainage and floodwaters</p>
Use Codes	Yes
Details	<p>6.3 CANAL CODE</p> <p>SO1 The canal:</p> <p>a) does not cause additional flooding;</p> <p>SO7 The location and design of revetments / walls ensures that:</p> <p>e) flood conveyance and flood storage requirements during flood flows are maintained;</p> <p>6.4 COMMUNITY USES CODE</p> <p>PS 3.2 Community wellbeing infrastructure is not located in an area subject to flooding.</p> <p>6.5 EARTHWORKS CODE</p> <p>6.5.2 OVERALL OUTCOMES FOR THE EARTHWORKS CODE</p> <p>C) Earthworks do not create flooding or drainage problems.</p> <p>2. Drainage</p> <p>SO13 Earthworks, either during or after completion of works, do not cause or increase drainage or flooding problems on adjoining properties.</p> <p>SO14 Earthworks do not adversely affect the present or estimated future flows of any waterway in a natural or artificial watercourse.</p> <p>SO15 There is no adverse reduction in the available flood plain volume to temporarily store floodwaters.</p> <p>9 Parkland</p> <p>PS 20.3 Parkland is located above a 1 in 20 years flooding event;</p> <p>10 Topography</p> <p>SO26 Ground levels allow drainage of stormwater to the street and have regard to flood levels and storm surge.</p>
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>5.1 Natural Features or Resources Overlay</p> <p>5.1.3 Natural Features or Resources Overlay Code</p> <p>The provisions in this division comprise the Natural Features or Resources Overlay code.</p> <p>They are -</p> <p>3) assessment criteria (section 5.1.6)</p>

	<p>C) Drainage problem areas – flooding</p> <p>2) The overall outcomes sought for the Natural Features or Resources Overlay are the following -</p> <p>C) Development located within areas affected by drainage problems or subject to flooding as indicated on Overlay Map 3 and does not result in adverse impacts to the environment or other land.</p> <p>(C) FOR SITES INCLUDED IN A DRAINAGE PROBLEM AREA AND AREAS SUBJECT TO FLOODING AS IDENTIFIED ON OVERLAY MAP 3</p> <p>SO11 New development for residential purposes or involving the construction of permanent structures on land subject to flooding does not result in adverse impacts on safety of people and development.</p> <p>PS 11.1 Development is sited on land that is not subject to flooding; or</p> <p>PS 11.2 Floor levels are located above the Q100 flood level; and</p> <p>PS 11.3 There is at least one evacuation route that remains passable for emergency evacuation during floods; or</p> <p>PS 11.4 Premises are located to allow for sufficient warning time to enable safe evacuation; or</p> <p>PS 11.5 A safe refuge is available for people within the development site.</p> <p>SO12 Development does not result in adverse impacts on structures or premises in relation to:</p> <p>a) flood levels;</p> <p>b) stream bank stability (erosion); or</p> <p>c) water quality in receiving waters.</p> <p>SO13 Essential services such as electricity, gas, water, sewerage and telecommunications maintains its function during a flood event.</p> <p>PS 13.1 Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood water are:</p> <p>a) located above flood levels; or</p> <p>b) designed and constructed to exclude floodwater intrusion / infiltration;</p> <p>PS 13.2 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by flood.</p> <p>5.2.3 CULTURAL HERITAGE OVERLAY CODE</p> <p>SO11 The cultural heritage value of the Humpybong Creek culvert (Overlay Map 8, Site 11) is retained because of:</p> <p>b) its technically innovative design which provided a smooth flow through a limited waterway without increasing flood level upstream;</p>
PSPs	No
Details	
Other	Yes
Details	<p>3.1 Desired Environmental Outcomes</p> <p>3) The desired environmental outcomes for Redcliffe City are as follows -</p> <p>L) The design and operation of development is appropriate with regard to drainage, soil types, stability, environmental impacts and the minimisation of the adverse impacts of flood, bushfire and landslide.</p>
Op Works Code	Yes
Details	<p>6.5 EARTHWORKS CODE</p> <p>6.5.2 OVERALL OUTCOMES FOR THE EARTHWORKS CODE</p> <p>C) Earthworks do not create flooding or drainage problems.</p> <p>Specific Outcomes</p> <p>2. Drainage</p> <p>SO13 Earthworks, either during or after completion of works, do not cause or increase drainage or flooding problems on adjoining properties.</p> <p>SO14 Earthworks do not adversely affect the present or estimated future flows of any waterway in a natural or artificial watercourse.</p> <p>SO15 There is no adverse reduction in the available flood plain volume to temporarily store floodwaters.</p>
Overlay Code	Yes
Details	<p>5.1 Natural Features or Resources Overlay</p> <p>5.1.3 Natural Features or Resources Overlay Code</p> <p>The provisions in this division comprise the Natural Features or Resources Overlay code.</p> <p>They are -</p> <p>3) assessment criteria (section 5.1.6)</p> <p>C) Drainage problem areas – flooding</p> <p>2) The overall outcomes sought for the Natural Features or Resources Overlay are the following -</p> <p>C) Development located within areas affected by drainage problems or subject to flooding as indicated on Overlay Map 3 and does not result in adverse impacts to the environment or other land.</p> <p>(C) FOR SITES INCLUDED IN A DRAINAGE PROBLEM AREA AND AREAS SUBJECT TO FLOODING AS IDENTIFIED ON OVERLAY MAP 3</p> <p>SO11 New development for residential purposes or involving the construction of permanent structures on land subject to flooding does not result in adverse impacts on safety of people and development.</p> <p>PS 11.1 Development is sited on land that is not subject to flooding; or</p> <p>PS 11.2 Floor levels are located above the Q100 flood level; and</p> <p>PS 11.3 There is at least one evacuation route that remains passable for emergency evacuation during floods; or</p> <p>PS 11.4 Premises are located to allow for sufficient warning time to enable safe evacuation; or</p> <p>PS 11.5 A safe refuge is available for people within the development site.</p> <p>SO12 Development does not result in adverse impacts on structures or premises in relation to:</p> <p>a) flood levels;</p> <p>b) stream bank stability (erosion); or</p> <p>c) water quality in receiving waters.</p> <p>SO13 Essential services such as electricity, gas, water, sewerage and telecommunications maintains its function during a flood event.</p> <p>PS 13.1 Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood water are:</p> <p>a) located above flood levels; or</p> <p>b) designed and constructed to exclude floodwater intrusion / infiltration;</p> <p>PS 13.2 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by flood.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Mount Isa
Planning Scheme	Mt Isa
Adopted	19-Jul-06
Flood Amendments	No
SPP Compliance	Yes
Details	The Minister for Local Government and Planning has identified the following State Planning Policies as having being appropriately reflected in the planning scheme - - SPP1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	Yes
Details	Inundation Overlay Maps Q100
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Residential Planning Area Code</p> <p>P2 Buildings are satisfactorily protected against the ingress of floodwater.</p> <p>A2 The lowest floor of any building is to be:</p> <ul style="list-style-type: none"> - in the case of an extension to a building existing at the date of commencement of this planning scheme, where the floor area of the extension does not exceed 50% of the floor area of the existing building, at least 600mm above the level of the 15 year ARI flood as identified in maps 13-26; - otherwise, at least 300mm above the level of the 100 year ARI flood as identified in maps 13-26. <p>P8 Flood-plain development does not materially increase flood levels on other land.</p> <p>A8.1 The afflux caused by all development on any one allotment is not to exceed 25mm at the peak of the 100 year ARI flood as identified in maps 13-26. OR</p> <p>Development does not increase the water level on other land during the 100 year ARI flood as identified in maps 13-26.</p> <p>Rural Residential Planning Area Code</p> <p>P2 Buildings are satisfactorily protected against the ingress of floodwater.</p> <p>A2 The lowest floor of any building is to be:</p> <ul style="list-style-type: none"> (a) in the case of an extension to a building existing at the date of commencement of this planning scheme, where the floor area of the extension does not exceed 50% of the floor area of the existing building, at least 600mm above the level of the 15 year ARI flood as identified in maps 13-26; (b) otherwise, at least 300mm above the level of the 100 year ARI flood as identified in maps 13-26. <p>P3 Flood-plain development does not materially increase flood levels on other land.</p> <p>A3.1 Development is not to increase the water level on other land during the 100 year ARI flood as identified in maps 13-26.</p> <p>A3.2 Development is not to result in loss of floodplain storage below the level of the 100 year ARI flood on land which lies to the west of the Leichhardt River as identified in maps 13-26.</p> <p>Village Planning Area Code</p> <p>P4 Buildings are satisfactorily protected against the ingress of floodwater.</p> <p>A4 The lowest floor of any building is to be:</p> <ul style="list-style-type: none"> (a) in the case of an extension to a building existing at the date of commencement of this planning scheme, where the floor area of the extension does not exceed 50% of the floor area of the existing building, at least 600mm above the level of the 15 year ARI flood; (b) otherwise, at least 300mm above the level of the 100 year ARI flood. <p>P7 Flood-plain development does not materially increase flood levels on other land.</p> <p>A7.1 Development is not to increase the water level on other land during the 100 year ARI flood.</p> <p>A7.2 Development is not to result in the loss of floodplain storage below the level of the 100 year ARI flood.</p> <p>Commercial Planning Area Code</p> <p>P5 Buildings are satisfactorily protected against the ingress of floodwater.</p> <p>A5 The lowest floor of any building is to be:</p> <ul style="list-style-type: none"> (a) in the case of an extension to a building existing at the date of commencement of this planning scheme, where the floor area of the extension does not exceed 50% of the floor area of the existing building, at least 600mm above the level of the 15 year ARI flood as identified in maps 13-26; (b) otherwise, at least 300mm above the level of the 100 year ARI flood as identified in maps 13-26. <p>P9 Floodplain development does not materially increase flood levels on other land.</p> <p>A9 The afflux caused by all development on the allotment is not to exceed 25mm at the peak of the 100 year ARI flood as identified in maps 13-26; OR</p> <p>Development does not increase the water level on other land during the 100 year ARI flood as identified in maps 13-26.</p> <p>Industrial Planning Area Code</p> <p>P2 Buildings are satisfactorily protected against the ingress of floodwater.</p> <p>A2 The lowest floor of any building is to be:</p> <ul style="list-style-type: none"> (a) in the case of an extension to a building existing at the date of commencement of this planning scheme, where the floor area of the extension does not exceed 50% of the floor area of the existing building, at least 600mm above the level of the 15 year ARI flood as identified in maps 13-26; (b) otherwise, at least 300mm above the level of the 100 year ARI flood as identified in maps 13-26. <p>P8 Public safety and the environment are not adversely affected by the detrimental effects of floodwater on hazardous materials manufactured or stored in bulk.</p> <p>A8 The manufacture or storage in bulk of hazardous materials is to take place above the 100 year ARI flood level. OR</p> <p>Structures used for the manufacture or storage of hazardous materials in bulk are to be designed and constructed:</p> <ul style="list-style-type: none"> (a) to prevent the intrusion of floodwaters during the 100 year ARI flood, and (b) to resist the hydrostatic and hydrodynamic forces caused by inundation by the 100 year flood. <p>P9 Floodplain development does not materially increase flood levels on other land.</p> <p>A9.1 The afflux caused by all development on the allotment is not to exceed 25mm at the peak of the 100 year ARI flood as identified in maps 13-26; OR</p> <p>Development does not increase the water level on other land during the 100 year ARI flood as identified in maps 13-26.</p>

	<p>A9.2 Development does not cause loss of floodplain storage below the level of the 100 year ARI flood (as identified in maps 13-26) on land which lies to the south of the Australian map grid coordinate line N7702000.</p> <p>Rural Planning Area</p> <p>P2 Buildings are satisfactorily protected against the ingress of floodwater.</p> <p>A2 The lowest floor of any habitable building is to be:</p> <p>(a) in the case of an extension to a building existing at the date of commencement of this planning scheme, where the floor area of the extension does not exceed 50% of the floor area of the existing building, at least 600mm above the level of the 15 year ARI flood as identified in maps 13-26;</p> <p>(b) otherwise, at least 300mm above the level of the 100 year ARI flood as identified in maps 13-26.</p> <p>P6 Flood-plain development does not materially increase flood levels on other land.</p> <p>A6.1 Development does not increase the water level on other land during the 100 year ARI flood as identified in maps 13-26.</p> <p>A6.2 Development is not to result in the loss of floodplain storage below the level of the 100 year ARI flood as identified in maps 13-26.</p>
Use Codes	Yes
Details	<p>Division 11—Caravan Park / Camping Ground Code</p> <p>P12 Development is designed to provide an appropriate level of protection for occupants and property from injury or damage from stormwater inundation</p> <p>A12 (a) For sites not occupied between 1 October in any year and 1 April in the following year, no requirement.</p> <p>(b) For other sites:</p> <p>(1) the surface water resulting from stormwater runoff or flooding is to meet the following criteria:</p> <p>(i) $dV < 0.4\text{m}^2/\text{s}$, where V = velocity (m/s) and d = depth (m); and</p> <p>(ii) the depth of water is:</p> <ul style="list-style-type: none"> • Less than 300mm for the 10 year ARI flood on caravan sites; and • Not greater than 25mm for the 10 year ARI flood on tent sites; and • at least 150mm below floor level for any cabin or relocatable home during the 100 year ARI flood; <p>(2) warning signs are to be erected which are clearly visible to all occupants of sites located below the level of the 100 year ARI flood and which</p> <p>(i) warn that the land is subject to flooding, and</p> <p>(ii) notify the location of evacuation routes and the procedures for evacuation; and</p> <p>(3) evacuation routes must connect all sites below the 100 year ARI flood level to land above the 100 year ARI flood level by a route which:</p> <p>(i) is the most direct route subject to (ii), and</p> <p>(ii) does not involve traversing water where the product of the depth and the velocity is greater than that at the site from which evacuation is being effected.</p>
ROL Code	Yes
Details	<p>Reconfiguration of a Lot Code</p> <p>P1 The subdivision layout must be designed to facilitate integration with adjoining sites and the overall framework for development of the local area and in particular, should:</p> <p>(a) provide for safe vehicular and pedestrian access; and</p> <p>(b) be based on an efficient use of land and provision of services; and</p> <p>(c) provide sufficient area for useable open space; and</p> <p>(d) protect site attributes including areas of particular vegetation conservation value, natural areas and views; and</p> <p>(e) take account of site constraints or risks such as steep slope, slope instability, bushfire and flooding; and</p> <p>(f) be in keeping with the character of surrounding development.</p> <p>A1.3 Lots are to contain an area at least 300mm above the calculated 100 year ARI flood level that complies with the following:</p> <p>(a) in the Residential, Village, Commercial Centre and Industrial Planning Areas, the area identified in column 2 of Table 5.19.3.1; and</p> <p>(b) in the Rural Residential Planning Area, an area of at least 1000m² with a minimum dimension of 30m.</p> <p>P5 Any new road layout created by reconfiguring a lot:</p> <p>(b) provides convenient, safe and efficient movement of a variety of modes of transport including public transport, walking and cycling; and</p> <p>(e) provides for the construction and drainage of all roads and land in the area to be reconfigured; and</p> <p>(f) does not adversely impact on the existing environment including by impact on waterways or wildlife movement corridors.</p> <p>A5.2 Lots are to have direct access to an existing public road, or are to be connected to an existing public road by new roads and on-site access all of which are at least 150mm above the calculated 5 year ARI flood level.</p> <p>A5.3 The afflux caused by the construction of a new road or on-site access to a road is not to cause heightened flood levels on other land during the 100 year ARI flood.</p> <p>A5.4 New roads are not to pass through areas subject to the Riverine Corridors Overlay, and/or the Natural Areas Overlay and/or the Scenic Rim Overlay.</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>7.4 Priority Infrastructure Area</p> <p>Public parks will be provided to a standard that supports a diverse range of recreational, sporting and health-promoting activities to meet community expectations. This includes ensuring land is of an appropriate size, configuration and slope, and has an acceptable level of flood immunity.</p>

	<ul style="list-style-type: none"> The rate of public park provision is identified in Table 2. The size for public parks is identified in Table 3. The maximum gradient for public parks is identified in Table 4. The minimum flood immunity for public parks identified in Table 5.
Op Works Code	Yes
Details	<p>Division 16—Earthworks Code</p> <p>The purpose of the Earthworks Code is to ensure earthworks do not:</p> <ul style="list-style-type: none"> result in erosion of land and sedimentation of watercourses; cause an increase in flooding or drainage problems; <p>P4 Earthworks do not cause any increase in flooding or drainage problems.</p> <p>A4 The works are to be designed and constructed so that both during construction and upon completion:</p> <p>(a) water does not pond on any land; and</p> <p>(b) the afflux caused by the works does not affect other land by way of a heightened water level during the 100 year ARI flood as identified on maps 13-26, and</p> <p>(c) there is no loss of floodplain storage below the level of the 100 year ARI flood (as identified on maps 13-26) on land which, at the time of commencement of this planning scheme is either - in the rural planning area, or</p> <p>- is in the industrial planning area and is located south of the Australian map grid coordinate line N7702000, or</p> <p>- is in the rural residential planning area and is located west of the Leichhardt river, and</p> <p>(d) any runoff diverted by the works is to be discharged directly to a point of lawful discharge in such a way that the pre-existing runoff patterns</p> <p>Division 17—Engineering Works and Services Code</p> <p>P8 Essential services maintain their function during the occurrence of natural hazards.</p> <p>A8.1 Components of the systems which deliver electricity supply, gas supply, water supply, sewerage and telecommunications services and which will be adversely affected by the inundation by or infiltration of floodwater are to be</p> <p>(a) located above the level of the 100 year ARI flood, or</p> <p>(b) designed and constructed to exclude inundation by or infiltration of floodwater during the 100 year ARI flood.</p> <p>A8.2 All parts of the systems which deliver electricity supply, gas supply, water supply, sewerage and telecommunications services and which are subject to inundation during the 100 year ARI flood are to be designed and constructed to resist the hydrostatic and hydrodynamic forces which result from such inundation.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Murweh
Planning Scheme	Murweh
Adopted	20/06/2005
Flood Amendments	No
SPP Compliance	Yes
Details	State planning policies The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme— 3. 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	Yes
Details	Q80
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 3—Assessment Criteria for Rural Zone Code</p> <p>4.8 Specific Outcomes and Probable Solutions for the Rural Zone</p> <p>Development in the Rural Zone seeks to achieve the following specific outcomes:</p> <p>Specific Outcome</p> <p>(b) Natural Resources Values</p> <p>(ii) Development does not:-</p> <ul style="list-style-type: none"> - Establish in flood prone areas - Degrade natural watercourses and water storages - Endanger users by sitings near potential hazards <p>Probable Solution</p> <p>(ii) Buildings, ancillary structures and all developments are constructed</p> <ul style="list-style-type: none"> - with floor levels 300mm above the Q80 flood for the locality and - at least 100 m from the top bank of all water courses and full supply level of storages - no closer than 200m from a petroleum pipeline. <p>Division 5—Assessment Criteria for Park Residential Zone Code</p> <p>4.15 Specific Outcomes and Probable Solutions for Park Residential Zone Development of Park Residential areas seeks to achieve the following specific outcomes and probable solutions:</p> <p>(ii) Separation is maintained between the development and natural permanent watercourses and water storages to prevent degradation and effects of floods.</p> <p>Probable Solution</p> <p>(ii) Buildings and ancillary structures are constructed with floor levels 300mm above the Q100 flood for the locality and at least 100 m from the top bank of all water courses and full supply level of storages</p> <p>Division 7—Assessment Criteria for Residential Zone Code</p> <p>4.22 Specific Outcomes and Probable Solutions for Residential Zone Developments in the Residential Zone seek to achieve the following specific outcomes:-</p> <p>(ii) New residential areas are developed on land which ,.</p> <ul style="list-style-type: none"> - Are above the highest available flood level in the locality or the Q80 flood whichever is higher <p>Division 11—Assessment Criteria for Industry Zone Code</p> <p>4.36 Specific Outcomes and Probable Solutions for Industry Zone</p> <p>Probable Solution</p> <p>(i) New industrial estate are established on land with the following characteristics:-</p> <ul style="list-style-type: none"> - Well drained with all allotments above the Q80 flood level. Allotments are free draining at all times without creating pondage on adjoining land. <p>Specific Outcome</p> <p>General Values</p> <p>(iii) Sites for industry are located in areas with low risk of threats from landslip, flood or bushfire.</p> <p>Specific Outcome</p> <p>(b) Natural Resources</p> <p>(ii) Separation exists between the development and natural permanent watercourses and water storages to prevent degradation and effects of floods</p> <p>Probable Solution</p> <p>(ii) Buildings and ancillary structures are constructed with floor levels 300 mm above the highest known flood for the locality and at least 100 m from the top bank of all water courses and storages</p> <p>Division 13—Assessment Criteria for Green Space Zone Code</p> <p>4.43 Specific Outcomes and Probable Solutions for Green Space Zones</p> <p>Development in the Green Space Zone seeks to achieve the following specific outcomes.</p> <p>Specific Outcome</p> <p>(d) Natural Resources Values</p> <p>(ii) Separation is provided between the development and natural watercourses and water storages and to prevent degradation and effects of floods.</p> <p>Probable Solution</p> <p>(ii) Buildings and ancillary structures are constructed with floor levels 300mm above the Q80 flood for the locality and at least 100m from the top bank of all water courses and storages</p> <p>Division 15—Community Use Zone Code</p> <p>4.50 Specific Outcomes and Probable Solutions for Community Use Zones</p> <p>Developments in the Community Use Zone seek to achieve the following specific outcomes:</p> <p>Specific Outcome</p> <p>(d) Natural Resources Values</p> <p>(ii) Separation is provided between the development and natural watercourses and water storages and to prevent degradation and effects of</p>

	<p>floods.</p> <p>Probable Solution</p> <p>(ii) Buildings and ancillary structures are constructed with floor levels 300mm above the Q80 flood for the locality and at least 100m from the top bank of all water courses and stora</p>
Use Codes	Yes
Details	<p>Division 3—Caravan Park Code</p> <p>6.9 Specific Outcomes And Probable Solutions For Caravan Park Code</p> <p>The specific outcomes sought for Caravan Park code are included in column 1 and probable solutions in column 2.</p> <p>Specific Outcome</p> <p>(a) Caravan parks are located ;</p> <p>(i) on land with sufficient area and minimal grade to ensure risk of landslide is minimised and</p> <p>(ii) on land not subject to flooding.</p> <p>Probable Solution</p> <p>(a) (i) The minimum area of land is 4 ha with slopes not exceeding 2% on 90% of the site and be above the maximum recorded flood level for the area or the Q100 ,which ever is the highest.</p> <p>Division 6—Child Care Centre Code</p> <p>6.21 Specific outcomes and probable solutions for Child Care Centre Code</p> <p>The specific outcomes sought for Child Care Centre code are included in column 1 and probable solutions in column 2.</p> <p>Specific Outcome</p> <p>(b) The development is located to minimise:</p> <p>(iii) flood damage or hazard</p> <p>Division 9—Dwelling house Code</p> <p>Specific Outcome</p> <p>(c) Buildings and associated structures are sited to minimise the effects of flood inundation on the structure and its contents</p> <p>Probable Solution</p> <p>(c) (i) Floor levels for Habitable living areas are a minimum of 300 mm above the highest recorded flood level on the allotment, or the Q80 flood level whichever is higher.</p> <p>Division 13—General Development Code</p> <p>6.49 Specific outcomes and probable solutions for general development code</p> <p>The specific outcomes sought for General Development code are included in column 1 and probable solutions in column 2.</p> <p>Specific Outcome</p> <p>(iii) Access and Drainage</p> <p>All developments ensure access to and drainage are:</p> <ul style="list-style-type: none"> • flood free and with systems that ensure all lots are free draining. <p>Division 14— Holiday Cabin Development Code</p> <p>6.53 Specific Outcomes And Probable Solutions For Holiday Cabin Development Code</p> <p>The specific outcomes sought for Holiday Cabin Development code are included in column 1 and probable solutions in column 2.</p> <p>Probable Solution</p> <p>(iii) The sites are flood free and not constructed on land steeper than 1 in 8.</p> <p>Division 18—Intensive Rural Use Code</p> <p>6.69 Specific Outcomes And Probable Solutions For Intensive Rural Use Code</p> <p>The specific outcomes sought for Intensive Rural Use code are included in column 1 and probable solutions in column 2.</p> <p>Specific Outcome</p> <p>(a) The development is located and sited such that:</p> <ul style="list-style-type: none"> - natural flood and drainage processes and patterns are maintained
ROL Code	Yes
Details	<p>Division 21—Reconfiguring a Lot Code</p> <p>6.81 Specific Outcomes and Probable Solutions for Reconfiguring a Lot Code</p> <p>The specific outcomes sought for Reconfiguring a Lot code are included in column 1 and probable solutions in column 2.</p> <p>Probable Solution</p> <p>(e) Allotments are not created:</p> <p>(i) Below the highest recorded flood level or Q80 flood level for the locality, whichever is higher.</p>
Overlay Codes	Yes
Details	<p>Division 4—Assessment criteria for Natural Hazards Overlay Code</p> <p>5.9 Natural Hazards overlay code The provisions in this division comprise the Natural hazards Overlay code Overlay Maps OM 2(a, b) relate to the flood and bushfire hazard listed in section 5.12</p> <p>Floodable Land*</p> <p>Specific Outcome</p> <p>(a) Development maintains the safety of people on the development site from all floods up to and including a 1:100 year event.</p> <p>*Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to Planning Scheme Policy 5.</p> <p>Probable Solution</p> <p>(a) Development is sited on land that would not be subject to flooding during a 1:100 year flood event.</p> <p>Specific Outcome</p> <p>(b) Development does not result in adverse impacts on peoples safety or the capacity to use land within the floodplain.</p> <p>Probable Solution</p> <p>(b) Works do not involve:</p> <p>(i) any physical alteration to a permanent watercourse or floodway including vegetation clearing; or</p> <p>(ii) net filling exceeding 50 cubic metres.</p> <p>Specific Outcome</p> <p>(c) Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk.</p> <p>Probable Solution</p> <p>(c) The manufacture or storage in bulk of hazardous materials takes place above the level of a 1:100 year flood event; OR</p>

	<p>Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event.</p> <p>Specific Outcome</p> <p>(d) Essential public utilities are available and maintain their function during flood events up to a 1:100 year flood event.</p> <p>Probable Solution</p> <p>(d) Components of the infrastructure including water, sewerage, gas electricity, telecommunications that are likely to fail or may result in contamination are -</p> <p>(i) located above the level of a 1:100 year flood event; or</p> <p>(ii) are designed and constructed to exclude water inundation or infiltration and resist hydrostatic and hydrodynamic forces as a result of inundation.</p> <p>Specific Outcome</p> <p>(e) Community Infrastructure* is able to function effectively during and immediately after flood events.</p> <p>*The types of Community infrastructure to which the specific outcome applies are set out in A1.2 of Annex 1 of the SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p> <p>Probable Solution</p> <p>(e) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide .</p>
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 5</p> <p>FLOODS</p> <p>Refer whole policy.</p>
Other	Yes
Details	<p>Flood Plain means an area of land which is inundated periodically by flood waters.</p> <p>PART 3—DESIRED ENVIRONMENTAL OUTCOMES</p> <p>Community Facilities and Infrastructure</p> <p>8. Community facilities and infrastructure including access and waste management, provide for the well being of the community, and enhanced by minimising adverse impacts of natural hazards, including floods.</p>
Op Works Code	Yes
Details	<p>Division 11— Filling and Excavation Code</p> <p>6.40 Overall Outcomes Of Filling And Excavation Code</p> <p>(b) Filling or excavation does not degrade:-</p> <p>- or increase flooding or surface flows</p>
Overlay Code	Yes
Details	<p>Division 4—Assessment criteria for Natural Hazards Overlay Code</p> <p>5.9 Natural Hazards overlay code The provisions in this division comprise the Natural hazards Overlay code Overlay Maps OM 2(a, b) relate to the flood and bushfire hazard listed in section 5.12</p> <p>Floodable Land*</p> <p>Specific Outcome</p> <p>(a) Development maintains the safety of people on the development site from all floods up to and including a 1:100 year event.</p> <p>*Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to Planning Scheme Policy 5.</p> <p>Probable Solution</p> <p>(a) Development is sited on land that would not be subject to flooding during a 1:100 year flood event.</p> <p>Specific Outcome</p> <p>(b) Development does not result in adverse impacts on peoples safety or the capacity to use land within the floodplain.</p> <p>Probable Solution</p> <p>(b) Works do not involve:</p> <p>(i) any physical alteration to a permanent watercourse or floodway including vegetation clearing; or</p> <p>(ii) net filling exceeding 50 cubic metres.</p> <p>Specific Outcome</p> <p>(c) Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk.</p> <p>Probable Solution</p> <p>(c) The manufacture or storage in bulk of hazardous materials takes place above the level of a 1:100 year flood event;</p> <p>OR</p> <p>Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event.</p> <p>Specific Outcome</p> <p>(d) Essential public utilities are available and maintain their function during flood events up to a 1:100 year flood event.</p> <p>Probable Solution</p> <p>(d) Components of the infrastructure including water, sewerage, gas electricity, telecommunications that are likely to fail or may result in contamination are -</p> <p>(i) located above the level of a 1:100 year flood event; or</p> <p>(ii) are designed and constructed to exclude water inundation or infiltration and resist hydrostatic and hydrodynamic forces as a result of inundation.</p> <p>Specific Outcome</p> <p>(e) Community Infrastructure* is able to function effectively during and immediately after flood events.</p> <p>*The types of Community infrastructure to which the specific outcome applies are set out in A1.2 of Annex 1 of the SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p> <p>Probable Solution</p> <p>(e) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide .</p>
PSPs	No
Details	

Other	No
Details	
Other Info	No

LGA	North Burnett
Planning Scheme	Biggenden
Adopted	4/07/2006
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme –</p> <p>2. The bushfire and landslide components of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Mapped Q100 / DFE	No
Details	Maximum Recorded May Be Used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone / Small Town Zone/ Urban Zone</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(4) Within the Rural “Zone”, “development”:</p> <p>(j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events;</p> <p>Rural Zone</p> <p>PC16 Stormwater</p> <p>Stormwater is collected and discharged so as to:</p> <p>(a) protect the stability of buildings or the use of adjacent land; and</p> <p>(b) protect and maintain environmental values</p> <p>AS16 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1.</p> <p>Urban Zone</p> <p>PC24 “Watercourses” and “Lakes” (Rural , Small Town, Urban) Zones)</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS24 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses.</p> <p>PC26 Cultural Heritage “Development” ensures the protection and maintenance of places and items of cultural heritage.</p> <p>AS26.1 A minimum separation distance of 50 metres is provided to the “Bed and banks” of “Watercourses” and “Lakes”.</p> <p>Small Town Code</p> <p>PC24 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS24 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses.</p> <p>PC25 Cultural Heritage (Small Town and Urban Zone)</p> <p>“Development” ensures the protection and maintenance of places and items of cultural heritage.</p> <p>AS25.1 A minimum separation distance of 10 metres is provided to the “Bed and banks” of “Watercourses” and “Lakes”.</p> <p>PC32 Flooding (Small Town and Urban Zone)</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.</p> <p>AS32 No acceptable solution is prescribed.</p> <p>PC5 “Watercourses” and “Lakes” (Small Town and Urban Zone)</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS5 A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p> <p>PC6 Cultural Heritage (Small Town and Urban Zone)</p> <p>“Development” ensures the protection and maintenance of places and items of cultural heritage.</p> <p>AS6.1 A minimum separation distance of 10 metres is provided to the “Bed and banks” of “Watercourses” and “Lakes”.</p> <p>Urban Zone/ Commercial/ Industrial/Open Space and Recreation Zone</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(h) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>Commercial/Industrial Zone</p> <p>PC12/PC13/PC27/PC14 Stormwater (Commercial/Industrial/ Open Space and RecreationZone/ Ral)</p> <p>Stormwater is collected and discharged so as to:</p> <p>(a) protect the stability of buildings or the use of adjacent land; and</p> <p>(b) protect and maintain environmental values</p> <p>AS12/AS13/AS27 Commercial/Industrial/ Open Space and RecreationZone)</p> <p>Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1.</p> <p>PC19/20/35 “Watercourses” and “Lakes”</p> <p>Commercial/Industrial/ Open Space and RecreationZone)</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS19/20 Commercial and Industrial Zone)</p> <p>A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses.</p> <p>AS35 (Open Space and Recreation Zone)A minimum 50 metre wide buffer area is provided extending out from the high bank of any</p>

	<p>“Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses.</p> <p>PC20/21 Cultural Heritage</p> <p>“Development” ensures the protection and maintenance of places and items of cultural heritage.</p> <p>AS20.1 /21.1(Commercial and Industrial Zone)</p> <p>A minimum separation distance of 10 metres is provided to the “Bed and banks” of “Watercourses” and “Lakes”</p> <p>AS37.1 (Open Space and Recreation Zone)</p> <p>A minimum separation distance of 50 metres is provided to the “Bed and banks” of “Watercourses” and “Lakes”.</p> <p>PC27 /28 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding. (To assist an applicant to demonstrate compliance with PC27, the maximum recorded flood may be adopted as an indication of flood level)</p> <p>PC5 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS5 (Commercial and Industrial) Zone) A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p> <p>AS5 (Open Space and Recreation Zone) A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses.</p> <p>PC6 Cultural Heritage</p> <p>“Development” ensures the protection and maintenance of places and items of cultural heritage.</p> <p>AS6.1 (Commercial and Industrial Zone) A minimum separation distance of 10 metres is provided to the “Bed and banks” of “Watercourses” and “Lakes”.</p> <p>AS6.1 (Open Space and Recreation Zone).A minimum separation distance of 50 metres is provided to the “Bed and banks” of Watercourses” and “Lakes”.</p>
Use Codes	Yes
Details	
ROL Code	Yes
Details	Reconfiguring A Lot Code
Overlay Codes	No
Details	(e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events;
PSPs	Yes
Details	<p>PSP 1 - Information Council May Request</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(i) location of any “Watercourse” or waterhole;</p> <p>(j) details of any known flood levels;</p>
Other	Yes
Details	<p>Schedule 1</p> <p>5.1 Standards for Stormwater Drainage</p> <p>(1) Stormwater Drainage is in accordance with:</p> <p>Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PSP 1 - Information Council May Request</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(i) location of any “Watercourse” or waterhole;</p> <p>(j) details of any known flood levels;</p>
Other	No
Details	
Other Info	

LGA	North Burnett
Planning Scheme	Eidsvold
Adopted	23/01/2007
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.
Mapped Q100 / DFE	No
Details	Maximum Recorded May Be Used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/ Rural Residential/Small Town/Urban/Commercial / Industrial/Open Space and Recreation/Ral Zone The following outcomes are the Purpose of the Code: j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; PC16 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS16 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1. PC24 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS24 (Rural/Rural Residential/Open Space and Recreation Zone) A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. AS24 (Small Town /Urban/Commercial/Industrial Zone) A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. PC34 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. AC34 No acceptable solution is prescribed. (Footnote: To assist an applicant to demonstrate compliance with PC33, the maximum recorded flood may be adopted as an indication of flood level).
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	PSP 1 - Information Council May Request 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (i) location of any “Watercourse” or waterhole; (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	PSP 1 Information Council May Request
Other	
Details	
Other Info	1.4 General Assessment Provisions (2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	North Burnett
Planning Scheme	Gayndah
Adopted	13/09/2006
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Maximum Recorded May Be Used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/ Rural Residential/Small Town/Urban/Commercial/Industrial/Open Space and Recreation Zone/Ral Code The following outcomes are the Purpose of the Code: j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; PC16 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS16 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1. PC24 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS24 (Rural / Rural Residential/Open Space and Recreation Zone) A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. AS24 (Small Town/Urban Zone/Commercial/Industrial) A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. PC34 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. PC34 No acceptable solution is prescribed. (Footnote: To assist an applicant to demonstrate compliance with PC32, the maximum recorded flood may be adopted as an indication of flood level).
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	PSP 1 - Information Council May Request 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (i) location of any “Watercourse” or waterhole; (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	PSP 1 Information Council May Request
Other	No
Details	
Other Info	1.4 General Assessment Provisions (2) Exempt Development (a) The following “Development” is exempt development within the local government area:

	(v) "Development" involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;
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LGA	North Burnett
Planning Scheme	Monto
Adopted	24/08/2006
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components only of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Maximum Recorded May Be Used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Rural Residential/Small Town/Urban/Industrial /Commercial/ Mixed Use Code/Open Space and Recreation/RaL) The following outcomes are the Purpose of the Code: j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; PC16 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS16 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1. PC24 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment AS24 (Rural /Rural Residential/Open Space and Recreation Zone) A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. AS24 (Small Town/Urban Zone/Commercial/Industrial/Mixed Use A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. PC34 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. AC34 No acceptable solution is prescribed. (Footnote: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level).
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	PSP 1 - Information Council May Request 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (i) location of any “Watercourse” or waterhole; (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	PSP 1 Information Council May Request
Other	No
Details	
Other Info	1.4 General Assessment Provisions (2) Exempt Development (a) The following “Development” is exempt development within the local government area: (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;

LGA	North Burnett
Planning Scheme	Mundubbera
Adopted	20/01/2006
Flood Amendments	No
SPP Compliance	No
Details	Compliance is not stated
Mapped Q100 / DFE	Yes
Details	Flood Problem Area Mapped in Cultural Heritage Overlay
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone Specific Outcomes Public Safety, health and amenity (g) Areas that are subject to periodic inundation, land slip or failure of any Referable Structure defined under the Water Act 2000 are not occupied. ASg. No probable solution stated</p> <p>Industrial Zone Specific Outcomes Wastewater, surface water and refuse disposal (m) Wastewater does not enter watercourses or groundwater because the following measures have been implemented— (v) locating storage tanks containing hazardous, toxic or noxious wastes only in locations that are flood free for a 1 in 100 year flood event. ASm No probable solution stated (n) Stormwater drainage and run-off from hardstand areas do not result in overloading of downstream flows due to a concentration of flows. ASn No probable solution stated (o) Where large quantities of concentrated run-off are likely, retarding basins are provided to avoid concentration of stormwater flows. ASo No probable solution stated</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code Specific Outcomes Lot size and configuration—generally applicable (69) The reconfiguring does not result in increased risk to life or property as a result of flooding, landslip, wildfire, or other natural hazard, having regard to the likely subsequent development on the land. General site suitability—for subsections (89) A suitable building platform is available that— (a) is not below the highest recorded flood level or otherwise subject to flooding or inundation;</p>
Overlay Codes	Yes
Details	<p>5.8 Assessment provisions—Cultural Heritage Features Overlays Code Cultural Heritage Features Overlay (c) 5.8.4—Specific outcomes for flooding 5.8.4 Specific outcomes for flooding (19) For development located in the Drainage and Flood Liability Overlay— Immunity from flooding (a) An acceptable level of flood immunity is provided. (b) Development minimises risks to personal safety and the risk of damage to property. Flooding or drainage problems (c) Works do not create or increase flooding or drainage problems</p>
PSPs	No
Details	
Other	Yes
Details	<p>Schedule 2 - Cultural Heritage features Location of premises shown on the map as "Drainage and Flood Liability Overlay". (Includes map)</p>
Op Works Code	Yes
Details	<p>6.3 Filling and Excavation Code (20) The overall outcomes for the Filling and Excavation Code are— (b) where filling or excavation occurs on a floodaffected\ site, there is no increase in the risk of flood damage to life or property for existing and proposed development; Specific Outcomes Environmental Effects (g) Filling and excavation does not adversely affect environmental values in receiving waterways or wetlands nor adversely affect areas of nature conservation significance. A.S(g). Filling or excavation does not occur— (ii) within 100 metres of any wetland or creek or 200 metres of a river; or, (iii) below a 100 year ARI flood level. Flooding and Drainage (k) The finished surface level — (i) is free draining;</p>

	<p>(ii) is free from flooding;</p> <p>(iii) does not interrupt or materially change the surface water drainage from or onto adjoining land;</p> <p>(iv) does not adversely affect the flow of water in any overland flow path; and</p> <p>(v) permits surface water to drain to a lawful point of discharge.</p> <p>AS-k No acceptable or probable solution identified</p> <p>(l) Filling and excavation does not cause any new or exacerbate an existing flooding or drainage problem including—</p> <p>(i) the loss or reduction of flood storage;</p> <p>(ii) creation of afflux;</p> <p>(iii) hazards to property or people;</p> <p>(iv) any impediment to a Counter Disaster Plan measure;</p> <p>(v) creating new flood prone land or a flood hazard;</p> <p>(vi) adverse hydraulic impact on areas external to the site.</p> <p>AS-l No acceptable or probable solution identified</p> <p>Infrastructure Works Code</p> <p>(12) The following are the overall outcomes sought for the Development Infrastructure Works Code—</p> <p>(16) Adequate stormwater drainage is provided to—</p> <p>(b) detain, collect and reuse stormwater without ponding for a prolonged period;</p> <p>(c) protect the efficiency of downstream drainage;</p> <p>(e) maintain the safety of people and property;</p>
Overlay Code	Yes
Details	<p>5.8.4 Specific outcomes for flooding</p> <p>(19) For development located in the Drainage and Flood Liability Overlay—</p> <p>Immunity from flooding</p> <p>(a) An acceptable level of flood immunity is provided.</p> <p>(b) Development minimises risks to personal safety and the risk of damage to property.</p> <p>Flooding or drainage problems</p> <p>(c) Works do not create or increase flooding or drainage problems.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	North Burnett
Planning Scheme	Perry
Adopted	29/09/2006
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components only of the State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	the maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Rural/Rural Residential/Urban/Commercial/Industrial/Open Space and Recreation/RaL Code The following outcomes are the Purpose of the Code: j) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; PC16 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values AS16 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1. PC24 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment. AS24 (Rural/Rural Residential/Open Space and Recreation) A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses. AS24 (Urban/Commercial/Industrial zones) A minimum 10 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”. Buffer areas include a cover of vegetation, including grasses PC34 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding. (Footnote: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	.
PSPs	Yes
Details	PSP 1 - Information Council May Request 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (i) location of any “Watercourse” or waterhole; (j) details of any known flood levels;
Other	Yes
Details	Schedule 1 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	PSP 1 - Information Council May Request 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (i) location of any “Watercourse” or waterhole; (j) details of any known flood levels;
Other	No

Details	
Other Info	

LGA	Paroo
Planning Scheme	Paroo
Adopted	21-Jul-06
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme –</p> <p>2. The bushfire and landslide components of the State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p> <p>The Minister for Local Government and Planning has advised the Integrated Development Assessment System trigger for Department of Main Roads, and the flood provisions of State Planning Policy 1/03 continue to have effect.</p>
Mapped Q100 / DFE	No
Details	Highest recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone / Rural Residential Zone / Small Town Zone / Urban Zone / Commercial Zone / Industrial / Mixed Use / Open Space and Recreation Zone</p> <p>(4) Within the Rural “Zone”, “development”:</p> <p>(k) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC34 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.</p> <p>AS34: No acceptable solution is prescribed.</p> <p>Note: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>5.2 Code Purpose</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(1) “Reconfiguring a lot”:</p> <p>(e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events; and</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(j) details of any known flood levels;</p>
Other	Yes
Details	<p>(2) Exempt Development</p> <p>(a) The following “Development” is exempt development within the local government area:</p> <p>(v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;</p> <p>Desired Environmental Outcomes</p> <p>3.1 The Environment</p> <p>In Paroo Shire, ecological systems (including the Paroo and Warrego River Systems) and the unique natural features (such as the Culgoa Floodplain National Park and Currawinya National Park) and items and places of cultural and heritage significance are protected and enhanced by development.</p> <p>– Development is managed to minimise the adverse impacts on air and water quality, to prevent land degradation, loss of habitat and biodiversity and to protect riparian areas.</p> <p>– Protected areas (including the Culgoa Floodplain National Park and Currawinya National Park) and areas and items of cultural significance (including areas along water courses) are identified to ensure their environmental and landscape values and historic significance are protected and enhanced through compatible development.</p> <p>Division 5: Standards For Stormwater Drainage</p> <p>5.1 Standards for Stormwater Drainage</p> <p>(1) Stormwater Drainage is in accordance with:</p> <p>Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council</p> <p>Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT</p>
Op Works Code	Yes
Details	PC4 “Watercourses” and “Lakes”

	<p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(j) details of any known flood levels;</p>
Other	No
Details	
Other Info	

LGA	Quilpie
Planning Scheme	Quilpie
Adopted	8-Jun-06
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme –</p> <p>2. The bushfire and landslide components of the State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p> <p>The Minister for Local Government and Planning has advised the Integrated Development Assessment System trigger for Department of Main Roads, and the flood provisions of State Planning Policy 1/03 continue to have effect.</p>
Mapped Q100 / DFE	No
Details	Highest Recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone / Small Town Zone / Urban Zone / Commercial Zone / Industrial / Mixed Use / Open Space and Recreation Zone</p> <p>(4) Within the Rural “Zone”, “development”:</p> <p>(k) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC34 Flooding</p> <p>“Premises” are designed and located so as:</p> <p>(a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent or magnitude of flooding.</p> <p>AS34: No acceptable solution is prescribed.</p> <p>Note: To assist an applicant to demonstrate compliance with PC34, the maximum recorded flood may be adopted as an indication of flood level.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>5.2 Code Purpose</p> <p>The following outcomes are the Purpose of the Code:</p> <p>(1) “Reconfiguring a lot”:</p> <p>(e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events; and</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(j) details of any known flood levels;</p>
Other	Yes
Details	<p>(2) Exempt Development</p> <p>(a) The following “Development” is exempt development within the local government area:</p> <p>(v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants;</p> <p>Division 5: Standards For Stormwater Drainage</p> <p>5.1 Standards for Stormwater Drainage</p> <p>(1) Stormwater Drainage is in accordance with:</p> <p>Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council</p> <p>Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT</p>
Op Works Code	Yes
Details	<p>PC4 “Watercourses” and “Lakes”</p> <p>“Development” ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.</p> <p>AS4 A minimum 50 metre wide buffer area is provided extending out from the high bank of any “Watercourse” or “Lake”.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PLANNING SCHEME POLICY 1 - INFORMATION COUNCIL MAY REQUEST</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p>

	2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	No
Details	
Other Info	

LGA	Redland
Planning Scheme	Redland Planning Scheme
Adopted	Originally adopted 15 -Mar-06, current version 3.1 adopted 15-Dec-10
Flood Amendments	Yes
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	Yes
Details	Flood Prone, Storm Tide and Drainage Constrained Land Overlay
Structure Plans (Etc)	Yes
Details	<p>(4) South-East Thornlands Structure Plan</p> <p>(h) Land Use Precinct Strategy – Greenspace Network</p> <p>(i) The Greenspace Network incorporates a protected and connected network of natural areas and accessible open spaces in private and public ownership comprised of parklands, wetlands, bushland habitats and landscape values that help to define the footprint of urban development in South-East Thornlands.</p> <p>(ii) Outcomes for the Greenspace Precinct include:</p> <ul style="list-style-type: none"> - protect the hydraulic and ecological processes of the Moreton Bay foreshore, waterway corridors, flood prone land and land subject to storm surge; <p>c. Sub-precinct 4b Eprapah Creek Corridor protects and enhances publicly owned land that:</p> <ul style="list-style-type: none"> - maintains the hydraulic capacity of Eprapah Creek and its riparian flood plains to accommodate local flooding and overland stormwater flows; <p>d. Sub-precinct 4c Pinklands Reserve Corridor protects and enhances publicly owned land that:</p> <ul style="list-style-type: none"> - maintains the hydraulic capacity of Thornlands Creek and its riparian flood plains to accommodate local flooding and overland stormwater flows; <p>f. Sub-precinct 4e Bushland Living provides for single dwelling houses on existing privately owned lots that:</p> <ul style="list-style-type: none"> - maintains the hydraulic capacity of existing wetlands, waterways and Moreton Bay Foreshore to accommodate ecological processes including tidal storm surges, flooding and overland stormwater flows; <p>g. Sub-precinct 4f Flood Prone Area – Central Open Space protects and enhances publicly owned land that:</p> <ul style="list-style-type: none"> - maintains the hydraulic capacity, water quality and ecological values of this locally important drainage line; <p>s1.6 (e) ensure that where development adjoins Precinct 4 – Greenspace network it is located and designed so as not to compromise adjoining environmental values or the hydraulic capacity and ability of the adjoining land to accommodate the one percent AEP flood;</p> <p>P1.6 (1) No probable solution identified.</p> <p>(3) Sub-precinct 4b – Eprapah Creek Corridor protects and enhances publicly owned land that –</p> <p>(d) protects the hydraulic capacity and ecological functions of Eprapah Creek and land which naturally accommodates the flow of water during flood events;</p> <p>(5) Sub-precinct 4d - Thornlands Creek Corridor protects and enhances publicly owned land that –</p> <p>(f) protects the hydraulic capacity and ecological functions and values of the waterway and lands which accommodate the flow of water during flood events;</p> <p>(6) Sub-precinct 4e - Bushland Living is designed and located to –</p> <p>(b) protects the hydraulic capacity and ecological functions of wetlands, waterways and Moreton Bay Foreshore and lands which accommodate the flow of water during flood and storm tide events</p> <p>(7) Sub-precinct 4f - Flood Prone Areas – Central Open Space protects and enhances publicly owned land that –</p> <p>(b) protects the hydraulic capacity of the waterway and lands which accommodate the flow of water during flood events;</p> <p>(c) incorporates a local park located above the 1 percent AEP flood inundation level;</p>
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Commercial Industry Zone Code / Community Purpose Zone / Conservation Zone / District Centre Zone / Emerging Community Zone / Environmental Protection Zone / Genral Industry Zone / Investigation Zone / Island Industry Zone / Local Centre Zone / Low Density Residential Zone / Major Centre Zone / marine Activity Zone / Medium Density Zone / Neighbourhood Density Zone / Open Space Zone / Park Residential Zone / Point Lookout Centre Zone / Point Lookout Residential Zone / Point Lookout Tourist Zone / SMI Centre Zone / SMI Residential Zone / Urban Residential Zone</p> <p>P6.7 Community infrastructure is able to function effectively during and immediately after flood events.</p> <p>S6.7 Community infrastructure is located at or above the recommended flood levels in Table 4 - Recommended Flood Levels for Community Infrastructure.</p> <p>Table 4 - Recommended Flood Levels for Community Infrastructure</p> <p>Type of Community Infrastructure - Recommended Flood Level AEP (ARI)</p> <p>Emergency services, other than police facilities 0.2% (1 in 500 year ARI)</p> <p>Emergency shelters 0.5% (1 in 200 year ARI)</p> <p>Police facilities 0.5% (1 in 200 year ARI)</p> <p>Hospitals and associated facilities 0.2% (1 in 500 year ARI)</p> <p>Stores of valuable records or items of historic or cultural significance, such as galleries and libraries 0.5% (1 in 200 year ARI)</p> <p>Power stations 0.2% (1 in 500 year ARI)</p> <p>Major switch yards 0.2% (1 in 500 year ARI)</p> <p>Substations 0.5% (1 in 200 year ARI)</p> <p>Sewerage treatment plants 1% (1 in 100 year ARI)</p> <p>Water treatment plants 0.5% (1 in 200 year ARI)</p> <ul style="list-style-type: none"> - State-controlled roads - Works of an electricity entity not otherwise listed in this table - Railway lines, stations and associated facilities - Aviation facilities - Communication network facilities <p>No specific recommended flood level but development proponents should ensure that the infrastructure is optimally located and designed to achieve suitable levels of service, having regard to the processes and policies of the administering government agency.</p> <p>Conservation Zone</p> <p>4.3.7 Overall Outcomes for Conservation Zone Code</p>

	<p>(a) Environment</p> <p>h. where in sub-area CN1 - the ecological function of flood prone, inter-tidal and drainage constrained land.</p> <p>S1.1 (1) Uses and other development maintain, enhance and protect environmental values by -</p> <p>(i) minimising the need for excavation and fill;</p> <p>(j) managing stormwater run-off and enhancing water quality;</p> <p>(k) reducing erosion and sediment run-off;</p> <p>(l) where in sub-area CN1 -</p> <p>(i) flood prone, inter-tidal and drainage constrained land provides habitat and movement for native animals, treatment of stormwater run-off, allows for natural infiltration, and manages the effects of erosion;</p> <p>P1.1 (1) No probable solution identified.</p> <p>Open Space Zone</p> <p>S3.3 (1) Site coverage of buildings and any other hard surface areas minimise built areas to -</p> <p>(d) facilitate stormwater and flood management.</p> <p>P3.3 (1) No probable solution identified.</p> <p>S3.4 (1) Setbacks of buildings from property boundaries -</p> <p>(d) enable the effective location of overland flow paths and utility infrastructure;</p> <p>(f) are increased where required to provide -</p> <p>(i) overland flow paths associated with flood and stormwater management,</p> <p>P3.4 (1) No probable solution identified.</p> <p>SMBI Residential Zone Code - Overall Outcomes</p> <p>(iv) Uses and other development are located to protect land below the 1 percent AEP (1 in 100 year ARI) flood and storm tide level to -</p> <p>a. avoid the risk of flooding and maintain the safety of people and property;</p> <p>d. protect the hydraulic capacity of land below the flood or storm tide level.</p> <p>S1.5 Uses and other development are not undertaken on land below the 1 percent AEP (1 in 100 year ARI) flood level and storm surge level.</p> <p>P1.5 No probable solution identified.</p> <p>S5.5 Vehicular access is provided to the site from a road of sufficient standard, in terms of surface, gradient and structural capacity, to provide unrestricted flood free access at all times by a conventional two wheel drive vehicle.</p> <p>P5.5 No probable solution identified.</p>
Use Codes	Yes
Details	<p>Intensive Agriculture Code</p> <p>S1.1 (1) The use is consistent with the land capability including -</p> <p>(a) topography;</p> <p>P1.1 (1) The lot or premises -</p> <p>(a) has land with slopes less than 10 percent (1 in 10);</p> <p>(b) is not on land subject to flooding or inundation in a 1 percent AEP event (1 in 100 year ARI);</p> <p>Private Waterfront Structures</p> <p>S1. (1) Private waterfront structures including jetties, pontoons, boat ramps or slipways -</p> <p>(iv) wind, tidal and flood flows, including debris.</p> <p>(vi) have a mooring system designed with provision for -</p> <p>a. vertical movement to allow for tidal effects and the highest recorded flood effects;</p> <p>b. positive fixing of the flotation unit in plan position; or</p> <p>8.9.3 Overall Outcomes of the Stormwater Management Code</p> <p>(1) The overall outcomes are the purpose of the Stormwater Management Code.</p> <p>(2) The overall outcomes sought for the Stormwater Management Code are the following -</p> <p>(a) to ensure -</p> <p>(i) effective management of the quantity and quality of stormwater run-off;</p> <p>(ii) stormwater run-off does not adversely impact on the quality of receiving waters, including waterways, wetlands and Moreton Bay;</p> <p>(iii) provision of efficient and effective stormwater management that provides adequate protection for people and property from the effects of overland flow or flooding;</p> <p>(iv) maintenance of the natural flow regime of stormwater through the application of water sensitive urban design (WSUD) principles, where possible.</p> <p>S1. (1) Stormwater drainage design -</p> <p>(a) protects and preserves land below the 1 percent Annual Exceedance Probability (AEP) flood level;</p> <p>(1) Stormwater drainage design -</p> <p>(a) protects and maintains land below the 1 percent AEP in its natural state;</p> <p>(b) ensures stormwater run-off leaving a lot or premises complies with the water quality objectives in Part 9 - Schedule 11 - Water Quality Objectives;</p> <p>(c) identifies and determines the 1 percent AEP of natural overland drainage lines where the lot or premises -</p> <p>(i) has an upstream catchment area greater than 5 hectares; or</p> <p>(ii) is 2500m² or greater in area;</p> <p>(d) maximises the retention and use of natural overland drainage lines through their identification, and minimises earthworks that will result in stormwater run-off being redirected.</p> <p>Note -The Stormwater Management Plan prepared for the development should detail how all matters contained in S1. are addressed. Refer to Planning Scheme Policy 9 - Infrastructure Works for more information.</p> <p>S3. (1) Stormwater management for roof and surface drainage -</p> <p>(a) has the capacity to control roof and surface run-off and any excess flows from the land or upstream land to prevent stormwater flows from entering buildings;</p> <p>(b) avoids the risk of flooding.</p> <p>P3. (1) Stormwater management -</p> <p>(a) for reconfiguration that will result in roof-water through adjoining properties -</p> <p>(i) for residential reconfiguration, a maximum of two lots is served by a pipe system that discharges roof water run-off to the nearest downhill road reserve or lawful point of discharge; or</p> <p>(ii) for other reconfiguration, an inter-lot drainage system discharges roof and surface run-off to the nearest available downhill road reserve or lawful point of discharge;</p>

	<p>(iii) avoids the risk of flooding by ensuring that uses and other development are undertaken on land above the 1 percent AEP flood and storm tide level (2.4 metres AHD).</p> <p>Table 1 - Minor System Design Storm Event by Road Frontage Classification and Zone</p>
ROL Code	Yes
Details	<p>Reconfiguration Design -</p> <p>S1.1 (1) The reconfiguration design -</p> <ul style="list-style-type: none"> (a) responds to the landscape setting and topography of the location; (b) protects environmental values and functions including habitat areas, corridors and waterways; (c) responds to potential impacts of previous land uses such as land contamination; (d) does not result in lots that are subject to risk or hazard from flood, bushfire or landslip; <p>P1.1 (1) No probable solution identified, as each proposal will require an individual approach.</p> <p>Note - To assist in achieving the specific outcomes in S1.1 - S1.5 reconfiguration is required to consider all relevant matters and to satisfy the requirements of the local government's Reconfiguration Design Process detailed in Planning Scheme Policy 9 - Infrastructure Works. This involves the preparation and submission of a Site Analysis Plan and Structure Plan in addition to Subdivision Plans.</p> <p>S1.7 (1) In the following zones, Standard Format Plan reconfiguration is inconsistent due to -</p> <ul style="list-style-type: none"> (f) in SMBI Residential including sub-area SR1 - constraints associated with - (i) provision of utility and road infrastructure; (ii) environmental values; (iii) drainage and flooding; (iv) hazard associated with bushfire risk; or <p>P1.7 (1) The creation of Standard Format Plan lots is not undertaken in these zones.</p>
Overlay Codes	Yes
Details	<p>Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code</p> <p>5.6.7 Overall Outcomes of the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code</p> <ul style="list-style-type: none"> (1) The overall outcomes are the purpose of the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code. (2) The overall outcomes sought for the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code are the following - (a) to provide acceptable levels of flood immunity for people, buildings and other structures; (b) to minimise the risk of damage and property loss due to flooding or storm tide; (c) to protect the hydraulic capacity and ecological functions and values of waterways, Moreton Bay foreshore and lands which naturally accommodate the flow of waters during flood or storm tide events; (d) to minimise adverse impacts associated with overland flow, high water table and seepage on the Southern Moreton Bay Islands (SMBI). <p>S1. (1) Uses and other development avoid the risk of flooding by not being undertaken on land below the 1 percent AEP (1 in 100 year ARI) flood and storm tide level; or</p> <p>Note -</p> <ul style="list-style-type: none"> - 1 percent Annual Exceedance Probability (AEP) is equivalent to the 1 in 100 year Average Recurrence Interval (ARI) and applies to flood and storm tide events. - For the purposes of this planning scheme the defined flood event (DFE) for the planning scheme area is the 1 percent AEP flood and storm tide (RL 2.4 metre AHD) level. - Survey investigation and analysis is necessary to accurately identify the 1 percent AEP for flooding and storm tide constraints. - A licensed surveyor performs survey work, with all analysis work undertaken by a suitably qualified Registered Professional Engineer of Queensland (RPEQ). All levels are noted as AHD levels. - To assist in performing the survey investigation and analysis, refer to Part 11 - Planning Scheme Policy 7 - Flood Prone, Storm Tide and Drainage Constrained Land. - In some instances the local government may have undertaken detailed flood survey or have on record a flood study for the site that has been undertaken by a suitably qualified person. Contact the local government to verify if this information is available. <p>P1. (1) Avoid the risk of flooding by-</p> <ul style="list-style-type: none"> (a) for a material change of use - buildings are sited on land that is above the 1 percent AEP flood and storm tide level; or (b) reconfiguration ensures no lots are created that adjoin or extend over the flood and storm tide level; or (c) for building work - habitable floor levels are above flood and storm tide level; or (d) operational work is undertaken on land above the flood or storm tide level; (e) having at least one accessway or road evacuation route that is passable for emergency evacuations during all flood or storm tide events up to and including the 1 percent AEP level; or <p>(2) Uses and other development -</p> <ul style="list-style-type: none"> (a) maintain safety of people and property; (b) ensure minimal impact on the environment; (c) protect native plants; (d) do not alter the flood characteristics of land below the flood or storm tide level by - (i) ensuring the free flow of flood or tidal waters; (ii) not concentrating flood or tidal waters, or intensifying flow velocity on land up or downstream; (iii) not reducing the floodplain storage capacity; (e) maintain visual amenity; (f) minimise the extent of excavation or fill; or <p>Note -</p> <ul style="list-style-type: none"> - A detailed environmental investigation and analysis undertaken by a suitably qualified person is necessary to demonstrate no adverse environmental impacts. - To assist in performing the environmental investigation, refer to Part 11 - Planning Scheme Policy 4 - Ecological Impacts. <p>(2) No probable solution identified; or</p> <p>(3) On the mainland, the redevelopment, alteration or addition to an existing development on a lot or premises that is partly or wholly below the flood or storm tide level -</p> <ul style="list-style-type: none"> (a) is located above the flood or storm tide level; or (b) where required to locate partly below the flood or storm tide level pole design is used; or (c) where required to locate mostly below the flood or storm tide level achieve a finished land level of no greater than the flood or storm tide level for that part of the lot or premises required to site buildings; (d) protects native plants;

	<p>(e) maintains the flood characteristics of land below the flood or storm tide level by -</p> <p>(i) ensuring the free flow of flood or tidal waters;</p> <p>(ii) not concentrating flood or tidal waters, or intensifying flow velocity on land up or downstream;</p> <p>(iii) not reducing the floodplain storage capacity;</p> <p>(f) maintains visual amenity.</p> <p>(3) No probable solution identified.</p> <p>Where proposed on a lot or premises shown as Drainage Constrained Land on this overlay map -</p> <p>S2. (1) Uses and other development -</p> <p>(a) minimise adverse impacts associated with overland flow paths, high water table and seepage;</p> <p>(b) achieve legal access through adjoining lots, in the form of an easement, to the development site, where access to the lot or premises is not available, due to the road reserve being drainage constrained.</p> <p>P2. (1) No probable solution identified.</p> <p>Note -</p> <ul style="list-style-type: none"> - A detailed survey and drainage investigation is necessary, in order to accurately identify drainage constraints. - A licensed surveyor performs survey work, with all analysis work undertaken by a suitably qualified Registered Professional Engineer of Queensland (RPEQ). All levels should be noted as AHD levels. - To assist in performing the survey and drainage investigation, refer to Planning Scheme Policy 7 - Flood Prone, Storm Tide and Drainage Constrained land. - Refer to Schedule 6 - Movement Network and Road Design to achieve access requirements. <p>Hazardous Materials -</p> <p>S3. Bulk manufacture and storage of hazardous materials takes place above the flood or storm tide level to minimise risk to public safety and the environment.</p> <p>P3. No probable solution identified.</p> <p>Utility Infrastructure -</p> <p>S4. (1) Infrastructure maintains its function during a flood or storm tide event.</p> <p>Note -</p> <ul style="list-style-type: none"> - Refer to relevant zone code/s that specify the recommended flood levels for community infrastructure. - The use or other development complies with any applicable criteria set out by a Floodplain Management Plan. <p>P4. (1) Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood or storm tide flows, such as electrical switch gear and motors, or water supply pipeline air valves are -</p> <p>(a) located above the flood or storm tide level; or</p> <p>(b) designed and constructed to exclude floodwater intrusion/infiltration;</p> <p>(2) Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by a flood or storm tide level.</p> <p>Environmental Values -</p> <p>S5. The environmental values of land subject to flood, storm tide or drainage constraints are protected and maintained.</p> <p>P5. No probable solution is identified.</p> <p>Note -</p> <ul style="list-style-type: none"> - A detailed environmental investigation and analysis undertaken by a suitably qualified person is necessary to demonstrate no adverse impacts on environmental values. - To assist in performing the environmental investigation, refer to Part 11 - <p>4 Planning Scheme Policy 4 - Ecological Impacts;</p> <p>4 Planning Scheme Policy 14 - Waterways, Wetlands and Moreton Bay.</p>
PSPs	Yes
Details	<p>Planning Scheme Policy 7 - Flood Prone, Storm Tide and Drainage Constrained Land</p> <p>7.1 Purpose</p> <p>(1) The purpose of this policy is to -</p> <p>(a) set out the requirements for the preparation and submission of technical reports and/or flood studies associated with development applications affected by the Flood Prone, Storm Tide and Drainage Constrained Land Overlay and lots subject to significant stormwater overland flow and/or inundation;</p> <p>(b) provide information relating to development within the Flood Prone, Storm Tide and Drainage Constrained Land areas or lots subject to significant stormwater overland flow and/or inundation.</p> <p>7.2 Applicability</p> <p>This policy applies to all development applications on land affected by the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Map and Code and lots subject to significant stormwater overland flow and/or inundation.</p> <p>Note -</p> <p>In some instances the local government may have undertaken detailed flood survey or have on record a flood study for the site that has been undertaken by a suitably qualified person. Contact the local government to verify if this information is available.</p> <p>7.3 Methodology Used for the Creation of the Flood Prone Storm Tide and Drainage Constrained Overlay</p> <p>(1) Flood prone areas were created by -</p> <p>(a) the identification of natural floodwater routes using local government maps showing 0.5 metre contours at a scale of 1:5000. In many cases, this mapping was examined at a much larger scale on computer;</p> <p>(b) verification of results included the use of the local government 2002 aerial photography, local government recorded flood studies, which were done by various Engineering consultants, or local government engineers. Also used was various Council Officers' local knowledge extending back to the 1974 flood;</p> <p>(c) the storm tide areas were generated based on the 0.5 metre contour mapping by Council's GIS staff;</p> <p>(d) the Southern Moreton Bay Islands flood identification was determined by the engineering consultant, Gutteridge Haskins and Davey (GH&D) in 1998. This information has been upgraded at many locations by the local government and (GH&D) since 1998.</p> <p>7.4 Flood Prone and Storm Tide Lots</p> <p>7.4.1 Lots Subject To Flooding</p> <p>(1) An application involving a lot that is identified on the Flood Prone, Storm Tide and Drainage Constrained Land Overlay or is subject to significant stormwater flow and/or inundation will require an assessment that identifies the discharge, extent, depth and velocity of flow. Flow is simulated in accordance with the methods recommended in the Queensland Urban Drainage Manual (QUDM) and Australian Rainfall and Runoff (AR&R).</p>

- (2) Information submitted to the local government is to include -
- (a) a contour plan with levels to AHD at 0.25 metre contours;
 - (b) location of the calculated 1 percent Annual Exceedance Probability (AEP) 100 year Average Recurrence Interval (ARI) flood line across the site;
 - (c) location of the calculated 50 percent AEP (2 year ARI) and 10 percent AEP (10 year ARI) flood lines on land which is proposed for dedication to the local government for park;
 - (d) location of any existing and/or proposed buildings on the lot;
 - (e) submission of a hard copy flood modeling report prepared by a Registered Professional Engineer (Queensland) including relevant computer software data files that are compatible with the local government's software to enable checking of data.

7.4.2 Lots Subject To Storm Tide

- (1) An application involving a lot identified on the Flood Prone, Storm Tide and Drainage Constrained Land Overlay will require an assessment that identifies the extent of the 1 percent AEP (100 year ARI) storm tide inundation.

- (2) Information submitted to the local government is to include -
- (a) a contour plan with levels to AHD at 0.25 metre contours;
 - (b) location of the 1 percent AEP storm tide line (RL 2.4 metre AHD) on the lot;
 - (c) location of the highest astronomical tide line (if applicable) on the lot and vegetation below this level;
 - (d) location of any existing and or proposed buildings on the lot;
 - (e) the likely impact of the proposed development, particularly in terms of the effect on adjoining lots;
 - (f) extent of excavation and fill including any associated earthworks;
 - (g) likely impact in terms of foreshore bank stability and type of protection proposed (if any).

7.5 Drainage Constrained Land on Southern Moreton Bay Islands

7.5.1 Lots Subject To High Water Table, Seepage and All Weather Access Problems

- (1) During extended wet weather periods, lots are to have acceptable all weather roadway access to the site, immunity from high water table and be free from significant seepage problems. The suitability of the location is ascertained by a Registered Professional Engineer (Queensland) competent in regard to these matters.

- (2) Lot stormwater drainage conforms to AS3500, Parts 3.1 - National plumbing and drainage - Stormwater drainage - Performance requirements (1998) and 3.2 - National plumbing and drainage - Stormwater drainage - Acceptable solutions (1998). Testing of soil samples are by a National Association of Testing Authorities (NATA) registered materials tester using methods described by the Standards Association of Australia.

- (3) Information submitted to the local government is to include -
- (a) a contour plan with levels to AHD at 0.25 metre contours;
 - (b) location plan showing existing contributing stormwater catchment and future catchment where applicable;
 - (c) description of soil layers to a depth of 1.2 metres;
 - (d) location, depth, width and velocity of calculated stormwater overland flow;
 - (e) location of dwelling and other buildings proposed on site.
- (4) Remedial works information should show proposed works to solve -
- (a) all weather access problems;
 - (b) seepage problems (stormwater and wastewater);
 - (c) problems associated with a high water table.

7.6 Flood Modelling and Analysis

7.6.1 Introduction

- (1) The following requirements detail the minimum acceptable design criteria for determination of hydrological and hydraulic performance of waterways including -
- (a) the extension of existing constructed channels, where deemed necessary;
 - (b) structures associated with constructed channels;
 - (c) documentation required for submission to the local government.
- (2) This policy is not intended as a comprehensive document on open channel design or of the requirements of the local government, but a compilation of minimum standards incorporated or used to determine an acceptable design.
- (3) Notwithstanding the design criteria set out in QUDM, AR&R or this policy, the local government may set alternative criteria for individual developments, or restrict or allow alternative and innovative solutions that can be supported by well documented and criticised research. Designs of this nature will be subject to determination by the local government.
- (4) Appropriate approvals from relevant State Government Departments are obtained prior to works in the vicinity of or affecting watercourses as defined and controlled by the Department of Natural Resources, Mines and Energy.
- (5) Applicable guidelines include -
- (a) Natural Channel Design Guidelines - Brisbane City Council, December 2000;
 - (b) The Constructed Wetland Manual Volume 1 and 2 - Department of Lands and Water Conservation NSW, 1998;
 - (c) Stormwater Outlets in Parks and Waterways - Brisbane City Council, Version 2, 2003;
 - (d) Road Drainage Design Manual - Queensland Main Roads Department, 2003.

7.6.2 Hydrological Analysis

- (1) Stream flow is simulated in accordance with the methods recommended in QUDM and/or AR&R.
- (2) Hydrological models are to account for all existing and future stream and catchment development.
- (3) Model parameters are determined by calibration against past flood events and by recognised AR&R regional relationships.
- (4) Calibration includes all major flooding events with recorded flood level information.
- (5) Calibration models accurately reflect the existing development during the event.
- (6) Flood analysis by accepted flood modeling techniques are carried out to determine the worst flooding scenario for the particular flood frequency in concern.

7.6.3 Hydraulic Analysis

- (1) Flood levels are simulated in accordance with the methods recommended in QUDM and AR&R.
- (2) Cross section information used in hydraulic calculations is based on a recent survey of the waterway or foreshore at sufficient detail to accurately model the terrain.
- (3) Survey is to Australian Height Datum (AHD).
- (4) Roughness coefficients are determined from calibration and published upper bound guidance values and accurately reflect terrain conditions.
- (5) Hydraulic gradients are determined from surveyed flood levels or cross-sections up and downstream of the job site.
- (6) Flood levels for a particular Annual Exceedance Probability (AEP) are determined from the design storm that yields the highest water level prediction.
- (7) Final electronic hydrology and hydraulic calculations are provided to the local government on hard copy and CDROM.

	<p>7.6.4 Natural Drainage Lines and Flood Plains</p> <p>(1) As stated in the planning scheme, it is the local government's intention that waterways and foreshores, flood plains and significant natural drainage lines are retained for environmental purposes.</p> <p>(2) Natural vegetation is maintained in all natural drainage lines, waterways, foreshore areas and flood plains.</p> <p>(3) Natural drainage lines are preserved in their natural state, except at a pipe outlet which is to have provision for erosion protection and disposal of stormwater into a natural or formed wide sheet flow. Refer Stormwater Outlets in Parks and Waterways (Brisbane City Council, Version 2, 2003).</p>
Other	Yes
Details	<p>3.1.2 Desired Environmental Outcome No. 1 - Natural Environment</p> <p>(1) Redland City's environmental values and natural resources are managed in a sustainable manner to maintain biodiversity, ecological processes and community well being by ensuring development -</p> <p>(e) minimises the adverse impacts of natural hazards (flood, bushfire and landslide) on environmental values and the Redland Community.</p> <p>Strategic Framework</p> <p>(5) The strategies and measures explained in the Strategic Framework are designed to address the core matters3.1. These are -</p> <p>(a) Land Use and Development which includes -</p> <p>(v) development constraints including, but not limited to, population, demographic impacts and flooding.</p> <p>(9) Environmental Management and Hazard Planning -</p> <p>(a) Major hazard constraints are recognised through the Redlands Planning Scheme under a hazard planning framework based on Overlays and codes regulating development in areas subject to acid sulfate soils, bushfire hazard, flood and tidal surge or drainage constrained land.</p> <p>(12) Infrastructure -</p> <p>(e) The management of stormwater is achieved through compliance with the provisions of the Stormwater Management Code, and the Flood Prone, Tidal Affected and Drainage Constrained Overlay and Code and Waterways, Wetlands and Moreton Bay Overlay and Code.</p>
Op Works Code	No
Details	
Overlay Code	Yes
Details	<p>Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code</p> <p>5.6.7 Overall Outcomes of the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code</p> <p>(1) The overall outcomes are the purpose of the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code.</p> <p>(2) The overall outcomes sought for the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code are the following -</p> <p>(a) to provide acceptable levels of flood immunity for people, buildings and other structures;</p> <p>(b) to minimise the risk of damage and property loss due to flooding or storm tide;</p> <p>(c) to protect the hydraulic capacity and ecological functions and values of waterways, Moreton Bay foreshore and lands which naturally accommodate the flow of waters during flood or storm tide events;</p> <p>(d) to minimise adverse impacts associated with overland flow, high water table and seepage on the Southern Moreton Bay Islands (SMBI).</p> <p>S1. (1) Uses and other development avoid the risk of flooding by not being undertaken on land below the 1 percent AEP (1 in 100 year ARI) flood and storm tide level; or</p> <p>Note -</p> <ul style="list-style-type: none"> - 1 percent Annual Exceedance Probability (AEP) is equivalent to the 1 in 100 year Average Recurrence Interval (ARI) and applies to flood and storm tide events. - For the purposes of this planning scheme the defined flood event (DFE) for the planning scheme area is the 1 percent AEP flood and storm tide (RL 2.4 metre AHD) level. - Survey investigation and analysis is necessary to accurately identify the 1 percent AEP for flooding and storm tide constraints. - A licensed surveyor performs survey work, with all analysis work undertaken by a suitably qualified Registered Professional Engineer of Queensland (RPEQ). All levels are noted as AHD levels. - To assist in performing the survey investigation and analysis, refer to Part 11 - Planning Scheme Policy 7 - Flood Prone, Storm Tide and Drainage Constrained Land. - In some instances the local government may have undertaken detailed flood survey or have on record a flood study for the site that has been undertaken by a suitably qualified person. Contact the local government to verify if this information is available. <p>P1. (1) Avoid the risk of flooding by-</p> <p>(a) for a material change of use - buildings are sited on land that is above the 1 percent AEP flood and storm tide level; or</p> <p>(b) reconfiguration ensures no lots are created that adjoin or extend over the flood and storm tide level; or</p> <p>(c) for building work - habitable floor levels are above flood and storm tide level; or</p> <p>(d) operational work is undertaken on land above the flood or storm tide level;</p> <p>(e) having at least one accessway or road evacuation route that is passable for emergency evacuations during all flood or storm tide events up to and including the 1 percent AEP level; or</p> <p>(2) Uses and other development -</p> <p>(a) maintain safety of people and property;</p> <p>(b) ensure minimal impact on the environment;</p> <p>(c) protect native plants;</p> <p>(d) do not alter the flood characteristics of land below the flood or storm tide level by -</p> <p>(i) ensuring the free flow of flood or tidal waters;</p> <p>(ii) not concentrating flood or tidal waters, or intensifying flow velocity on land up or downstream;</p> <p>(iii) not reducing the floodplain storage capacity;</p> <p>(e) maintain visual amenity;</p> <p>(f) minimise the extent of excavation or fill; or</p> <p>Note -</p> <ul style="list-style-type: none"> - A detailed environmental investigation and analysis undertaken by a suitably qualified person is necessary to demonstrate no adverse environmental impacts. - To assist in performing the environmental investigation, refer to Part 11 - Planning Scheme Policy 4 - Ecological Impacts. <p>(2) No probable solution identified; or</p> <p>(3) On the mainland, the redevelopment, alteration or addition to an existing development on a lot or premises that is partly or wholly below the flood or storm tide level -</p> <p>(a) is located above the flood or storm tide level; or</p> <p>(b) where required to locate partly below the flood or storm tide level pole design is used; or</p>

	<p>(c) where required to locate mostly below the flood or storm tide level achieve a finished land level of no greater than the flood or storm tide level for that part of the lot or premises required to site buildings;</p> <p>(d) protects native plants;</p> <p>(e) maintains the flood characteristics of land below the flood or storm tide level by -</p> <p>(i) ensuring the free flow of flood or tidal waters;</p> <p>(ii) not concentrating flood or tidal waters, or intensifying flow velocity on land up or downstream;</p> <p>(iii) not reducing the floodplain storage capacity;</p> <p>(f) maintains visual amenity.</p> <p>(3) No probable solution identified.</p> <p>Where proposed on a lot or premises shown as Drainage Constrained Land on this overlay map -</p> <p>S2. (1) Uses and other development -</p> <p>(a) minimise adverse impacts associated with overland flow paths, high water table and seepage;</p> <p>(b) achieve legal access through adjoining lots, in the form of an easement, to the development site, where access to the lot or premises is not available, due to the road reserve being drainage constrained.</p> <p>P2. (1) No probable solution identified.</p> <p>Note -</p> <ul style="list-style-type: none"> - A detailed survey and drainage investigation is necessary, in order to accurately identify drainage constraints. - A licensed surveyor performs survey work, with all analysis work undertaken by a suitably qualified Registered Professional Engineer of Queensland (RPEQ). All levels should be noted as AHD levels. - To assist in performing the survey and drainage investigation, refer to Planning Scheme Policy 7 - Flood Prone, Storm Tide and Drainage Constrained land. - Refer to Schedule 6 - Movement Network and Road Design to achieve access requirements. <p>Hazardous Materials -</p> <p>S3. Bulk manufacture and storage of hazardous materials takes place above the flood or storm tide level to minimise risk to public safety and the environment.</p> <p>P3. No probable solution identified.</p> <p>Utility Infrastructure -</p> <p>S4. (1) Infrastructure maintains its function during a flood or storm tide event.</p> <p>Note -</p> <ul style="list-style-type: none"> - Refer to relevant zone code/s that specify the recommended flood levels for community infrastructure. - The use or other development complies with any applicable criteria set out by a Floodplain Management Plan. <p>P4. (1) Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood or storm tide flows, such as electrical switch gear and motors, or water supply pipeline air valves are -</p> <p>(a) located above the flood or storm tide level; or</p> <p>(b) designed and constructed to exclude floodwater intrusion/infiltration;</p> <p>(2) Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by a flood or storm tide level.</p> <p>Environmental Values -</p> <p>S5. The environmental values of land subject to flood, storm tide or drainage constraints are protected and maintained.</p> <p>P5. No probable solution is identified.</p> <p>Note -</p> <ul style="list-style-type: none"> - A detailed environmental investigation and analysis undertaken by a suitably qualified person is necessary to demonstrate no adverse impacts on environmental values. - To assist in performing the environmental investigation, refer to Part 11 - <p>4 Planning Scheme Policy 4 - Ecological Impacts;</p> <p>4 Planning Scheme Policy 14 - Waterways, Wetlands and Moreton Bay.</p>
PSPs	Yes
Details	Planning Scheme Policy 7 - Flood Prone, Storm Tide and Drainage Constrained Land
Other	No
Details	
Other Info	<p>PSP 7 Continued</p> <p>7.6.5 Constructed Channels</p> <p>(1) Low flow pipes and low flow channels are not favoured as they interfere with the natural hydrological balance and destroy the natural aquatic ecosystems.</p> <p>(2) A constructed channel may be approved by the local government for extensions where similar infrastructure exists.</p> <p>(3) Artificial open channels are to comply with the requirements of the local government. Refer to Natural Channel Design Guidelines (Brisbane City Council, December 2000).</p> <p>(4) Bed and batters are planted with suitable grasses in topsoil of sufficient depth, quality and compactness to maintain 100 percent grass cover under all channel flows. This should be achieved if bed and batters are top soiled to a minimum depth of 100mm of a quality and texture to remain productive under all moisture conditions and grassed with an approved mixture consisting primarily of couch (cynodon dactylon), kikuyu and pangola grass, together with a rapidly establishing nurse crop. The specification in all cases includes the provision for watering, fertilising and general management until 80 percent grass cover in every 10 square metres has been obtained and continued maintenance for the specified period of maintenance.</p> <p>(5) In areas where local high velocities will be experienced and where average stream velocities will exceed acceptable velocities, additional measures are undertaken to protect the bed and batters against erosion. Such measures may include an approved grass anchoring system.</p> <p>(6) In areas subject to tidal influence, alternative surfacing to grass may be provided. Such surfaces are to take into consideration the need to exclude vermin such as rats from the constructed channel and banks in the vicinity of the high water mark. For the purposes of this clause the defined lower limit for the provision of grass covering to the requirements of the previous clause is 1.6 metre AHD.</p> <p>(7) Channel design is to comply with the following criteria -</p> <p>(a) maximum permissible average flow velocity in Planning Scheme Policy consolidated bare earth and vegetated channels is to comply with the lower of the tabulated values for -</p> <p>(i) easily erodable soils in QUDM;</p> <p>(ii) poor grass cover in AR&R;</p> <p>(b) maximum Froude number is less than 0.9, and supercritical flow is not acceptable;</p>

- (c) Manning's 'n' values are determined from the sources recommended in QUDM and published upper bound guidance values are adopted;
- (d) velocity and Froude number calculations are to include several stream flow events from a 50 percent AEP (2 year ARI) to 1 percent AEP (100 year ARI) storm event;
- (e) channel design is to minimise erosion potential;
- (f) the minimum centerline radius of bends in channels is not less than four times the width of flow of a 1 percent AEP (100 year ARI) flow at that location;
- (g) the maximum angle of deflection of the channel between the straight reaches upstream and downstream of the curve is not to exceed 60°;
- (h) the channel is straight both upstream and downstream of all curves for a distance in each case equivalent to at least the radius of the curve.
- (8) Access to channels is provided for maintenance equipment.

Planning Scheme Policy 8 Housing

Site Analysis Plan to show:

- Flood-prone land at 1, 20 and 100 percent AEP, within and adjoining the premises.

Planning Scheme Policy 9 Infrastructure

ROL Plan Requirements: Flood-prone land at 1 percent AEP (1 in 100 year ARI), 20 percent AEP (1 in 5 year ARI) and 50 percent AEP (1 in 2 year ARI) and, where adjoining a foreshore, 2.4 metre AHD (1 percent AEP storm tide levels) and 1.6 metre AHD within and adjoining the premises.

Chapter 6 - Stormwater Management

9.6.1 Purpose

- (1) The purpose of this chapter of the policy is to -

- (c) provide an efficient and effective stormwater management system that provides adequate protection for people and property from the effects of overland flow or flooding;

- (6) Planning and design approaches for stormwater systems have regard to the needs of the local community. Approaches include -

- (d) protection from flooding;

- (b) Natural Drainage Lines -

- (i) the applicant identifies the 1 percent annual exceedance probability (AEP) flood level for all natural drainage lines (NDL's) identified on the Waterway, Wetlands and Moreton Bay Overlay;

- (ii) the natural drainage flowpath areas identified as below the 1 percent AEP flood event level are preserved or enhanced in a natural state where the -

- a. development has an upstream catchment area of 5 hectares or more; or

- b. premises has an area of 2500m² or greater;

- (iii) drainage flowpaths which intersect at an existing road sag and have an upstream area greater than 5 hectares, are retained for the full natural width of the 1 percent AEP flood level on the downstream side of the road in order to preserve the natural drainage lines;

- (iv) roads may be constructed along natural drainage lines if the upstream catchment is less than 5 hectares in order to cater for the 1 percent AEP flood level event;

- (v) the minimum width preserved for a natural drainage line is 15 metres;

9.6.6.14 Drainage in Parks

- (1) Drainage in parks complies with the local government's Park Code and policy; the Flood Prone, Storm Tide and Drainage Constrained Land Overlay Code and policy; and this chapter of the Infrastructure Works Policy.

- (2) Waterways, significant natural drainage paths, and flood plains are preserved in their natural state for environmental purposes.

- (3) The local government's goals for drainage systems in parks are-

- (a) To provide adequate drainage systems to allow for the passage of stormwater in a manner that minimises adverse impact on the natural environment;

- (b) The design and construction of drainage systems within parkland has regard to safeguarding life and property and protection against visual and environmental degradation due to changes to water quality, volume and velocity;

- (c) The design of parks containing drainage systems has regard to the multi-functional use of the park by integration of the various components to maximise aesthetic, environment, economic and recreational benefits and is capable of effective and efficient maintenance.

- (4) The local government recognises the following categories of drainage in relation to public areas within parks -

- (a) Natural overland flowpaths in parks - this category is applicable when no underground drainage pipes are required and overland flow through parks is accommodated in a natural creek or waterway, with or without floodplains, at a minimum frequency of 1 percent AEP. Flood flow across a park to the main waterway or creek, at a frequency up to 50 percent AEP, is in a wide shallow sheet flow at a safe velocity and depth for pedestrians. The depth in metres multiplied by velocity does not exceed 0.4.

- (b) Natural overland flowpaths and underground pipe systems within parks - this category is the most usual form of drainage within parks used for active recreation. Underground drainage is designed to collect surface run-off within the park. It consists of pipes designed and constructed at a frequency of 100 percent AEP and discharge stormwater from the active recreation area to a location approved by the local government. The overland flowpath/s on the active recreation area, combined with the underground system, discharges stormwater off the recreation area at a frequency of 1 percent AEP without flooding adjoining private property but may inundate playing fields. Flow from external catchments is normally confined to a natural creek or waterway through the park at a minimum frequency of 1 percent AEP.

- (c) Detention and retention basins in conjunction with other works - this category may be used to reduce downstream flows and velocities to values acceptable to the local government to enable better use of downstream land by preserving or reducing the extent of flooding downstream. Refer Queensland Urban Drainage Manual, Part 6 - Detention Basins and Australian Rainfall & Runoff, Book 8 - Urban Stormwater Management.

9.6.7 Major Stormwater Management Systems

- (4) The backwater effect (afflux) caused by the construction of structures such as roads, culverts or causeways is not to create nuisance or adverse flood effects to upstream or adjoining lots.

9.6.7.2 Location of Overland Flowpaths

- (3) Pedestrian and vehicular access to sewerage pump stations is not impeded by overland flow at any time, particularly in times of emergency when flooding occurs.

9.6.7.4 Overland Flow in Parks

- (2) The 1 percent AEP level in parks is generally preserved in its natural existing condition.

- (3) The 50 percent AEP level is generally designed as a sheet flow, taking into consideration -

- (a) scour prevention;

- (b) downstream flood reduction by maintaining or increasing the existing time of concentration.

9.6.7.5 Overland Flow from Downhill Access Places (Culs-de-sac)

- (1) Downhill culs-de-sac are provided with an overland flowpath designed to cater for excess flow not contained in the underground drainage system for a 1 percent AEP (100 year ARI) level.

	<p>(2) Major Flood Events.</p> <p>(a) Erosion control measures such as outlined in Chapter 4 of this policy or other approved methods are required when flows are likely to cause extensive erosion damage during major flood flows.</p> <p>(3) Minor Flood Events -</p> <p>(a) The minor flood flows are reduced as a result of the incorporation of OSD facilities. Theoretically, no flow will be generated from Type (a) areas, see reference below, unless greater than a 50 percent AEP event occurs when all the OSD facilities are functioning without fail. However, a margin of 20 percent of Type (a) area is allowed as a safety factor against malfunction of some OSD facilities.</p>
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LGA	Richmond
Planning Scheme	Richmond
Adopted	20-Sep-05
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>2.1.1 DEO 1 The Shire's valuable natural and cultural features, built environment and land use patterns create a distinct sense of place and local identity, and are vibrant, safe and healthy, with access to community and cultural facilities and services.</p> <p>2.1.2 Shire Wide Strategies DEO 1 is intended to be achieved by – (b) ensuring places, areas or sites identified as being susceptible to land degradation (including contamination, erosion, salinity and landslip or flood areas) are protected and further degradation is minimised; and</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Rockhampton
Planning Scheme	Fitzroy
Adopted	5/12/2005
Flood Amendments	No
SPP Compliance	Yes
Details	Specifically states that the Minister is satisfied that SPP 01/03 is appropriately reflected.
Mapped Q100 / DFE	Yes
Details	Council Study Overlay Map Included in Scheme - Does not cover whole shire
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Alton Downs Code: S5 Development densities of dwelling units reflect the desired character of the Zone, as described in the Overall Outcomes for the Zone. Alton Downs Code:</p> <p>P5.2 The maximum development densities for existing or newly created lots only exceeds that in P/A4.1 above, where;</p> <p>(i) For lots approved prior to 13 December 1996; or</p> <p>(ii) For proposals where the proposed lot size falls below the minimum lot size and it does not result in the creation of any additional lots; AND the following is achieved;</p> <p>(a) The effluent disposal on site is achieved by satisfying the performance requirements and performance criteria of the Interim Code of Practice for On-Site Sewerage Facilities gazetted on 2 July 1999 or any subsequent revised code;</p> <p>(b) The siting of the dwelling unit is clear of the flood water levels of the Flood Prone Land Overlay (Appendix 2);</p> <p>Gracemere – Stanwell Zone Code: Special Industry Precinct E (vii) Development is undertaken in a manner that does not exacerbate local flooding, and that does not place people or property at risk to flooding; and</p> <p>General Industry Precinct G (iii) Development is undertaken in a manner that does not exacerbate local flooding, and that does not place people or property at risk to flooding;</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code: S1 The configuration of lots;</p> <p>(iii) Provide for a high level of residential amenity, access to services and facilities, and safety from risk of natural hazards such as flooding and bushfire. (No relevant AS)</p> <p>ROL in Special Industries Zone / Open Space Zone / Town Zone / Village Zone / Rural Residential Zone / Alton Downs Zone / S@ Lots are of an appropriate size and configuration;</p> <p>(i) To provide efficient land use;</p> <p>(ii) To provide for on-site services and access;</p> <p>(iii) To accommodate the necessary boundary setbacks and buffering; and</p> <p>(iv) which have regard for whether the proposed lot boundaries are derived from one or more of the following;</p> <p>(c) The natural landforms and topography of the land including soil types, slopes, flooding and drainage characteristics and the location of existing vegetation;</p> <p>(d) The existence of any natural topographical features such as watercourses and gullies which traverse or constrain the land; (No relevant AS)</p> <p>ROL - Alton Downs Zone S19 Development densities of dwelling units reflect the desired character of the Zone, as described in the Overall Outcomes for the Zone.</p> <p>P19.1 The maximum development density for existing or newly created lots is (i) In Precinct 1A and 1B: 1 dwelling unit per 8 ha of lot area; and</p> <p>(ii) In Precinct 2: 1 dwelling unit per 16ha of lot area.</p> <p>P19.2 The maximum development densities for existing or newly created lots only exceeds that in P19.1 above, where;</p> <p>(i) The proposed lot size falls below the minimum lot size as required by P19.1 and P19.2 above; and</p> <p>(ii) There are no additional lots created; and</p> <p>(iii) The following is achieved;</p> <p>(b) The siting of the dwelling unit is clear of the flood water levels of the 1991 flood event, as shown by aerial photography produced by the Department of Natural Resources;</p> <p>Reconfiguring a Lot in the Gracemere – Stanwell Zone S32 The layout incorporates natural and cultural features, allows for the control of soil erosion and sedimentation, and avoids inappropriate development on flood-prone land.</p> <p>AS Subdivisional development is in accordance with an approved Precinct Master Plan or other Development Plan that::</p> <p>(i) Is consistent with Council's lot reconfiguration requirements; and/or</p> <p>(ii) Is in accordance with Queensland Streets, Austroads, and the Queensland Urban Drainage Manual;</p> <p>Development Standards ROL Code / Development Standards Code: S@ Stormwater Section requires drainage systems to be designed having regard to the following aims:</p> <p>(i) To ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits;</p> <p>(ii) Provide convenience and safety for pedestrians and traffic in frequent stormwater flows by controlling those flows within prescribed limits; and</p> <p>(iii) Retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment AS Requires Compliance with Capricorn Municipal Development Manual D5 (Stormwater Drainage Design).</p>
Overlay Codes	Yes
Details	<p>Natural Disasters Overlay Code: (a) The overall outcome sought for all areas in the Natural Disaster Overlays is that;</p> <p>(i) Development minimises the potential adverse impacts of flood and bushfire on people, property, economic activity and the environment.</p>

	<p>(ii) Wherever practicable, community infrastructure is located and designed to function effectively during and immediately after natural hazard events commensurate with a specified level of risk.</p> <p>(iii) Development is compatible with the nature of a natural hazard management area (eg. Flood Prone Land Overlay, Bushfire Prone Land Overlay or Landslide Prone Land Overlay), as it satisfies all of the relevant Specific Outcomes of this Code.</p> <p>(b) The overall outcome sought for the Flood Prone Land Overlay is that::</p> <p>(i) The number of people and properties subject to flood risk are minimised by regulating building location and design; and</p> <p>(ii) Evacuation is facilitated in the event of any flood threat;</p> <p>All Flood Prone Land</p> <p>S1 Development must be protected from adverse flooding and must not interfere with the passage, storage or quality of storm water, overland flow or the natural flow of a waterway.</p> <p>P1.1 Development is not conducted within the passage of any storm water, overland flow or natural flow path.</p> <p>P1.2 Development is not conducted on flood prone land (as indicated on the Flood Prone Land Overlay Map in Appendix 2).</p> <p>S2 Structures have acceptable levels of flood immunity.</p> <p>P2.1 Where the lot is subject to a resolution about minimum floor levels of habitable rooms under the Standard Building Regulation 1993, the floor level of all new rooms satisfied the level determined in the resolution; or</p> <p>Where the house is on floodable land but the lot is not subject to a resolution about minimum floor levels of habitable rooms under the Standard Building Regulation 1993, the floor level of all habitable rooms is not less than 600mm above the 100 year ARI peak flood event.</p> <p>P2.2 Where a lot is on floodable land, the minimum levels for non-habitable areas (including utility areas, garage, laundry and storage room) are not less than 300mm above the 100 year ARI peak flood event.</p>
PSPs	Yes
Details	<p>Local Planning Scheme Policy 03/96</p> <p>Subdivision Development Standards</p> <p>8.0 FLOODING</p> <p>All lots shall be free from flooding.</p>
Other	Yes
Details	<p>Desired Environmental Outcomes:</p> <p>g) The risks to persons and property due to flood, bushfire and landslide are minimised.</p>
Op Works Code	Yes
Details	<p>Development Standards Code:</p> <p>Works</p> <p>S7 Stormwater drainage systems are designed having regard to the following aims;</p> <p>(i) To ensure that inundation of private and public buildings located in flood prone areas occurs only on rare occasions and that, in such events, surface flow routes convey floodwaters below the prescribed velocity/depth limits;</p> <p>(ii) Provide convenience and safety for pedestrians and traffic in frequent stormwater flows by controlling those flows within prescribed limits; and</p> <p>(iii) Retain within each catchment as much incident rainfall and runoff as is possible and appropriate for the planned use and the characteristics of the catchment.</p> <p>P/A7.1 All stormwater drainage systems are designed in accordance with the Capricorn Municipal Development Manual; (i) Design Guideline D5 (Stormwater Drainage Design).</p>
Overlay Code	Yes
Details	<p>Natural Disasters Overlay Code:</p> <p>S1 Development must be protected from adverse flooding and must not interfere with the passage, storage or quality of storm water, overland flow or the natural flow of a waterway.</p> <p>P1.1 Development is not conducted within the passage of any storm water, overland flow or natural flow path.</p> <p>P1.2 Development is not conducted on flood prone land (as indicated on the Flood Prone Land Overlay Map in Appendix 2).</p> <p>S2 Structures have acceptable levels of flood immunity.</p> <p>P2.1 Where the lot is subject to a resolution about minimum floor levels of habitable rooms under the Standard Building Regulation 1993, the floor level of all new rooms satisfied the level determined in the resolution; or</p> <p>Where the house is on floodable land but the lot is not subject to a resolution about minimum floor levels of habitable rooms under the Standard Building Regulation 1993, the floor level of all habitable rooms is not less than 600mm above the 100 year ARI peak flood event.</p> <p>P2.2 Where a lot is on floodable land, the minimum levels for non-habitable areas (including utility areas, garage, laundry and storage room) are not less than 300mm above the 100 year ARI peak flood event.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Rockhampton
Planning Scheme	Livingstone
Adopted	17/10/2005
Flood Amendments	No
SPP Compliance	No
Details	SPP01/03 Only Satisfied for Bushfire and Landslide Components Only.
Mapped Q100 / DFE	Yes
Details	Drainage Problem Areas Mapped Q100 Not Mapped.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone Code / Prk Residential Zone Code / Residential Zone Code / Village Zone Code / Yeppon Central Zone / Business Zone / Industry Zone / Open Space Zone / Special Purpose Zone /</p> <p>O@ Reconfigured lots are designed and developed with:</p> <ul style="list-style-type: none"> - and do not expose people and works to unacceptable risks from flooding or other hazards. (No relevant AS) <p>O@ Development is immune to flood events which result in unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>S@ Land on which buildings and structures associated with development nominated in Column 1 of Schedule 7 will be constructed has immunity from a flood event of at least the annual exceedence probability specified in Column 2 of Schedule 7 for the development. Note: The flood immunity parameters listed in Schedule 7 include consideration of storm tide hazard.</p> <p>Open Space Zone</p> <p>O@ Outdoor recreation / Recreational Purposes</p> <ul style="list-style-type: none"> - not involving the construction of buildings or structures, or - if involving the construction of buildings or structures, such buildings or structures are sited outside identified areas of constraint relating to: inundation by floodwater or storm tide hazard, vegetation management, or movement corridors for both fauna and people. <p>Comprehensive Development Zone</p> <p>Great Barrier Reef International Resort</p> <p>O9 Development is immune to flood events which result in unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>Rosslyn Bay</p> <p>O3 Reconfigured lots are designed and developed with:</p> <ul style="list-style-type: none"> - and do not expose people and works to unacceptable risks from flooding or other hazards. (No relevant AS) <p>O7 Development is immune to flood events which result in unacceptable risk to health and safety or unacceptable risk of property damage with building floor levels at or above 4.225 metres AHD.</p> <p>Capricorn International Resort</p> <p>O3 Reconfigured lots are designed and developed with:</p> <ul style="list-style-type: none"> - and do not expose people and works to unacceptable risks from flooding or other hazards. (No relevant AS) <p>O7 Development is immune to flood events which result in unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>S7 Land on which buildings and structures associated with development nominated in Column 1 of Schedule 7 will be constructed has immunity from a flood event of at least the annual exceedence probability specified in Column 2 of Schedule 7 for the development.</p> <p>Stanage</p> <p>O10 Development is immune to flood events which result in unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>S10 Land on which buildings and structures associated with development nominated in Column 1 of Schedule 7 will be constructed has immunity from a flood event of at least the annual exceedence probability specified in Column 2 of Schedule 7 for the development.</p> <p>Sea Spray</p> <p>O4 Reconfigured lots are designed and developed with:</p> <ul style="list-style-type: none"> - and do not expose people and works to unacceptable risks from flooding or other hazards. <p>Special Management Area</p> <p>(h) Drainage Problem special management area</p> <p>O18 Development levels are set above the design flood level to reduce property damage and, where applicable, ensure public safety.</p> <p>(i) Storm Tide Hazard special management area</p> <p>O19 Development levels are set above the design storm tide hazard level to reduce property damage and, where applicable, ensure public safety.</p>
Use Codes	Yes
Details	<p>Forestry Business Code</p> <p>Purpose: (L) maintain the natural hydrological characteristics of the flooding and drainage systems in the locality, and</p> <p>O7 Site preparation, harvesting, on-farm processing and release points for air/water blast spraying to application areas of chemicals, pesticides, fertilisers and the like minimise sediments, pathogens and nutrient contamination of downstream waters and controls erosion so the environmental values of ground and surface waters for ecosystem health and human consumption (with minimal treatment) are not degraded.</p> <p>S7 (a) For Forestry business within:</p> <ul style="list-style-type: none"> (i) 50 metres of the top bank of a river, or (ii) 30 metres of the top bank of a stream or creek, or (iii) 10 metres of the top bank of a dry gully or perennial waterway, there is no site preparation¹⁴⁶, harvesting and air/water blast spray application of chemicals and fertilizers. <p>(c) All works for access, log dumps and onfarm processing remain 300mm above known flood levels.</p> <p>Retirement Village Code</p> <p>O2 Retirement villages are located on land:</p> <ul style="list-style-type: none"> - which is not flood prone, poorly draining or unstable, and
ROL Code	No
Details	

Overlay Codes	No
Details	
PSPs	Yes
Details	Policy 1 Common Material for a DA - the susceptibility of a site or any part thereof is, to flooding, and its geological erosion potential;
Other	Yes
Details	<p>Desired Environmental Outcomes: (c) Risks to safety, property and the environment are not increased by the interaction of development and natural or other hazards, including flooding, bushfires, disturbance of acid sulfate soils, storm tide, cyclonic weather events and landslide.</p> <p>Schedule 7 - % Likelihood to occur in a year. Comercial Premises (Garden Centre, Market) - 2% Commerical Premises (All Other) - 1%. Industrial Purposes (Car Wash, Extactive Industry, Landscape Supplies, Storage Premises, Trasnport Station, Vehicle Depot) - 2% Industrial (All Other) - 1% Residential Purposes - 1% Rural Purposes (Animal Keeping, Intensive Animal Husbandry) - 0.5% Rural Purposes (Other) - N/A Community Purposes (All) - 1% Community Purpose (Major Utility, Ambulance, First Aid Station, Fire Brigade, Police Station, Emergency Service Depot) - 0.5% Community Purpose (Hospital, Nursing Home. Residential Health Care Facility) - 0.5% Recreation Purposes (all) - 30% Recreation Purposes (Indoor Recreation, Indoor Sports Facility) - 2% Ungrouped Purposes (All) - N/A Major Tourist Facility - As Advised by Council.</p> <p>Explanatory Notes (4) Natural hazard events (a) In line with the State's policy position, development should minimise the potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment [refer State Planning Policy 1/03]. (b) The Shire is susceptible to each of these natural hazards and accordingly the planning scheme includes responses for dealing with each. The primary mechanism used in the planning scheme is to identify areas subject to these hazards as special management areas and accordingly to trigger the assessment of development proposed within such areas for assessment against particular assessment criteria detailed in the natural Features Code. (c) The nominated assessment criteria seek to ensure that proposed development either avoids or minimises within acceptable levels, risks to the natural and built environment and to human health and safety. (7) Schedule 7 – Flood Immunity for Specific Purposes Schedule 7 details requirements of flood immunity for specific purposes. Each zone code includes requirement for development to be immune from flood events that result in unacceptable levels of risk to health and safety or unacceptable risk of property damage. The requirements detailed in Schedule 7 provide the self-assessment solutions applicable to new development. This means that for self-assessable development, compliance with the nominated standards is mandatory. Any departure from the listed requirements means that a proposal cannot meet the self-assessment solutions and accordingly is likely to become assessable development. For assessable development, the requirements detailed in Schedule 7 can be taken as a guide to satisfying the relevant specific outcomes of the zone code (i.e., minimum flood immunity standards for new development that will result in acceptable levels of risk for life an property).</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	Policy 1 Common Material for a DA - the susceptibility of a site or any part thereof is, to flooding, and its geological erosion potential;
Other	No
Details	
Other Info	

LGA	Rockhampton
Planning Scheme	Mount Morgan
Adopted	25/02/2003
Flood Amendments	No
SPP Compliance	No
Details	Approval to adopt this planning scheme is conditional upon the continued operation and effect of: State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Commercial Premise Code D - Drainage - The development is not affected by or contribute to storm water problems (i.) The development provides stormwater drainage to a lawful discharge point and to a standard that will ensure no adverse impacts on crown land, public roads or waterways or on privately owned land; (ii.) The development demonstrates that stormwater discharge will not have adverse environmental impacts by way of flow volume or water quality on the development site or adjoining lands;</p> <p>Horticulture C Code D - Water Protection - Developments make adequate provision for maintaining and protecting groundwater and surface water quality. (iii.) Developments do not interfere with natural surface water flow paths.</p> <p>E - Soil Erosion - While recognising that soil erosion is a natural process, all development to which this code relates must ensure that soil erosion does not worsen or accelerate as a consequence of development (iii.) no major earthworks occur in a riparian corridor of a perennial or permanent stream (ii.) surface waters use existing natural flow paths</p> <p>Animal Husbandry B 4. Water Protection Developments make adequate provision for maintaining and protecting groundwater and surface water quality. (iii.) Developments do not interfere with natural surface water flow paths.</p> <p>Forestry C Soil Erosion - While recognising that soil erosion is a natural process, all development to which this code relates must ensure that soil erosion does not worsen or accelerate as a consequence of development (v.) no major earthworks occur in a riparian corridor of a perennial or permanent stream (iv.) surface waters use existing natural flow paths</p> <p>Health Safety Environmental Management Code Soil Erosion -While recognising that soil erosion is a natural process, all development to which this code relates must ensure that soil erosion does not worsen or accelerate as a consequence of development (ii.) Development manages and controlling surface drainage by using natural flow paths wherever possible.</p>
ROL Code	Yes
Details	Reconfiguration of a Lot Code A. Access - The proposed allotments have appropriate access (i.) Each allotment shall have legal and safe practical and flood standard access from a public road.
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	Definitions: Flood standard access: Means access, provided motor vehicles and pedestrians, that is constructed so as not to be inundated by flood waters to a depth of greater than 200mm in a Q 50 rain fall event.
Op Works Code	Yes
Details	<p>Operational Works Code A. Infrastructure Stormwater that is- (i.) designed in accordance with Queensland Urban Drainage Manual and Australian Rainfall And Runoff 1987 (ii.) constructed in accordance with Institution of Public Works Engineers of Australia Standard Drawings (iii.) supervised by an engineer registered with the Board of Professional Engineers Queensland or the Institution of Engineers Australia –NPER-3</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Rockhampton
Planning Scheme	Rockhampton
Adopted	16/08/2005
Flood Amendments	No
SPP Compliance	Yes
Details	Scheme indicates minister is satisfied that SPP1/03 is adequately reflected.
Mapped Q100 / DFE	Yes
Details	Q100 Mapped
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	Various Statements in relation to flooding in most area descriptions and intent statements.
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Caretakers Residence Code P6 The Caretakers Residence: (a) is protected from adverse flooding and does not: (1) significantly interfere with the passage, storage or quality of stormwater or the natural functions of a waterway; and (2) put loss of life at risk; and (3) put life at risk of injury; and (4) put damage to property at high risk; and (b) complies with the requirements of the Flood Prone Land Code: A6 Caretakers Residences and ancillary structures are not located within the Q100 floodable area as shown on the Planning Area Map. P7 Habitable rooms, non habitable areas (eg utility areas, garage, laundry and storage room) and car parking do not significantly interfere with the passage or storage of stormwater or the natural functions of a waterway. A7 Caretakers Residences and ancillary structures are not located within the Q100 floodable area as shown on the Planning Area Map.</p> <p>Childcare Centre Code P6 Location and site design ensures that children and staff are not exposed to any environmental harm or nuisance. A6.3 The site is not located on flood prone land.</p> <p>Commercial Centres Self Assessable Code P4 Flood impacts are minimised by using appropriate building techniques to improve the safety of buildings and structures. A4 Where located on Flood Prone Land, any new services and utilities connected to the site, including electrical outlets, are designed and installed at such a height that they are a minimum of 500mm above the Defined Flood Event.</p>
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>FLOOD PRONE LAND CODE 1. Purpose of the Code The purpose of this code is to provide direction and controls on the planning and management of development on flood prone land (defined as land below the 1 in 100 year ARI flood level) to:</p> <ul style="list-style-type: none"> • reduce the potential for a loss of life or injury to residents and visitors; and • ensure development proposals do not increase the potential for flood damage to occur, not only to the development itself but also to other properties; and • ensure development proposals do not adversely affect the behaviour of floodwaters; and • minimise the potential of Rockhampton's residents being subjected to the difficulties and dangers of floods; and • restrict development in areas adversely affected by severe flooding; and • reduce the intensity of existing development on flood prone land; and • restrict development in locations that do not have safe and trafficable access during the defined flood event; and • reduce the potential for damage to the structure and contents of buildings, damage to public property and loss of commercial production; and • ensure that strategic community facilities, and their supporting infrastructure/services required during an emergency are outside and significantly above the flood prone land; and • protect the hydraulic capacity and ecological functions of the City's river and creeks; and • ensure that no additional demands are placed on emergency services as a result of development on flood prone land or isolated by flooding. <p>5. Performance Criteria and Acceptable Solutions Part A – Requirements Applicable To All Development Structural Design and Location P1 The capacity and function of floodways and flood storage areas are preserved in high and low hazard areas. A1.1 In a high hazard or low hazard floodway, development involving; (i) building works, or (ii) filling or excavation, or (iii) changes in the natural surface level of the land; or (iv) the storage of materials, goods, equipment or the like on the land that cannot be easily and quickly removed from the site; does not occur. OR A1.2.1 In a high hazard or low hazard storage area; (i) filling or excavation, or (ii) changes in the natural surface level of the land; or (iii) the storage of materials, goods, equipment or the like on the land that cannot be easily and quickly removed from the site; does not occur. AND A1.2.2 The development; (i) has land immediately surrounding the site developed for the same or a similar purpose; and (ii) is the only practical development option for the land; and (iii) the depth of flood waters do not exceed two (2) metres in depth based on modelling of the defined flood event.</p>

	<p>Access</p> <p>P2 Safe access from the development site to the Central Business District or the Gracemere township is available during the defined flood event. Note: Development not on flood prone land must still comply with this Performance Criterion.</p> <p>A2.1.1 A material change of use and/or buildings works;</p> <p>(i) that is not for the purposes of community infrastructure listed in Table 3 or a residential use; or</p> <p>(ii) for a Bed and Breakfast, Home Occupation, Home Based Business, House, Caretakers Residence, Small Lot House or Display House / Office:</p> <p>(1) in a residential Area or Precinct; or</p> <p>(2) not in a residential Area or Precinct but involving the use of an existing building used lawfully for a residential use (whether or not involving building works internal to the existing building) or it's curtilage; or</p> <p>(iii) that complies with Performance Criterion P10 of this code;</p> <p>has access to an existing constructed road regardless of the road's immunity to flooding from the Fitzroy River but has immunity from stormwater, local or creek flooding in gaining access to that constructed road in accordance with the Type of Low Hazard Access specified for each land use category below in Table 1 and detailed in Appendix 2.</p> <ul style="list-style-type: none"> - Rural Use (Type 2 Access) DFE 50 - Residential Use (Type 1 Access) DFE 50 - Commercial Use (Type 2) DFE 50 - Industry Use (Type 2) DFE 50 - Community/ Recreation Use (For those specified in Table 3; 300mm below the corresponding RFL) DFE 50 - Community / Recreation Use (For those not specified in Table 3; no requirements) DFE50 - Miscellaneous Use (Type 2 for a Tourist Facility and Veterinary Hospital only – for other uses no requirements) DFE: 50 <p>* In determining the type of access to a site, the DFE above is to be used instead of Q100.</p> <p>OR</p> <p>A2.1.2 Access routes between the development site and the Central Business District or the Gracemere township are trafficable during the Defined Flood Event and do not exceed the Type of Low Hazard Access specified for each use category below in Table 2 and detailed in Appendix 2. For development that is not a material change of use, the applicable use category is the intended use for the development. Example: A Reconfiguring a Lot to create residential allotments would need to comply with the residential use category.</p> <ul style="list-style-type: none"> - Rural Use (Type 2 Access) DFE 100 - Residential Use (Type 1 Access) DFE 100 - Commercial Use (Type 2) DFE 100 - Industry Use (Type 2) DFE 100 - Community/ Recreation Use (For those specified in Table 3; 300mm below the corresponding RFL) DFE 100 - Community / Recreation Use (For those not specified in Table 3; no requirements) DFE 100 - Miscellaneous Use (Type 2 for a Tourist Facility and Veterinary Hospital only – for other uses no requirements) DFE: 100 <p>AND</p> <p>A2.2 There are no new allotments created in areas that will be isolated by a high or low hazard floodway within the Defined Flood Event.</p> <p>Note 1: A determination on access requirements to a community/recreation use where access is not completely flood free will take into account:</p> <p>(i) the location of other related or dependant community uses; and</p> <p>(ii) proximity to the community the proposed facility is intended to serve; and</p> <p>(iii) the role of the facility during a defined flood event; and</p> <p>(iv) whether the community use is an essential service.</p> <p>Note 2: Development for a residential use on land in a high hazard floodway has an approved evacuation plan that addresses the following aspects:</p> <p>(i) What is the evacuation time; and</p> <p>(ii) What types of vehicles are necessary for evacuation purposes; and</p> <p>(iii) What is the distance to flood free land; and</p> <p>(iv) What is the evacuation route; and</p> <p>(v) At what stage of the flood will the evacuation routes be cut.</p> <p>Environmental Considerations</p> <p>P3 Development protects and enhances the environmental values in a Waterway corridor, including its banks and associated vegetation.</p> <p>A3.1 Development is carried out in accordance with the Water Quality and Water Quantity Code, and, where relevant the Biodiversity / Nature Conservation Code.</p> <p>AND</p> <p>A3.2 No development is carried out in a Waterway corridor.</p> <p>Public Safety</p> <p>P4 The proposal prevents the intensification of the overall flood impacts within the community by:</p> <p>(a) not significantly increasing the overall level of flood damage and community disruption in high hazard areas, and</p> <p>(b) not creating any unacceptable impacts on flood levels and flows in a high hazard area i.e. a zero net loss in flood storage; and</p> <p>(c) ensuring the outside storage of any goods or equipment will not contribute to the overall level of flood damage and community disruption in both high and low hazard areas.</p> <p>A4 No Acceptable Solution specified.</p> <p>Part B – Requirements Applicable To Material Change Of Use Or Building Works Only</p> <p>P5 Community infrastructure is;</p> <p>(a) able to function effectively during and immediately after a defined flood event, or</p> <p>(b) of a type that needs to be protected due to its historical or cultural significance.</p> <p>A5 Community Infrastructure is not located on land below the Recommended Flood Level (RFL) contained in Table 3 below for that community infrastructure and has at least one road access that will remain trafficable for the performance of emergency evacuations for all floods up to and including the RFL.</p> <p>Recommended flood levels for community infrastructure</p> <p>Emergency Services -1:500 ARI</p> <p>Emergency Shelters - 1:200 ARI</p> <p>Police Facilities - 1:200 ARI</p> <p>Hospital - 1:500 ARI</p> <p>Nursing homes, aged care and child care facilities - 1:200 ARI</p> <p>Stores of valuable records or items of historic or cultural significance (eg. galleries and libraries) 1:500 ARI</p>
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Power stations - 1:500 ARI
 Major Switch Yards - 1:500 ARI
 Substations - 1:500 ARI
 Sewerage Treatment Plants - 1:100 ARI
 Water Treatment Plants - 1:200 ARI
 P6 Flood damage is avoided by using the appropriate design, location and construction techniques for buildings and structures within the floodplain.

A6.1 If within a floodway, the building or structure is certified by a qualified and experienced structural engineer in accordance with Planning Scheme Policy No. 14 – Flood Plain Management;
 AND
 A6.2 All services and utilities connected to the property, including electrical outlets, are to be designed or installed at such a height that they are a minimum of 500mm above the Defined Flood Event.
 AND
 A6.3 Non livable room areas may be below the level of the defined flood event provided they are designed and constructed using flood resilient materials.

For a Residential Use of Category of Development Only
 P7 Extensions to existing residential buildings do not exacerbate the impacts and consequences caused by flooding.
 Note: If in an area defined as a High Hazard Floodway, High Hazard Flood Storage or Low Hazard Floodway, the development will need to be carried out in accordance with an approved flood statement in accordance with Planning Scheme Policy No. 14 – Flood Plain Management.

A7.1 Extensions that are a minor ‘once off’ addition occur in accordance with one of the following circumstances:
 (i) For an existing residential building with a floor level below the Defined Flood Event:
 (1) the floor level of the extension is not below the existing floor level; and
 (2) there is no increase in the number of dwelling units or accommodation units (but does not provide for a relatives apartment6).
 OR
 (ii) For an existing residential building with a floor level at or above the Defined Flood Event (or that will and can be raised to comply):
 (1) all liveable floor areas (existing and proposed will be at or above the level of the defined flood event); and
 (2) there is no increase in the number of dwelling units or accommodation units; and
 (3) the total number of bedrooms does not exceed four; and
 (4) the level of the raised residential building (if raised) does not exceed 3 metres above the natural or finished ground level (where mounding or earthworks are proposed), and the height and form is consistent with the amenity of the surrounding area.
 OR
 A7.2 Extensions that are not a ‘minor once off’ addition have all liveable floor areas for the extension located 500mm above the level of the defined flood event.

P8 Flood damage, damage to property and social disruption to residential landowners and the community in general is avoided by using the appropriate design, location and construction techniques for buildings and structures within the floodplain.

A8.1 For new development intended or able to be used for a residential use, the floor level of all livable room areas (or residential sites as defined in the caravan/cabin park code) are no less than 500mm above the Defined Flood Event.
 OR
 A8.2 Liveable room areas (or residential sites as defined in the caravan/cabin park code) may be below the level of the defined flood event but are not subjected to flooding due to the installation of flood proofing measures (approved by the Rockhampton Regional Council) such as bunds, dykes, levee banks, flood walls or the like.
 Note: It will be a condition of any approval that a certificate from a licensed surveyor is submitted to Rockhampton Regional Council prior to “lock up” stage of the building construction (or prior to the commencement of the use for a caravan/cabin park) certifying the building floor levels of liveable room areas (or residential site levels in a caravan/cabin park) as being 500mm above the Defined Flood Event.

P9 New residential buildings and reclassifications of buildings or parts of a building from a nonresidential use to a residential use do not exacerbate the impacts and consequences caused by flooding.

A9.1.1 The new residential building is not constructed on flood prone land.
 AND
 A9.1.2 The new residential building is not created as a result of a conversion or reclassification from a non residential building.
 OR
 A9.2 Building Works or a Material Change of Use is not located in a high or low hazard floodway and will result in there being a reduced number of dwelling units or accommodation units on the land or allotments than there were there previously.
 OR
 A9.3 Building Works or a Material Change of Use for the purposes of a residential building only occurs on an allotment that is determined to be;
 (i) Low Hazard Flood Fringe; or
 (ii) Low Hazard Flood Storage; or
 (iii) High Hazard Flood Fringe.
 OR
 A9.4 Building Works or a Material Change of Use for the purposes of a House, Small Lot House or Caretakers Residence only occurs on an allotment that was privately owned and vacant on the commencement day of this planning scheme and located within the Depot Hill Residential Area – East Depot Hill Precinct.
 OR
 A9.5 Building Works or a Material Change of Use for the purposes of a residential building only occurs within the Central Business District Area.
 OR
 A9.6 Building Works or a Material Change of Use for the purposes of a residential building only occurs when in accordance with Performance Criteria P10 of this code.

P10 Development for a residential building in any Rural Area or Special Use Area is carried out, when unavoidably necessary, having proper regard to mitigating the effects, impacts and consequences of flooding.
 Note: The development will need to be carried out in accordance with an approved flood statement in accordance with Planning Scheme Policy No. 14 – Flood Plain Management

A10.1 At the location of the proposed development, the depth multiplied by velocity calculation is equal to or less than 0.5m²/s where:
 (i) the depth of inundation does not exceed 0.8 metres; and
 (ii) the subject land is not in a floodway; and

	<p>(iii) the livable floor area is 500mm above the level of the defined flood event.</p> <p>AND</p> <p>A10.2 The development is only for the purposes of a house or caretakers residence (but not both) and has been demonstrated to be essential to a bona-fide rural use of the land and is located on the least flood affected part of the site.</p> <p>For a Commercial or Industrial Use Category of Development Only</p> <p>P11 New buildings or uses for a non-residential purpose or an extension to an existing non-residential building or use is able to mitigate all possible impacts and consequences caused by flooding.</p> <p>Note: To have less than 30% of the gross floor area of the building at least 500 mm above the level of the defined flood event, it will be necessary to demonstrate that on the basis of the following, that a smaller area if any, is appropriate:</p> <p>(a) acceptable alternative flood proofing measures in accordance with Planning Scheme Policy No. 14 – Flood Plain Management can be reliably provided; and</p> <p>(b) an acceptable contingency plan is provided and approved; and</p> <p>(c) the nature of the business, activity or products used requires significantly less storage space; and the risk to staff is not increased; and</p> <p>(d) the potential goods, equipment or materials that become submerged in flood waters do not:</p> <p>(1) add to an increase in the flood debris loading of flood waters; or</p> <p>(2) result in environmental harm as described in Planning Scheme Policy No. 14 – Flood Plain Management.</p> <p>Note: If in an area defined as a High Hazard Floodway, High Hazard Flood Storage or Low Hazard Floodway, the development needs to be carried out in accordance with an approved flood statement in accordance with Planning Scheme Policy No. 14 – Flood Plain Management.</p> <p>A11 A minimum of 30% of the gross floor area of the building is at least 500 mm above the level of the defined flood event for the storage of goods in the times of flood.</p> <p>Note: To remove any doubt, this area does not need to be set aside and may be used on a day to day basis as an office, storage area or the like.</p> <p>Part C – Requirements Applicable To Reconfiguring a Lot or Operational Works Only</p> <p>P12 Any development that involves the excavation or filling of land (excluding minor development) is carried out such that ‘no worsening’ of floodwater levels, flow paths, velocity or flood behaviour results.</p> <p>Note: No net worsening of floodwater levels or reduction in storage area is to result from excavation or filling;</p> <p>A12 No Acceptable Solution specified</p> <p>Development associated with, or for, a Residential Use only</p> <p>P13 There is no increase in the number of allotments adversely affected by the Defined Flood Event.</p> <p>A13 Any new allotment (either additional or as a result of a boundary realignment) contains a minimum area of 500m² of land not affected by the defined flood event able to accommodate a 15m x 15m square.</p> <p>Development associated with, or for, other than a Residential Use</p> <p>P14 There is no increase in the number of allotments adversely affected by the Defined Flood Event.</p> <p>A14 Any new allotment (either additional or as a result of a boundary realignment) contains a minimum area of 1000m² of land not affected by the defined flood event able to accommodate a 20m x 25m rectangle.</p> <p>2.1.5 Code for Development in Water Resource Catchment Areas</p> <p>P2 Development which adjoins or incorporates major drainage lines or waterways must provide for their retention or, the enhancement of their natural environmental values to Council’s satisfaction.</p> <p>Acceptable Measures</p> <p>A2.1 Provision is made for vegetation protection and revegetation of streamlines and protection of river and creek corridors by appropriate buffers, and in accordance with the relevant Acceptable Measures of Council’s Planning Scheme Code 2.1.2 for Waterways and Wetlands, so as to ensure bank stability and reduce flooding/ siltation and erosion risks.</p>
PSPs	Yes
Details	PSP 14 Flood Plain Management
Other	Yes
Details	<p>Strategies Supporting the DEOS</p> <p>2. Protecting the ecological values and biodiversity of Rockhampton’s waterways, including the Fitzroy River, wetlands, lagoons, major urban creeks and their environs by, but not limited to the following:</p> <ul style="list-style-type: none"> - Providing sufficient buffer distances between development and waterways; - Managing stormwater run-off such that it does not contribute to erosion and increased sediment load to waterways; - Installing treatment facilities on sites to minimise pollution from water borne pollutants entering waterways; and - Locating only compatible uses in flood prone areas such that hazardous or noxious substances or other materials will not pollute the waterways in times of flood. <p>6. Preventing land contamination by, but not limited to the following:</p> <ul style="list-style-type: none"> - Storing chemicals and hazardous, toxic or noxious wastes in areas that are flood free and secure; and - Conducting operational activities in a manner that avoids the contamination of stormwater. <p>7. Mitigating the adverse impacts of flooding, bushfire and landslide on people, property and the environment by ensuring that only compatible development occurs (to an appropriate standard) in areas that are prone to flooding, bushfire and landslide.</p> <p>13. Ensuring that industrial development, including extensions to industrial development, occurs in areas that are not constrained by flooding, by identifying a number of Industrial Areas within Rockhampton that are flood free.</p> <p>Information Required for Impact Assessable Applications</p> <p>(b) The suitability of the site for the proposed development having regard to:</p> <ul style="list-style-type: none"> • Its size, location and physical characteristics; • Whether the development is subject to flood inundation; and • Whether the development is of a nature or scale that would be more appropriately located in another planning area.
Op Works Code	No
Details	
Overlay Code	Yes
Details	<p>Part B – Requirements Applicable To Material Change Of Use Or Building Works Only</p> <p>P5 Community infrastructure is;</p> <p>(a) able to function effectively during and immediately after a defined flood event, or</p> <p>(b) of a type that needs to be protected due to its historical or cultural significance.</p>

	<p>A5 Community Infrastructure is not located on land below the Recommended Flood Level (RFL) contained in Table 3 below for that community infrastructure and has at least one road access that will remain trafficable for the performance of emergency evacuations for all floods up to and including the RFL.</p> <p>Recommended flood levels for community infrastructure</p> <p>Emergency Services - 1:500 ARI</p> <p>Emergency Shelters - 1:200 ARI</p> <p>Police Facilities - 1:200 ARI</p> <p>Hospital - 1:500 ARI</p> <p>Nursing homes, aged care and child care facilities - 1:200 ARI</p> <p>Stores of valuable records or items of historic or cultural significance (eg. galleries and libraries) 1:500 ARI</p> <p>Power stations - 1:500 ARI</p> <p>Major Switch Yards - 1:500 ARI</p> <p>Substations - 1:500 ARI</p> <p>Sewerage Treatment Plants - 1:100 ARI</p> <p>Water Treatment Plants - 1:200 ARI</p> <p>P6 Flood damage is avoided by using the appropriate design, location and construction techniques for buildings and structures within the floodplain.</p> <p>A6.1 If within a floodway, the building or structure is certified by a qualified and experienced structural engineer in accordance with Planning Scheme Policy No. 14 – Flood Plain Management;</p> <p>AND</p> <p>A6.2 All services and utilities connected to the property, including electrical outlets, are to be designed or installed at such a height that they are a minimum of 500mm above the Defined Flood Event.</p> <p>AND</p> <p>A6.3 Non livable room areas may be below the level of the defined flood event provided they are designed and constructed using flood resilient materials.</p> <p>For a Residential Use of Category of Development Only</p> <p>P7 Extensions to existing residential buildings do not exacerbate the impacts and consequences caused by flooding.</p> <p>Note: If in an area defined as a High Hazard Floodway, High Hazard Flood Storage or Low Hazard Floodway, the development will need to be carried out in accordance with an approved flood statement in accordance with Planning</p>
PSPs	No
Details	
Other	Yes
Details	Exempt Development: Filling of topsoil to a depth of less than 100mm above natural ground level in any location where the Flood Prone Land Code applies;
Other Info	

LGA	Scenic Rim
Planning Scheme	Boonah
Adopted	28/03/2006
Flood Amendments	Yes
SPP Compliance	No
Details	Not Stated.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 3: Assessment Criteria for the Rural Zone 4.9 Overall Outcomes for the Rural Zone Code (e) Land resources are used sustainably, consistent with any environmental or physical constraints (such as flooding, instability, slope, landslip and erosion) and within the land's productive capacity.</p> <p>Division 5: Assessment Criteria for the Rural Buffer Zone 4.15 Overall Outcomes for the Rural Buffer Zone Code (g) Land resources are used sustainably, consistent with any environmental or physical constraints (such as instability, slope, landslip, flooding and erosion) and within the land's productive capacity. (2) The overall outcomes sought for the Town Zone are the following: (a) Boonah The urban area is constrained by: -physical characteristics of the land including potential land slip, steep and flood prone land, good quality agricultural land, soil salinity and bushfire hazard.</p> <p>Division 9: Assessment Criteria for the Town Zone 4.25 Town Zone Code Parkland Precinct: Areas in public ownership provide: - drainage for flood prone areas; 4.33 Overall Outcomes for the Village Zone Code (2) The overall outcomes sought for the Village Zone are as follows: (l) Village development does not occur on steep land, flood prone land, good quality agricultural land, or land prone to bushfire hazard. Division 10: Intensive Animal Industry 6.41(A) Provisions Applicable Only to Code and Impact Assessable Development Element (ii) : POULTRY FARMS Specific Outcome SO8 The poultry farm does not impede flood storage and flood and stormwater drainage flows.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Division 12: Reconfiguring a Lot 6.49(A) Provisions Applicable Only to Code and Impact Assessable Development in all Zones SPECIFIC OUTCOMES Element (i) : LOT LAYOUT AND DESIGN SO2 Lots have an appropriate area and dimensions for the siting and construction of buildings and the provision of on-site recreation space, landscaping, vehicle access and parking, such that they: (i) respond to site characteristics and potential hazards, including soil erosion, bushfire risk and flood liability;</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Division 2: Strategic Framework 1.4 Broad Strategies (xi) The level of risk to the community from natural hazards such as flooding and bushfire is minimised. In the longer term, beyond the life of the scheme, appropriate land in the rural zone may be converted for urban (particularly residential purposes) in locations surrounding the towns of Boonah and Kalbar, where not constrained by flooding and good quality agricultural land or similar constraints, and there is the ability to provide appropriate urban infrastructure. Land in the Rural Zone located around the villages is not intended for long term urban opportunities – it will remain rural.</p> <p>Part 3: Desired Environmental Outcomes C. Ecological Resources, Processes and Values 21) The level of risks to people, property, facilities and the environment associated with the impacts of natural hazards including flooding, bushfire and landslide is minimised.</p> <p>Schedule 2: Desired Environmental Outcomes - Supporting Material Community Well Being Issues associated with the identification of suitable urban expansion include: physical constraints on the availability of land (such as flooding, topography, demand for other land uses such as agriculture or business); Scheme Measures Development Assessment Development (particularly residential) will have regard to physical constraints including the Willowbank Raceway and RAAF Base Amberley sensitive areas, slope of land, bushfire hazard, vegetation, good quality agricultural land and flood liability.</p>

	<p>The following specific outcomes for residential and rural residential development are incorporated within codes:</p> <ul style="list-style-type: none"> - residential development will have regard to physical constraints including (but not limited to) slope of land, bushfire hazard, vegetation, good quality agricultural land, flood liability and buffer areas; <p>Economic Development</p> <p>The availability and efficiency of adequate water supply, stormwater management and sewage disposal systems is a significant factor in determining the future development potential for the Shire's communities. The control of stormwater runoff is critical to the protection of water quality, the maintenance of environmental flow regimes and management of flood impacts.</p> <p>PART 3: ECOLOGICAL RESOURCES, PROCESSES AND VALUES</p> <p>Division 5: Desired Environmental Outcomes</p> <p>21) The level of risks to people, property, facilities and the environment associated with the impacts of natural hazards including flooding, bushfire and landslides is minimised.</p> <p>Accordingly, the Shire contributes significantly and importantly to the landscape values of the region as well. While reserves, national parks, world heritage areas, etc contribute to these landscape values, it should also be recognised that much of these landscape values are derived from land that is privately owned (farms, etc) and that landowners must have flexibility and not be unduly constrained particularly in terms of future regional landscape/open space policies.</p> <p>environmental impacts and land degradation from certain land uses should be minimised. Land use practices should be encouraged which avoid land degradation including:</p> <ul style="list-style-type: none"> -flooding; -run off and flooding (where possible) are managed to minimise ecological impacts and potential risk to property; <p>Background Information Flood prone land adjacent to the Bremer River, Warrill Creek, Teviot Brook and Purga Creek is a constraint to the development of residential buildings and the construction of roads in these areas. Parts of the town of Boonah also include flood prone land. Significant parts of the north-western sector of the Shire are subject to land degradation processes including sheet, rill and gully soil erosion. Due to the rugged terrain of the Shire there are several areas which are prone to landslip, primarily on cleared land with slopes in excess of 15%. Many of the steeper and higher parts of the Shire contain significant native vegetation, as do some other areas in the Shire. Soil salinity is also a constraint to land use in various areas throughout the Shire, while several areas are prone to bushfire hazards restricting land use in these areas.</p> <p>Scheme Measures</p> <p>Development Assessment</p> <ul style="list-style-type: none"> -flooding, bushfire hazard and steeply sloping land is managed to minimise ecological and potential risk to property.
Op Works Code	Yes
Details	<p>Division 6: Filling and Excavation Code</p> <p>6.24 Overall Outcomes for the Filling and Excavation Code</p> <p>(2) The overall outcome for the Filling and Excavation Code are to ensure:</p> <p>(d) risk of flooding or nuisance to nearby land is reduced.</p> <p>6.25(A) Provisions Applicable to Self, Code and Impact Assessable Development</p> <p>SPECIFIC OUTCOMES</p> <p>Element (i) : ENVIRONMENTAL IMPACT</p> <p>SO3 Filling or excavation does not result in any adverse impact on drainage or flood flows whether upstream or downstream of the site.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Scenic Rim
Planning Scheme	Beaudesert
Adopted	27/03/2007
Flood Amendments	Yes
SPP Compliance	Yes
Details	
Mapped Q100 / DFE	Yes
Details	<p>Defined Flood Event (DFE) means the flood event adopted by the Local Government for the management of development on flood prone land being—</p> <p>(e) the 1% AEP flood in those streams or part of the streams not shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D; or</p> <p>(f) in those streams or part of the streams shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D, the following flood events—</p> <p>(i) Logan River (1974 and 1991 flood events, whichever is higher); or</p> <p>(ii) Albert River (1974 flood event); or</p> <p>(iii) Oxley River (1974 flood event); or</p> <p>(iv) Burnett Creek (1974 flood event); or</p> <p>(v) Cannon Creek (1974 flood event).</p>
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Part 2 Mt Lindesay Corridor Zone</p> <p>Table 3.2.11 Specific Outcomes and Prescribed Solutions for the Mt Lindesay Corridor Zone</p> <p>Open Space, Sport and Recreation Facilities</p> <p>SO39 Development is not to exacerbate or be adversely affected by flood events</p> <p>S39.1 Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% AEP flood.</p> <p>S39.2 Development ensures that uses, which are required to operate during a natural disaster, are located above a 0.2% AEP flood.</p> <p>SO41 Development is sympathetic to natural hazard constraints.</p> <p>S41.1 Development avoids flood prone, steep slope and high bushfire hazard areas.</p> <p>Part 3 Rural Zone</p> <p>Table 3.3.11 Specific Outcomes and Prescribed Solutions for the Rural Zone</p> <p>Protection of Personal Health, Safety and Property</p> <p>SO39 Development is not to exacerbate or be adversely affected by flood events.</p> <p>S39.1 Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% AEP flood.</p> <p>S39.2 Development ensures that uses, which are required to operate during a natural disaster, are located above a 0.2% AEP flood.</p> <p>SO41 Development is sympathetic to natural hazard constraints.</p> <p>S41.1 Development is designed to avoid flood, steep slopes and high bushfire hazard areas.</p> <p>Part 4 Kooralbyn Zone</p> <p>Table 3.4.11 Specific Outcomes and Prescribed Solutions for the Kooralbyn Zone</p> <p>Protection of Personal Health, Safety and Property</p> <p>SO34 Development is not to exacerbate or be adversely affected by flood events.</p> <p>S34.1 Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% EP flood.</p> <p>S34.2 Development ensures that uses, which are required to operate during a natural disaster, are located above a 0.2 AEP flood.</p> <p>Division 4 Bromelton Zone Code</p> <p>Table 3.5.11 Specific Outcomes and Prescribed Solutions for the Bromelton Zone</p> <p>Protection of Personal Health, Safety and Property</p> <p>SO28 Development is not to exacerbate or be adversely affected by flood events.</p> <p>S28.1 Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% AEP flood.</p> <p>S28.2 Development ensures that uses, which are required to operate during a natural disaster, are located above a 0.2% AEP flood.</p> <p>SO30 Development is sympathetic to natural hazard constraints.</p> <p>S30.1 Development is designed to avoid flood, steep slopes and high bushfire hazard areas.</p> <p>Division 4 Beaudesert and Canungra Townships Zone Code</p> <p>Table 3.6.11 Specific Outcomes and Prescribed Solutions for the Beaudesert and Canungra Townships Zone</p> <p>Protection of Personal Health, Safety and Property</p> <p>SO42 Development is not to exacerbate or be adversely affected by flood events.</p> <p>S42.1 Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% AEP flood.</p> <p>S42.2 Development ensures that uses, which are required to operate during a natural disaster, are located above a 0.2% AEP flood.</p> <p>SO44 Development is sympathetic to natural hazard constraints.</p> <p>S44.1 Development avoids flood prone, steep slope and high bushfire hazard areas.</p> <p>Protection of Personal Health, Safety and Property</p> <p>SO41 Development is not to exacerbate or be adversely affected by flood events.</p> <p>S41.1 Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% AEP flood.</p> <p>S41.2 Development ensures that uses, which are required to operate during a natural disaster, are located above a 0.2% AEP flood.</p> <p>SO43 Development is sympathetic to natural hazard constraints.</p> <p>S43.1 Development avoids flood prone, landslide prone, and high bushfire hazard areas.</p> <p>Division 4 Tamborine Mountain Zone Code</p> <p>Table 3.7.11 Specific Outcomes and Prescribed Solutions for the Tamborine Mountain Zone</p> <p>Protection of Personal Health, Safety and Property</p> <p>SO41 Development is not to exacerbate or be adversely affected by flood events.</p> <p>S41.1 Development ensures that buildings and structures are not located where they could impede and therefore exacerbate a 1% AEP flood.</p> <p>S41.2 Development ensures that uses, which are required to operate during a natural disaster, are located above a 0.2% AEP flood.</p> <p>SO43 Development is sympathetic to natural hazard constraints.</p> <p>S43.1 Development avoids flood prone, landslide prone, and high bushfire hazard areas.</p> <p>S43.2 Development provides for building envelopes where lots are constrained by environmental factors</p>

Use Codes	Yes
Details	<p>Division 10 Forestry Code</p> <p>SO2 Development—</p> <p>(c) avoids—</p> <p>(ii) land below the 10% AEP flood level;</p> <p>Division 21 Poultry Farm Code</p> <p>SO5 Development does not impede flood storage and flood and stormwater drainage flows.</p> <p>5.1 No Solution is prescribed.</p> <p>Division 3 Construction and Infrastructure Code</p> <p>Impacts on Flood Levels</p> <p>SO3 Development is sited to avoid damage to life and property from flood impacts.</p> <p>Note: Information on the flood level affecting a property can be obtained from Council where records are held. Records held include 1974 and 1991 flood events where mapped as Flood Hazard on the Development Constraints Overlay and in limited other locations the calculated 1% AEP flood.</p> <p>S3.2 Development ensures that where Building Work and Operational Work occurs outside of a Building Envelope it is located clear of the DFE.</p> <p>S3.3 Development provides for Buildings to be sited having a minimum freeboard of 300 millimetres and habitable Buildings 500 millimetres above the DFE.</p> <p>SO3 Development is sited to avoid damage to life and property from flood impacts. Note: Information on the flood level affecting a property can be obtained from Council where records are held. Records held include 1974 and 1991 flood events where mapped as Flood Hazard on the Development Constraints Overlay and in limited other locations the calculated 1% AEP flood.</p> <p>S3.4 Development provides an access from the Building platform to the street frontage which is above the DFE.</p> <p>SO12 Driveways and crossovers are located to avoid flood prone areas or areas with high water flows.</p> <p>S12.2 Where other than Self assessable, development provides that driveways and crossovers are not located below the DFE unless no other location is suitable in accordance with SO11.</p> <p>Standards of Service for Flooding</p> <p>SO28 The stormwater network is designed to provide flood immunity tailored to the specific purpose the land is utilised for and in order to maintain the operational effectiveness of infrastructure during a floor event.</p> <p>S28.1 Development is undertaken in accordance with the standards in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Design and Appearance</p> <p>SO29 Development provides for stormwater infrastructure to be designed and constructed in accordance with natural channel design principles instead of a constructed floodway where there is no natural flow path.</p> <p>S29.1 No Solution is prescribed.</p> <p>Major Drainage Flow Path</p> <p>SO32 The stormwater network is designed to not locate major overland flow paths in Building areas where in rural or rural residential areas.</p> <p>S32.1 Development provides for flood flows to be managed such that the 1% AEP flood event does not encroach onto a Building Envelope, or where no Building Envelope has been determined, within 30 metres of a Building or Building area.</p> <p>Stormwater Infiltration</p> <p>SO45 Development is designed to limit stormwater infiltration into the sewerage system.</p> <p>S45.1 Development provides that sewer mains are located above the DFE.</p> <p>S45.2 Development provides that sewer manholes are not located in areas subject to flooding or where bolt down lids are required.</p> <p>S45.3 Development provides that pump stations are located above the DFE.</p> <p>Pavement Drainage</p> <p>SO66 Pavement drainage is provided to prevent pooling of water on a pavement in other than a major flood event.</p> <p>S66.1 Development provides crossfalls, gully inlets, table drains, longitudinal gradients, stormwater drainage and flood immunity levels in accordance with the standards in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Access in Floodable Areas</p> <p>Safety</p> <p>SO139 Development is sited to enable access in the event of a flood in non-rural areas.</p> <p>S139.1 Development ensures that all Buildings have a trafficable access to a Major Transport Route during the DFE, where located in the—</p> <p>(a) Mt Lindesay Corridor Zone; or</p> <p>(b) Rural Zone, where in the— Village Precinct; or</p> <p>(ii) Rural Residential Precinct; or</p> <p>(iii) Rural Industry Precinct; or</p> <p>(iv) Active Recreation Precinct; or</p> <p>(v) Community Facilities Precinct; or</p> <p>(c) Kooralbyn Zone; or</p> <p>(d) Bromelton Zone; or</p> <p>(e) Beaudesert and Canungra Townships Zone; or</p> <p>(f) Tamborine Mountain Zone.</p> <p>SO140 Development is sited to enable access in reasonable time in the event of a flood in rural areas.</p> <p>S140.1 Development ensures that access in a Precinct not mentioned in S139.1 is available to a habitable Building in a 50% AEP flood event and within 24 hours of the loss of access in a 1% AEP flood event.</p> <p>Drainage</p> <p>S27.1 Development provides that all stormwater drainage is in accordance with the Institute of Engineers, Australia, 1999: “Australian Rainfall and Runoff: A Guide to Flood Estimation” for a two year return period.</p>
ROL Code	Yes
Details	<p>Part 4 Reconfiguring a Lot Code</p> <p>5.4.3 Overall Outcomes for Reconfiguring a Lot</p> <p>Reconfiguring a Lot is to—</p> <p>(d) minimise the adverse effects from natural or other hazards including flooding, bushfire, slope instability, contaminated sites and sites producing significant levels of emissions;</p> <p>SO10 Development provides for the protection of property in areas liable to flood inundation.</p> <p>S10.1 Development provides—</p> <p>(a) a Building platform located above the DFE; and</p>

	<p>(b) an additional area above the DFE of sufficient size for the treatment and disposal of effluent on site; and</p> <p>(c) access which is above the DFE.</p> <p>Probable Solution</p> <p>S14.1 Development provides that an area of public open space has a minimum area of 0.5 hectares, a maximum slope of 5%, a regular usable shape and is located above a defined flood event;</p> <p>Specific Outcome</p> <p>SO16 Development protects environmentally sensitive features and habitats and avoids natural hazards.</p> <p>Probable Solution</p> <p>S16.1 Development</p> <p>(e) avoids steep and unstable land, land below the 1% AEP flood level and land subject to severe bushfire risk;</p>
Overlay Codes	Yes
Details	<p>Division 3 Development Constraints Overlay Code</p> <p>Subdivision 2 Assessment Criteria for Development Constraints</p> <p>4.4.7 Overall Outcomes for Development Constraints Code</p> <p>(12) Development for the reconfiguration of a lot minimises the adverse effects from natural or other hazards including flooding, bushfire, slope instability, contaminated sites and sites producing significant levels of emissions.</p> <p>Table 4.4.8 Specific Outcomes and Prescribed Solutions for the Development Constraints Overlay</p> <p>Natural Hazards Management - Flood</p> <p>SO1 Development is sited to avoid damage to life and property from flood impacts.</p> <p>S1.1 Development is located within an approved Building Envelope where an approved Building Envelope exists.</p> <p>S1.2 Development is located clear of the Defined Flood Event (DFE).</p> <p>S1.3 Development ensures that all habitable floor levels are a minimum of 500 millimetres above the DFE.</p> <p>S1.4 Development ensures that Filling does not occur below the DFE.</p> <p>SO2 Development is sited to enable access in the event of a flood.</p> <p>S2.1 Development ensures that all buildings have a trafficable access to a public road during the DFE, where located in the—</p> <p>(a) Mt Lindesay Corridor Zone; or</p> <p>(b) Rural Zone, where in the—</p> <p>(i) Village Precinct; or</p> <p>(ii) Rural Residential Precinct; or</p> <p>(iii) Rural Industry Precinct; or</p> <p>(iv) Active Recreation Precinct; or</p> <p>(v) Community Facilities Precinct; or</p> <p>(c) Kooralbyn Zone; or</p> <p>(d) Bromelton Zone; or</p> <p>(e) Beaudesert and Canungra Zone; or</p> <p>(f) Tamborine Mountain Zone.</p> <p>SO2 Development is sited to enable access in the event of a flood.</p> <p>S2.2 Development ensures that the maximum permitted time for access to a dwelling to be flood effected and non-trafficable is 24 hours during the DFE, where located in the—</p> <p>(a) Rural Zone, where in the—</p> <p>(i) Conservation Precinct; or</p> <p>(ii) Countryside Precinct; or</p> <p>(iii) Equestrian Activities Precinct; or</p> <p>(iv) Future Dam Catchment Precinct; or</p> <p>(v) Passive Recreation Precinct.</p> <p>SO3 Development on flood-prone land—</p> <p>(a) does not alter the environmental values of soils, waterways and wetlands; and</p> <p>(b) does not constitute a public safety risk.</p> <p>S3.1 Development, involving the bulk storage or manufacture of hazardous material—</p> <p>(a) is not located on land below the level of the DFE; or</p> <p>(b) is constructed to prevent the intrusion of flood waters for any flood event.</p> <p>S3.2 Development, being a sewage treatment plant, is—</p> <p>(a) located above the level of the DFE; or</p> <p>(b) constructed to exclude floodwater intrusion, and to resist all hydrostatic and hydrodynamic forces resulting from flood inundation.</p> <p>SO4 Development provides that the functioning of essential services is maintained during a flood event.</p> <p>S4.1 Development, being a community or infrastructure use, provides that floor levels are not less than—</p> <p>(a) 0.2% Annual Exceedence Probability (AEP) for emergency services facilities; and</p> <p>(b) 0.5% AEP for emergency shelter; and</p> <p>(c) 0.5% AEP for a police station; and</p> <p>(d) 0.2% AEP for a hospital; and</p> <p>(e) 0.2% AEP for an electricity substation; and</p> <p>(f) 0.2% AEP for a water treatment plant; and</p> <p>(g) 0.5% AEP for a power station; and</p> <p>(h) 0.5% AEP for a major electrical switchyard; and</p> <p>(i) 0.5% AEP for a store for valuable records, or items of historic or cultural significance.</p> <p>SO5 Development, being the reconfiguration of a lot, creates lots that incorporate a flood free, Building Envelope.</p> <p>S5.1 No Solution is prescribed</p>
PSPs	Yes
Details	<p>Part 2 Building and Conservation Envelopes</p> <p>Division 1 Considerations when Determining Building and Conservation Envelopes</p> <p>2.1.1 Considerations when Determining Building and Conservation Envelopes Building and Conservation Envelope information may be required by the Local Government for developments which require the restriction of development on part of any proposed Lot for reason of-</p> <p>(a) potential Flood Impacts;</p> <p>Division 2 Presentation of Building and Conservation Envelope Plans</p>

2.2.1 Presentation of Building and Conservation Envelope Plans
 (7) Where a boundary setback is required for a particular reason this reason should be clearly indicated on the plan (eg “1% AEP flood line”, “steep slope”).

Part 2 Applications for a Material Change of Use
 Division 1 Applications for a Material Change of Use
 2.1.1 Applications for a Material Change of Use
 (p) the location of all Watercourses, waterholes and creeks and the highest known flood levels and the defined flood levels;

Part 4 Applications for Reconfiguring a Lot
 Division 1 Applications for Reconfiguring a Lot
 4.1.1 Applications for Reconfiguring a Lot
 (n) areas of the land that:
 (ii) are located in a Natural Hazards Management Area (bushfire, landslide, flood);
 (w) all land below the adopted flood level;
 (bb) specific details confirming -
 (xii) for urban subdivisions details-
 (A) demonstrating that consideration has been given to the drainage requirements for the adopted flood level;
 NOTE:
 (c) Any additional calculations in support of overland flow path capacities, weir flows over kerbs, flood fill studies, etc are to be submitted.

Division 2 Information Definitions
 6.2.1 Information Definitions
 (B) Passive Assets-
 (iii) surface drainage and flood control devices.

Division 10 General Data Notes
 6.10.1 General Data Notes
 Roads Notes-
 (a) Road information is to contain-
 Flood Notes (Open Drains/Detention Basins)-
 (a) Flood information is to contain –
 (i) the location and level of centreline/invert of channel at maximum 25 metre intervals, change of grade or tangent points. The spacing of the survey points around the curved sections is to be such that the curve geometry can be accurately positioned on the mapping systems.
 (ii) Sufficient topological information of any open drain to develop cross sectional profiles at the corresponding centre line survey points,
 (iii) Full extent of concrete inverts and other Associated Works,
 (iv) For detention basins, sufficient topological information to determine extent, approximate highest and lowest points and volume.
 (v) Where earthworks have been carried out to change the existing profile of the land, sufficient surface levels are to be provided to accurately depict the changed surface.

Part 15 Natural Hazards Management
 Division 1 Natural Hazards Management Assessment
 Reports and Plans
 15.1.1 Natural Hazards Management - Flood Where an application requires assessment against the Development Constraints Overlay – Specific Outcomes for Natural Hazards Management – Flood (Section 4.4.8)-
 (a) An assessment is to be undertaken of the development’s potential to generate changes to flood characteristics on or outside the subject land which may increase the risks to existing persons, property or the interests of other landowners.
 (b) To demonstrate the nature of potential changes, a hydraulic and hydrologic assessment report prepared by a registered professional engineer with specialist expertise in such assessment, should be provided to the Assessment Manager. The report should examine any changes to flood depths, flood duration, flood velocities, flood warning times, flood storage, and flow paths generated by the development for the Defined Flood Event (DFE). Such a technical report should use recognised and locally accepted data and design methodologies, and use calculations for flood modelling which include options based on a vegetated riparian Zone, including ground cover, understorey, and canopy vegetation.)

Part 18 Extractive Industry
 Division 1 Extractive Industry Report
 18.1.1 Extractive Industry Report
 (e) Water Quality
 (ii) Potential extent of flooding affecting the development site;

Planning Scheme Policy 7
 Standards for Construction and Infrastructure
 Part 4 Standards for Earthworks, Excavation and Filling
 Division 1 Determining Flood Levels
 4.1.2 Determining Flood Levels using Local Rainfall Data
 (1) Calculation of flood levels shall be undertaken in accordance with the Queensland Urban Drainage Manual Section 5 (Urban Drainage).
 (2) The rainfall intensities used in determining flood levels shall be based on Design Rainfall Intensity Diagrams for Canungra, Logan Village and Jimboomba issued by the Australian Bureau of Meteorology and dated 1997.

Division 2 Standards of Service for Flooding
 5.2.2 Flood Immunity Standards
 (1) The stormwater Infrastructure network shall be designed to provide the flood immunity levels specified in Table 1.4A - Stormwater Design Criteria.
 Notes for Table 1.4A.
 (a) Minor system storm 10%AEP flood for all collector or higher order roads
 (b) Cross road culverts shall be designed to pass the flow of a 2%AEP flood with the top water level (TWL) not exceeding edge of carriageway except as indicated below-
 (i) For roads servicing less than 20 lots and where average lot area fronting the road is greater than 7999m², 20%AEP flood with TWL edge of carriageway. A design check should also be undertaken for 2%AEP flood assuming the road acts as a floodway. The floodway should be trafficable in a 2%AEP flood with a maximum submergence of 200mm and the maximum velocity shall be 1.85m/sec.
 (ii) The culvert may be designed for a 10%AEP flood with TWL edge of carriageway if the subject road has less than 2000 AADT at the 20 year horizon and where there exists an alternative route above the 2%AEP flood, which is in acceptable proximity. Other factors are road geometry (sight distance to flood affected areas), the speed environment, the period of time the road would be impassable, the location of alternative

routes and the standard of other nearby cross road drainage.

(iii) In rural areas the drainage design criteria shall be assessed on a case by case situation and shall take into account traffic volumes, the period of time the road would be impassable, road geometry (sight distance to flood affected areas), alternative routes and general funding limitations. The design must ensure that backwater from the DFE does not exceed permissible limits and whether or not embankments require facing where overtopping is likely to occur.

(iv) In residential and rural residential areas where the pipe extends through private property downstream of the road the culverts and downstream drainage shall be designed for a 1%AEP flood.

(c) In rural and rural residential areas, backwater from culverts can extend into private property provided the area of inundation is shown on the building envelope plan and is excluded from the building envelope.

(d) Culvert length criteria:

(i) Where kerb and channel or flush kerb with shallow table drains- culvert to be full width of road reserve except where the cumulative span of culvert internal diameters/box widths exceeds 3m. If the later case applies, culvert length shall be in accordance with the AUSTROADS Bridge Design Code with provision for a footway on one side of the road. The minimum clear width available for pedestrians shall be 1.8 m.

(ii) In rural residential areas with an average lot size of 0.8 ha or greater –where road frontage is less than or equal to 50 m the culvert is to extend from the road formation of upstream side to 5 m beyond the building envelope of the affected and adjoining lot on the downstream side.

(iii) Otherwise – road formation width.

(e) Minimum building envelope above 1%AEP flood level in accordance with Table 5.4.6B – Building Area Dimensions.

(f) Restriction criteria for major storm overland flow and natural watercourses-

(i) In residential and rural residential areas up to a lot size of 3999m² or industrial, commercial or shopping areas-

1) All natural watercourses and man made channels shall be wholly contained within parks or reserves for the extent of flooding up to the calculated 1%AEP flood.

2) Minor or major storm flows through private property shall be conveyed in only a fully piped system and where such piped system is within an easement.

(ii) In rural residential area with lot sizes 4000m² to 8000m²-

1) Piped systems in private property shall extend through the property to a legal point of discharge or may discharge within the property at or below the 1%AEP flood. The extent of the piped system and any constructed aprons or outfall channels shall be included in a drainage easement.

2) Defined natural watercourses are to be wholly contained within park or reserves for the width of definition plus an appropriate allowance for maintenance access.

3) Aside from discharge channels as in b.i. above , i.e. located below the 1%AEP flood, all constructed channels shall be wholly contained within park or drainage reserves (for the full width of construction plus an allowance for maintenance access).

4) Where minimum building envelope criteria are satisfied, the 1%AEP flood may extend into private property (beyond the limits of a channel or watercourse).

(iii) In rural and rural residential areas-

1) Major storm flows may pass overland through these properties subject to an assessment of the 1%AEP flood and compliance with minimum building envelope criteria and the requirements of 4.b. being satisfied. Where cross road culverts discharge into private property, an easement shall be provided for the extent of any pipeline in the property (if applicable) and for a minimum distance of 30 m beyond the culvert apron or channel outfall. (This latter requirement may be waived if the cross road culvert discharges into a recognisable creek system.)

2) Natural watercourses may be contained within private property. Easements may be required over the defined width.

3) Major man made channels shall be wholly contained within park or drainage reserves (for the full width of construction plus an appropriate allowance for maintenance access). Minor channels typically less than 10 m total constructed width, shall be included in a drainage easement.

4) Where minimum building envelope criteria are satisfied, the 1%AEP flood may extend beyond the channel into private property.

(iv) The minimum width of any park used for drainage purposes shall be in accordance with section 14.2 of this policy.

(g) Erosion Control All culvert outfalls, manmade channels/table drains (and natural watercourses as directed) shall be provided with erosion control measures suitable for maximum calculated velocities. Unless approved otherwise, the permissible velocities in Table 8.03 QUDM shall be based on easily eroded soils and a maximum 70% grass coverage. Reinforced concrete low flow channels shall be incorporated in all large open channels with “soft” facings.

(h) Rural residential (average lot size <6000m²) alternative drainage system

(i) Table drains to be maximum 400 mm deep and fully turfed except where cement grouted stone pitching or concrete lining or approved equivalent is required for scour protection. Side batters to be 1:4 (V:H).

(ii) Pipe/table drain minor system to be designed for 2%AEP flood with top water level not exceeding edge of shoulder level.

(iii) Access culvert crossings shall be provided for entry to all allotments in accordance with Standard Drawing 50418 in Planning Scheme Policy 8. Box culverts 225 mm internal height shall be used at these access crossovers.

(iv) At or adjacent to road crests, concrete invert style crossings may be used in lieu of pipe crossings.

(i) Dual Use Drainage and Open Space Areas

(i) The drainage standards to be applied to a dual use area must be considered within the context of the intended function of the land. This process may be complicated by the mix of functional use, namely-

1) Open space areas with a low to high need for access by pedestrians and cyclists,

2) Passive recreation areas with a low to high visitation,

3) Active recreational or sporting areas,

4) Natural watercourses with low to high ecological significance.

(ii) Appropriate drainage standards for particular areas shall be determined with respect to the following-

1) Major flood capacity,

2) Convenience flood capacity – minor event in terms of interval event and the time to drain ponded sites,

3) Maintenance costs (eg batter slopes between 1 in 4 and 1 in 6),

4) Safety (eg maximum velocity 2.0m/sec),

5) Stability factors eg resistance to scour, slip, etc.,

6) Ecological considerations eg preserving areas with high nature conservation values, appropriate planting in waterways, minimum impact on existing riparian/aquatic ecosystems.

(j) Allotment Drainage Roof and allotment drainage shall be designed to QUDM 5.18 except as varied herein. In rural residential areas generally all roof water is connected to rainwater tanks,

ii. Inter-allotment drainage (refer QUDM Figure 5.18.2) shall be located on the low side of any sewer reticulation and generally 1.5 metres clear of the sewer alignment (or 1.5 metres from the property boundary where there is no adjoining sewer),

iii. Easements are required for inter-allotment drainage.

	<p>(k) Table Drains – rural & rural residential areas Table drains to be a maximum 600mm deep, aside from localised deepening at pipe crossovers. Desirable side batter slopes of table drains shall be 1 in 4 (provided there is sufficient room within road reserves where constructing in an existing road reserve). The TWL for the minor system flood shall be the outer edge shoulder level. Table drains shall be turfed except where velocities exceed limits in Table 8.03 QUDM in which case alternative permanent erosion control measures shall be incorporated.</p> <p>(l) Access Crossovers in rural and rural residential areas Piped crossovers shall be constructed in accordance with Standard Drawing 50416. The maximum diameter pipe used in crossovers shall be 600mm. Crossover pipes shall be sized to pass a 2%AEP flood with TWL not exceeding edge of carriageway level. At or adjacent to road crests concrete invert crossings may be used in lieu of a piped crossover.</p> <p>7.5.6 Flood Immunity Levels</p> <p>Limitations for overland flow in roads conform with the requirements in QUDM clauses 5.08 and 5.09, except that where lots are below the road level, the depth of flow is not above the top of kerb.</p>
Other	Yes
Details	<p>Division 2 Desired Environmental Outcomes</p> <p>2.1.3 Desired Environmental Outcomes</p> <p>(1) Environment—The environment is conserved such that—</p> <p>(d) the landscape features of the Shire including its mountain ranges, valleys, specific views from Tamborine Mountain and other locations, waterways, floodplain, vegetation and rural farming areas are protected and managed to maintain their unique character and appeal;</p> <p>(3) Social—Development provides that—</p> <p>(b) adverse effects of natural or other hazards including flooding, bushfire, slope stability, contaminated sites and sites producing significant levels of emissions are minimised;</p> <p>Part 2 Strategic Framework</p> <p>Division 2 Vision and Strategic Issues</p> <p>2.2.5 Broad Strategies for the Shire</p> <p>(17) Development is located, designed and managed to minimise the risk from natural hazards including flooding, bushfire and landslide.</p> <p>(18) Development in an area which is subject to natural hazards including flooding, bushfire and landslide is to be compatible with the natural hazard, unless there is an overriding need for the development in the public interest in the proposed location and the hazard can be effectively managed.</p> <p>Schedule 1 Dictionary</p> <p>Part 3 Defined Terms</p> <p>Adverse Flooding means flooding that is considered to adversely affect the value, safety or use of land whether publicly or privately owned. Adverse flooding may result from a change in the peak discharge, a change in the runoff volume, a change in the impervious area, or a change in the rate of runoff (i.e. the travel time of stormwater runoff through the catchment). When assessing the impact of a development on an upstream or downstream property, the impact should be assessed for the critical storm duration associated with the time of concentration for the flood problem area, as well as the critical time of concentration for the development area.</p> <p>Annual Exceedence Probability (AEP) means the likelihood of the occurrence of a flood of a given size or larger in any one year, usually expressed as a percentage. An annual exceedence probability of 1% for flood levels equates to Q100 or a 1 in 100 year flood.</p> <p>Average Recurrence Interval (ARI) means a statistical estimate of the average period in years between the occurrence of a flood of a given size or larger (e.g. floods with a discharge as big as or larger than the 100 year ARI flood event will occur on average once every 100 years). The ARI of a flood event gives no indication of when a flood of that size will occur next.</p> <p>Defined Flood Event (DFE) means the flood event adopted by the Local Government for the management of development on flood prone land being—</p> <p>(e) the 1% AEP flood in those streams or part of the streams not shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D; or</p> <p>(f) in those streams or part of the streams shown as Flood Hazard on Overlay Maps 3.2A, 3.2B, 3.2C and 3.2D, the following flood events—</p> <p>(i) Logan River (1974 and 1991 flood events, whichever is higher); or</p> <p>(ii) Albert River (1974 flood event); or</p> <p>(iii) Oxley River (1974 flood event); or</p> <p>(iv) Burnett Creek (1974 flood event); or</p> <p>(v) Cannon Creek (1974 flood event).</p> <p>Flood means the temporary inundation of land or premises by expanses of water that overtop the natural or artificial banks of a stream, creek, river or other watercourse or those of an estuary, lake or dam.</p> <p>Flood Prone Land means land which is flooded by the probable maximum flood.</p> <p>Floodway means the area of a floodplain where a significant discharge of stormwater occurs during a DFE.</p> <p>Natural Hazard Management Area means an area that has been defined for the management of a hazard (flood, bushfire or landslide) but may not reflect the full extent of the area that may be affected by the hazard (e.g. land above the 1:100 ARI may flood during a larger flood event).</p> <p>Natural Hazards means a naturally occurring situation or condition with the potential for loss or harm to the community or environment. The natural hazards addressed in the Planning Scheme are flood, bushfire and landslide.</p> <p>Overland Flow Path means—</p> <p>(a) where a piped drainage system exists, the path along which flood waters exceeding the capacity of the underground drainage system would flow; or</p> <p>(b) where no piped drainage system or other form of defined watercourse exists, the path taken by surface runoff from higher parts of the catchment.</p> <p>Note: The term does not include a watercourse or gully with well-defined banks.</p> <p>Probable Maximum Flood (PMF) means the largest flood that could conceivably occur at a particular location, resulting from the probable maximum precipitation.</p>
Op Works Code	Yes
Details	<p>Division 3 Construction and Infrastructure Code</p> <p>Table 5.3.8 Specific Outcomes and Prescribed Solutions for Construction and Infrastructure</p> <p>Impacts on Flood Levels</p> <p>Specific Outcome</p> <p>SO3 Development is sited to avoid damage to life and property from flood impacts.</p> <p>Note: Information on the flood level affecting a property can be obtained from Council where records are held. Records held include 1974 and 1991 flood events where mapped as Flood Hazard on the Development Constraints Overlay and in limited other locations the calculated 1% AEP flood.</p> <p>Probable Solution</p>

	<p>S3.2 Development ensures that where Building Work and Operational Work occurs outside of a Building Envelope it is located clear of the DFE.</p> <p>S3.3 Development provides for Buildings to be sited having a minimum freeboard of 300 millimetres and habitable Buildings 500 millimetres above the DFE.</p> <p>SO3 Development is sited to avoid damage to life and property from flood impacts. Note: Information on the flood level affecting a property can be obtained from Council where records are held. Records held include 1974 and 1991 flood events where mapped as Flood Hazard on the Development Constraints Overlay and in limited other locations the calculated 1% AEP flood.</p> <p>S3.4 Development provides an access from the Building platform to the street frontage which is above the DFE.</p> <p>Specific Outcome</p> <p>SO12 Driveways and crossovers are located to avoid flood prone areas or areas with high water flows.</p> <p>Probable Solution</p> <p>S12.2 Where other than Self assessable, development provides that driveways and crossovers are not located below the DFE unless no other location is suitable in accordance with SO11.</p> <p>Earthworks, Excavation and Filling</p> <p>Specific Outcome</p> <p>Impact on Flood Levels</p> <p>SO14 Development is sited to avoid damage to life and property from flood impacts.</p> <p>Probable Solution</p> <p>S14.1 Development ensures that Filling does not occur below the DFE.</p> <p>Probable Solution</p> <p>S14.2 Development, which is not clear of the DFE or access is not available which is above the DFE, ensures that—</p> <p>(a) Buildings are only located within the area affected by the DFE if—</p> <p>(i) they are nonhabitable Buildings (eg sheds or garages); or</p> <p>(ii) there is an overriding need for the development in the public interest and no other site is suitable and reasonably available for the development; and</p> <p>(iii) they are located in an area where flow depths are a maximum 1.5 metres in a 1%AEP flood and the flow velocity multiplied by the depth is less than 0.6 as per QUDM table 5.08.1; and</p> <p>(b) a trafficable access is available from the earthworks platform directly to the road network or a flood free access route is available across adjoining land to the road network; or access route is to be utilised, access over this route in the event of a flood must be guaranteed; and</p> <p>(d) where a trafficable access is not available from the Building site, which is clear of the DFE, then the access shall be designed so that it is only inundated up to a maximum of 0.6 metres and the flow velocity multiplied by the depth does not exceed 0.6 metres as specified in Table 5.08.1 of the Queensland Urban Drainage Manual; and</p> <p>(e) all fill required to construct the earthworks platform and access is sourced from the development site below the flood level to provide compensation for the flood storage volume occupied by the earthworks with any borrow pits created being self draining.</p> <p>Specific Outcome</p> <p>SO15 Filling or Excavation does not result in increased flood levels for upstream or downstream properties.</p> <p>Probable Solution</p> <p>S15.1 Development does not result in the raising of flood levels on downstream properties by way of decreasing the downstream time of concentration or moving the point of discharge.</p> <p>S15.2 Development does not result in the raising of flood levels on upstream properties by way of the blockage of flow paths.</p> <p>S15.3 Development provides that flood levels are determined in accordance with the method identified in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Specific Outcome</p> <p>SO17 Filling or Excavation is designed to prevent erosion.</p> <p>Probable Solution</p> <p>S17.1 In a flood liable area, development provides slope batters on earthworks which prevents flood water erosion.</p> <p>S17.2 Development provides surfacing to areas of fill or Excavation where located within high velocity flood areas.</p> <p>S17.3 Development provides surfacing to areas of fill or Excavation where located within high velocity flood areas. Development provides slope batters on earthworks which prevent erosion by stormwater.</p> <p>Specific Outcome</p> <p>Standards of Service for Flooding</p> <p>SO28 The stormwater network is designed to provide flood immunity tailored to the specific purpose the land is utilised for and in order to maintain the operational effectiveness of infrastructure during a floor event.</p> <p>Probable Solution</p> <p>S28.1 Development is undertaken in accordance with the standards in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Specific Outcome</p> <p>Design and Appearance</p> <p>SO29 Development provides for stormwater infrastructure to be designed and constructed in accordance with natural channel design principles instead of a constructed floodway where there is no natural flow path.</p> <p>Probable Solution</p> <p>S29.1 No Solution is prescribed.</p> <p>Major Drainage Flow Path</p> <p>Specific Outcome</p> <p>SO32 The stormwater network is designed to not locate major overland flow paths in Building areas where in rural or rural residential areas.</p> <p>Probable Solution</p> <p>S32.1 Development provides for flood flows to be managed such that the 1% AEP flood event does not encroach onto a Building Envelope, or where no Building Envelope has been determined, within 30 metres of a Building or Building area.</p> <p>Specific Outcome</p> <p>Stormwater Infiltration</p> <p>SO45 Development is designed to limit stormwater infiltration into the sewerage system.</p> <p>Probable Solutions</p> <p>S45.1 Development provides that sewer mains are located above the DFE.</p> <p>S45.2 Development provides that sewer manholes are not located in areas subject to flooding or where bolt down lids are required.</p> <p>S45.3 Development provides that pump stations are located above the DFE.</p> <p>Specific Outcome</p>
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	<p>Pavement Drainage</p> <p>S066 Pavement drainage is provided to prevent pooling of water on a pavement in other than a major flood event.</p> <p>Probable Solution</p> <p>S66.1 Development provides crossfalls, gully inlets, table drains, longitudinal gradients, stormwater drainage and flood immunity levels in accordance with the standards in Planning Scheme Policy 7 (Standards for Construction and Infrastructure).</p> <p>Access in Floodable Areas</p> <p>Specific Outcome</p> <p>Safety</p> <p>SO139 Development is sited to enable access in the event of a flood in non-rural areas.</p> <p>Probable Solution</p> <p>S139.1 Development ensures that all Buildings have a trafficable access to a Major Transport Route during the DFE, where located in the—</p> <p>(a) Mt Lindesay Corridor Zone; or</p> <p>(b) Rural Zone, where in the— Village Precinct; or</p> <p>(ii) Rural Residential Precinct; or</p> <p>(iii) Rural Industry Precinct; or</p> <p>(iv) Active Recreation Precinct; or</p> <p>(v) Community Facilities Precinct; or</p> <p>(c) Kooralbyn Zone; or</p> <p>(d) Bromelton Zone; or</p> <p>(e) Beaudesert and Canungra Townships Zone; or</p> <p>(f) Tamborine Mountain Zone.</p> <p>Specific Outcome</p> <p>SO140 Development is sited to enable access in reasonable time in the event of a flood in rural areas.</p> <p>Probable</p> <p>S140.1 Development ensures that access in a Precinct not mentioned in S139.1 is available to a habitable Building in a 50% AEP flood event and within 24 hours of the loss of access in a 1% AEP flood event.</p> <p>Drainage</p> <p>Probable Solution</p> <p>S27.1 Development provides that all stormwater drainage is in accordance with the Institute of Engineers, Australia, 1999: “Australian Rainfall and Runoff: A Guide to Flood Estimation” for a two year return period.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Somerset
Planning Scheme	Esk
Adopted	17/10/2008
Flood Amendments	Yes
SPP Compliance	No
Details	Q100
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Division 7 – Assessment criteria for the Village Zone 4.21 Overall outcomes for the Village Zone Code (m) village development does not occur on steep land or on flood prone land;
Use Codes	Yes
Details	Division 12 – Kennels and catteries 6.49 Specific outcomes and probable solutions (d) is not subject to flooding; PS1.3 The site area: - is not subject to flooding
ROL Code	Yes
Details	Division 15 – Reconfiguring a Lot 6.61(A): Provisions applicable to reconfiguration of lots in Town and Village Zones Specific Outcome Element (i): LOT AREA AND DESIGN SO1 (i) respond to site characteristics and potential hazards, including soil erosion, slope of the land, bushfire risk and flood liability 6.61(B): Provisions applicable to reconfiguration of lots in the Rural Zone PS1.1 Lot boundaries relate to natural features such as ridges or other catchment boundaries, drainage lines or flood flows, or remnant stands of vegetation Division 15 – Reconfiguring a Lot 6.58 Reconfiguring a Lot Code 6.61 Specific outcomes and probable solutions 6.61(A): Provisions applicable to reconfiguration of lots in Town and Village Zones Probable Solution PS2 No new lots are created in areas subject to inundation in a Q100 rainfall event or in an area prone to slope instability
Overlay Codes	Yes
Details	Division 7 – Assessment tables for the Natural Hazard Management Areas Overlay 5.27 Natural Hazard Management Areas Overlay The Natural Hazard Management Areas Overlay is introduced as the principal mechanism for identifying the most vulnerable areas in the Shire at risk from a natural hazard event. Inappropriate development in areas susceptible to natural hazards significantly increases the risk (and associated costs) to the community. Effective land use planning is an important means of reducing the community's vulnerability to the natural hazards of flood, bushfire, or landslide and promoting resilient communities ²⁶ . The Natural Hazard Management Areas Overlay includes land in the shire, which because of its slopes, orientation and vegetative state, has been categorised as a high or very high bushfire hazard. Division 10 – Assessment criteria for the Major Transport and Energy Corridor and Infrastructure Overlays 5.42(B): Provisions applicable to code and impact assessable development only SO8 Stormwater run-off from development does not compromise the flood immunity of a major transport corridor PS8 Development of land upstream of a major transport corridor will need to ensure that the rate of stormwater run-off from development sites does not exceed the pre-developed run-off, or alternatively, the flood immunity of the major transport corridor is not compromised by the development (this may require the construction of stormwater retention structures within the development)
PSPs	No
Details	
Other	Yes
Details	Part 3 Desired Environmental Outcomes (3) The Desired Environmental Outcomes for the Esk Shire are as follows: (f) places and landscapes of cultural heritage significance in the Shire are protected and managed in keeping with the aspirations of the community and the attainment of economic and other benefits; and a high quality built environment is achieved with development consistent with desired local character and sited so as to minimise the potential adverse impacts of flood, bushfire and landslide; SCHEDULE 1 – DESIRED ENVIRONMENTAL OUTCOMES – SUPPORTING MATERIAL 1.3 Infrastructure efficiency (a) Background The control of stormwater run-off is also critical to the protection of water quality, the maintenance of environmental flow regimes and the management of flood impacts. Measures The following specific outcomes are incorporated within codes and planning policies: - run-off and flooding are managed to minimise ecological impacts and potential risk to property 3.2 Settlement pattern Wivenhoe Dam and the other water bodies are significant features of the Shire, with major implications for land use and economic development. Other constraints include flood prone land, salinity, bushfire hazard areas and erosion prone soils. (c) Scheme measures The table below sets out the components of the desired environmental outcome as outcomes and the various measures in the planning scheme

	<p>for achieving the desired environmental outcome.</p> <p>Outcomes</p> <p>New development is directed away from constrained land or satisfactorily addresses the relevant development constraint.</p> <p>Measures</p> <p>Development Assessment</p> <p>Development proposed on land identified on an overlay map as being flood prone or of high erosion or bushfire hazard must comply with a code to be prepared dealing with these issues (note: this matter is to be addressed by way of an amendment to the scheme as accurate information becomes available).</p> <p>2.0 Standard for effluent treatment and disposal</p> <p>A. New development is:</p> <p>(iii) the proposed on-site effluent disposal system is located on land which:</p> <p>-is situated above the Q10 flood level;</p>
Op Works Code	Yes
Details	<p>Division 16 – Filling and excavation</p> <p>6.64 Overall outcomes for the Filling and Excavation Code</p> <p>(2) The overall outcome for the Filling and Excavation Code is to ensure that filling and excavation is carried out in a manner that ensures:</p> <ul style="list-style-type: none"> -filling and excavation does not adversely affect the amenity and visual character of the area; -protection of surface water quality; - filling and excavation does not adversely impact on flooding of upstream, downstream and adjoining land; and -risk of drainage or nuisance to nearby land is reduced. <p>6.65 Specific outcomes and acceptable solutions</p> <p>SO3 Filling and excavation does not result in any adverse impact on drainage or flood flows either upstream or downstream of the site</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Somerset
Planning Scheme	Kilcoy
Adopted	26/04/2006
Flood Amendments	No
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	Yes
Details	Q100 Mapped
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Division 3—Assessment Criteria for Rural Zone Code</p> <p>4.4 Rural Zone Code</p> <p>4.8 Specific Outcomes and Probable Solutions for the Rural Zone</p> <p>(b) Natural Resources Values</p> <p>(ii) Development does not establish in flood prone areas</p> <p>(ii) Buildings and ancillary structures are constructed</p> <p>- with floor levels 300mm above the 1% AEP(Q100) flood level for the locality</p> <p>Division 5—Assessment Criteria for Park Residential Zone Code</p> <p>(ii) Development does not establish in flood prone areas.</p> <p>(ii) Buildings and ancillary structures are constructed with floor levels 300mm above the 1% AEP(Q100) flood level for the locality</p> <p>Division 7 —Assessment Criteria for Residential Zone Code</p> <p>Acceptable Solution</p> <p>(ii) New residential areas are developed on land which has the following characteristics. Above the highest recorded flood level in the locality or the 1% AEP(Q100) flood level whichever is higher</p> <p>Division 11—Assessment Criteria for Industry Zone Code</p> <p>(i) New industrial estate are established on land with the following characteristics:-</p> <ul style="list-style-type: none"> Well drained without flooding by the 1% AEP(Q100) flood on any part of the land. Allotments are free draining at all times without creating pondage on adjoining land. <p>(b) Natural Resources</p> <p>(ii) Development does not establish in flood prone areas.</p> <p>Acceptable Solutions</p> <p>(b) (ii) Buildings and ancillary structures are constructed with floor levels 300 mm above the 1% AEP(Q100) flood level for the locality</p> <p>Division 13—Assessment Criteria for Green Space Zone Code</p> <p>4.39 Green space zone code</p> <p>(d) Natural Resources Values</p> <p>(ii) Development is not located on flood prone land.</p> <p>Specific Outcomes</p> <p>(b)(ii) Buildings and ancillary structures are constructed with floor levels 300mm above the 1% AEP(Q100) flood for the locality</p> <p>(c) Natural Resource Values</p> <p>(ii) Development is not located on flood prone land</p> <p>(ii) Buildings and ancillary structures are constructed with floor levels 300mm above the 1% AEP(Q100) flood level for the locality</p>
Use Codes	Yes
Details	<p>6.9 Specific Outcomes And Probable Solutions For Caravan Park Code</p> <p>(a) Caravan parks are located;</p> <p>(i) on land with sufficient area and gradient to ensure minimal risk to land slippage; and</p> <p>(ii) on land that is not subject to flooding.</p> <p>Acceptable Solutions</p> <p>(a) (i) The minimum area of land is 4 ha with slopes not exceeding 2% on 90% of the site and be above the maximum recorded flood level for the area.</p> <p>(ii) Land to be above the maximum recorded flood level or the 1% AEP(Q100) flood, whichever is higher.</p> <p>6.21 Specific outcomes and probable solutions for Child Care Centre Code</p> <p>Specific Outcome</p> <p>(b) The development is located to minimise:</p> <p>(iii) flood damage or hazard</p> <p>(b) The development is not located:</p> <p>(ii) on a site subject to flooding.</p> <p>Specific Outcome</p> <p>(e) (i) Buildings and associated structures are sited to minimise the effects of flood inundation on the structure and its contents</p> <p>Acceptable Solution</p> <p>(e) (i) Floor levels for habitable living areas are a minimum of 300 mm above the highest recorded flood level on the allotment, or the 1% AEP(Q100) flood level whichever is higher.</p> <p>Division 13—General Development Code</p> <p>Specific Outcome</p> <p>(i) Public Utilities and Community Activities function effectively during and after flood events</p> <p>(i) Public Utilities and Community Activities are not located:</p> <ul style="list-style-type: none"> for self assessable development, in areas below the recommended flood level (RFL) identified at Outcome 1.1 of Appendix 9 of the Guideline for State Planning Policy 1/03, Public Utilities and Community Activities are designed and located in accordance with Solutions 1.1, 1.2 or 1.3 in Appendix 9 of the Guideline for State Planning Policy 1/03, Mitigating the Adverse Impacts of Flood, Bushfire, and Landslide <p>Division 14— Holiday Cabin Development Code</p>

	6.53 Specific Outcomes And Probable Solutions For Holiday Cabin Development Code Acceptable Solutions (iii) The sites are flood free above the 1%AEP(Q100) and not subject to the likelihood of landslide or bush fire risk. Division 18—Intensive Rural Use Code 6.69 Specific Outcomes And Probable Solutions For Intensive Rural Use Code Specific Outcome (a) The development is located and sited such that: - natural flood and drainage processes and patterns are maintained
ROL Code	Yes
Details	Division 21—Reconfiguring a Lot Code 6.81 Specific Outcomes and Probable Solutions for Reconfiguring a Lot Code Specific Outcome (e) Lots are not constrained by: (i) flooding; Acceptable Solution (e) Allotments are not created: (i) Below the highest recorded flood level or the 1%AEP(Q100) flood level for the locality, whichever is higher.
Overlay Codes	Yes
Details	Division 6—Assessment criteria for Natural Hazards Overlay Code 5.18 Specific Outcomes for Natural Hazards Overlay Code Floodable Land* (a) Development maintains the safety of people on the development site from all floods up to and including the 1%AEP(1:100 year) flood event *Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP3. Acceptable Solution (a) Development is sited on land that would not be subject to flooding during a the 1%AEP(1:100 year) flood event. Specific Outcome (b) Development does not result in adverse impacts on peoples safety or the capacity to use land within the floodplain. Acceptable Solutions (b) Works do not involve: (i) any physical alteration to a permanent watercourse or floodway including vegetation clearing; or (ii) net filling exceeding 50 cubic metres. Specific Outcome (c) Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk. Acceptable Solution (c) The manufacture or storage in bulk of hazardous materials is above the 1%AEP(1:100 year) year flood event. OR Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event. Specific Outcome (d) Essential public utilities are available and maintain their function during flood events up to a 1:100 year flood event. Acceptable Solutions (d) Components of the infrastructure that are likely to fail or may result in contamination are - (i) located above the level of the 1%AEP(Q100) flood event; or (ii) are designed and constructed to exclude water inundation or infiltration and resist hydrostatic and hydrodynamic forces as a result of inundation. Specific Outcome (e) Community Infrastructure is able to function effectively during and immediately after flood events. Acceptable Solutions (e) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide Guideline
PSPs	Yes
Details	3.0 PLANNING SCHEME POLICY 3: ENVIRONMENTAL MANAGEMENT PLANS (EMP) 2.9 Flood Studies A flood study will include the following minimum information; --The highest recorded flood level in the locality and its likely effects on the development or the Q100 flood whichever is the highest and --The likely effects of the development on flood levels in the area and --Proposals to ensure that all parts of the development are above flood level and residential areas are at least 300mm above the highest level found in these studies
Other	Yes
Details	Annual Exceedance Probability (AEP) Means the likelihood of occurrence of a flood of a given size or larger in any one year, usually expressed as a percentage. Eg if a peak flood discharge of 500 has an AEP of 5% there is a 5% risk (probability of 0.05 or likelihood of 1 in 20) of a peak flood discharge of 500 m3 per second or larger occurring in any one year. KILCOY SHIRE COUNCIL SECTION 6 STORMWATER DRAINAGE SUMMARY OF “DEEMED-TO-COMPLY” CRITERIA 2. Culverts under roads should be designed to accept the full flow for the minor system ARI shown. In addition, the designer must ensure that the 100 year ARI backwater does not enter properties upstream. If upstream properties are at a relatively low elevation, it may be necessary to install culverts of capacity greater than that for the minor system ARI design storm to ensure flooding of upstream properties does not occur. In addition, the downstream face of the causeway embankment may need protection where overtopping is likely to occur.
Op Works Code	Yes
Details	Division 11— Filling and Excavation Code 6.40 Overall Outcomes Of Filling And Excavation Code (2) The overall outcomes sought for the Filling and Excavation code are as follows:-

	<p>- or increase flooding or surface flows</p> <p>Specific Outcome</p> <p>(a) (iv) Access and Drainage</p> <p>All developments ensure access to and drainage are:</p> <ul style="list-style-type: none"> • flood free and with systems that ensure all lots are free draining. <p>4.0 PLANNING SCHEME POLICY 4: REQUIREMENTS FOR IMPACT ASSESSMENTS.</p> <p>1.0. MINIMUM REQUIREMENTS – ALL DEVELOPMENTS</p> <p>(iii) the flood and drainage characteristics of the site</p>
Overlay Code	Yes
Details	<p>Division 6—Assessment criteria for Natural Hazards Overlay Code</p> <p>5.18 Specific Outcomes for Natural Hazards Overlay Code</p> <p>Floodable Land*</p> <p>(a) Development maintains the safety of people on the development site from all floods up to and including the 1%AEP(1:100 year) flood event</p> <p>*Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP3.</p> <p>Acceptable Solution</p> <p>(a) Development is sited on land that would not be subject to flooding during a the1%AEP(1:100 year) flood event.</p> <p>Specific Outcome</p> <p>(b) Development does not result in adverse impacts on peoples safety or the capacity to use land within the floodplain.</p> <p>Acceptable Solutions</p> <p>(b) Works do not involve:</p> <p>(i) any physical alteration to a permanent watercourse or floodway including vegetation clearing; or (ii) net filling exceeding 50 cubic metres.</p> <p>Specific Outcome</p> <p>(c) Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk.</p> <p>Acceptable Solution</p> <p>(c) The manufacture or storage in bulk of hazardous materials is above the1%AEP(1:100 year) year flood event. OR</p> <p>Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event.</p> <p>Specific Outcome</p> <p>(d) Essential public utilities are available and maintain their function during flood events up to a 1:100 year flood event.</p> <p>Acceptable Solutions</p> <p>(d) Components of the infrastructure that are likely to fail or may result in contamination are -</p> <p>(i) located above the level of the1%AEP(Q100) flood event; or</p> <p>(ii) are designed and constructed toexclude water inundation or infiltration and resist hydrostatic and hydrodynamic forces as a result of inundation.</p> <p>Specific Outcome</p> <p>(e) Community Infrastructure is able to function effectively during and immediately after flood events.</p> <p>Acceptable Solutions</p> <p>(e) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide Guideline</p>
PSPs	Yes
Details	<p>3.0 PLANNING SCHEME POLICY 3: ENVIRONMENTAL MANAGEMENT PLANS (EMP)</p> <p>2.9 Flood Studies</p> <p>A flood study will include the following minimum information;</p> <p>--The highest recorded flood level in the locality and its likely effects on the development or the Q100 flood whichever is the highest and</p> <p>--The likely effects of the development on flood levels in the area and</p> <p>--Proposals to ensure that all parts of the development are above flood level and residential areas are at least 300mm above the highest level found in these studies</p>
Other	No
Details	
Other Info	No

LGA	South Burnett
Planning Scheme	Kingaroy
Adopted	28/07/2006
Flood Amendments	No
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	No
Details	Q100
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Locality</p> <p>O4 Lots are located, designed and constructed with sufficient area and suitable road frontage, shape and proportions to:</p> <p>(j) minimise any adverse affects of flooding, salinity, erosion, land slip and bushfire on people, property, economic activities and the environment,</p> <p>S4.1 Lots resulting from reconfiguring are consistent if they comply with the standards in Table S3.1 at the end of this Code.</p> <p>O4 (Village Locality)</p> <p>(Rural/Rural Residential/Urban Locality Zone)</p> <p>O10 Fences and walls are located, designed and of a form and construction so:</p> <p>(g) local ecology, drainage, flooding, geotechnical and microclimatic conditions are maintained.</p> <p>O12 Development is located, designed and constructed to function effectively and in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including:</p> <p>(c) hydrological processes of flood plains and drainage systems,</p> <p>AS012c (Rural Locality Zone) for storage areas, vehicle movement areas, enclosures, compounds, essential onsite infrastructure, treated effluent disposal areas and buildings and structures, they are located at ground level to be at least:</p> <p>(i) for habitable buildings above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known,</p> <p>(ii) for Major utilities or Special uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, where known,</p> <p>(iii) for buildings and structures where (c)(i) and (ii) do not apply 300mm above the highest known flood event, or</p> <p>(iv) for other uses and works – 100mm above the highest known flood event,</p> <p>ASO13C (Rural Residential/Urban Locality Zone)</p> <p>Development within the building area and for any other uses or works on a site are confined to:</p> <p>(a) free draining areas with a cross fall of at least 0.5-1%</p> <p>(c) for uses and works, except for Farming are located at ground level to be at least:</p> <p>(i) for habitable buildings:</p> <p>(A) above land inundated by the 1% Annual Exceedance Probability (EAP) flood event where known, or</p> <p>(B) 300mm above the highest known flood,</p> <p>(ii) for Major utilities or Special uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or</p> <p>(iii) for other uses and works – 100mm above the highest known flood event,</p> <p>(f) the propensity for any natural hazard related to flooding, land slip and bushfire to adversely affect people, property, economic activities and the property, economic activities and the environment,</p> <p>Rural Residential/Urban/Village Locality Zone</p> <p>Specific Outcomes</p> <p>O3 For reconfiguring a lot in the Rural Residential/Urban Locality:</p> <p>(f) risk to people and property from development is minimised to an acceptable level in terms of:</p> <p>(i) lands below the highest known flood,</p> <p>(ii) drainage problem lands below 1% slope,</p> <p>(iii) slopes over 15% in gradient,</p> <p>O4 Lots are located, designed and developed so that useable lots with sufficient area and suitable shape and proportions</p> <p>(b) provide appropriately for local topography so flood immune, stable and free draining building areas, accesses and works are achieved,</p> <p>Urban Locality Code</p> <p>Table S4.1A- Design Parameters for Reconfiguring a Lot in the Residential Zone or in the Community Expansion Zone</p> <p>(e) Lots with minimum area and dimensions to enable:</p> <p>(i) a 10 metres by 15 metres building area measured 6 metres from the frontage of the site at ground level 300mm above the highest known flood and on slopes of 10% or less.</p>
Use Codes	Yes
Details	<p>Dwelling, House, Relatives Unit and Caretakers Residence/ Bed and Breakfast and Smal Scale Tourist Facility Code</p> <p>(ii) Natural and Man Made Hazard Risk Management:</p> <p>O2 Areas susceptible to hazards associated with erosion, land slide, mass movement, flooding, drainage problems, salinity and instability are maintained in a state which minimises the following relative to the site and its setting:</p> <p>(2) unacceptable risks to public safety,</p> <p>(3) potential damage to property and essential service infrastructure,</p> <p>(5) unacceptable change to local flooding and drainage characteristics.</p> <p>S2.2 Buildings, structures and works (including areas for onsite disposal of treated effluent) occur:</p> <p>(2) outside overland flow paths, gullies or other drainage paths, including stormwater discharge points,</p> <p>(3) at least the following from the top bank of a river, creek, stream or wetland:</p> <ol style="list-style-type: none"> 1. 50 metres in the Rural Locality, and 2. 20 metres in other Localities, <p>(4) at least 200 metres from the full supply level for any refrerrable dam2, and</p> <p>(5) on free draining land so that:</p> <ol style="list-style-type: none"> 1. habitable rooms within a building are: <ol style="list-style-type: none"> (i) above the 1% Annual Exceedance Probability (AEP) flood event, where known,

	<p>(ii) 300mm above the highest known flood level; or</p> <p>2. nonhabitable rooms within a building as well as carports, onsite areas for disposal of treated effluent and approved property accesses are 100mm above the highest known flood.</p> <p>Extractive Industry & Borrow Pit Code</p> <p>i) Sediment Erosion and Drainage Control</p> <p>O3 On-site control measures for managing erosion, sediment movement and drainage are provided so that during set-up and thereafter:</p> <p>5) ponding is prevented outside approved water storages and runoff management facilities,</p> <p>(6) flood characteristics are maintained or restored so uses on-site and in the surrounds have adequate flood immunity, and</p> <p>(7) efficient extraction methods result in sustainable volumes and production rates over the life of the industry without increasing incidents of erosion, salinity, flooding, soil degradation, land slip, stormwater concentration and subsidence, and sedimentation.</p> <p>S3.1 Areas for uses and associated works are located:</p> <p>(6) so water storages, extraction pits and settlement ponds are above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, and</p> <p>(7) so processing areas, areas with improvements and accesses to roads are located:</p> <p>1. above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or</p> <p>2. otherwise 300mm above the highest known flood level on the property.</p> <p>Home-based business Code</p> <p>b) Character</p> <p>O2 A Homebased business is located and of a scale, design and appearance so:</p> <p>(1) it is visually unobtrusive in the setting,</p> <p>S2.1 Any:</p> <p>(1) commercial vehicle garaging,</p> <p>(2) stored equipment or materials/goods,</p> <p>(3) public display of goods, or</p> <p>(4) outdoor activity areas,</p> <p>are located and treated so that they are:</p> <p>5. where involving outdoor handling and storage of goods or materials, located 100mm above the highest known flood level.</p> <p>Child Care Centre Code</p> <p>a) Location and Site Characteristics</p> <p>O3 The premises are located and designed so they are not exposed to unacceptable levels of hazards, environmental harm or nuisance</p> <p>S3.1 The premises are located on a site where:</p> <p>(4) ground level is located 300mm above the highest known flood or above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known.</p> <p>Farming Code</p> <p>O6 Premises are located, designed and constructed to function effectively</p> <p>S6.2 Compounds, on-farm processing and any cultivated areas (associated with irrigation services) are located on:</p> <p>(1) free draining areas with a cross fall of at least 0.5-1%,</p> <p>(3) land which is 100mm above the highest known flood level,</p> <p>Forestry Business Code</p> <p>O7 Premises are located, designed and constructed to function effectively and in a manner that:</p> <p>S7.2 Log dumps, on-farm processing, buildings and structures and vehicle movement areas are located on:</p> <p>(1) free draining areas with a cross fall of at least 0.5-1%,</p> <p>(2) minimises contamination of downstream waters so the environmental values of ground and surface waters for ecosystem health and drinking (with minimal treatment) are not degraded.</p> <p>(2) slopes not exceeding 15%, and</p> <p>(3) land which is 100mm above the highest known flood level.</p>
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>Planning Scheme Policy No. 1 – Information Requests – General Assessment of Development Applications</p> <p>PSP1 For a development application involving the following circumstances, the relevant assessments listed below may be requested from the applicant:</p> <p>(3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <p>a. likely probability, depth, volume and velocity of flows across a site pre and post development,</p> <p>b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and</p> <p>c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners).</p> <p>(8) for all development applications – a Proposal Plan that:</p> <p>c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas,</p> <p>For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant:</p> <p>(2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard to proposed buildings and infrastructure,</p> <p>(17) the affect on drainage and flooding having regard to catchment drainage over the land</p>
Other	Yes
Details	<p>DEOs</p> <p>(c) minimises risks to the safety and wellbeing of people, property and the natural environment (as resulting from impacts from natural, technological and development related hazards) to an acceptable level.</p> <p>Schedule 2 - Internal, Connecting and External Infrastructure - Design and Construction Standards</p> <p>(b) Road Flooding</p>

	In accordance with Queensland Urban Drainage Manual – Volume 1: Text – Section 5.00. (4) Access strips or easements to rear lots arising from reconfiguring a lot have the following construction standards from the pavement edge of the road for its full length: (E) above the 1 in 10 year flood
Op Works Code	Yes
Details	Rural/Rural Residential/Urban/Village Locality g) Earthworks Specific Outcomes 015 Filling, draining, grading or excavation of land provides for compacted, finished levels which secure flood free, stable and free draining building and infrastructure sites appropriate to the intended use and minimising impacts to an acceptable level within and off the site regarding (c) flooding and drainage flow rates, volumes and natural flood storage capacity, (d) potential for point source discharge or concentration of flows, S15.1 Filling, drainage, grading or excavation of land is undertaken so that: c) cut or fill is setback at least 2 metres from: (i) lands below the highest known flood level,
Overlay Code	No
Details	
PSPs	Yes
Details	Planning Scheme Policy No. 1 – Information Requests – General Assessment of Development Applications PSP1 For a development application involving the following circumstances, the relevant assessments listed below may be requested from the applicant: (3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the: a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners). (8) for all development applications – a Proposal Plan that: c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas, For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant: (2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard to proposed buildings and infrastructure, (17) the affect on drainage and flooding having regard to catchment drainage over the land Planning Scheme Policy No. 5 – Landscaping Installation and Maintenance (6) Soil stripped from construction areas is retained for use onsite and stockpiles do not exceed 2 metres in height, are outside known flood prone areas and are protected by sediment fencing The following information should form part of a Landscape Plan: d. flood data if known Planning Scheme Policy No. 11 – Rural Subdivision Below 200ha 2.2 Land Capability and Environmental Assessment Report (12) The report shall discuss land capability and constraints with regards to: · Susceptibility to flooding
Other	Yes
Details	Schedule 7 - Definitions Annual exceedence probability (AEP) the likelihood of occurrence of a flood of a given size or larger in any one year; usually expressed as a percentage. For example, if a peak flood discharge of 500 cubic metres per second has an AEP of 5%, it means that there is a 5% risk (ie probability of 0.05 or a likelihood of 1 in 200) of a peak flood discharge of 500 cubic metres/second or larger occurring in any one year. The AEP of a flood event gives no indication of when a flood of that size will occur next Highest known flood level is the flood level established by a proponent or Council based on anecdotal or empirical data regarding the height of overland flood waters at the highest recorded flood to have affected the site
Other Info	

LGA	South Burnett
Planning Scheme	Murgon
Adopted	24/03/2006
Flood Amendments	No
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	Yes
Details	Special Management Area Map Q100 mentioned in provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Residential/Urban Locality</p> <p>(a) Land Use and Development</p> <p>O3 For reconfiguring a lot in the Rural Residential/Urban Locality:</p> <p>(f) risk to people and property from development is minimised to an acceptable level in terms of:</p> <p>(i) lands below the highest known flood,</p> <p>Rural/Rural Residential/Urban Locality</p> <p>(b) Density and design for reconfiguring</p> <p>O4 Lots are located, designed and constructed with sufficient area and suitable road frontage, shape and proportions to:</p> <p>(b) (Rural Residential Locality) provide appropriately for local topography so flood immune, stable and free draining building areas, accesses and works are achieved,</p> <p>(j) (Rural Locality) minimise any adverse affects of flooding, salinity, erosion, land slip and bushfire on people, property, economic activities and the environment</p> <p>c) Character and Amenity</p> <p>O10 Fences and walls are located, designed and of a form and construction so:</p> <p>(g) local ecology, drainage, flooding, geotechnical and micro-climatic conditions are maintained.</p> <p>(d) Land and water resource management</p> <p>O12 Development is located, designed and constructed to function effectively and in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including:</p> <p>(c) hydrological processes of flood plains and drainage systems,</p> <p>(f) the propensity for any natural hazard related to flooding, land slip and bushfire to adversely affect people, property, economic activities and the environment,</p> <p>S11.1 Uses, associated works and compounds are confined to:Uses, associated works and compounds are confined to:</p> <p>(c) (Rural) for storage areas, vehicle movement areas, enclosures, compounds, essential on-site infrastructure, treated effluent disposal areas and buildings and structures, they are located at ground level to be at least: (see i, ii, iii, iv)</p> <p>(c) (Rural Residential) for uses and works, except for Farming are located at ground level to be at least: (see i, ii, iii, iv)</p> <p>(c) (urban) for storage areas, vehicle movement areas, essential infrastructure, and buildings and structures, they are located at ground level to be at least:</p> <p>(i) for habitable buildings - above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known,</p> <p>(ii) for Major utilities or Special uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, where known,</p> <p>(iii) for buildings and structures where (c)(i) and (ii) do not apply - 300mm above the highest known flood event, or</p> <p>(iv) for other uses and works – 100mm above the highest known flood event,</p> <p>Urban Locality</p> <p>TABLE S4.1A – DESIGN PARAMETERS FOR RECONFIGURING A LOT IN THE RESIDENTIAL ZONE</p> <p>(e) Lots with minimum area and dimensions to enable:</p> <p>(i) a 10 metres by 15 metres building area measured 6 metres from the frontage of the site at ground level 300mm above the highest known flood and on slopes of 10% or less</p> <p>(d) areas outside stormwater discharge points, overland flow paths, watercourses and natural drainage features,</p>
Use Codes	Yes
Details	<p>Dwelling House, Annexed Unit and Caretakers Residence/Bed and Breakfast and Small Scale Code</p> <p>(ii) Natural and Man Made Hazard Risk Management:</p> <p>O2 Areas susceptible to hazards associated with erosion, land slide, mass movement, flooding, drainage problems, salinity and instability are maintained in a state which minimises the following relative to the site and its setting:</p> <p>(2) unacceptable risks to public safety,</p> <p>(3) potential damage to property and essential service infrastructure,</p> <p>(5) unacceptable change to local flooding and drainage characteristics.</p> <p>S2.2 Buildings, structures and works (including areas for onsite disposal of treated effluent) occur:</p> <p>(2) outside overland flow paths, gullies or other drainage paths, including stormwater discharge points,</p> <p>(3) at least the following from the top bank of a river, creek, stream or wetland:</p> <ol style="list-style-type: none"> 50 metres in the Rural Locality, and 20 metres in other Localities, <p>(4) at least 200 metres from the full supply level for any referable dam, and</p> <p>(5) on free draining land so that:</p> <ol style="list-style-type: none"> habitable rooms within a building are 300mm above the highest known flood level, and nonhabitable rooms within a building as well as carports, onsite areas for disposal of treated effluent and approved property accesses are 100mm above the highest known flood <p>Extractive Industry and Borrow Pit Code</p> <p>Land and Water Resource Management</p> <p>O3 On-site control measures for managing erosion, sediment movement and drainage are provided so that during set-up and thereafter:</p>

	<p>(6) flood characteristics are maintained or restored so uses on-site and in the surrounds have adequate flood immunity,</p> <p>(7) efficient extraction methods result in sustainable volumes and production rates over the life of the industry without increasing incidents of erosion, salinity, flooding, soil degradation, land slip, stormwater concentration and subsidence, and sedimentation.</p> <p>S3.1 (6) so water storages, extraction pits and settlement ponds are above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, and</p> <p>(7) so processing areas, areas with improvements and accesses to roads are located:</p> <ol style="list-style-type: none"> 1. above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or 2. otherwise 300mm above the highest known flood level on the property. <p>Riparian and Habitat Land Management</p> <p>O5 Uses and works adjoining or incorporating the following provide that such areas are retained in or rehabilitated to provide for a natural stable state:</p> <p>(3) vegetation important to land stability or local hydrology, or</p> <p>S5.2 No tree clearing occurs on:</p> <ol style="list-style-type: none"> (2) banks to waterways or in gullies, (3) within the set backs to water resources on the property resulting from S5.1 above, (5) flood plains as defined by land inundated by the 1% Annual Exceedance Probability (AEP) flood event, <p>Home Based Business Code</p> <p>O2 A Home-based business is located and of a scale, design and appearance so</p> <p>S2.1 Any:</p> <ol style="list-style-type: none"> (1) commercial vehicle garaging, (2) stored equipment or materials/goods, (3) public display of goods, or (4) outdoor activity areas, are located and treated so that they are: 5. where involving outdoor handling and storage of goods or materials, located 100mm above the highest known flood level. <p>Child Care Centres Code</p> <p>Location and Site Characteristics</p> <p>O3 The premises are located and designed so they are not exposed to unacceptable levels of hazards, environmental harm or nuisance.</p> <p>S3.1 The premises are located on a site where1:</p> <ol style="list-style-type: none"> (4) ground level is located 300mm above the highest known flood or above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known. <p>Farming/Forestry Business Code</p> <p>O6 Premises are located, designed and constructed to function effectively and in a manner that:</p> <ol style="list-style-type: none"> (2) minimises contamination of downstream waters so the environmental values of ground and surface waters for ecosystem health and drinking (with minimal treatment) are not degraded <p>S6.2 (Farming) Compounds, on-farm processing and any cultivated areas (associated with irrigation services) are located on:</p> <ol style="list-style-type: none"> (1) free draining areas with a cross fall of at least 0.5-1%, (3) land which is 100mm above the highest known flood level, <p>S7.2 (Forestry Business Code) Log dumps, on-farm processing, buildings and structures and vehicle movement areas are located on:</p> <ol style="list-style-type: none"> (1) free draining areas with a cross fall of at least 0.5-1%, (3) land which is 100mm above the highest known flood level,
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Assessment Provisions for Special Management Overlay Areas (SMOA Map 2B)</p> <p>Natural Hazard Risk Management Areas:</p> <p>Possible Drainage or Flood Problem Areas:</p> <p>Specific Outcomes:</p> <p>O7 Development on a possible drainage or flood problem area depicted on SMOA map 2B which would be placed at unacceptable risk from or is incompatible with flooding, maintains the safety of people and minimises damage to property on the site by:</p> <ol style="list-style-type: none"> (1) avoiding areas shown as possible flood or drainage problem on SMOA map 2B; or (2) mitigating the risk through: <ol style="list-style-type: none"> 1. lot design and the siting of buildings and uses so: <ol style="list-style-type: none"> i. efficient emergency access is optimised, and ii. the number of people and properties at risk is minimised. <p>O8 Development on a possible drainage or flood problem area depicted on SMOA map 2B, is of a type and intensity⁵ and is located and designed so that the hydrological regime of drainage or flood problem areas is not altered to the detriment of the following values related to the site and surrounds:</p> <ol style="list-style-type: none"> (1) public safety, (2) the integrity of property including buildings, structures, plant, equipment and stock, (3) the operational efficiency of essential service infrastructure during and following an event, (4) flood storage and conveyancing capacity including static or dynamic loads, (5) depth, duration, velocity and warning times associated with flooding, (6) soil and bank stability, (7) hydraulic capacity and effective functions of watercourses and drainage lines, (8) access routes and emergency vehicle operations, (9) integrity of areas accommodating contaminants or hazardous materials, (10) the capacity to use land in the floodplain, and (11) downstream water quality. <p>O9 Community uses on a site shown as a possible drainage or flood problem area on SMOA map 2B are able to function effectively during and immediately after flood events.</p> <p>Natural Hazard Risk Management Areas: SMOA - 2B</p>

	(b) Possible Bye Wheatland Floodplain (Indicative) (c) Possible Rural Flood Areas (Indicative)
PSPs	Yes
Details	PSP1 & 2 Information Council May Request
Other	Yes
Details	<p>DEOs</p> <p>(c) minimises risks to the safety and wellbeing of people, property and the natural environment (as resulting from impacts from natural, technological and development related hazards) to an acceptable level.</p> <p>Schedule 2 – Internal, Connecting and External Infrastructure – Design and Construction Standards</p> <p>(b) Road Flooding</p> <p>In accordance with Queensland Urban Drainage Manual – Volume 1: Text – Section 5.00.</p> <p>(4) Access strips or easements to rear lots arising from reconfiguring a lot have the following construction standards from the pavement edge of the road for its full length:</p> <p>(E) above the 1 in 10 year flood,</p>
Op Works Code	Yes
Details	<p>Rural/Rural Residential/Urban Locality</p> <p>g) Earthworks</p> <p>Specific Outcomes</p> <p>014 Filling, draining, grading or excavation of land provides for compacted, finished levels which secure flood free, stable and free draining building and infrastructure sites appropriate to the intended use and minimising impacts to an acceptable level within and off the site regarding:</p> <p>(g) flooding and drainage flow rates, volumes and natural flood storage capacity,</p> <p>(h) potential for point source discharge or concentration of flows,</p> <p>S14.1 Filling, drainage, grading or excavation of land is undertaken so that:</p> <p>(c) cut or fill is setback at least 2 metres from:</p> <p>(i) lands below the highest known flood level; or</p> <p>(iii) overland flow paths.</p>
Overlay Code	Yes
Details	<p>Assessment Provisions for Special Management Overlay Areas (SMOA Map 2B)</p> <p>Natural Hazard Risk Management Areas:</p> <p>Possible Drainage or Flood Problem Areas:</p> <p>Specific Outcomes:</p> <p>07 Development on a possible drainage or flood problem area depicted on SMOA map 2B which would be placed at unacceptable risk from or is incompatible with flooding, maintains the safety of people and minimises damage to property on the site by:</p> <p>(1) avoiding areas shown as possible flood or drainage problem on SMOA map 2B; or</p> <p>(2) mitigating the risk through:</p> <p>1. lot design and the siting of buildings and uses so:</p> <p>i. efficient emergency access is optimised, and</p> <p>ii. the number of people and properties at risk is minimised.</p> <p>08 Development on a possible drainage or flood problem area depicted on SMOA map 2B, is of a type and intensity⁵ and is located and designed so that the hydrological regime of drainage or flood problem areas is not altered to the detriment of the following values related to the site and surrounds:</p> <p>(1) public safety,</p> <p>(2) the integrity of property including buildings, structures, plant, equipment and stock,</p> <p>(3) the operational efficiency of essential service infrastructure during and following an event,</p> <p>(4) flood storage and conveyancing capacity including static or dynamic loads,</p> <p>(5) depth, duration, velocity and warning times associated with flooding,</p> <p>(6) soil and bank stability,</p> <p>(7) hydraulic capacity and effective functions of watercourses and drainage lines,</p> <p>(8) access routes and emergency vehicle operations,</p> <p>(9) integrity of areas accommodating contaminants or hazardous materials,</p> <p>(10) the capacity to use land in the floodplain, and</p> <p>(11) downstream water quality.</p> <p>09 Community uses on a site shown as a possible drainage or flood problem area on SMOA map 2B are able to function effectively during and immediately after flood events.</p> <p>Natural Hazard Risk Management Areas: SMOA - 2B</p> <p>(b) Possible Bye Wheatland Floodplain (Indicative)</p> <p>(c) Possible Rural Flood Areas (Indicative)</p>
PSPs	No
Details	
Other	Yes
Details	<p>Schedule 7 - Definitions</p> <p>Annual exceedence probability (AEP)</p> <p>the likelihood of occurrence of a flood of a given size or larger in any one year; usually expressed as a percentage. For example, if a peak flood discharge of 500 cubic metres per second has an AEP of 5%, it means that there is a 5% risk (ie probability of 0.05 or a likelihood of 1 in 200) of a peak flood discharge of 500 cubic metres/second or larger occurring in any one year. The AEP of a flood event gives no indication of when a flood of that size will occur next</p> <p>Highest known flood level</p> <p>is the flood level established by a proponent or Council based on anecdotal or empirical data regarding the height of overland flood waters at the highest recorded flood to have affected the site.</p> <p>Riparian land</p> <p>land which adjoins, directly influences or is influenced by a body of water, including:</p> <p>(a) land alongside water courses defined in the Water Act, 2000 and including the banks, and</p> <p>(b) areas surrounding lakes or wetlands on river flood plains which interact with the river in times of flood</p>

Other Info	
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LGA	South Burnett
Planning Scheme	Nanango
Adopted	25/09/2006
Flood Amendments	No
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	Yes
Details	Special Management Overlay Map - Flooding and Drainage Problems Q100 mentioned in provision
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Residential/Urban/Village Locality (a) Land Use and Development O3 For reconfiguring a lot in the Rural Residential/Urban Locality: (f) risk to people and property from development is minimised to an acceptable level in terms of: (i) lands below the highest known flood, Rural/Rural Residential/Urban Locality (b) Density and design for reconfiguring O4 Lots are located, designed and constructed with sufficient area and suitable road frontage, shape and proportions to: Rural Residential/Urban/Village Locality (b) provide appropriately for local topography so flood immune, stable and free draining building areas, accesses and works are achieved, Rural Locality (k) minimise any adverse affects of flooding, salinity, erosion, land slip and bushfire on people, property, economic activities and the environment Rural/Rural Residential/Urban/Village Locality Specific Outcomes O9 Fences and walls are located, designed and of a form and construction so: (g) local ecology, drainage, flooding, geotechnical and micro-climatic conditions are maintained. (d) Land and water resource management O11 Development is located, designed and constructed to function effectively and in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including: (c) hydrological processes of flood plains and drainage systems, (f) the propensity for any natural hazard related to flooding, land slip and bushfire to adversely affect people, property, economic activities and the environment, S11.1 Uses, associated works and compounds are confined to: (c) for uses and works, except for Farming are located at ground level to be at least: (i) for habitable buildings: (A) above land inundated by the 1% Annual Exceedance Probability (AEP) flood event where known, or (B) 300mm above the highest known flood (ii) for Major Utilities and Special Uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, except; (A) for Hospitals, Power Stations, Major Switchyards and Emergency Services – above land inundated by the 0.2% Annual Exceedance Probability (AEP) flood event, (iii) for buildings and structures where (c)(i) and (ii) do not apply 300mm above the highest known flood event, or (Rural/Rural Residential/Urban) (iv) for other uses or works 100mm above the highest known flood event, (d) areas outside stormwater discharge points, overland flow paths, watercourses and natural drainage features (Rural/Rural Residential/Urban) Urban Locality TABLE S4.1A – DESIGN PARAMETERS FOR RECONFIGURING A LOT IN THE RESIDENTIAL ZONE OR THE COMMUNITY EXPANSION ZONE (e) Lots with minimum area and dimensions to enable: (i) a 10 metres by 15 metres building area measured 6 metres from the frontage of the site at ground level 300mm above the highest known flood and on slopes of 10% or less Bunya Mountains Locality (c) Character and amenity O4 Development is located, designed and constructed to function effectively and in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including: (e) the propensity for any natural hazard related to flooding, land slip and bushfire to adversely affect people, property and the environment</p>
Use Codes	Yes
Details	<p>Dwelling House, Annexed Unit and Caretakers Residence/Bed and Breakfast and Small Scale Code (ii) Natural and Man Made Hazard Risk Management: O2 Areas susceptible to hazards associated with erosion, land slide, mass movement, flooding, drainage problems, salinity and instability are maintained in a state which minimises the following relative to the site and its setting: (2) unacceptable risks to public safety, (3) potential damage to property and essential service infrastructure, (5) unacceptable change to local flooding and drainage characteristics. S2.2 Buildings, structures and works (including areas for onsite disposal of treated effluent) occur: (2) outside overland flow paths, gullies or other drainage paths, including stormwater discharge points, (3) at least the following from the top bank of a river, creek, stream or wetland: 1. 50 metres in the Rural Locality, and 2. 20 metres in other Localities, (4) at least 200 metres from the full supply level for any referable dam, and (5) on free draining land so that:</p>

	<p>1. habitable rooms within a building are 300mm above the highest known flood level, and</p> <p>2. Non-habitable rooms within a building as well as carports, onsite areas for disposal of treated effluent and approved property accesses are 100mm above the highest known flood.</p> <p>Extractive Industry and Borrow Pit Code</p> <p>Land and Water Resource Management</p> <p>O3 On-site control measures for managing erosion, sediment movement and drainage are provided so that during set-up and thereafter:</p> <p>(6) flood characteristics are maintained or restored so uses on-site and in the surrounds have adequate flood immunity,</p> <p>(7) efficient extraction methods result in sustainable volumes and production rates over the life of the industry without increasing incidents of erosion, salinity, flooding, soil degradation, land slip, stormwater concentration and subsidence, and sedimentation.</p> <p>S3.1 (6) so water storages, extraction pits and settlement ponds are above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, and</p> <p>(7) so processing areas, areas with improvements and accesses to roads are located:</p> <p>1. above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or</p> <p>2. otherwise 300mm above the highest known flood level on the property.</p> <p>Riparian and Habitat Land Management</p> <p>O5 Uses and works adjoining or incorporating the following provide that such areas are retained in or rehabilitated to provide for a natural stable state:</p> <p>(3) vegetation important to land stability or local hydrology, or</p> <p>S5.2 No tree clearing occurs on:</p> <p>(2) banks to waterways or in gullies,</p> <p>(3) within the set backs to water resources on the property resulting from S5.1 above,</p> <p>(5) flood plains as defined by land inundated by the 1% Annual Exceedance Probability (AEP) flood event,</p> <p>Home Based Business Code</p> <p>O2 A Home-based business is located and of a scale, design and appearance so</p> <p>S2.1 Any:</p> <p>(1) commercial vehicle garaging,</p> <p>(2) stored equipment or materials/goods,</p> <p>(3) public display of goods, or</p> <p>(4) outdoor activity areas, are located and treated so that they are:</p> <p>5. where involving outdoor handling and storage of goods or materials, located 100mm above the highest known flood level.</p> <p>Child Care Centres Code</p> <p>Location and Site Characteristics</p> <p>O3 The premises are located and designed so they are not exposed to unacceptable levels of hazards, environmental harm or nuisance.</p> <p>S3.1 The premises are located on a site where1:</p> <p>(4) ground level is located 300mm above the highest known flood or above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known.</p> <p>Farming/Forestry Business Code</p> <p>O6 Premises are located, designed and constructed to function effectively and in a manner that:</p> <p>(2) minimises contamination of downstream waters so the environmental values of ground and surface waters for ecosystem health and drinking (with minimal treatment) are not degraded</p> <p>S6.2 Compounds, on-farm processing and any cultivated areas (associated with irrigation services) are located on:</p> <p>(1) free draining areas with a cross fall of at least 0.5-1%,</p> <p>(3) land which is 100mm above the highest known flood level,</p>
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Special Management Overlay Areas (SMOA)</p> <p>Natural Hazard Risk Management Areas:</p> <p>(a) High to Moderate Potential Bushfire Risk Areas (Indicative)</p> <p>(b) Possible Flood Problem Areas (Indicative)</p> <p>(c) SMOA map 2B - Natural Hazard Risk Management Areas – Possible Drainage or Flood Problem Areas:</p> <p>Specific Outcomes:</p> <p>O7 Development on a possible drainage or flood problem area depicted on SMOA map 2B which would be placed at unacceptable risk from or is incompatible with flooding, maintains the safety of people and minimises damage to property on the site by:</p> <p>(1) avoiding areas shown as possible flood or drainage problem on SMOA map 2B; or</p> <p>(2) mitigating the risk through:</p> <p>1. lot design and the siting of buildings and uses so:</p> <p>i. efficient emergency access is optimised, and</p> <p>ii. the number of people and properties at risk is minimised.</p> <p>O8 Development on a possible drainage or flood problem area depicted on SMOA map 2B, is of a type and intensity and is located and designed so that the hydrological regime of drainage or flood problem areas is not altered to the detriment of the following values related to the site and surrounds:</p> <p>(1) public safety,</p> <p>(2) the integrity of property including buildings, structures, plant, equipment and stock,</p> <p>(3) the operational efficiency of essential service infrastructure during and following an event,</p> <p>(4) flood storage and conveyancing capacity including static or dynamic loads,</p> <p>(5) depth, duration, velocity and warning times associated with flooding,</p> <p>(6) soil and bank stability,</p> <p>(7) hydraulic capacity and effective functions of watercourses and drainage lines,</p> <p>(8) access routes and emergency vehicle operations,</p> <p>(9) integrity of areas accommodating contaminants or hazardous materials,</p> <p>(10) the capacity to use land in the floodplain, and</p> <p>(11) downstream water quality.</p>

	O9 Community uses on a site shown as a possible drainage or flood problem area on SMOA map 2B are able to function effectively during and immediately after flood events.
PSPs	Yes
Details	<p>PSP1 For a development application involving the following circumstances, the relevant assessments listed below may be requested from the applicant:</p> <p>(3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <ul style="list-style-type: none"> a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners). <p>(8) for all development applications – a Proposal Plan that:</p> <ul style="list-style-type: none"> c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas, <p>For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant:</p> <p>(2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard to proposed buildings and infrastructure,</p> <p>(17) the affect on drainage and flooding having regard to catchment drainage over the land</p> <p>PSP2 – Information Requests - Development Applications Affected by a SMOA</p> <p>(2) on lands subject to flooding or major stormwater flows on SMOA map 2B - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <ul style="list-style-type: none"> a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners). <p>PSP5 Installation and Maintenance</p> <p>(6) Soil stripped from construction areas is retained for use onsite and stockpiles do not exceed 2 metres in height, are outside known flood prone areas and are protected by sediment fencing</p> <p>The following information should form part of a Landscape Plan:</p> <ul style="list-style-type: none"> d. flood data if known <p>PSP10 Rural Subdivisions below 200ha</p> <p>2.0 ASSESSMENT CRITERIA</p> <p>(12) The report shall discuss land capability and constraints with regard to Susceptibility of flooding</p>
Other	Yes
Details	<p>DEOs</p> <p>(c) minimises risks to the safety and wellbeing of people, property and the natural environment (as resulting from impacts from natural, technological and development related hazards) to an acceptable level.</p> <p>Schedule 2 – Internal, Connecting and External Infrastructure – Design and Construction Standards</p> <p>(b) Road Flooding In accordance with Queensland Urban Drainage Manual – Volume 1: Text – Section 5.00.</p> <p>(4) Access strips or easements to rear lots arising from reconfiguring a lot have the following construction standards from the pavement edge of the road for its full length:</p> <p>(E) above the 1 in 10 year flood</p>
Op Works Code	Yes
Details	<p>Rural/Rural Residential/Urban/Village/Bunya Mountains Locality</p> <p>g) Earthworks</p> <p>Specific Outcomes</p> <p>014 Filling, draining, grading or excavation of land provides for compacted, finished levels which secure flood free, stable and free draining building and infrastructure sites appropriate to the intended use and minimising impacts to an acceptable level within and off the site regarding:</p> <ul style="list-style-type: none"> (g) flooding and drainage flow rates, volumes and natural flood storage capacity, (h) potential for point source discharge or concentration of flows, <p>S14.1 Filling, drainage, grading or excavation of land is undertaken so that:</p> <ul style="list-style-type: none"> (c) cut or fill is setback at least 2 metres from: (i) lands below the highest known flood level; or (iii) overland flow paths. <p>Bunya Mountains Locality</p> <ul style="list-style-type: none"> iii) Building and site work <p>Specific Outcomes</p> <ul style="list-style-type: none"> (e) Filling, drainage, grading and excavation are designed and executed to: (iii) provide for flood free, stable and free draining building and works areas appropriate for the intended use,
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PSP1 For a development application involving the following circumstances, the relevant assessments listed below may be requested from the applicant:</p> <p>(3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <ul style="list-style-type: none"> a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and

	<p>c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners).</p> <p>(8) for all development applications – a Proposal Plan that:</p> <p>c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas,</p> <p>For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant:</p> <p>(2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard to proposed buildings and infrastructure,</p> <p>(17) the affect on drainage and flooding having regard to catchment drainage over the land</p> <p>PSP2 – Information Requests -</p> <p>Development Applications Affected by a SMOA</p> <p>(2) on lands subject to flooding or major stormwater flows on SMOA map 2B - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <p>a. likely probability, depth, volume and velocity of flows across a site pre and post development,</p> <p>b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and</p> <p>c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners).</p> <p>PSP5</p> <p>Installation and Maintenance</p> <p>(6) Soil stripped from construction areas is retained for use onsite and stockpiles do not exceed 2 metres in height, are outside known flood prone areas and are protected by sediment fencing</p> <p>The following information should form part of a Landscape Plan:</p> <p>d. flood data if known</p> <p>PSP10 Rural Subdivisions below 200ha</p> <p>2.0 ASSESSMENT CRITERIA</p> <p>(12) The report shall discuss land capability and constraints with regard to</p> <ul style="list-style-type: none"> · Susceptibility of flooding
Other	Yes
Details	<p>Schedule 7 - Definitions</p> <p>Annual exceedence probability (AEP)</p> <p>the likelihood of occurrence of a flood of a given size or larger in any one year; usually expressed as a percentage. For example, if a peak flood discharge of 500 cubic metres per second has an AEP of 5%, it means that there is a 5% risk (ie probability of 0.05 or a likelihood of 1 in 200) of a peak flood discharge of 500 cubic metres/second or larger occurring in any one year. The AEP of a flood event gives no indication of when a flood of that size will occur next</p> <p>Highest known flood level</p> <p>is the flood level established by a proponent or Council based on anecdotal or empirical data regarding the height of overland flood waters at the highest recorded flood to have affected the site</p>
Other Info	

LGA	South Burnett
Planning Scheme	Wondai
Adopted	5/01/2006
Flood Amendments	No
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	Yes
Details	Special Management Area Map Q100 mentioned in provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Residential/Urban/Village Locality</p> <p>(a) Land Use and Development</p> <p>03 For reconfiguring a lot in the Rural Residential/Urban Locality:</p> <p>(f) risk to people and property from development is minimised to an acceptable level in terms of:</p> <p>(i) lands below the highest known flood,</p> <p>Rural/Rural Residential/Urban/Village Locality</p> <p>(b) Density and design for reconfiguring</p> <p>04 Lots are located, designed and developed so that useable lots with sufficient area and suitable shape and proportions</p> <p>(b) provide appropriately for local topography so flood immune, stable and free draining building areas, accesses and works are achieved,</p> <p>c) Character and Amenity</p> <p>010 Fences and walls are located, designed and of a form and construction so:</p> <p>(g) local ecology, drainage, flooding, geotechnical and micro-climatic conditions are maintained.</p> <p>(d) Land and water resource management</p> <p>012 Development is located, designed and constructed to function effectively and in a manner that minimises disturbance to the geotechnical, physical, hydrological and environmental characteristics of the site and its setting, including:</p> <p>(c) hydrological processes of flood plains and drainage systems,</p> <p>(f) the propensity for any natural hazard related to flooding, land slip and bushfire to adversely affect people, property, economic activities and the environment,</p> <p>S11.1 Uses, associated works and compounds are confined to: Uses, associated works and compounds are confined to:</p> <p>(c) for storage areas, vehicle movement areas, enclosures, compounds, essential on-site infrastructure, treated effluent disposal areas and buildings and structures, they are located at ground level to be at least:</p> <p>(i) for habitable buildings - above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known,</p> <p>(ii) for Major utilities or Special uses – above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, where known,</p> <p>(iii) for buildings and structures where (c)(i) and (ii) do not apply - 300mm above the highest known flood event, or</p> <p>(iv) for other uses and works – 100mm above the highest known flood event,</p> <p>(d) areas outside stormwater discharge points, overland flow paths, watercourses and natural drainage features,</p> <p>Urban Locality</p> <p>TABLE S4.1A – DESIGN PARAMETERS FOR RECONFIGURING A LOT IN THE RESIDENTIAL ZONE</p> <p>(e) Lots with minimum area and dimensions to enable:</p> <p>(i) a 10 metres by 15 metres building area measured 6 metres from the frontage of the site at ground level 300mm above the highest known flood and on slopes of 10% or less</p>
Use Codes	Yes
Details	<p>Dwelling House, Annexed Unit and Caretakers Residence/Bed and Breakfast and Small Scale Code</p> <p>(ii) Natural and Man Made Hazard Risk Management:</p> <p>02 Areas susceptible to hazards associated with erosion, land slide, mass movement, flooding, drainage problems, salinity and instability are maintained in a state which minimises the following relative to the site and its setting:</p> <p>(2) unacceptable risks to public safety,</p> <p>(3) potential damage to property and essential service infrastructure,</p> <p>(5) unacceptable change to local flooding and drainage characteristics.</p> <p>S2.2 Buildings, structures and works (including areas for onsite disposal of treated effluent) occur:</p> <p>(2) outside overland flow paths, gullies or other drainage paths, including stormwater discharge points,</p> <p>(3) at least the following from the top bank of a river, creek, stream or wetland:</p> <ol style="list-style-type: none"> 1. 50 metres in the Rural Locality, and 2. 20 metres in other Localities, <p>(4) at least 200 metres from the full supply level for any referable dam, and</p> <p>(5) on free draining land so that:</p> <ol style="list-style-type: none"> 1. habitable rooms within a building are 300mm above the highest known flood level, and 2. nonhabitable rooms within a building as well as carports, onsite areas for disposal of treated effluent and approved property accesses are 100mm above the highest known flood <p>Extractive Industry and Borrow Pit Code</p> <p>Land and Water Resource Management</p> <p>03 On-site control measures for managing erosion, sediment movement and drainage are provided so that during set-up and thereafter:</p> <p>(6) flood characteristics are maintained or restored so uses on-site and in the surrounds have adequate flood immunity,</p> <p>(7) efficient extraction methods result in sustainable volumes and production rates over the life of the industry without increasing incidents of erosion, salinity, flooding, soil degradation, land slip, stormwater concentration and subsidence, and sedimentation.</p> <p>S3.1 (6) so water storages, extraction pits and settlement ponds are above land inundated by the 1% Annual Exceedance Probability (AEP) flood</p>

	<p>event, and</p> <p>(7) so processing areas, areas with improvements and accesses to roads are located:</p> <ol style="list-style-type: none"> 1. above land inundated by the 0.5% Annual Exceedance Probability (AEP) flood event, or 2. otherwise 300mm above the highest known flood level on the property. <p>Riparian and Habitat Land Management</p> <p>05 Uses and works adjoining or incorporating the following provide that such areas are retained in or rehabilitated to provide for a natural stable state:</p> <p>(3) vegetation important to land stability or local hydrology, or</p> <p>S5.2 No tree clearing occurs on:</p> <p>(2) banks to waterways or in gullies,</p> <p>(3) within the set backs to water resources on the property resulting from S5.1 above,</p> <p>(5) flood plains as defined by land inundated by the 1% Annual Exceedance Probability (AEP) flood event,</p> <p>Home Based Business Code</p> <p>02 A Home-based business is located and of a scale, design and appearance so</p> <p>S2.1 Any:</p> <p>(1) commercial vehicle garaging,</p> <p>(2) stored equipment or materials/goods,</p> <p>(3) public display of goods, or</p> <p>(4) outdoor activity areas, are located and treated so that they are:</p> <p>5. where involving outdoor handling and storage of goods or materials, located 100mm above the highest known flood level.</p> <p>Child Care Centres Code</p> <p>Location and Site Characteristics</p> <p>03 The premises are located and designed so they are not exposed to unacceptable levels of hazards, environmental harm or nuisance.</p> <p>S3.1 The premises are located on a site where1:</p> <p>(4) ground level is located 300mm above the highest known flood or above land inundated by the 1% Annual Exceedance Probability (AEP) flood event, where known.</p> <p>Farming/Forestry Business Code</p> <p>06 Premises are located, designed and constructed to function effectively and in a manner that:</p> <p>(2) minimises contamination of downstream waters so the environmental values of ground and surface waters for ecosystem health and drinking (with minimal treatment) are not degraded</p> <p>S6.2 (Farming) Compounds, on-farm processing and any cultivated areas (associated with irrigation services) are located on:</p> <p>(1) free draining areas with a cross fall of at least 0.5-1%,</p> <p>(3) land which is 100mm above the highest known flood level,</p> <p>S7.2 (Forestry Business Code) Log dumps, on-farm processing, buildings and structures and vehicle movement areas are located on:</p> <p>(1) free draining areas with a cross fall of at least 0.5-1%,</p> <p>(3) land which is 100mm above the highest known flood level,</p>
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Assessment Provisions for Special Management Overlay Areas (SMOA Map 2B)</p> <p>Natural Hazard Risk Management Areas:</p> <p>Possible Drainage or Flood Problem Areas:</p> <p>Specific Outcomes:</p> <p>07 Development on a possible drainage or flood problem area depicted on SMOA map 2B which would be placed at unacceptable risk from or is incompatible with flooding, maintains the safety of people and minimises damage to property on the site by:</p> <p>(1) avoiding areas shown as possible flood or drainage problem on SMOA map 2B; or</p> <p>(2) mitigating the risk through:</p> <ol style="list-style-type: none"> 1. lot design and the siting of buildings and uses so: <ol style="list-style-type: none"> i. efficient emergency access is optimised, and ii. the number of people and properties at risk is minimised. <p>08 Development on a possible drainage or flood problem area depicted on SMOA map 2B, is of a type and intensity⁵ and is located and designed so that the hydrological regime of drainage or flood problem areas is not altered to the detriment of the following values related to the site and surrounds:</p> <ol style="list-style-type: none"> (1) public safety, (2) the integrity of property including buildings, structures, plant, equipment and stock, (3) the operational efficiency of essential service infrastructure during and following an event, (4) flood storage and conveyancing capacity including static or dynamic loads, (5) depth, duration, velocity and warning times associated with flooding, (6) soil and bank stability, (7) hydraulic capacity and effective functions of watercourses and drainage lines, (8) access routes and emergency vehicle operations, (9) integrity of areas accommodating contaminants or hazardous materials, (10) the capacity to use land in the floodplain, and (11) downstream water quality. <p>09 Community uses on a site shown as a possible drainage or flood problem area on SMOA map 2B are able to function effectively during and immediately after flood events.</p> <p>Map: SPECIAL MANAGEMENT OVERLAY AREAS: NATURAL HAZARD RISK MANAGEMENT AREAS</p> <p>c) Possible Byee Wheatland Floodplain (Indicative)</p> <p>Part 1: Introduction</p> <p>(1) The affects of Parts 3, 4 and 5 of this planning scheme on the location and nature of land use and development depicted on the Shire Outline Maps is explained as follows:</p> <p>(b) Valuable features and land use – rural sector and urban economic development (Shire Outline Map 2):</p> <p>(d) Byee Wheatland flood plain flanking Barkers Creek in which flood capacity needs careful management</p>

	SMOA Map 2b 2003 Possible Bye-Wheatland Flood Plain (Indicative) (1) Possible Drainage Problem Areas from 1993 Zoning
PSPs	Yes
Details	<p>PSP1 For a development application involving the following circumstances, the relevant assessments listed below may be requested from the applicant: (3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the: a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners). (8) for all development applications – a Proposal Plan that: c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas, For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant: (2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard to proposed buildings and infrastructure, (17) the affect on drainage and flooding having regard to catchment drainage over the land</p> <p>PSP2 – Information Requests - Development Applications Affected by a SMOA (2) on lands subject to flooding or major stormwater flows on SMOA map 2B - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the: a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners).</p> <p>PSP5 Installation and Maintenance (6) Soil stripped from construction areas is retained for use onsite and stockpiles do not exceed 2 metres in height, are outside known flood prone areas and are protected by sediment fencing The following information should form part of a Landscape Plan: d. flood data if known</p> <p>PSP10 Rural Subdivisions below 200ha 2.0 ASSESSMENT CRITERIA (12) The report shall discuss land capability and constraints with regard to · Susceptibility of flooding</p>
Other	Yes
Details	<p>DEOs (c) minimises risks to the safety and wellbeing of people, property and the natural environment (as resulting from impacts from natural, technological and development related hazards) to an acceptable level. Schedule 2 – Internal, Connecting and External Infrastructure – Design and Construction Standards (b) Road Flooding In accordance with Queensland Urban Drainage Manual – Volume 1: Text – Section 5.00. (4) Access strips or easements to rear lots arising from reconfiguring a lot have the following construction standards from the pavement edge of the road for its full length: (E) above the 1 in 10 year flood</p>
Op Works Code	Yes
Details	<p>Rural/Urban/Village Locality g) Earthworks Specific Outcomes 014 Filling, draining, grading or excavation of land provides for compacted, finished levels which secure flood free, stable and free draining building and infrastructure sites appropriate to the intended use and minimising impacts to an acceptable level within and off the site regarding: (g) flooding and drainage flow rates, volumes and natural flood storage capacity, (h) potential for point source discharge or concentration of flows, S14.1 Filling, drainage, grading or excavation of land is undertaken so that: (c) cut or fill is setback at least 2 metres from: (i) lands below the highest known flood level; or (iii) overland flow paths.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PSP1 For a development application involving the following circumstances, the relevant assessments listed below may be requested from the applicant: (3) on lands subject to flooding or major stormwater flows - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the: a. likely probability, depth, volume and velocity of flows across a site pre and post development, b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and</p>

	<p>c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners).</p> <p>(8) for all development applications – a Proposal Plan that:</p> <p>c. is scaled, dimensioned and dated, with a north point and contours or spot levels sufficient to determine slopes over 15% in gradient and known flood and drainage problem areas,</p> <p>For a development application involving earthworks, the relevant mapped/reported details listed below may be requested from the applicant:</p> <p>(2) affects of proposed earthwork levels on flooding (including relative to surrounding sites), land stability, habitats, adjoining properties, public utilities, easements and the like having regard to proposed buildings and infrastructure,</p> <p>(17) the affect on drainage and flooding having regard to catchment drainage over the land</p> <p>PSP2 – Information Requests -</p> <p>Development Applications Affected by a SMOA</p> <p>(2) on lands subject to flooding or major stormwater flows on SMOA map 2B - a flood and stormwater quantity assessment by a Registered Professional Engineer in Queensland identifying the:</p> <p>a. likely probability, depth, volume and velocity of flows across a site pre and post development,</p> <p>b. likely impacts of the proposal on upstream/downstream hydraulic regimes in terms of depth, duration, flows or velocity (including consideration of bank stability), and</p> <p>c. measures to address likely drainage impacts including by way of the appropriate location and treatment of assets and infrastructure. (NB Any stormwater discharging onto or through a nearby private property is supported by the approval from the affected property owners).</p> <p>PSP5</p> <p>Installation and Maintenance</p> <p>(6) Soil stripped from construction areas is retained for use onsite and stockpiles do not exceed 2 metres in height, are outside known flood prone areas and are protected by sediment fencing</p> <p>The following information should form part of a Landscape Plan:</p> <p>d. flood data if known</p> <p>PSP10 Rural Subdivisions below 200ha</p> <p>2.0 ASSESSMENT CRITERIA</p> <p>(12) The report shall discuss land capability and constraints with regard to</p> <ul style="list-style-type: none"> · Susceptibility of flooding
Other	Yes
Details	<p>Schedule 7 - Definitions</p> <p>Annual exceedence probability (AEP)</p> <p>the likelihood of occurrence of a flood of a given size or larger in any one year; usually expressed as a percentage. For example, if a peak flood discharge of 500 cubic metres per second has an AEP of 5%, it means that there is a 5% risk (ie probability of 0.05 or a likelihood of 1 in 200) of a peak flood discharge of 500 cubic metres/second or larger occurring in any one year. The AEP of a flood event gives no indication of when a flood of that size will occur next</p> <p>Highest known flood level</p> <p>is the flood level established by a proponent or Council based on anecdotal or empirical data regarding the height of overland flood waters at the highest recorded flood to have affected the site.</p> <p>Riparian land</p> <p>land which adjoins, directly influences or is influenced by a body of water, including:</p> <p>(a) land alongside water courses defined in the Water Act, 2000 and including the banks, and</p> <p>(b) areas surrounding lakes or wetlands on river flood plains which interact with the river in times of flood</p>
Other Info	

LGA	Southern Downs
Planning Scheme	Stanthorpe
Adopted	24/08/2004
Flood Amendments	Yes
SPP Compliance	Yes
Details	The Minister for Local Government and Planning has identified the following planning policies as having been appropriately reflected in the planning scheme: - State Planning Policy 1/03 - Mitigating the Adverse impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	Yes
Details	Highest Recorded
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Division 6- Industrial Use Code 8.16 Performance Criteria and Acceptable Solutions P1 The land is flat, free from flooding, bush fire hazard and land slip hazard.</p> <p>Division 7- Intensive Animal Husbandry Code 8.19 Performance Criteria and Acceptable Solutions P1 The development is located and sited such that: -Natural flood and drainage processes and patterns are maintained.</p> <p>Division 8- Residential Use Code 8.22 Performance Criteria and Acceptable Solutions Dwelling House AS1(2) The dwelling house is erected on a site with a flood free area of 17m x 17m at ground level except when located on land identified on the Flood Prone Land - Stanthorpe Regulatory Map.</p> <p>Travellers Residential Use Code 8.25 Performance Criteria and Acceptable Solutions AS13 (1) Tourist accommodation on land identified as Low Density Residential and Large Lot and Wallangarra on the Neighbourhood overlay comprises accommodation based on no more than one dwelling unit per lot and the tourist accommodation is (b) erected on a site with a flood free area of 17m x 17m at ground level except when located on land identified on the Flood Prone Land - Stanthorpe Regulatory Map.</p> <p>Division 10 - Winery Code 8.28 Performance Criteria and Acceptable Solutions Winery Code P1 the land is flat, free from flooding, bush fire hazard and land slip hazard.</p>
ROL Code	Yes
Details	<p>Part 2 - Reconfiguring a Lot Code Lot Size and Design P1 All lots in a zone and overlay have an area and frontage that is consistent with the zone intent and: (2) Reconfiguration of a lot in the Residential zone provides for a diversity of residential neighbourhoods to meet the needs and aspirations of different members of the community consistent with avoiding: - physical constraints including flood prone land, steep slopes and bushfire hazard.</p> <p>P2 The subject land is physically suitable for the use likely to be made of the land following the reconfiguration in terms of: - flooding risk AS2(2) All new lots contain an area at least 17m x 17m located at ground level which is flood free. AS(3) All lots have practical, legal, flood free access to an area on a site where a dwelling can be constructed.</p>
Overlay Codes	Yes
Details	<p>Division 7 - Development on Flood Prone Land - Stanthorpe Code 7.17 Purpose the purpose of this code is to control all development on land identified as being flood prone in order to minimise damage to people and property.</p> <p>7.18 Applicability (1) This code applies to all self-assessable and assessable development on land identified as being flood prone on the Flood Prone Land - Stanthorpe Regulatory Map (Regulatory Map 3).</p> <p>7.19 Performance Criteria and Acceptable Solutions P1 All new buildings for residential use are built with a habitable floor above the highest known flood level. All new dwelling units are constructed so they are safe against flooding and drainage problems. AS(1) The habitable floor of any new dwelling unit is 300mm above the highest known flood level. AS(2) Foundations of buildings are able to withstand the rise and flow of floodwaters without resulting in damage to the proposed building or any other building. P2 All new allotments have a building site at ground level that is above the highest known flood level. AS2 All new lots have an area at ground level measuring 17m x 17m that is above the highest known flood level. P4 Development on the floodplain will no result in an increase of floods on the floodplain.</p>
PSPs	Yes
Details	<p>Supporting Document 1 State Interests and Regional Considerations Families, Youth and Community Care Queensland Development should not be allowed on areas vulnerable to natural disaster such as flood prone land and steep slopes.</p>
Other	No

Details	
Op Works Code	No
Details	
Overlay Code	Yes
Details	<p>Division 7 - Development on Flood Prone Land - Stanthorpe Code</p> <p>7.17 Purpose the purpose of this code is to control all development on land identified as being flood prone in order to minimise damage to people and property.</p> <p>7.18 Applicability (1) This code applies to all self-assessable and assessable development on land identified as being flood prone on the Flood Prone Land - Stanthorpe Regulatory Map (Regulatory Map 3).</p> <p>7.19 Performance Criteria and Acceptable Solutions P1 All new buildings for residential use are built with a habitable floor above the highest known flood level. All new dwelling units are constructed so they are safe against flooding and drainage problems. AS(1) The habitable floor of any new dwelling unit is 300mm above the highest known flood level. AS(2) Foundations of buildings are able to withstand the rise and flow of floodwaters without resulting in damage to the proposed building or any other building. P2 All new allotments have a building site at ground level that is above the highest known flood level. AS2 All new lots have an area at ground level measuring 17m x 17m that is above the highest known flood level. P4 Development on the floodplain will not result in an increase of floods on the floodplain.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Southern Downs
Planning Scheme	Warwick
Adopted	9/12/1999
Flood Amendments	Yes
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>4.4 City East</p> <p>4.4.2 Policy Intent</p> <p>The area is also partially affected by flooding.</p> <p>4.8 Residential</p> <p>4.8.2 Policy Intent</p> <p>Newly developing areas will be required to be provided with acceptable arrangements for water supply, sewerage, storm water drainage, roads, power and telecommunications, as well as reasonable access to open space, community services and facilities and to be designed to ensure minimal risk to life and property as a result of flooding.</p> <p>4.11 Rural</p> <p>4.112 Policy Intent</p> <p>Part of the land use area falls within the environs of Warwick City, generally corresponding to the extent of the flood plain through the city. It is intended to protect this landscape feature and to prevent further risk to life or property as a result of flooding, by restructuring the type and intensity of development which occurs within it.</p>
Use Codes	Yes
Details	<p>5.0 MEASURES FOR DEVELOPMENT OTHER THAN A MATERIAL CHANGE OF USE</p> <p>5.2 RECONFIGURING A LOT</p> <p>(a) Reconfiguring of a Lot for Rural Residential Purposes</p> <p>(ii) Community Well Being</p> <ul style="list-style-type: none"> • incorporate the provision of a flood free building platform and access for each lot and provision of flood free access between the development site and local convenience shopping and local medical facilities; - he existing lots must be able to accommodate a building with regards to the size, shape, topography or features of the lot, flood or drainage liability, site contamination, and (where applicable) compliance with the requirements of Section 7.10.3(a). <p>5.2.4.3 Development Controls</p> <p>(iv) The subject land is to be physically suitable for the form of development proposed and for use likely to made of the land following the reconfiguration, having regard to:</p> <ul style="list-style-type: none"> • flood liability; <p>(c) Public Open Space</p> <p>Acceptable Solutions</p> <ul style="list-style-type: none"> • free of encumbrances such as flood liability, easements for services and the like; <p>Acceptable Solutions</p> <ul style="list-style-type: none"> • there is no increase in the number of lots that can accommodate a building to be used in accordance with the Policy Intent for the land use area. (In the rural Land Use Areas this will include the accommodation of a dwelling house.) The existing lots must be able to accommodate a building with regards to the size, shape, topography or features of the lot, flood or drainage liability, site contamination, and (where applicable) compliance with the requirements of Section 7.10.3(a). <p>7.3 RESIDENTIAL DEVELOPMENT CODE</p> <p>(iv) Site Suitability</p> <p>Performance Objective</p> <ul style="list-style-type: none"> • The subject land is to be physically suitable for the proposed development having regard to: - flood liability; <p>Acceptable Solutions</p> <ul style="list-style-type: none"> • The development must be located on an area of the subject land which is flood free. <p>7.7 CHILD CARE FACILITIES DEVELOPMENT CODE</p> <p>Performance Objective</p> <ul style="list-style-type: none"> · To minimise safety risks from heavy traffic, the introduction of non-local traffic into minor residential streets and flooding. · The child care facility is not to be located: - on a site generally subject to flooding
ROL Code	Yes
Details	<p>5.0 MEASURES FOR DEVELOPMENT OTHER THAN A MATERIAL CHANGE OF USE</p> <p>5.2 RECONFIGURING A LOT</p> <p>(a) Reconfiguring of a Lot for Rural Residential Purposes</p> <p>(ii) Community Well Being</p> <ul style="list-style-type: none"> • incorporate the provision of a flood free building platform and access for each lot and provision of flood free access between the development site and local convenience shopping and local medical facilities; - he existing lots must be able to accommodate a building with regards to the size, shape, topography or features of the lot, flood or drainage liability, site contamination, and (where applicable) compliance with the requirements of Section 7.10.3(a). <p>5.2.4.3 Development Controls</p> <p>(iv) The subject land is to be physically suitable for the form of development proposed and for use likely to made of the land following the reconfiguration, having regard to:</p> <ul style="list-style-type: none"> • flood liability; <p>(c) Public Open Space</p>

	<p>Acceptable Solutions</p> <ul style="list-style-type: none"> • free of encumbrances such as flood liability, easements for services and the like; <p>Acceptable Solutions</p> <ul style="list-style-type: none"> • there is no increase in the number of lots that can accommodate a building to be used in accordance with the Policy Intent for the land use area. (In the rural Land Use Areas this will include the accommodation of a dwelling house.) The existing lots must be able to accommodate a building with regards to the size, shape, topography or features of the lot, flood or drainage liability, site contamination, and (where applicable) compliance with the requirements of Section 7.10.3(a).
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>2.0 Desired Environmental Outcomes</p> <p>2.2 Ecological and Natural Systems</p> <p>(ii) Successful integrated catchment management involving:</p> <ul style="list-style-type: none"> - flood plains without adverse impact on natural drainage regimes or increase risk of flooding as a result of land uses and development. <p>Shire Wide Measures</p> <p>3.1.2.1 Strategies</p> <p>(i) Sensitive sub catchments and landscape features such as the forested uplands and flood plain areas have been included in land use areas which will afford the greatest level of control of inappropriate development. However, it is recognised that activities in other areas can also significantly impact on water quality and flow regimes, flooding patterns and sensitive riparian zones throughout the Upper Condamine catchment.</p> <p>3.1.2.2 Assessment Principles</p> <p>(i) This will be necessary irrespective of whether the development is proposed on land which adjoins a watercourse or is within the flood plain.</p> <p>(vii) Development within a flood plain area should not increase the risk of channel avulsion or of flooding, as a result of concentrating or obstructing flood flows or reducing flood storage areas. Council may request a hydrological study to be prepared by a suitably qualified person in respect of any application where flooding may be an issue in Council's opinion.</p> <p>(viii) Development on the flood plain should incorporate provision of building floor levels and emergency access to minimise risk to life and property in the event of flooding.</p> <p>3.2 Supporting Actions</p> <p>(vii) Best practice land management will be promoted on land within a flood plain particularly dealing with such aspects as vegetation clearing, cultivation practices, stock management, the establishment of infrastructure, such as fencing, irrigation structures and roads, and erosion and drainage control, earthworks and the like. Council intends to prepare a flood plain code which will be incorporated in the planning scheme and made applicable to any development in the flood plain.</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Sunshine Coast
Planning Scheme	Caloundra City
Adopted	25/08/2004
Flood Amendments	Yes
SPP Compliance	No
Details	
Mapped Q100 / DFE	Yes
Details	Q100
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>6.2.4 Planning Area Specific Outcomes (1) Specific Outcomes for Development in the Regional Business Centre Precinct Generally</p> <p>6.2.4 Planning Area Specific Outcomes (1) Specific Outcomes for Development in the Regional Business Centre Precinct Generally</p> <p>Flood Management</p> <p>O11 Where land may be below the 100 year ARI flood level or otherwise liable to flooding, the risk of flooding is investigated and established prior to development*.</p> <p>S11.1 No probable solution prescribed.</p> <p>O12 Development does not materially increase flood levels on other land*.</p> <p>S12.1 No probable solution prescribed.</p> <p>O13 Natural hydrological systems, landforms and drainage lines and the flood conveyance capacity of floodplains and waterways are maintained*</p> <p>S13.1 No probable solution prescribed.</p> <p>O14 Development and public infrastructure has an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk.</p> <p>S14.1 Development complies with Probable Solutions S4.1, S4.2, S5.1, S5.2 and S5.3 of the Flood Management Code.</p> <p>S14.2 Reconfiguring a lot provides for minimum lot sizes and flood free building sites which comply with the probable solutions for flood immunity provided in Probable Solutions S2.3, S2.6 and S8.3 of the Reconfiguring a Lot Code.</p> <p>*The Flood Management Overlay covers land for which detailed flood modelling exists. Other land not covered by the Flood Management Overlay may be liable to flooding. Section 11.6.10 of the Overlays Planning Scheme Policy provides guidance for achieving Specific Outcomes for flood management.</p> <p>6.3 Kawana Waters Planning Area Code</p> <p>6.3.1 Planning Area Context and Setting</p> <p>(1) The Planning Area Context and Setting is declared to be extrinsic material under section 15 of the Statutory Instruments Act 1992 and assists in the interpretation of the Kawana Waters Planning Area Code.</p> <p>The Planning Area is located on a low sand dune system and coastal floodplain. As a result, most of the Planning Area is relatively flat and close to sea level.</p> <p>6.5 Caloundra West Planning Area Code</p> <p>6.5.1 Planning Area Context and Setting</p> <p>The Planning Area is characterised by variable topography. The northern part is located within the coastal plain and is therefore relatively flat. The north-western part takes in the Mooloolah River floodplain. The central and southern parts of the Planning Area are dominated by the foothills of Little Mountain and the ridgeline along Sugarbag Road.</p> <p>6.7 Beerwah Township Planning Area Code</p> <p>6.7.1 Planning Area Context and Setting</p> <p>The Planning Area is situated within the Pumicestone Passage catchment. The landform is gently undulating reflecting its location within the coastal plain. Coochin Creek which forms the southern boundary of the Planning Area is subject to periodic local flooding.</p> <p>6.8 Maleny Township Planning Area Code</p> <p>6.8.1 Planning Area Context and Setting</p> <p>The Planning Area is characterised by variable topography with the northern parts having moderate to steep slopes. Obi Obi Creek, which flows to Lake Baroon, traverses the Planning Area and is subject to periodic flooding.</p> <p>Reconfiguring a Lot in the Township Residential Precinct (Area A – Maleny West)</p> <p>S13.4 Reconfiguring a lot provides for an interconnected park system, which links new residential lots to a centrally located neighbourhood park and to a linear park incorporating Obi Obi Creek and its floodplain.</p> <p>Reconfiguring a Lot in the Township Residential Precinct (Area C – Maleny East)</p> <p>S15.4 Reconfiguring a lot provides for an interconnected park system, which links new residential lots to a linear park incorporating Obi Obi Creek and its floodplain.</p> <p>Reconfiguring a Lot in the Township Residential Precinct (Area D – Maleny South)</p> <p>S16.3 Reconfiguring a lot provides for an interconnected park system, which links new residential lots to a linear park incorporating Obi Obi Creek and its floodplain and linking to Maleny Showground and State Schools.</p> <p>6.9 Landsborough Township Planning Area Code</p> <p>6.9.1 Planning Area Context and Setting</p> <p>Situated at the southern entrance to the Blackall Range, the Planning Area's landform is generally flat to gently undulating reflecting its location within the coastal plain. The northern portion of the Planning Area is located in the catchment of Ewen Maddock Dam whilst the southern portion (generally south of Caloundra and Maleny Streets) is contained in the Pumicestone Passage catchment. Mellum Creek, which forms the southern boundary of the Planning Area, is subject to periodic local flooding.</p> <p>6.10 Mooloolah Township Planning Area Code</p> <p>6.10.1 Planning Area Context and Setting</p> <p>The Planning Area is situated within the Mooloolah River catchment. Landform is generally flat to gently undulating reflecting its location adjacent to the Mooloolah River floodplain. However, some steeper land is found in the north-eastern (east of Suzen Court) and western (adjacent to Brandenburg Road) margins of the Planning Area. A number of drainage lines traverse this Planning Area. As a result, flooding is a significant constraint to further development.</p>

	<p>6.11 Glass House Mountains Township Planning Area Code</p> <p>6.11.1 Planning Area Context and Setting</p> <p>The landform of the Planning Area is gently undulating. It is contained within the catchment of Coonowrin Creek, which traverses the Planning Area in a south-west, north-east direction. Coonowrin Creek flows to Pumicestone Passage and is subject to periodic local flooding within the Planning Area.</p> <p>6.12 Beerburrum Township Planning Area Code</p> <p>6.12.1 Planning Area Context and Setting</p> <p>The Planning Area is located at the base of Mount Beerburrum and is predominantly flat. Beerburrum Creek adjoins the southern boundary of the Planning Area. This creek system flows to Pumicestone Passage and is subject to periodic local flooding within the Planning Area.</p> <p>6.13 Pumicestone Planning Area Code</p> <p>6.13.1 Planning Area Context and Setting</p> <p>Given the low lying nature of most of the Planning Area and its proximity to the Pumicestone Passage wetlands, flooding, acid sulfate soils and biting insects affect significant portions of the Planning Area.</p> <p>6.14 Mary River – Conondale Planning Area Code</p> <p>6.14.1 Planning Area Context and Setting</p> <p>Maleny – Kenilworth Road is the only major road link within the Planning Area, although it is not always trafficable due to flooding. With the exception of a limited range of community facilities at Conondale, no urban services are available to this Planning Area.</p> <p>6.17 Mooloolah Valley Planning Area Code</p> <p>6.17.1 Planning Area Context and Setting</p> <p>West of the Bruce Highway the Planning Area takes in the remainder of the upper Mooloolah River catchment and the foothills of Mt Sippy which rise steeply to the north. Situated in an intermediate area between the floodplain and the higher slopes is the rural residential community of Glenview which extends in a linear pattern along the length of Glenview Road.</p> <p>6.17.2 Planning Area Overall Outcomes</p> <p>(d) The large floodplain and flood storage area to the east of the Bruce Highway (Meridan Plains) remains undeveloped for urban purposes. Any development in this area is limited to activities (including extractive industry activities) which maintain or increase the flood mitigation capacity of the floodplain, protect the water quality of the Mooloolah River and preserve the function of this area as an important scenic resource and sub-regional inter-urban break.</p> <p>(e) The extractive resource area located to the east of the Bruce Highway at Meridan Plains is developed in an efficient, planned and sustainable manner that:- (i) maintains or improves the integrity of the Mooloolah River and the flood storage capacity of the Mooloolah River floodplain; (ii) maintains, as far as practicable, the flow conveyance patterns of the Mooloolah River flood plain, avoids any worsening of existing flooding conditions and protects the existing ground water regime;</p> <p>(ix) minimises the visual impacts of extractive industry operations throughout the life of the development on the scenic values of the floodplain as an open landscape;</p> <p>(f) Land immediately to the north of the Meridan Plains Environmental Reserve (between Sattler Road and Westaway Road), where not part of the floodplain, provides for equestrian related uses which complement and support the operation of the Sunshine Coast Turf Club. Smaller rural lots are created in this area to specifically accommodate these uses.</p> <p>Specific Outcome for Kings Beach Revitalisation Area, Kawana Planning Area, Caloundra South Planning Area, Caloundra West Planning Area, Caloundra Eastern Beaches Planning Area, Beerwah Township Planning Area, Malaney Township Planning Area, Landsborough Township Planning Area, Mooloolah Township Planning Area, Glasshouse Mountains Township Area, Beerburrum Township Planning Area, Pumicestone Planning Area, Conondale Planning Area, Stanley River - Peachester Planning Area, Maleny Plateau Planning Area, Mooloolah Valley Planning Area, Mooloolah Valley Planning Area</p> <p>Flood Management</p> <p>O5 Where land may be below the 100 year ARI flood level or otherwise liable to flooding, the risk of flooding is investigated and established prior to development*.</p> <p>Specific Outcome</p> <p>O6 Development does not materially increase flood levels on other land*.</p> <p>Specific Outcome</p> <p>O7 Natural hydrological systems, landforms and drainage lines and the flood conveyance capacity of floodplains and waterways are maintained*.</p> <p>Specific Outcome</p> <p>O8 Development and public infrastructure has an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk.</p> <p>Probable Solution</p> <p>S8.1 Development complies with Probable Solutions S4.1, S4.2, S5.1, S5.2 and S5.3 of the Flood Management Code.</p> <p>S8.2 Reconfiguring a lot provides for minimum lot sizes and flood free building sites which comply with the probable solutions for flood immunity provided in Probable Solutions S2.3, S2.6 and S8.3 of the Reconfiguring a Lot Code.</p> <p>The Flood Management Overlay covers land for which detailed flood modelling exists. Other land not covered by the Flood Management Overlay may be liable to flooding. Section 11.6.10 of the Overlays Planning Scheme Policy provides guidance for achieving Specific Outcomes for flood management.</p>
Use Codes	Yes
Details	<p>8.5 Detached House Code</p> <p>8.5.2 Specific Outcomes</p> <p>Flood Immunity</p> <p>O1 The detached house is sited in a location with an acceptable level of flood immunity, including site access.</p> <p>S1.1* The detached house is not located on land identified on a Planning Area Overlay Map as being subject to the Flood Management Overlay.</p> <p>S1.2* The floor level of all habitable rooms is at least 500 millimetres above the 100 year ARI flood level. OR Where no design flood levels have been determined, the floor level of all habitable rooms is at least 600 millimetres above the highest recorded flood level.</p> <p>S1.3* The building location and the site access are not located in an overland flow path</p> <p>8.12 Intensive Rural Uses Code</p> <p>8.12.2 Specific Outcomes</p> <p>Location and Site Suitability</p> <p>O3 The intensive rural use is located on a site which:</p> <p>(c) is not subject to flooding within the areas used for buildings and pens;</p> <p>8.14 Rural Service Industry Code</p> <p>8.14.2 Specific Outcomes</p>

	<p>Location and Site Suitability</p> <p>(b) is not subject to constraint by waterways, wetlands, flooding, steep slopes or significant habitat;</p> <p>8.17 Extractive Industry Code</p> <p>8.17.2 Specific Outcomes</p> <p>Avoidance of Constrained Areas and Staging of Extraction (2) Additional Specific Outcomes for Extractive Industry in the “Meridan Plains Extractive Resource Area” (Area A on Mooloolah Valley Planning Area Precinct Map [Map MVP1])</p> <p>02 The extractive industry avoids constrained areas and utilises a staged approach to site development that provides for:-</p> <p>(c) the progressive creation of a lake system that at all times:-</p> <p>(i) maintains or improves the integrity of the Mooloolah River and the flood storage capacity of the Mooloolah River floodplain;</p> <p>(ii) maintains, as far as practicable, the flow conveyance patterns of the Mooloolah River floodplain;</p> <p>The extractive industry provides for:-</p> <p>S2.1 (b) the avoidance of exploitation in areas identified as ‘Constrained Resource Area (Type B)’ on Figure 8.6 (Meridan Plains Extractive Resource Area Master Plan) until such time as outstanding strategic coastal management, flooding and hydrological issues are investigated and resolved;</p> <p>Lake and Site Management</p> <p>07 The extractive industry is established and operated in accordance with:-</p> <p>(ii) identifies and addresses all environmental and flooding impacts and the measures to manage the potential impacts;</p> <p>9.10 Stormwater Management Code</p> <p>9.1 0.1 Overall Outcomes</p> <p>(2) The Overall Outcomes sought for the Stormwater Management Code are that development incorporates stormwater quality and quantity management systems which are planned, designed, constructed, implemented and maintained so that:</p> <p>(a) stormwater originating from development is of such a quality that:</p> <p>(ii) the natural water flow regime in waterways, wetlands and groundwaters is maintained to minimise the impact on flooding, contamination, erosion and scouring;</p> <p>9.1 0.2 Specific Outcomes</p> <p>01 Development incorporates stormwater management systems which:</p> <p>(c) minimise flooding;</p> <p>(f) protection of floodplains;</p> <p>Specific Outcome</p> <p>Infrastructure Capacity</p> <p>06 Infrastructure is capable of meeting the increased demand upon:-</p> <p>(e) stormwater and flooding infrastructure;</p> <p>9.7 Landscaping Code</p> <p>9.7 .2 Specific Outcomes</p> <p>SI5.7 Mounding</p> <p>Where earth mounds are incorporated as buffers they:</p> <p>(c) ensure no adverse flooding or stormwater drainage implications result either on the site or on adjoining sites</p>
ROL Code	Yes
Details	<p>9.9 Reconfiguring a Lot Code</p> <p>9.9 .3 Specific Outcomes</p> <p>Specific Outcome</p> <p>Lot layout, Sizes and Dimensions</p> <p>02 Lot size and dimensions:</p> <p>(e) take account of and respond sensitively to site constraints or risks such as steep slope, slope instability, bushfire and flooding;</p> <p>Probable Solution</p> <p>S2.3 Lots contain an area at least 0.5 metres above the calculated 100 year ARI flood level that complies with the following:</p> <p>Probable Solution</p> <p>S2.6 Lots containing land subject to one or more of the following constraints:</p> <p>(d) land below the 100 year ARI flood level;</p> <p>Transport and Access</p> <p>Probable Solution</p> <p>S8.3 Lots have direct access onto a dedicated road or are connected to a dedicated road by an access which is above the calculated 5 year ARI flood level, the construction of which does not raise the flood levels on adjoining parcels of land or affect flood flows generally.</p> <p>Infrastructure Capacity</p> <p>011 Infrastructure is capable of meeting the increased demand upon:</p> <p>(e) stormwater and flooding infrastructure;</p> <p>Openspace and Access Links</p> <p>014 Open space is provided which:</p> <p>(e) facilitates appropriate measures for stormwater and flood management;</p>
Overlay Codes	Yes
Details	<p>7.9 Flood Management Code</p> <p>7.9.2 Overall Outcomes</p> <p>(1) The overall outcomes are the purpose of the Flood Management Code.</p> <p>(2) The overall outcomes sought for the Flood Management Code are the following:</p> <p>(a) development occurring in areas subject to flooding is regulated;</p> <p>(b) Caloundra City’s floodplains and the flood conveyance capacity of Caloundra City’s waterways are protected;</p> <p>(c) associated works, siting and building levels of development avoid or otherwise lessen the adverse impacts of flooding; and</p> <p>(d) the risk of loss of life, injury or damage to property and infrastructure is limited.</p> <p>7.9.3 Specific Outcomes</p> <p>Development in Areas Subject to Flooding</p> <p>01 Development is undertaken such that:</p> <p>(a) there is no afflux in flood levels when the completed development scenario (including cumulative potential) is compared with the pre-development scenario (i.e. no increase in peak water level);</p> <p>(b) there is no loss of flood storage volume;</p>

	<p>(c) natural hydrological systems are protected;</p> <p>(d) natural landforms and drainage lines are maintained to protect the hydraulic performance of waterways; and</p> <p>(e) there is no detrimental impact on flood evacuation routes or to counter disaster procedures or systems.</p> <p>S1.1 Built structures and filling and excavation work do not occur on land identified on a Planning Area Overlay Map as being subject to the Flood Management Overlay.</p> <p>Development Levels and Access</p> <p>O2 New lots are located at a suitable height above flood levels to protect development from the risk of flooding.</p> <p>S2.1 Reconfiguring a lot provides for minimum lot sizes and flood free building sites.</p> <p>Note: Section 9.9 (Reconfiguring a Lot Code) sets out the minimum lot size and flood free building site requirements.</p> <p>O3 Access to building sites within lots is at an elevation that is safely accessible and trafficable during a 100 year ARI flood event.</p> <p>S3.1 No probable solution prescribed.</p> <p>O4 Development floor levels are provided at an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk.</p> <p>S4.1 Floor levels for essential community uses (e.g. hospitals and emergency services) are a minimum of 1 metre above the 100 year ARI flood level or 1 metre above the highest recorded flood level in areas where no design flood levels have been previously determined.</p> <p>S4.2 Floor levels for residential, business and commercial, and industrial buildings are a minimum of:</p> <p>(a) 500 millimetres above the 100 year ARI flood level; or</p> <p>(b) 600 millimetres above the highest recorded flood level in areas where no design flood levels have previously been determined.</p> <p>Public Infrastructure</p> <p>O5 Public infrastructure is located with due regard to flood risks associated with public safety, function and economic loss.</p> <p>S5.1 Mechanical and electrical works (e.g. pump stations, electricity substations) are located 500 millimetres above the 100 year ARI flood level.</p> <p>S5.2 Roads required as evacuation routes are designed and constructed to be safely accessible and trafficable during a 100 year ARI flood event.</p> <p>S5.3 Road drainage design (kerb and channelling and cross-drainage) complies with Section 5-28 and 5-29 of the Queensland Urban Drainage Manual</p>
PSPs	Yes
Details	<p>Planning Scheme Policies Relating to Part 7 – Overlay Codes</p> <p>11.6.10 Guidance Relevant to Flood Management Code</p> <p>“ARI” is a term used in the Flood Management Code and means the Average Recurrence Interval of a particular flood event, e.g. 100 year ARI means an event that occurs on average only once every 100 years. Guidance for Achieving Specific Outcome O1</p> <p>(1) The achievement of Specific Outcome O1 of the Flood Management Code may be demonstrated by a Flood and Stormwater Impact Report prepared by a competent person, which properly addresses, describes or includes:</p> <p>(a) accurate hydrologic and hydraulic modelling of the waterway network and assessment of existing flooding and flood levels of major waterway systems;</p> <p>(b) modelling of the 5, 10, 50 and 100 year ARI flood events to determine locations that are prone to flooding and the recommended management systems for mitigation;</p> <p>(c) where appropriate, a qualitative assessment of the piped drainage and hydraulic analysis of the drainage network; and</p> <p>(d) an assessment of the potential impact of development and land use change on water quality, waterways and the general environment.</p> <p>11.6.11 Guidance Relevant to Habitat and Biodiversity Code</p> <p>(3) Habitat Links</p> <p>(b) Habitat links are maintained, protected and improved whenever an opportunity is identified and should incorporate the following principles:</p> <p>(v) land unsuitable for development, including flood-prone land or steep land is also used to provide links;</p> <p>11.10.3 Guidance Relevant to the Landscaping Code</p> <p>Landscape Plan</p> <p>(a) The Landscape Plan is appropriately scaled and annotated, including written specifications, that clearly indicates the following:</p> <p>(ii) Site Analysis and Opportunities</p> <p>site restrictions (easements, flood lines, airport noise contours);</p> <p>11.12 Reconfiguring a Lot Planning Scheme Policy</p> <p>(9) The achievement of Specific Outcome O17 (Density Bonuses for Environmental Protection) of the Reconfiguring a Lot Code may be demonstrated by using the following approach:</p> <p>(c) However, where additional lands are provided for vegetation protection by the applicant (above and beyond that required by the Reconfiguring a Lot Code), the land included in the Open Space - Conservation and Waterways Precinct (where not located below the 100 year ARI flood level) may be included in the calculation of the total site area for the purposes of identifying the maximum number of lots.</p> <p>11.13 Structure Planning Scheme Policy</p> <p>11.13.4 Specific Outcome Guidance</p> <p>Guidance for Achieving Specific Outcome O1 and O2</p> <p>(ii) Residential Development Structure Planning Principles</p> <p>(C) development on land subject to physical constraints (e.g. steep slopes, flood prone land) is designed to mitigate the development's impact on these constraints or to otherwise limit the potential impacts of the constraints on development;</p> <p>11.14a.5 Ecological and Landscape Protection Outcomes</p> <p>General Advice for Ecological and Landscape Protection Outcomes</p> <p>(2) The following is general advice about satisfying the ecological and landscape protection outcomes:-</p> <p>(b) The ecological and landscape protection outcomes are primarily intended to be satisfied by the following:-</p> <p>(A) on flood prone land identified as being unsuitable to be filled for urban purposes;</p> <p>(7) For the purposes of Specific Outcome O10 in Section 12.5.3 of the Palmview Structure Plan Area Code the following is advice about satisfying the assessment criteria in the code for the scenic amenity and highway acoustic buffer outcomes:-</p> <p>(a) The Palmview Master Planned Area forms an important part of the distinctive green space or intra-urban break between Caloundra and Maroochydore and is visually significant in relation to views of the Mooloolah River floodplain landscape from the Bruce Highway.</p> <p>11.14a.12 Integrated Water Cycle Management Infrastructure Network Outcomes</p> <p>General Advice for Integrated Water Cycle Management Infrastructure Network Outcomes</p> <p>2) The following is general advice about satisfying the integrated water cycle management infrastructure network outcomes:-</p> <p>(a) The integrated water cycle management infrastructure network outcomes seek to ensure that development within the Master Planned Area achieves the following:-</p> <p>(v) protects people, property and the built environment from flooding and stormwater damage;</p> <p>(vi) limiting the extent of development for urban purposes to a defined area that has been determined to be suitable for urban development</p>

	<p>which is above the defined flood event or has been determined to be suitable to be filled;</p> <p>Standards for the Urban Open Space Infrastructure Network Outcomes</p> <p>(3) For the purposes of Specific Outcome O36(b) in Section 12.5.21 of the Palmview Structure Plan Area Code the following are the standards identified in the code for the urban open space infrastructure network:-</p> <p>(c) Development ensures that urban open space achieves the following levels of flood immunity:-</p> <p>(i) regional recreation parks have at least 20% of the total area above the 100 year ARI climate change scenario (defined flood event) and the remaining area above the 20yr ARI climate change scenario;</p> <p>(ii) district sport and recreation parks have at least 20% of the total area above the 100 year ARI climate change scenario (defined flood event), with the remaining area above the 20 year ARI climate change scenario; and</p> <p>(iii) local recreation parks are located entirely above the 100 year ARI climate change scenario (defined flood event).</p> <p>Refer to Table 11.8 Compliance Assessment Requirements</p>
Other	Yes
Details	<p>2.4 Desired Environmental Outcome No. 3 - Natural Assets and Systems</p> <p>(3) Water resources such as the Pumicestone Passage, the Mooloolah, Mary (including Obi Obi Creek) and Stanley Rivers and their tributaries and groundwater where:</p> <p>(b) The occurrence of filling and other potentially damaging activities within floodplains is avoided.</p> <p>2.7 Desired Environmental Outcome No. 6 – Infrastructure</p> <p>(6) The flood carrying capacity of waterways, wetlands and floodplains is not adversely affected by development.</p>
Op Works Code	Yes
Details	<p>9.3 Civil Works Code</p> <p>9.3 .2 Specific Outcomes</p> <p>Infrastructure Capacity</p> <p>O6 Infrastructure is capable of meeting the increased demand upon:-</p> <p>(e) stormwater and flooding infrastructure;</p> <p>9.6 Filling and Excavation Code</p> <p>9.6 .1 Overall Outcomes</p> <p>(2) The Overall Outcomes sought for the Filling and Excavation Code are that excavation and filling does not adversely or unreasonably impact on the environment or on adjacent properties having regard to:</p> <p>(c) flooding or drainage;</p> <p>Specific Outcome</p> <p>Flooding and Drainage</p> <p>O3 Filling or excavation does not exacerbate flooding or existing drainage regimes.</p> <p>Probable Solutions</p> <p>S3.1 Filling or excavation is not undertaken on land identified on a Planning Area Overlay Map as being subject to the Flood Management Overlay.</p> <p>S3.2 Filling or excavation does not divert any perennial or ephemeral watercourse outside of site boundaries.</p> <p>S3.3 Filling or excavation does not detain runoff on the site nor raise or lower the hydraulic gradeline upstream or downstream of the site, for any flood event.</p> <p>9.3 Civil Works Code</p> <p>9.3 .2 Specific Outcomes</p> <p>Infrastructure Capacity</p> <p>O6 Infrastructure is capable of meeting the increased demand upon:-</p> <p>(e) stormwater and flooding infrastructure;.</p>
Overlay Code	Yes
Details	<p>7.9 Flood Management Code</p> <p>7.9.2 Overall Outcomes</p> <p>(1) The overall outcomes are the purpose of the Flood Management Code.</p> <p>(2) The overall outcomes sought for the Flood Management Code are the following:</p> <p>(a) development occurring in areas subject to flooding is regulated;</p> <p>(b) Caloundra City's floodplains and the flood conveyance capacity of Caloundra City's waterways are protected;</p> <p>(c) associated works, siting and building levels of development avoid or otherwise lessen the adverse impacts of flooding; and</p> <p>(d) the risk of loss of life, injury or damage to property and infrastructure is limited.</p> <p>7.9.3 Specific Outcomes</p> <p>Development in Areas Subject to Flooding</p> <p>O1 Development is undertaken such that:</p> <p>(a) there is no afflux in flood levels when the completed development scenario (including cumulative potential) is compared with the pre-development scenario (i.e. no increase in peak water level);</p> <p>(b) there is no loss of flood storage volume;</p> <p>(c) natural hydrological systems are protected;</p> <p>(d) natural landforms and drainage lines are maintained to protect the hydraulic performance of waterways; and</p> <p>(e) there is no detrimental impact on flood evacuation routes or to counter disaster procedures or systems.</p> <p>S1.1 Built structures and filling and excavation work do not occur on land identified on a Planning Area Overlay Map as being subject to the Flood Management Overlay.</p> <p>Development Levels and Access</p> <p>O2 New lots are located at a suitable height above flood levels to protect development from the risk of flooding.</p> <p>S2.1 Reconfiguring a lot provides for minimum lot sizes and flood free building sites.</p> <p>Note: Section 9.9 (Reconfiguring a Lot Code) sets out the minimum lot size and flood free building site requirements.</p> <p>O3 Access to building sites within lots is at an elevation that is safely accessible and trafficable during a 100 year ARI flood event.</p> <p>S3.1 No probable solution prescribed.</p> <p>O4 Development floor levels are provided at an acceptable level of flood immunity, providing for the protection of development at an acceptable level of risk.</p> <p>S4.1 Floor levels for essential community uses (e.g. hospitals and emergency services) are a minimum of 1 metre above the 100 year ARI flood level or 1 metre above the highest recorded flood level in areas where no design flood levels have been previously determined.</p> <p>S4.2 Floor levels for residential, business and commercial, and industrial buildings are a minimum of:</p>

	<p>(a) 500 millimetres above the 100 year ARI flood level; or</p> <p>(b) 600 millimetres above the highest recorded flood level in areas where no design flood levels have previously been determined.</p> <p>Public Infrastructure</p> <p>O5 Public infrastructure is located with due regard to flood risks associated with public safety, function and economic loss.</p> <p>S5.1 Mechanical and electrical works (e.g. pump stations, electricity substations) are located 500 millimetres above the 100 year ARI flood level.</p> <p>S5.2 Roads required as evacuation routes are designed and constructed to be safely accessible and trafficable during a 100 year ARI flood event.</p> <p>S5.3 Road drainage design (kerb and channelling and cross-drainage) complies with Section 5-28 and 5-29 of the Queensland Urban Drainage Manual</p>
PSPs	Yes
Details	<p>Planning Scheme Policies Relating to Part 7 – Overlay Codes</p> <p>11.6.10 Guidance Relevant to Flood Management Code</p> <p>“ARI” is a term used in the Flood Management Code and means the Average Recurrence Interval of a particular flood event, e.g. 100 year ARI means an event that occurs on average only once every 100 years. Guidance for Achieving Specific Outcome O1</p> <p>(1) The achievement of Specific Outcome O1 of the Flood Management Code may be demonstrated by a Flood and Stormwater Impact Report prepared by a competent person, which properly addresses, describes or includes:</p> <p>(a) accurate hydrologic and hydraulic modelling of the waterway network and assessment of existing flooding and flood levels of major waterway systems;</p> <p>(b) modelling of the 5, 10, 50 and 100 year ARI flood events to determine locations that are prone to flooding and the recommended management systems for mitigation;</p> <p>(c) where appropriate, a qualitative assessment of the piped drainage and hydraulic analysis of the drainage network; and</p> <p>(d) an assessment of the potential impact of development and land use change on water quality, waterways and the general environment.</p>
Other	No
Details	
Other Info	

LGA	Sunshine Coast
Planning Scheme	Maroochy
Adopted	22/06/1905
Flood Amendments	Yes
SPP Compliance	Yes
Details	<p>State Planning Policies</p> <p>In accordance with section 18(5)(b)(i) of Schedule 1 of the repealed Integrated Planning Act 1997, The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme:-</p> <p>(4) State Planning Policy 1/03: Mitigating the Adverse Affects of Flood, Bushfire and Landslide.</p> <p>Maroochy</p>
Mapped Q100 / DFE	Yes
Details	Q100
Structure Plans (Etc)	Yes
Details	<p>MAROOCHYDORE PRINCIPAL ACTIVITY CENTRE STRUCTURE PLAN</p> <p>2.1.7 Relationship to State Planning Instruments</p> <p>(1) The Minister has identified that the SEQ Regional Plan as it applies to the Master Planned Area is appropriately reflected in the Maroochydhore PAC Structure Plan.</p> <p>(2) The Minister has identified that the following state planning policies are appropriately reflected in the Maroochydhore PAC Structure Plan:-</p> <p>(c) SPP 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide;</p> <p>Defined flood event means the modelled 1:100 year Average Recurrence Flood level with a provisional allowance based on the projection by the Intergovernmental Panel on Climate Change (IPCC) for the effects of climate change on rainfall intensity and sea level rise as specified in the Planning Scheme Policy for the Maroochydhore PAC Structure Plan.</p> <p>Minimum habitable floor level means the minimum level of a lot to which the floor level of a habitable room must be built to satisfy the flood immunity requirements as specified in the Maroochydhore PAC Structure Plan Area Code.</p> <p>2.2.8 Strategic Outcome 5 – Environment</p> <p>(5) Development in the Master Planned Area enhances environmental values through well planned urban open space that also assists in the management of flood and storm surge risk and increasing community resilience to climate change.</p> <p>2.2.12 Strategic Outcome 9 – Open Space Network</p> <p>(1) Development in the Master Planned Area provides for an integrated urban open space infrastructure network which:-</p> <p>(h) performs flood mitigation and stormwater management functions that minimise risk from natural hazards;</p> <p>Specific Outcome</p> <p>Natural Hazards</p> <p>022 Development is designed to minimise the exposure and risk to people (including residents, employees and visitors) and property from fresh water flooding and storm tide inundation, having regard to the appropriate parameters for climate change.</p> <p>2.5.5 Overall Outcomes for the Dalton Drive West Precinct</p> <p>(11) Development responds to land constraints, including but not limited to topography, bushfire and flooding constraints.</p> <p>Specific Outcome</p> <p>Intent for the Dalton Drive West Precinct</p> <p>02 Development complies with the following intent for the precinct:-</p> <p>(j) development provides for significant urban open space to be created across the northern-eastern part of the precinct to the east of the Main street so as to create a “green gateway” character, accommodate bicycle and pedestrian infrastructure to the Parkland Sub-precinct in the Maroochydhore Central Precinct (Master Plan Unit) and accommodate flood conveyance functions;</p> <p>2.5.7 Overall Outcomes for the Dalton Drive South Precinct</p> <p>(8) Development responds to land constraints, including flooding constraints.</p> <p>2.5.11 Overall Outcomes for the Government Precinct</p> <p>(6) Development is designed to withstand and appropriately respond to the predicted impacts of river flooding and storm surge.</p> <p>Specific Outcome</p> <p>Intent for the Government Precinct</p> <p>01 Development complies with the following intent for the precinct:-</p> <p>(g) development adequately takes into account flood risk and hazards.</p> <p>2.5.13 Overall Outcomes for the Ocean Street Precinct</p> <p>(8) Development is designed to withstand and appropriately respond to the predicted impacts of river flooding and storm surge.</p> <p>Intent for the Ocean Street Precinct</p> <p>01 Development complies with the following intent for the precinct:-</p> <p>(f) development adequately takes into account flood risk and hazard.</p> <p>2.5.15 Overall Outcomes for the Maroochydhore North Precinct</p> <p>(7) Development responds to land constraints, including flooding constraints.</p> <p>2.5.17 Overall Outcomes for the Maroochy Boulevard Precinct</p> <p>(12) Development responds to land constraints, including flooding constraints.</p> <p>2.5.19 Overall Outcomes for the Plaza Parade Precinct</p> <p>(7) Development responds to land constraints, including flooding constraints.</p> <p>2.5.21 Overall Outcomes for the Sunshine Plaza Precinct (Master Plan Unit)</p> <p>(15) Development responds to land constraints, including flooding constraints.</p> <p>2.5.23 Overall Outcomes for the Maroochydhore Central Precinct (Master Plan Unit)</p> <p>(12) Development responds to land constraints, including flooding constraints.</p> <p>Specific Outcome</p> <p>Intent for the Parkland Sub-Precinct</p> <p>01 Development complies with the following intent for the Parkland Sub-precinct:-</p> <p>(b) development ensures that the Maud Canal provides a key landscape and recreational feature and an appropriate level of flood immunity for the balance of the Maroochydhore Central Precinct (Master Plan Unit);</p> <p>Specific Outcome</p> <p>022 Development provides for the following:-</p> <p>(a) the finished ground surface levels of new lots following building work to be above the defined flood event to protect the development from the risk of flooding;</p>

	<p>(b) undeveloped lots which will be subject to subsequent building work that is likely to involve basement excavation may temporarily have lower ground surface levels which may be raised to above the defined flood event at the time of building work utilising fill material from basement excavation works;</p> <p>(c) all lots are to be free draining, avoid pondage of stormwater and are not to cause any adverse amenity impact or other nuisance.</p> <p>Permeability and Accessibility</p> <p>025 Development designs the Parkland Sub-precinct and in particular the Maud Canal waterway to provide for flood immunity for the balance of the Maroochydore Central Precinct (Master Plan Unit) for the defined flood event.</p> <p>Natural Hazards</p> <p>07 Development provides an efficient drainage network which:-</p> <p>(b) minimises flood risk from major rainfall events;</p> <p>Acceptable Solutions</p> <p>S27.1 Development provides development and storm water drainage infrastructure in accordance with a flood and drainage study submitted to and approved by the Council.</p> <p>Road Transport Infrastructure Network</p> <p>010 Development provides road transport infrastructure which achieves the following:-</p> <p>(h) where required for evacuation purposes is established above the defined flood event;</p> <p>Urban Open Space Infrastructure Network</p> <p>Specific Outcome</p> <p>49 Development provides for the urban open space infrastructure network to accommodate environmental and flood mitigation functions with appropriate consideration for the impacts of climate change</p>
Local Area Plans	Yes
Details	<p>7.6 Yandina East Industrial Local Area Code</p> <p>The purpose of this code is to achieve the following overall outcomes:</p> <p>-the floodplain is protected and the conveyance of flood waters is not restricted by development;</p> <p>YANDINA EAST INDUSTRIAL AREA BUSINESS AND INDUSTRY PRECINCT</p> <p>P1 Development in the Yandina East Business and Industry Precinct is consistent with the Preferred Development Outcomes Map (Figure 7.6.1) and:</p> <p>(e) does not adversely impact on the floodplain and the conveyance of flood waters, North Maroochy River or the unnamed waterway;</p> <p>SUSTAINABLE CANE LAND PRECINCT</p> <p>P2 Development in the Sustainable Cane Land Precinct is consistent with the Preferred Development Outcomes Map (Figure 7.6.1) and</p> <p>e) does not impact on the conveyance of flood waters;</p> <p>(g) Rehabilitates the floodplain/drainage area with plantings at a density and type which does not adversely impact on the conveyance of flood waters or local drainage.</p> <p>FLOODING</p> <p>P4 Development within the Flood Prone Land on Regulatory Map 1.5 (Flood Prone and Drainage Constraint Areas) achieves the following outcomes;</p> <p>(a) consistency with Preferred Development Outcomes Map (Figure 7.6.1);</p> <p>(b) filling is restricted to the 'Proposed Development' area as shown on 100 year ARI Flood Hazard Map (Figure 7.6.2);</p> <p>(c) for flood events up to and including 100 year ARI, development (including filling) does not adversely impact on the conveyance of flood waters or local drainage</p> <p>(d) the floodplain is protected and enhanced with the provision of rehabilitated riparian buffer corridors to the Maroochy River and the unnamed waterway; and</p> <p>(e) provides adequate resilience to future climate change for the life of the infrastructure.</p> <p>Acceptable Measures</p> <p>A4.1 Building floor levels within the 'Proposed Development' Area as shown on 100 year ARI Flood Hazard Map (Figure 7.6.2) are at least 900 mm above the current 100 year ARI flood level estimates.</p> <p>ROAD LAYOUT</p> <p>P1 Development improves the local road network to provide for safe, efficient pedestrian, bicycle, public transport and vehicular movement by providing:</p> <p>(a) the road network consistent with Preferred Development Outcomes Map (Figure 7.6.1) and 100 year ARI Flood Hazard Map (Figure 7.6.2);</p> <p>Performance</p> <p>P2 The layout of streets, lot and infrastructure responds appropriately to environmental features of the site or locality, by:</p> <p>(e) maintaining natural drainage features and floodways</p>
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>2.7 Code for Integrated Water Management</p> <p>PURPOSE</p> <p>(g) Adverse impacts, including cumulative impacts, as a result of flooding are minimised and unacceptable risk* to people and property is not created.</p> <p>* 'Unacceptable risk' is defined in State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p> <p>(3) Flooding*</p> <p>*Council may request the Integrated Water Management Plan to include a flood assessment element that demonstrates compliance with these Performance Criteria and Acceptable Measures.</p> <p>P1 Development does not result in:</p> <ul style="list-style-type: none"> • adverse impacts on flood conveyance capacity; • unacceptable risk to people's safety; and • adverse impacts on the capacity to use land within the floodplain. <p>A1.1 In areas identified on Regulatory Map 1.5 – Flood Prone and Drainage Constraint Areas Special Management Area:</p> <p>(a) works do not involve:</p> <p>(i) any physical alteration to a waterway or floodway including vegetation clearing⁵; or</p> <p>(ii) net filling exceeding 50m³;</p> <p>(b) any reductions of on site flood storage capacity is avoided and any changes to depth, duration and velocity of floodwaters of all floods up to and including the 100year ARI are contained within the site; OR</p>

	<p>(c) there is no change in the flood characteristics of the 100 year ARI outside the subject site in ways that result in</p> <p>(i) loss of flood storage; or</p> <p>(ii) loss of/changes to flow paths; or</p> <p>(iii) acceleration or retardation of flows; or</p> <p>(iv) any reduction of warning times elsewhere on the floodplain.</p> <p>A1.2 Stormwater peak discharges and levels are equivalent to the pre-developed condition.</p> <p>A1.3 Where a “regulation line” has been set by Council to define the limit to which development may encroach onto a floodplain development is undertaken outside such “regulation line”.</p> <p>P2 For all floods up to and including the 100 year ARI:</p> <ul style="list-style-type: none"> • the safety of people on the site is maintained; • potential damage to property on the site is minimised; and <p>A2.1 (a) Development is sited on land that would not be subject to flooding during the 100 year ARI flood event. OR</p> <p>(b) There is no increase in the number of people living or working on the site, except where the premises are occupied on a short-term or intermittent basis (e.g. by construction / maintenance workers, certain agricultural and forestry workers). OR</p> <p>(c) Development complies with the standards for flood immunity set out in Planning Scheme Policy No. 5 – Operational Works.</p> <p>A2.2 Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood water (e.g. electrical switchgear and motors, water supply pipeline air valves) are:</p> <p>(a) located in accordance with the standards for flood immunity set out in Planning Scheme Policy No. 5 – Operational Works; OR</p> <p>(b) designed and constructed to exclude floodwater intrusion/infiltration.</p> <p>A2.3 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the 100 year ARI flood event.</p> <p>P3 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk.</p> <p>A3.1 (a) The manufacture or storage in bulk of hazardous materials takes place above the 100 year ARI flood level. OR</p> <p>(b) Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of floodwaters from a 100 year ARI flood.</p> <p>2.8 Code for Erosion and Sediment Control</p> <p>A2.1 It is demonstrated that the development does not involve the installation of necessary water quality control measures, or emplacement of any fill, below the one in two year ARI flood level</p> <p>3.2 Code for Development and Use of Intensive Animal Industries and Aquaculture</p> <p>performance criteria</p> <p>(e) is not subject to flooding;</p> <p>Acceptable measures</p> <p>A1.1 The site the premises are developed on:</p> <ul style="list-style-type: none"> - is not on land subject to flooding by the 100 year ARI event; <p>4. Codes for Residential Development and Use</p> <p>PURPOSE</p> <p>To ensure acceptable levels of flood immunity for people and buildings.</p> <p>P1 Floor levels of Detached houses and Display homes are provided at a height above flood levels at which the safety of people on the site is maintained and potential damage to property on the site is minimised.</p> <p>A1.1 In any Flood Prone or Drainage Constraint Area as shown on Regulatory Map No 1.5, the floor levels of all buildings¹⁵ are:</p> <p>(a) the greater of:</p> <p>(i) 2.5m AHD (to provide protection from storm surge events); or</p> <p>(ii) 400mm above the 100 year ARI flood level; or</p> <p>(iii) 600mm above the highest recorded flood level; OR</p> <p>(b) where an extension to an existing building, not less than the floor level of existing Habitable rooms.</p> <p>A1.2 Net filling in any Flood Prone or Drainage Constraint Area as shown on Regulatory Map No 1.5 does not exceed 50m³.</p> <p>4.9 Code for Caretaker’s Residence</p> <p>PURPOSE</p> <p>(d) to ensure acceptable levels of flood immunity for people and buildings.</p> <p>(9) Element: Flooding</p> <p>Performance Criteria</p> <p>p1 Floor levels of detached houses and display homes are provided at a height above flood levels at which the safety of people on the site is maintained and potential damage to property on the site is minimised.</p> <p>A1.1 In any Flood Prone or Drainage Constraint Area as shown on Regulatory Map No 1.5:</p> <p>(a) no new Detached houses or Display homes are constructed other than extensions to existing buildings; or</p> <p>(b) the floor levels of all habitable rooms are the greater of:</p> <p>(i) 2.5m AHD (to provide protection from storm surge events);or</p> <p>(ii) 400mm above the 100 year ARI flood level; or</p> <p>(iii) where design flood levels have not yet been determined – 600mm above the highest recorded flood level; other than extensions to existing buildings where the floors of existing habitable rooms are below the levels nominated.</p> <p>OR</p> <p>A1.2 Net filling In any Flood Prone or Drainage Constraint Area as shown on Regulatory Map No 1.5 does not exceed 50m³.</p>
ROL Code	Yes
Details	<p>8. CODE FOR RECONFIGURING LOTS</p> <p>P2 The layout of streets, lot and infrastructure responds appropriately to environmental features of the site or locality, by:</p> <p>(e) maintaining natural drainage features and floodways</p>
Overlay Codes	Yes
Details	<p>Flood Prone and Drainage Constraint Areas</p> <ul style="list-style-type: none"> - Triggers the Integrated Water Management Code
PSPs	Yes

Details	<p>MAROOCHY SHIRE COUNCIL PLANNING SCHEME POLICY NO. 9</p> <p>Reconfiguring Lots</p> <p>2.4 Information to Support Lot Reconfiguration in a Master Planned Community</p> <p>(a) An Opportunities (views, breezes, paths, edges etc) and Constraints (slope, road noise, land use conflicts, storm paths, flooding, ASS areas, vegetation constraints, etc) Analysis plan;</p> <p>2.5 Other Information</p> <p>Flooding Study;</p> <p>8.2 Surface Water Management</p> <p>f) Discharges to waterways should mimic natural flows in terms of magnitude, seasonality, frequency and variability. Stream flows immediately downstream during and after construction should mimic the natural range for at least the 2 year ARI event, and desirably the 1 year ARI event, to minimise channel expansion.</p> <p>l) Where works are to be conducted within waterways and stormwater drainage, the works must be timed to minimise the potential for exposure to flood events, having regard for the three-day weather Bureau of Meteorology forecast, as far as practicable.</p>
Other	Yes
Details	<p>3.2 Administrative Definitions</p> <p>“Flood prone land” means that land which is below the 100 year Average Recurrence Interval (ARI) flood level of the Maroochy, Mary and Mooloolah Rivers, their tributaries and any other permanently running waterway in the Shire;</p> <p>“Floodway” for the purposes of the special management area assessment tables and the Integrated Water Management Code, has the meaning given to it in State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide;</p> <p>3. Urban Development</p> <p>3.5 Objectives and Implementation Measures</p> <p>3.5.4 To Ensure That The Physical Environment Can Sustain Urban and Rural Residential Development Implementation</p> <p>5. All applications relating to land in flood-prone areas are to describe the known flood-plains and the characteristics of natural drainage and detail the drainage, landfilling, open space allocation and site planning to be adopted in addressing flood issues.</p> <p>3.5.3 To Encourage A Comprehensive and Integrated Set of Performance and Prescriptive Standards To Cover Low and Medium Density Residential Development</p> <p>2. In some parts of the Shire, additional criteria will be applied as dictated by local conditions, which may relate to matters such as the protection of significant vegetation, natural resources, flood prone land and steeply sloping land. These are identified by the Special Management Areas and Planning Areas and Precincts.</p> <p>5. Industry</p> <p>5.5 Objectives and Implementation Measures</p> <p>5.5.1 To Identify Areas of Land for Possible Future Investigation for Industrial Purposes</p> <p>(2) Further investigation to determine the suitability of these sites will have to address issues such as:</p> <ul style="list-style-type: none"> • flooding; <p>10.0 Natural Resources</p> <p>10.5.3 To Protect or Provide Connections and Linkages to or Between Areas of Conservation Significance</p> <p>Implementation</p> <p>(2) In waterway situations, corridors should be preserved having regard to:</p> <ul style="list-style-type: none"> • other constraints such as flooding or urban land uses which may encumber the land; <p>16. Stormwater Drainage and Floodprone Land</p> <p>Refer whole chapter</p> <p>VOLUME 3</p> <p>2. GENERAL STATEMENTS OF INTENT FOR PRECINCT CLASSES</p> <p>2.2 General Intent for Residential Precincts</p> <p>(2) Neighbourhood Residential</p> <p>Council intends that all residential development should respond to and respect local climate, landscape and character. This includes the provision of continuous and linked open space corridors along rivers, creeks and other major drainage lines intended to be developed for multiple use purposes which may include:</p> <ul style="list-style-type: none"> • serving floodway and drainage functions, and protect water quality; <p>3.1.3 Key Character Elements</p> <p>(3) Environmental Values</p> <p>(e) The natural drainage and flooding characteristics of Cornmeal Creek and the Maroochy River are to be recognised as a constraint to the built form.</p> <p>(8) Maroochydore Promenade (Precinct Class = Multi-storey Residential)</p> <p>Landscape and Built Form</p> <p>This precinct is located in proximity to the Maroochy River, consequently, properties within this precinct may be subject to predicted river flooding and storm surge.</p> <p>(9) Picnic Point (Precinct Class = Multi-storey Residential)</p> <p>This precinct is located in proximity to the Maroochy River, consequently, properties within this precinct may be subject to predicted river flooding and storm surge.</p> <p>(10) Maroochy Riverfront (Precinct Class = Mixed Housing)</p> <p>This precinct is located proximate to the Maroochy River and consequently properties within the precinct may be subject to the effects of river flooding and storm surge.</p> <p>(12) Maroochy Waters Local Centre (Precinct Class = Local Centre)</p> <p>This precinct is located in proximity to the Maroochy River, consequently, parts of the precinct may be subject to the effects of river flooding and storm surge.</p> <p>(13) Maroochy North-West Mixed Housing (Precinct Class = Mixed Housing)</p> <p>This precinct is located in proximity to the Maroochy River, consequently, properties within this precinct may be subject to predicted river flooding and storm surge.</p> <p>(14) Maroochy Waters (Precinct Class = Neighbourhood Residential)</p> <p>This precinct is located in proximity to the Maroochy River, consequently, properties within this precinct may be subject to predicted river</p>

flooding and storm surge.

(15) Maroochy South- West (Precinct Class = Mixed Housing)

Land within this precinct has been developed for the purposes of a retirement village and residential care facility. As a portion of the land is low lying and subject to floodwater inundation, extensive filling was required to accommodate this development.

(17) Anzac Avenue Mixed Housing (Precinct Class = Mixed Housing)

This precinct is located in proximity to the Maroochy River and its tributaries, consequently, properties within this precinct may be subject to predicted river flooding and storm surge.

3 . S TATEMENTS OF DESIRED CHARACTER FOR PLANNING AREAS AND PRECINCTS

(17) Windsor Road (Precinct Class = Business and Industry)

flat land (although some is constrained by drainage and flooding).

Petrie Creek passes beside the Precinct. Any new development will be assessed having particular regard to potential adverse impacts on the quality of water entering or likely to enter the creek and any measures proposed to avoid or minimise such impacts. Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the creek, and its environmental values.

(18) Moreton Mill (Precinct Class = Core Industry)

Petrie Creek passes beside the Precinct. Any new development will be assessed having particular regard to potential adverse impacts on the quality of water entering or likely to enter the creek and any measures proposed to avoid or minimise such impacts. Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the creek, and its environmental values.

(22) Nambour Showgrounds (Precinct Class = Special Purpose)

Petrie Creek passes through the Precinct. Any new development will be assessed having particular regard to potential adverse impacts on the quality of water entering or likely to enter the creek and any measures proposed to avoid or minimise such impacts. Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the creek, and its environmental values.

3.3 Planning Area No. 3 Sippy Downs

3.3.2 Vision Statement

(iii) An Ecologically Sustainable Network of Habitats

In select places within the broad Mooloolah River floodplain, regional recreational uses may be provided, but in such a manner as to preserve the ecological integrity of the surrounding habitats.

(5) Stringybark Road West (Precinct Class = Master Planned Community)

Further north, the land is used for a number of low density rural related activities while the land within the Mountain Creek floodplain has been retained in a semi-natural state.

In assessing development applications in this Precinct, particular consideration will be given to:

protection of steep slopes and floodplain areas;

(8) Chancellor Park South (Precinct Class = Master Planned Community)

Urban development along Sippy Creek should:

- Be above the 100 year ARI flood level;

(5) Buderim Non-Urban (Precinct Class = General Rural Lands)

Intent

The lands in this Precinct, being mainly forested, provide a dramatic contrast to the urban development and rural uses that have occurred on other parts of the scarp, along the river floodplain and along the coast.

(8) Buderim North Hilltop (Precinct Class = Neighbourhood Residential)

The Precinct forms the top of the northern Buderim escarpment and is highly visible from the north, particularly from the Sunshine Coast

Motorway and Maroochy River floodplain

(5) Kuluin West (Precinct Class = Neighbourhood Residential)

Given that the Maroochy River and the Eudlo Creek Conservation Park are important resources within the Shire, any new development will be assessed having particular regard to potential adverse impacts on the quality of water entering or likely to enter the river and/or creek and any measures proposed to avoid or minimise such impacts. Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the waterways,

(6) Commercial Road West (Precinct Class = Core Industry)

Given that the Maroochy River and the Eudlo Creek Conservation Park are important resources within the Shire, any new development will be assessed having particular regard to potential adverse impacts on the quality of water entering or likely to enter the river and/or creek and any measures proposed to avoid or minimise such impacts. Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the waterways,

(7) Kuluin Business and Industry (Precinct Class = Business and Industry)

Given that the Maroochy River and the Eudlo Creek Conservation Park are important resources within the Shire, any new development will be assessed having particular regard to potential adverse impacts on the quality of water entering or likely to enter the river and/or creek and any measures proposed to avoid or minimise such impacts. Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the waterways,

(8) Kuluin North

(Precinct Class = General Rural Lands)

Intent

This Precinct is to intended to remain in rural use and includes small areas of identified Good Quality Agricultural Land on the floodplain of the Maroochy River/Eudlo Creek.

Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the waterways, and of the environmental values of the conservation park.

Landscape and Built Form

-measures to ensure an acceptable level of flood immunity and a no-worsening or improvement of flooding conditions in the area;

(7) Airport Industrial Park (Precinct Class = Business and Industry)

The Precinct's significant attributes are:

-flat land (with some drainage and flooding constraints required to be addressed through filling),

(11) North Shore Rural (Precinct Class = General Rural Lands)

Intent

-an area of land adjacent to the northern edge of the Pacific Paradise Precinct and to the west of the school severely constrained by flooding and

	<p>drainage problems,</p> <p>(11) North Shore Rural (Precinct Class = General Rural Lands)</p> <p>Preferred and Acceptable Uses</p> <p>-the issue of flooding,</p> <p>Landscape and Built Form</p> <p>Any development of the land within the Precinct and adjacent to the northern edge of the Pacific Paradise Precinct and to the west of the school is to provide for:</p> <p>- measures to ensure an acceptable level of flood immunity and a no-worsening or improvement of flooding conditions in the area,</p> <p>(12) Mudjimba (Precinct Class = Neighbourhood Residential)</p> <p>Some of this land has been previously proposed for residential use but much of the land in the Precinct is not considered suitable for conventional urban residential development due to locational constraints, flood susceptibility, wetland and ecological values, infrastructure provision and exposure to aircraft noise.</p> <p>(15) Twin Waters Residential (Precinct Class = Master Planned Community)</p> <p>Intent</p> <p>-resolve environmental constraints such as flooding, impacts on waterways hydrology and any acid sulphate soils</p> <p>(15) Twin Waters Residential (Precinct Class = Master Planned Community)</p> <p>Intent</p> <p>- resolve environmental constraints such as flooding, impacts on waterways hydrology and any acid sulphate soils</p> <p>Landscape and Built Form</p> <p>- environmental constraints in the Precinct including flooding, impacts on waterways hydrology and any acid sulphate soils</p> <p>(4) Coolum West Local Centre (Precinct Class = Local Centre)</p> <p>Any redevelopment of this Precinct must consider drainage and flooding issues.</p> <p>(7) Coolum West Gateway (Precinct Class = Master Planned Community)</p> <p>Intent</p> <p>Any redevelopment of land in this precinct needs to address flooding and drainage problems and have proper regard to the sensitive surrounding land uses.</p> <p>(1) Bli Bli South (Precinct Class = Neighbourhood Residential)</p> <p>Intent</p> <p>The landform in the precinct slopes gently towards the Maroochy River and Petrie Creek and effects a transition into the original floodplains.</p> <p>(2) Palmwoods Village Residential (Precinct Class = Neighbourhood Residential)</p> <p>Landscape and Built Form</p> <p>Such development is generally preferred to be situated at the rear of lots behind existing buildings wherever reasonably practicable but away from any low-lying land that may be floodprone.</p> <p>(5) Southern Slopes (Precinct Class = Neighbourhood Residential)</p> <p>It is intended that development of new premises generally avoid the flood-prone lands (ie. below RL 22 metres) in this Precinct and to provide open space corridors along the major drainage lines</p> <p>Given the flooding constraint, the presence of areas of remnant vegetation and the major drainage lines, it is preferred that subdivisional development in the area between Dunning Street and Palmwoods School Road be integrated (ie. involving more than four hectares of land) so that the desired pattern and balance of developed and open space areas can best be achieved.</p> <p>Landscape and Built Form</p> <p>Development in this Precinct should be particularly responsive to the varied environmental characteristics of the area by addressing the issues of flooding, remnant vegetation and land slope.</p> <p>(6) Hobson Street Hill (Precinct Class = Hillside Residential)</p> <p>Residential development should avoid any flood-prone land within the Precinct and should provide for the protection of the water quality and flow characteristics of Paynter's Creek.</p> <p>(8) Orange County Area (Precinct Class = Neighbourhood Residential)</p> <p>Landscape and Built Form</p> <p>Development in this Precinct should be particularly responsive to the varied environmental characteristics of the area by addressing the issues of flooding, remnant vegetation and surrounding rural use.</p> <p>(12) Jubilee Drive Area (Precinct Class = Neighbourhood Residential)</p> <p>Residential development should avoid any flood-prone land within the Precinct and acceptably flood-free access will be required.</p> <p>(5)Yandina Gateway Industrial (Precinct Class = Core Industry)</p> <p>Intent</p> <p>Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the river, and its environmental values.</p> <p>(6) Old Gympie Road (Precinct Class = Neighbourhood Residential)</p> <p>The potential for this Precinct for urban development may be constrained by low lying flood prone land closer to the South Maroochy River. It is intended that development should generally be avoided on flood prone lands and provision of open space corridors along drainage lines and waterways should occur.</p> <p>(5) Eumundi East (Precinct Class = Neighbourhood Residential)</p> <p>The potential for this Precinct for urban development is constrained by low lying flood prone land.</p> <p>Otherwise, rural uses which appropriately address the issue of flooding and do not impact on the environmental values of the land or nearby North Maroochy River are considered acceptable.</p> <p>Landscape and Built Form</p> <p>When occurring, new development for residential purposes in this Precinct should be particularly responsive to the varied environmental characteristics of the area by addressing the issues of flooding.</p> <p>Development for residential purposes should avoid any floodprone land within the Precinct and acceptably flood free access will be required.</p> <p>Open space corridors should be provided or maintained along drainage lines.</p> <p>3.18 Planning Area No. 18 - Kenilworth</p> <p>(2) This vision will be achieved through:</p> <p>(f) ensuring development has proper regard to environmental constraints such as flooding;</p> <p>(2) Design Intent</p> <p>(f) Particular recognition needs to be given to the constraint of flooding on the lower lying parts of the town so that new development does not create or worsen flooding problems.</p>
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	<p>(2) Kenilworth Residential (Precinct Class = Neighbourhood Residential) Landscape and Built Form New development is to identify and respect flooding constraints, and avoid establishing buildings and structures on flood-prone land.</p> <p>(3) Kenilworth North (Precinct Class = Neighbourhood Residential) Landscape and Built Form New development is to identify and respect flooding constraints, and avoid establishing buildings and structures on flood-prone land.</p> <p>(6) Kenilworth East (Precinct Class = Sustainable Pastoral Land) Intent This precinct is to intended to remain in rural use and includes small areas of identified Good Quality Agricultural Land on the floodplain of the Mary River. Particular consideration will also be given to the issue of flooding and the maintenance of the hydraulic and environmental capacity of the river. Preferred and Acceptable Uses Undesirable development includes residential, commercial and industrial uses due to the flooding constraints of the Mary River, and the desire to maintain a defined edge to the town. Landscape and Built Form - measures to ensure an acceptable level of flood immunity and a no-worsening or improvement of flooding conditions in the area</p> <p>(7) Kenilworth Community Land (Educational Establishment, Showgrounds and Outdoor Recreation) (Precinct Class = Special Purpose) Landscape and Built Form - recognition of the flooding constraints</p> <p>3.21.4 Statements of Desired Precinct Character</p> <p>(2) Eudlo Village Residential (Precinct Class = Neighbourhood Residential) Intent The urban boundaries of Eudlo will remain in their current form consistent with the maintenance of the town's discrete character. Low-lying flood prone land and the lack of reticulated water and sewerage will continue to limit further development of Eudlo.</p> <p>(9) Forest Glen (Precinct Class = Business and Industry) Description The Precinct's significant attributes are: -the availability of flat land (but in some areas subject to drainage and flooding),</p> <p>10) Mons North (Precinct Class = Rural Residential) Hazard Management -habitable areas, waste disposal sites, accessways and the like are sited on flood free and stable land</p> <p>(2) Nambour – Bli Bli Road (Precinct Class = Core Industry) Description However, the Precinct has only a limited amount of flat land much of which is subject to drainage and flooding constraints.</p>
Op Works Code	Yes
Details	<p>2.7 Code for Integrated Water Management PURPOSE (g) Adverse impacts, including cumulative impacts, as a result of flooding are minimised and unacceptable risk* to people and property is not created. * 'Unacceptable risk' is defined in State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.</p> <p>(3) Flooding* *Council may request the Integrated Water Management Plan to include a flood assessment element that demonstrates compliance with these Performance Criteria and Acceptable Measures. P1 Development does not result in:</p> <ul style="list-style-type: none"> • adverse impacts on flood conveyance capacity; • unacceptable risk to people's safety; and • adverse impacts on the capacity to use land within the floodplain. <p>A1.1 In areas identified on Regulatory Map 1.5 – Flood Prone and Drainage Constraint Areas Special Management Area: (a) works do not involve:</p> <ul style="list-style-type: none"> (i) any physical alteration to a waterway or floodway including vegetation clearing⁵; or (ii) net filling exceeding 50m³; <p>(b) any reductions of on site flood storage capacity is avoided and any changes to depth, duration and velocity of floodwaters of all floods up to and including the 100year ARI are contained within the site; OR</p> <p>(c) there is no change in the flood characteristics of the 100 year ARI outside the subject site in ways that result in</p> <ul style="list-style-type: none"> (i) loss of flood storage; or (ii) loss of/changes to flow paths; or (iii) acceleration or retardation of flows; or (iv) any reduction of warning times elsewhere on the floodplain. <p>A1.2 Stormwater peak discharges and levels are equivalent to the pre-developed condition.</p> <p>A1.3 Where a "regulation line" has been set by Council to define the limit to which development may encroach onto a floodplain development is undertaken outside such "regulation line".</p> <p>P2 For all floods up to and including the 100 year ARI:</p> <ul style="list-style-type: none"> • the safety of people on the site is maintained; • potential damage to property on the site is minimised; and <p>A2.1 (a) Development is sited on land that would not be subject to flooding during the 100 year ARI flood event. OR</p> <p>(b) There is no increase in the number of people living or working on the site, except where the premises are occupied on a short-term or intermittent basis (e.g. by construction / maintenance workers, certain agricultural and forestry workers). OR</p> <p>(c) Development complies with the standards for flood immunity set out in Planning Scheme Policy No. 5 – Operational Works.</p> <p>A2.2 Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood water (e.g. electrical switchgear and motors, water supply pipeline air valves) are:</p> <ul style="list-style-type: none"> (a) located in accordance with the standards for flood immunity set out in Planning Scheme Policy No. 5 – Operational Works; OR (b) designed and constructed to exclude floodwater intrusion/infiltration.

	<p>A2.3 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the 100 year ARI flood event.</p> <p>P3 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk.</p> <p>A3.1 (a) The manufacture or storage in bulk of hazardous materials takes place above the 100 year ARI flood level. OR</p> <p>(b) Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of floodwaters from a 100 year ARI flood.</p> <p>2.8 Code for Erosion and Sediment Control</p> <p>A2.1 It is demonstrated that the development does not involve the installation of necessary water quality control measures, or emplacement of any fill, below the one in two year ARI flood level</p> <p>3.2 Code for Development and Use of Intensive Animal Industries and Aquaculture performance criteria</p> <p>(e) is not subject to flooding;</p> <p>Acceptable measures</p> <p>A1.1 The site the premises are developed on:</p> <p>- is not on land subject to flooding by the 100 year ARI event;</p>
Overlay Code	Yes
Details	<p>Flood Prone and Drainage Constraint Areas</p> <p>- Triggers the Integrated Water Management Code</p>
PSPs	Yes
Details	<p>operational works policy</p> <p>1.1.1.2 Integrated Water Management Code</p> <p>g) Adverse impacts, including cumulative impacts, as a result of flooding are minimised and unacceptable risk¹ to people and property is not created;</p> <p>2 General Information Requirements</p> <p>Compliance with these codes at the initial material change of use or reconfiguration application stage should generally be demonstrated by:</p> <p>-Providing an assessment of flooding issues for the site;</p> <p>7.1.2 Preparation of an Integrated Water Management Plan</p> <p>To demonstrate that all Performance Criteria of the IWM Code have been addressed, the applicant may be required to prepare an Integrated Water Management Plan, considering all elements of the water cycle. The Plan will need to be formulated in a logical sequence that includes the following elements:</p> <p>3. A Flood Assessment Report</p> <p>7.1.2.1 Key Issues</p> <p>The key issues to be addressed by the Integrated Water Management Plan via the Water Cycle Management Plan, Flood Assessment Report and Water Quality Management Plan are:</p> <ol style="list-style-type: none"> 1. A demonstrated integrated approach to the management of the urban water cycle with particular reference to stormwater management, reducing potable water demand and wastewater minimisation 2. Link water quantity controls with water quality controls; 3. Integrate stormwater management features into the development's landscape plan and built forms; 4. Address ecological protection issues that are influenced by the management of stormwater (e.g. waterway buffer vegetation and habitat management issues). These issues should be addressed on the site, adjoining sites and downstream. <p>7.1.2.2 The Integrated Water Management Objectives</p> <p>- Clearly show how the elements of the urban water cycle, flood management requirements and water quality management measures have been dealt with in an integrated way.</p> <p>7.2 Water Quality Management</p> <p>The integration of flood management and water cycle management elements with water quality management measures may lead to synergistic benefits that assist in achieving the water quality objectives.</p> <p>These features may have synergistic benefits when used in combination with other management practices and may assist in achieving water cycle management targets, in addition to those set for water quality and flooding.</p> <p>7.3.4 Sizing of Rainwater Tanks</p> <p>Rainwater tanks, if appropriately configured, may have synergistic benefits when used in combination with other management practices and may assist at achieving water quality and flooding targets in addition to those set for water cycle management.</p> <p>7.4 Flood Management</p> <p>Refer whole section</p> <p>8.2.3 Application Requirements</p> <p>j) Accompanied by a copy of the approved Flood Study. This Flood Study must be accompanied by a letter of certification from a RPEQ experienced in hydrologic/hydraulic engineering stating that the attached Flood Study is the latest study referenced and approved by Council's relevant Development Permits and incorporates all amendments.</p> <p>Where a development is staged, the flood study and certification must be provided with every stage.</p> <p>8.3.3.3 Earthworks</p> <p>Certification of design plan(s) require that sufficient levels are provided to show that works have been constructed in accordance with the approval and conform to the level of tolerances below:</p> <ul style="list-style-type: none"> • general cut and fill: + 100 mm • in nominated flood free areas: + 100 mm +/- 25 mm <p>Requirements for Specific Plans</p> <p>Earthworks</p> <p>Defined flood level (if appropriate)</p> <p>TRANSPORT TRAFFIC AND PARKING</p> <p>4.13 Flood Immunity</p> <p>Road Drainage Design Roads located in flood-prone areas should be designed in accordance with the Queensland Urban Design Manual (QUDM), Average Recurrence Intervals. For the purpose of clarification: the term Major Roads, Arterial, Subarterial Roads and District Collector Streets in Maroochy Plan's Road Hierarchy Map and Minor roads are all other streets.</p>

Other	No
Details	
Other Info	No

LGA	Sunshine Coast
Planning Scheme	Noosa
Adopted	1/02/2006
Flood Amendments	Yes
SPP Compliance	No
Details	The Minister for Local Government and Planning identified the following State Planning Policies as being appropriately reflected in the planning scheme— 4. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (for Bushfire and Landslide only); and
Mapped Q100 / DFE	Yes
Details	Q100
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>Part 5 - Cooroibah Locality Plan Character Statement of the Locality Physical Setting The lowland characteristics result in relatively poor drainage with areas frequently inundated by floodwaters or which become boggy during, and for long periods after, wet weather.</p> <p>Division 16—Specific Outcomes for the Cooroy & Lake Macdonald Locality* Flooding and drainage O14 Buildings and other works are designed and sited to— a) provide flood free access to premises and flood free habitable areas; b) allow only minor, short term and infrequent flooding of non-habitable areas; c) ensure carparking areas can be adequately drained; d) ensure drainage does not adversely impact upon other premises; and e) ensure filling or excavation does not adversely impact upon other premises by— i. causing ponding of water on the site or nearby land; ii. increasing flooding, which adversely affects the safety or use of any land upstream and downstream; and iii. adversely affecting the flow of water in any overland flow path.</p> <p>S14.1 For new buildings or structures or additions of more than 50m² gross floor area to an existing building or structure, floor levels for habitable rooms are— a) for areas where minimum floor levels are available—not less than the specified level; b) for areas where flood modelling is available—a minimum of 500mm above the modelled flood level; and c) for areas where flood modelling is not available, a minimum of 500mm above the highest known flood level; AND S14.2 Where Council infrastructure is available— a) any drainage (including buildings and yards) flows to that infrastructure; and b) the infrastructure has the capacity to accept any additional loading; AND S14.3 Car parking and maneuvering areas are constructed at a level that permits the parking area to drain from the site by gravity means, without the need for mechanical pumping; or S14.4 Basements for residential uses have flood immunity above the Q100 where alternative means to mechanical pumping are used to achieve such immunity; or S14.5 Basements for non-residential uses have flood immunity above the Q100 that may be achieved by means of mechanical pumping where the mechanical feature is installed with adequate holding tanks and an alternative back up power source.</p> <p>*Council has mapping of minimum floor levels and flood levels and flood modelling for some parts of the Shire. Contact the Land Development Section of Noosa Shire Council.</p> <p>Division 15—Specific Outcomes and Probable Solutions for the Eastern Beaches Locality Flooding and drainage O11 Buildings and other works are designed and sited to— a) provide flood free access to premises and flood free habitable areas; b) allow only minor, short term and infrequent flooding of non-habitable areas; ‘ c) ensure carparking areas can be adequately drained; d) ensure drainage does not adversely impact upon other premises; and e) ensure filling or excavation does not adversely impact upon other premises by— i. causing ponding on the site or nearby land; ii. increasing flooding, which adversely affects the safety or use of any land upstream and downstream; iii. adversely affecting the flow of water in any overland flow path; and iv. falling towards the frontage or other boundaries without sufficient retention</p> <p>S11.1 For new buildings or structures or additions of more than 50m² gross floor area to an existing building or structure, floor levels for habitable rooms are— a) for areas where minimum floor levels are available—not less than the specified level; b) for areas where flood modelling is available—a minimum of 500mm above the modelled flood level; and c) for areas where flood modelling is not available, a minimum of 500mm above the highest known flood level; AND S11.2 Where Council infrastructure is available— a) any drainage (for buildings and land) flows to that infrastructure; and b) the infrastructure has the capacity to accept any additional loading. AND S11.3 Car parking and maneuvering areas are constructed at a level that permits the parking area to drain from the site by gravity means, without the need for mechanical pumping; or S11.4 Basements for residential uses have flood immunity above the Q100 where alternative means to mechanical pumping are used to achieve such immunity; or S11.5 Basements for non-residential uses have flood immunity above the Q100 that may be achieved by means of mechanical pumping where the mechanical feature is installed with adequate holding tanks and an alternative back up power source.</p> <p>Division 1—Contents of the Mary River Catchment Locality Plan More intensive forms of rural settlement occur on land which has greater slope or is not constrained by flooding, where rural vistas, privacy and</p>

open space are key features. Generally, areas of lesser slope or within the flood paths of Six Mile Creek, Jampot Creek, Cooroora Creek or other watercourses have a higher potential for agricultural production and therefore have an agricultural focus.

PART 9 - NOOSA HEADS LOCALITY PLAN

Character statement of the locality

Physical Setting

Periodic flooding occurs, as a consequence of the rainfall flooding in the river system and storm surge in Laguna Bay.

Flooding and drainage⁵⁹

O16 Buildings and other works are designed and sited to—

- a) provide flood free access to premises and flood free habitable areas;
- b) allow only minor, short term and infrequent flooding of non-habitable areas;
- c) ensure carparking areas can be adequately drained;
- d) ensure drainage does not adversely impact upon other premises; and
- e) ensure filling or excavation does not adversely impact upon other premises by—
 - i. causing ponding of water on the site or nearby land;
 - ii. increasing flooding, which adversely affects the safety or use of any land upstream and downstream; and
 - iii. adversely affecting the flow of water in any overland flow path.

S16.1 For new buildings or structures or additions of more than 50m² gross floor area to an existing building or structure, floor levels for habitable rooms are not less than the specified minimum floor levels;

AND

S16.2 Where Council infrastructure is available—

- a) any drainage (from buildings and land) flows to that infrastructure; and
- b) the infrastructure has the capacity to accept any additional loading.

AND

S16.3 For Residential Uses—

- a) where slab on ground construction is used, filling does not extend more than 1m beyond the building footprint and access to car parking areas, measured from the outer walls of the building ; or
- b) the design consists of a suspended floor construction;

AND

S16.4 Car parking and maneuvering areas are constructed at a level that permits the parking area to drain from the site by gravity means, without the need for mechanical pumping or

S16.5 Basements for residential uses have flood immunity above the Q100 where alternative means to mechanical pumping are used to achieve such immunity; or

S16.6 Basements for non-residential uses have flood immunity above the Q100 that may be achieved by means of mechanical pumping where the mechanical feature is installed with adequate holding tanks and an alternative back up power source. Sloping sites and ridgelines

O17 Development on sloping sites—

- a) is responsive to the natural topography of the site and minimises cut and fill;
- b) does not visually dominate the hill slope or interrupt the skyline;
- c) is integrated with the natural site characteristics including vegetation; and
- d) for Multiple housing, takes the form of small separate buildings;

AND

O18 On steep slopes or ridgelines which are visible from the major road network, areas of public open space, the Noosa River or the beaches—

- a) new buildings and structures including

*Council has mapping of minimum floor levels and flood levels for some parts of the Shire. Contact the Land Development Section of Council, Tewantin Office.

Division 12—Specific Outcomes and Probable Solutions for the Noosa North Shore Locality

Flooding and drainage⁴⁹

O7 Buildings and other works are designed and sited to—

- a) provide flood free access to premises and flood free habitable areas;
- b) allow only minor, short term and infrequent flooding of non-habitable areas;
- c) ensure carparking areas can be adequately drained;
- d) ensure drainage does not adversely impact upon other premises; and
- e) ensure filling or excavation does not adversely impact upon other premises by—
 - i. causing ponding on the site or nearby land;
 - ii. increasing flooding, which adversely affects the safety or use of any land upstream and downstream; and
 - iii. adversely affecting the flow of water in any overland flow path.

S7.1 For new buildings or structures or additions of more than 50m² gross floor area to an existing building or structure, floor levels for habitable rooms are—

- a) for areas where minimum floor levels are available—not less than the specified level;
- b) for areas where flood modelling is available—a minimum of 500mm above the modelled flood level; and
- c) for areas where flood modelling is not available, a minimum of 500mm above the highest known flood level;

AND

S7.2 Dwelling houses are raised above ground with a suspended floor, rather than utilising "slab on ground" construction;

AND

S7.3 Development minimises the impact of earthworks associated with its building, access and service provision;

AND

S7.4 Drainage works are designed to disperse stormwater runoff, rather than concentrating it.

AND

S7.5 Car parking and maneuvering areas are constructed at a level that permits the parking area to drain from the site by gravity means, without the need for mechanical pumping; or

S7.6 Basements for residential uses have flood immunity above the Q100 where alternative means to mechanical pumping are used to achieve such immunity; or

S7.7 Basements for non-residential uses have flood immunity above the Q100 that may be achieved by means of mechanical pumping where the mechanical feature is installed with adequate holding tanks and an alternative back up power source.

⁴⁹ Council has mapping of minimum floor levels and flood levels and flood modelling for some parts of the Shire. Contact the Land Development

	<p>Section of Council, Tewantin Office.</p> <p>PART 11 - NOOSAVILLE LOCALITY PLAN</p> <p>Division 1—Contents of the Noosaville Locality Plan</p> <p>Character statement of the locality</p> <p>Physical Setting</p> <p>Eenie Creek and Lakes Weyba and Doonella. Balance land in the locality is generally low lying and within the flood plain of the Noosa River system. Periodic flooding occurs, as a consequence of the rainfall flooding in the river system.</p> <p>Flooding and drainage⁷¹</p> <p>Division 17—Specific Outcomes and Probable Solutions for the Noosaville Locality</p> <p>O17 Buildings and other works are designed and sited to—</p> <ul style="list-style-type: none"> a) provide flood free access to premises and flood free habitable areas; b) allow only minor, short term and infrequent flooding of non-habitable areas; c) ensure carparking areas can be adequately drained; d) ensure drainage does not adversely impact upon other premises; and e) ensure filling or excavation does not adversely impact upon other premises by— <ul style="list-style-type: none"> i. causing ponding on the site or nearby land; ii. increasing flooding, which adversely affects the safety or use of any land upstream and downstream; and iii. adversely affecting the flow of water in any overland flow path. <p>S17.1 For new buildings or structures or additions of more than 50m² gross floor area to an existing building or structure, floor levels for habitable rooms are not less than the specified minimum floor levels;</p> <p>AND</p> <p>S17.2 Where Council infrastructure is available—</p> <ul style="list-style-type: none"> a) any drainage (including buildings and yards) flows to that infrastructure; and b) the infrastructure has the capacity to accept any additional loading; <p>AND</p> <p>S17.3 For Residential Uses—</p> <ul style="list-style-type: none"> a) where slab on ground construction is used, filling does not extend more than 1m beyond the building footprint and access to car parking areas, measured from the outer walls of the building ; or b) the design consists of a suspended floor construction; <p>AND</p> <p>S17.4 Car parking and maneuvering areas are constructed at a level that permits the parking area to drain from the site by gravity means, without the need for mechanical pumping;</p> <p>AND</p> <p>S17.5 Basements for residential uses have</p> <p>71 Council has mapping of minimum floor levels and flood levels for some parts of the Shire. Contact the Land Development Section of Council, Tewantin Office.</p> <p>Division 15—Overall outcomes for the Tewantin & Doonan Locality</p> <p>12.8 Overall outcomes for the Tewantin & Doonan Locality.</p> <ul style="list-style-type: none"> i) The urban boundaries of Tewantin remain defined by vegetated edges provided by Tewantin State Forest, Harry Springs Conservation Park, Lake Doonella and the floodplains of the Noosa River and Cooroibah, Wooroi, Eenie and Keyser Creeks; <p>Flooding and drainage⁶⁸</p> <p>O11 Buildings and other works are designed and sited to—</p> <ul style="list-style-type: none"> a) provide flood free access to premises and flood free habitable areas; b) allow only minor, short term and infrequent flooding of non-habitable areas; c) ensure carparking areas can be adequately drained; d) ensure drainage does not adversely impact upon other premises; and e) ensure filling or excavation does not adversely impact upon other premises by— <p>S11.1 For new buildings or structures or additions of more than 50m² gross floor area to an existing building or structure, floor levels for habitable rooms are—</p> <ul style="list-style-type: none"> a) for areas where minimum floor levels are available—not less than the specified level; b) for areas where flood modelling is available—a minimum of 500mm above the modelled flood level; and c) for areas where flood modelling is not available, a minimum of 500mm <ul style="list-style-type: none"> i. causing ponding of water on the site or nearby land; ii. increasing flooding, which adversely affects the safety or use of any land upstream and downstream; and iii. adversely affecting the flow of water in any overland flow path. above the highest known flood level; <p>AND</p> <p>S11.2 Where Council infrastructure is available—</p> <ul style="list-style-type: none"> a) any drainage (from buildings and land) flows to that infrastructure; and b) the infrastructure has the capacity to accept any additional loading; <p>AND</p> <p>S11.3 For Residential Uses—</p> <ul style="list-style-type: none"> a) where slab on ground construction is used, filling does not extend more than 1m beyond the building footprint and access to car parking areas, measured from outer walls of the building; or b) the design consists of a suspended floor construction; <p>AND</p> <p>S11.4 Car parking and maneuvering areas are constructed at a level that permits the parking area to drain from the site by gravity means, without the need for mechanical pumping; or</p> <p>S11.5 Basements for residential uses have flood immunity above the Q100 where alternative means to mechanical pumping are used to achieve such immunity; or</p> <p>S11.6 Basements for non-residential uses have flood immunity above the Q100 that may be achieved by means of mechanical pumping where the mechanical feature is installed with adequate holding tanks and an alternative back up power source.</p>
Zone Codes	No
Details	

Use Codes	Yes
Details	<p>14.45 Specific Outcomes, probable solutions and acceptable solutions for the Residential Uses Code</p> <p>14.46 Effects of use Electricity supply infrastructure Basement drainage O9 Buildings and access works are designed and sited to protect persons and property in the event of a flood and power failure.</p> <p>14.53 Specific outcomes, acceptable solutions and probable solutions for the Detached House Code</p> <p>Flooding, drainage and earthworks O2 Buildings and other works are designed and sited to— a) provide flood free access to premises and S2.1 For new buildings or structures or additions of more than 50m² of gross floor area to an existing building or structure – floor levels flood free habitable areas; b) allow only minor, short term and infrequent flooding of non-habitable areas; c) ensure the protection of persons and property in the event of a flood and power failure; d) ensure drainage does not adversely impact upon other premises; and e) ensure filling, excavation or retaining structures do not adversely impact upon other premises by— i. causing ponding of water on the site or nearby land; and ii. increasing flooding, which adversely affects the safety or use of any land upstream and downstream; and iii. adversely affecting the flow of water in any overland flow path; iv. adversely affecting the privacy or visual amenity of surrounding properties. AND O3 Finished surface levels ensure land is free draining. of habitable rooms are— a) for areas where minimum floor levels are available—not less than the specified level; b) for areas where flood modelling is available—a minimum of 500mm above the modelled flood level; and c) for areas where flood modelling is not available, a minimum of 500mm above the highest known flood level;¹⁷ 17 Information on minimum floor levels and flood modelling can be obtained from Council. Detached House Code</p>
ROL Code	Yes
Details	<p>13.38 Effects of use and subdivision Safety and floodplain function O14 The proposed use does not compromise the safety of people or property from floods up to and including a 1% AEP (1:100 year ARI) flood event. S14.1 The use does not result in an increase in the number of persons living, working or congregating in Flood Hazard Areas identified on Overlay Maps OM1.3—OM9.3; or S14.2 At least one access route above the 1% AEP (1:100 year ARI) flood level is available for evacuation; or S14.3 An area of sufficient size and dimensions to accommodate users is provided, above the 1% AEP (1:100 year ARI) flood level that allows for safe congregation and evacuation; AND O15 Development does not result in adverse impacts on people’s safety and capacity to use land within floodplains. S14.4 Works avoid any reductions in on-site flood storage capacity and contain within the site any adverse changes, including changes to the depth, duration or velocity of flood waters up to and including a 1% AEP (1:100 year ARI) flood event. S15.1 No solution provided</p>
Overlay Codes	Yes
Details	<p>13.8 Specific outcomes for the Biodiversity Overlay Code Filling and excavation O15 Vegetation is not adversely impacted upon by earthworks and changes to the hydrological regime, including changes to ground water levels, flooding levels, run-off and tidal hydraulics.</p>
PSPs	No
Details	
Other	Yes
Details	<p>Division 2—Strategic Framework and Community Vision 1.7 Strategic framework 1.7.2 Urban settlement in the coastal part of Noosa has been shaped by the natural features including the coastal dune system, the Noosa River and lake system, the flood prone lowlands and large areas of environmentally sensitive open space protected as national park, conservation reserves or State forests. Accordingly, development is intended to remain limited to land physically suited to such development where the natural landform and landscape are not compromised. 1.7.14 Natural Hazard Management a) The planning scheme identifies areas at risk from natural hazards including landslide, bushfire, flooding and acid sulfate soils. b) Development in areas at risk from natural hazards is to be compatible with the nature of the hazard so as not to place people, property or the natural environment at risk. Administrative Terms AEP or annual exceedance probability means the likelihood of occurrence of a flood of a given size or larger in any one year; usually expressed as a percentage.</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Tablelands
Planning Scheme	Atherton Planning Scheme
Adopted	6-Jun-02
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	Yes
Details	<p>4.13 Codes for Development within the Declared Catchment Area of Lake Tinaroo</p> <p>4.13.1 General Code</p> <p>P1 An adequate separation between Rural Residential and Urban Activities and Lake Tinaroo and designated streams is provided that minimises nutrients entering the water by giving an opportunity for overland flow to capture such nutrients.</p> <p>A1.1 Rural Residential Activities provide:</p> <ul style="list-style-type: none"> • a setback of 400 metres from the full supply level of the Lake defined as E.L. 672.35 A.H.D. • in the case of existing lots where this setback can not be achieved, Rural Residential Activities are set back from E.L. 672.35 to the maximum degree possible having regard to the required setbacks from other boundaries, the topography of the site, access availability and any other relevant factor. <p>A1.2 Rural Residential Activities provide a setback of 100 metres from designated stream frontages.</p> <p>A1.3 Urban Activities provide a setback of 100 metres from the Lake Tinaroo flood margin boundary. Provided that, in the case of existing lots within the 100 metre setback,</p> <p>Urban Activities comply with the stormwater drainage criteria in the Tinaroo Falls Village and Environs Code. Such urban activities are set back from E.L.672.35 to the maximum degree possible having regard to the required setbacks from other boundaries, the topography of the site, and the availability of vehicle access.</p> <p>(v) Open Space Buffer</p> <p>P1 An esplanade of open space is provided between activities or uses and Lake Tinaroo or between activities or uses and a designated stream of sufficient width to assist in protecting water quality and allowing for public access.</p> <p>A1.1 Where a lot is in a Village or Rural Residential Planning Area or has a frontage to Lake Tinaroo or to a designated stream and is the subject of an application for Impact or Code Assessment, a buffer of a minimum of 20 metres in width is provided adjacent to the flood margin boundary or designated stream.</p> <p>P2 There are no significant adverse effects on the water quality in Lake Tinaroo arising from, but not limited to:</p> <ul style="list-style-type: none"> • disturbance of the land • the siting of development or other works • the flow of nutrients or sedimentation into Lake Tinaroo • waste disposal, or • the maintenance of water quality control devices. <p>A2.2 All land within 100m of the Lake Tinaroo flood margin boundary is retained as a natural buffer zone.</p>
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	Yes
Details	<p>4.16 Reconfiguring a Lot Code</p> <p>P7 The new subdivision layout retains significant vegetation and habitat areas incorporates natural and cultural features, minimises soil erosion and avoids development on flood prone land.</p> <p>A7 There is no acceptable solution prescribed.</p> <p>(iv) Lot Layout</p> <p>P1.1 Lot size and dimensions are compatible with the physical characteristics of a site and the projected user requirements having regard to the agricultural quality of the land, availability of vehicular access, scenic and cultural values, slope, stability and flooding potential.</p> <p>A1.1 to A1.14 Lot area and dimensions comply with Table 5.16.3 and generally satisfy the Performance Criteria. In some circumstances the area and/or frontage of a lot may need to be greater than the minimum identified to take account of the site constraints, the Performance Criteria and the provisions of other Codes.</p> <p>P1.11 The reconfiguration does not occur on flood prone land unless measures are taken to fill the site while having regard to P1.10 and the Filling and Excavation Code. (No AS)</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>2.16 General Impact Assessment Criteria</p> <p>When considering impact assessable development proposals Council will have regard for the following matters (to the extent they are relevant), in addition to any other relevant provision of this Planning Scheme:</p> <p>(a) the nature of the proposal and the suitability of the site, having regard to:</p> <ul style="list-style-type: none"> • the flood liability of the site
Op Works Code	Yes
Details	<p>4.15 Filling and Excavation Code</p> <p>Purpose</p> <p>The Purpose of this Code is to ensure that Filling and Excavation does not cause visual blight, flooding and drainage problems, land instability as well as it does not adversely impact upon utility services and the environment of the area.</p> <p>Flooding and Drainage</p>

	<p>P2 Filling and excavation that does not result in a change to the run-off characteristics of a site that will have a detrimental impact upon the site and nearby land.</p> <p>A2.1 Filling and excavating does not result in the ponding of water on a site or adjacent land.</p> <p>A2.2 Filling and excavating does not result in an increase in the flow of water across a site and any other land.</p> <p>A2.3 Filling and excavating does not result in an increase in the volume of water or concentration of water in a water course and overland flow paths.</p> <p>A2.4 Filling and excavation complies with the Queensland Urban Drainage Manual 1992.</p> <p>Water Quality</p> <p>P3 Filling and excavation that does not result in a reduction of the water quality of receiving waters.</p> <p>A3.1 Filling and excavation is located no closer than 20 metres from any watercourse or wetland identified in the Atherton Shire Environmental Audit.</p> <p>A3.2 Water quality is maintained by compliance with the Soil Erosion and Sedimentation Control Guidelines (Institute of Engineers Australia) 1996.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Tablelands
Planning Scheme	Eacham Planning Scheme
Adopted	12-May-10
Flood Amendments	No
SPP Compliance	No
Details	<p>State Planning Instruments</p> <p>The Minister has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme—</p> <p>2. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire and Landslide components only)</p>
Mapped Q100 / DFE	No
Details	Q100
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone Code / Rural Residential Code / Urban Expansion Code / Residential Zone Code / Village Zone Code / Business and Retail Code / Trade and Services Zone / Industry Zone / Open Space Zone / Conservation Zone / Public Purposes Code</p> <p>PC2 Development is immune to flood events which result in unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>PS2.1 Land on which buildings and structures associated with defined purpose nominated in Column 1 of Planning Scheme Schedule 3 are to be constructed to achieve immunity from a flood event of at least the annual exceedance probability specified in Column 2 of Planning Scheme Schedule 3 for the defined purpose.</p> <p>Open Space Zone / Conservation Zone Code</p> <p>PC2 Where uses involve the construction of buildings or structures, such buildings or structures are sited outside areas of constraint relating to –</p> <ul style="list-style-type: none"> - inundation by floodwater; or - vegetation management; or - movement corridors for both fauna and people. <p>PS2.1 No solution provided.</p>
Use Codes	Yes
Details	<p>Bed and Breakfast Code / Caretaker's Residence Code / Child Care Centre Code / Community Infrastructure and Facilities Code / Industrial Use Code / Multiple Dwelling Code /</p> <p>PC@ The site is not in an environmentally sensitive area.</p> <p>PS@ The site is not flood prone or subject to geological instability or prone to medium/high bushfire hazard, as shown on the Planning Scheme Maps – Natural Hazard Overlay – Bushfire Hazard and Planning Scheme Maps - Natural Hazard Overlay – Steep Land.</p> <p>Multiple Dwelling Code</p> <p>PC5 Development is designed to be sensitive to the environment and surrounds.</p> <p>PS5.1 Development is designed to–</p> <ul style="list-style-type: none"> - protect natural and cultural features of the site and surrounds; - address site constraints such as steep slopes, soil erosion, flooding, overland flow, storm surge etc; - retain special features such as trees; - provide adequate buffers and incorporate design measures to minimise exposure to risks and hazards such as noise impacts, air quality etc. <p>Primary Industries Code</p> <p>Purpose</p> <p>(b) Plantation forests and native forestry are located, designed and managed so they –</p> <ul style="list-style-type: none"> - maintain the natural hydrological characteristics of the flooding and drainage systems in the locality, <p>PC7 A site for intensive animal husbandry –</p> <ul style="list-style-type: none"> - comprises undulating or flat terrain, - is sufficiently elevated to facilitate ventilation and drainage, - has adequate vehicle access, - is not subject to flooding, and - is supplied with a reliable, good quality water supply, and a secure power supply. <p>PS7.1 A site –</p> <ul style="list-style-type: none"> - has land with slopes less than 1 in 6 (refer to the Planning Scheme Maps - Natural Hazard Overlay – Steep Land), - is not subject to flooding at a frequency of greater than 1 in 50 years, - is otherwise not low-lying, - is provided with a reliable water supply and has a capacity to store a minimum of two (2) days supply, and - is connected to an electricity supply. <p>Service Station Code</p> <p>PC2 The site is not in an environmentally sensitive area.</p> <p>PS2.1 The site is not flood prone or subject to geological instability, as shown on the Planning Scheme Maps – Natural Hazard Overlay – Steep Land.</p> <p>Tourist Code</p> <p>PC1 The site is not in an environmentally sensitive area.</p> <p>PS1.1 The site is not flood prone or subject to geological instability, as shown on the Planning Scheme Maps – Natural Hazard Overlay – Steep Land.</p> <p>Misty Mountain Tourism Development Area Code</p> <p>PC3 Development is immune to flood events that result in unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>PS3.1 Land on which buildings and structures will be constructed has immunity from a flood event of at least the annual exceedance probability specified in Column 2 of Planning Scheme Schedule 3 for the defined purposes.</p>

ROL Code	Yes
Details	<p>4.4 Reconfiguration of a Lot Code</p> <p>4.4.2 Purpose</p> <p>The purpose sought for the Reconfiguration Lot Code is as follows –</p> <p>(d) Allotments located, designed and developed so as to not expose people and works to unacceptable risks from flooding, geotechnical failure or other hazards;</p> <p>PC2 Lot sizes and dimensions enable buildings, structures and use areas to be sited and managed to –</p> <ul style="list-style-type: none"> - Acknowledge site constraints including soil stability, bushfire risk, flooding, erosion, drainage and buffers to incompatible land uses; - Allow for special features such as important vegetation, landforms, watercourses and views to be protected or enhanced; <p>PC11 New residential subdivision achieves retention of natural drainage lines, significant vegetation and habitat areas incorporating natural and cultural features, minimising soil erosion and avoiding development on flood prone land.</p> <p>PS11.1 No solution provided.</p> <p>PC23 Public open space providing –</p> <ul style="list-style-type: none"> - Adequate and accessible recreation and sporting facilities to meet the needs of the community, having regard to such indicators as population density and demographic structure; - Opportunities for the protection and incorporation of existing natural features of environmental value and places or things of cultural value and linkage of habitat and wildlife corridors; <p>PS23.1 Land, money, works, or any combination of these are given for public open space purposes in accordance with the provisions of Planning Scheme Policy 10 - Park Contributions, or subsequent infrastructure charges plan; AND</p> <p>In the Residential Zone on land to be used for Residential Category Use a minimum of 10% of the site area is provided as public open space or a contribution may be paid –</p> <p>In the Rural Residential or Village Zones a contribution per allotment shall be paid.</p> <p>Public open space is provided such that at least 85% of all proposed Residential Zoned lots are within 400 metres of the Open Space Zone.</p> <p>Parkland is provided which –</p> <ul style="list-style-type: none"> - has at least 10% of its area above the 1 in 50 year flood level and no area below the 1 in 5 year flood level; and - conserves any significant areas of natural vegetation and uses predominantly locally native species in further vegetation planting; and - has a minimum extent of 20 metres along each side of a watercourse or from the waters edge, measured from – - the centreline of the creek, or other smaller watercourse, as determined by survey; or - the banks of the watercourse where the watercourse is a river; or - the standing natural high-water mark of a wetland area; <p>whichever greatest applies.</p>
Overlay Codes	Yes
Details	<p>Natural Areas Overlay Code</p> <p>PC6 A land use proposal or activity is developed in ways that avoids causing environmental harm (through indirect and incidental impacts) and which avoids or minimises disturbance to significant vegetation and environmentally sensitive areas.</p> <p>PS6.1 Buildings, other structures, driveways, powerlines, drainage, access routes, public utility provision and facilities and fence-lines are not located within wetlands or along gullies, watercourses or ridgelines, or through significant vegetation, environmentally sensitive areas or other remnant vegetation (refer to the Planning Scheme Maps - Natural Areas Overlay – Significant Remnant Vegetation).</p> <p>PS6.2 Development is setback at least 100 metres from the margin of a wetland</p> <p>PS6.3 Development does not occur within –</p> <ol style="list-style-type: none"> 1. 100 metres for stream orders 5 or greater; 2. 50 metres for stream orders 3 or 4; or 3. 25 metres for stream orders 1 or 2; <p>with stream orders determined by 1:100,000 Department of Natural Resources, Mines & Water topographic mapping (or 1:250,000 where 1:100,000 is unavailable).</p>
PSPs	No
Details	
Other	Yes
Details	<p>2.3 DEO 2 - Natural Environment</p> <p>Environmental quality, ecological processes and natural assets are maintained and protected so that they contribute effectively to ecological sustainability.</p> <p>This is achieved through development that –</p> <ul style="list-style-type: none"> - protects the air, land and water resources in the Shire, including the catchment of the Tinaroo Falls Dam; - is compatible with areas of outstanding natural significance such as the Wet Tropics World Heritage Area and other protected areas in the Shire; and - does not increase risks to safety, property and the environment caused by adverse interaction between land uses and natural hazards, including flooding, bushfire, cyclonic weather events and landslip. <p>Schedule 3</p> <p>Flood Immunity for Specific Purposes</p> <p>Purpose - Probability of Event</p> <p>Residential Category</p> <p>All - 1 except:</p> <p>Retirement Village - 0.2</p> <p>Business and Retail Category</p> <p>All - 1</p> <p>Market - 2</p> <p>Trades and Services Category</p>

	All - 1 Landscape Nursery - 2 Rural Category Use All - N/A Tourism Category Use All - 1 Community Infrastructure and Facilities Category Use All - 1 Detention Facility - Hospital - 0.2 Park - 30 Public utility - 0.5 Special Use (incorporating an activity namely, ambulance station, first aid station, fire brigade, police station, emergency service depot) - 0.5 Roads All - 1 Roads in rural areas at a watercourse crossing (other than a river) - 50 Other roads at a watercourse crossing (other than a river) - 20
Op Works Code	Yes
Details	Works Services and Infrastructure Code PC12 Filling and excavation does not result in a reduction of the water quality of receiving waters. PS12.1 Filling and excavation does not occur within 20 metres of any watercourse. AS12.1 Filling and excavation does not occur within 20 metres of any watercourse. PS12.2 Water quality complies with Planning Scheme Policy 5 – FNQROC Regional Development Manual Section D5.10. PC14 An acceptable level of flood immunity is provided for new development and access to new development. PS14.1 Residential and commercial development does not occur below the Q100 flood level.OR For all other development, development does not occur below the Q50 flood level. PS14.2 Access to new development is in accordance with the Planning Scheme Policy 5 – FNQROC Regional Development Manual.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Tablelands
Planning Scheme	Herberton Planning Scheme
Adopted	1-Aug-05
Flood Amendments	No
SPP Compliance	No
Details	State planning policies The Minister for Local Government, Planning, Sport and Recreation has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme— 2. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire and Landslide components only)
Mapped Q100 / DFE	No
Details	Q50/Q100
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Bed and Breakfast code PC1 The site is not in an environmentally sensitive area AS1.1 The site is not flood prone, subject to geological instability, or prone to medium/high bushfire hazard. AS1.2 The development retains existing significant landscape trees and vegetation on the site.</p> <p>House Code The overall outcomes are the purpose of this code – these outcomes are as follows: The building form, siting, design and use of the house and ancillary structure/development – - does not detrimentally impact on the natural features or waterways within the area; - achieves an acceptable level of flood immunity; and - is not subject to unreasonable hazards because of their locations.</p> <p>Intensive Rural Uses Code PC1 The site has a suitable shape and sufficient area to accommodate the use and is suitably located to ensure the use does not impact on the environmental values of the area. AS1.1 The site, or the portion of the site to be utilised for the activity: ☐ has slopes less than 10%; ☐ does not occur below a Q50 flood line; ☐ is provided with a reliable water supply and has a capacity to store a minimum of 2 days' water supply; and AS1.2 Intensive animal keeping is located on a site that contains a regular shape and has an area greater than 8ha.</p> <p>Multiple Residential Code PC4 Development is designed to: - protect natural and cultural features of the site and surrounds; - address site constraints such as steep slopes, soil erosion, flooding, overland flow, storm surge etc; - retain special features such as trees; - provide adequate buffers and incorporate design measures to minimise exposure to risks and hazards such as noise impacts, air quality etc. No acceptable solution specified.</p>
ROL Code	Yes
Details	<p>Reconfiguration of a Lot Code PC2 The layout and design: - protects the biodiversity and landscape values of the area; - addresses site constraints such as steep slopes, soil erosion, flooding, overland flow, storm surges, bushfire risk, etc; - provides adequate buffers to risks and hazards such as noise impacts, air quality etc; - provides adequate buffers between incompatible land uses. No acceptable solution specified.</p> <p>PC16 Public open space for recreation purposes is provided in a manner which – - meets the recreation and leisure needs of the community; - provides well distributed public open spaces that contribute to the legibility and character of the development; - helps create an attractive environment; - where practical, contributes to a connected public open space network; - is readily and safely accessible; - enables the retention of significant vegetation, waterways and other habitat areas; and - is cost effective to maintain.</p> <p>AS16.1 An open space dedication of 10% of the total site area is provided in accordance with Planning Scheme Policy No. 3 – Public Park Provision. OR A contribution is made towards the provision of open space in accordance with Planning Scheme Policy No. 3 – Public Park Provision.</p> <p>AS16.2 Where open space is provided on site, the area of dedicated open space excludes the following – - land required for drainage purposes; - land below the Q20 flood level; - land with an electricity easement; - land for conservation significance that has minimal or no capacity to cater for active or passive recreation.</p>

	<p>Drainage</p> <p>PC17 Reconfiguration does not result in any adverse effects on the drainage of the subject land, adjacent lands or nearby waterways.</p> <p>AS17.1 Reconfiguration (including proposed roads) does not interfere with the natural flow of water or result in the ponding of water on the subject land or adjacent lands.</p> <p>AS17.2 Where stormwater is diverted through adjoining land, the applicant has obtained the written consent of the property owner for a lawful point of discharge. A drainage easement is to be provided over this land.</p> <p>AS17.3 Stormwater drainage is designed and constructed in accordance with the Design Guidelines set out in Sections D4 and D5 of the Development Manual Planning Scheme Policy.</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	No
Details	
Op Works Code	Yes
Details	<p>Works Code</p> <p>Flood management</p> <p>PC12 An acceptable level of flood immunity is provided for new development and access to new development.</p> <p>AS12.1 Residential and commercial development does not occur below the Q100 flood level. OR</p> <p>For all other development, development does not occur below the Q50 flood level.</p> <p>AS12.2 Access to new development is in accordance with the Development Manual Planning Scheme Policy.</p> <p>AS12.3 Water quality measures are provided in accordance with Section D5 of the Development Manual Planning Scheme Policy.</p> <p>AS12.4 No work is carried out within 20m of the top bank of any watercourse.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Tablelands
Planning Scheme	Mareeba Planning Scheme
Adopted	21-Dec-04
Flood Amendments	No
SPP Compliance	No
Details	Reflects bushfire components only of SPP 1/03.
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Residential Zone Code</p> <p>4.45 Building Siting, Scale and Amenity (similar provisions are applied to the Rural Zone Code; and Myola Zone Code, for this section)</p> <p>S4 Buildings are protected from adverse flooding and does not interfere with the passage or storage of stormwater.</p> <p>PS4.1 Buildings are designed and located as not to be within an subject to flooding unless:</p> <p>(i) the floor level of all habitable rooms is at least 300mm clear of the Q100 flood level</p> <p>(ii) the building is elevated and the area below the building is not enclosed or otherwise does not impede the passage of stormwater.</p> <p>4.46 Reconfiguring a Lot (similar provisions are applied to the Myola ZOne Code for residential uses, for Precincts A, B and C, for this section):</p> <p>P7.1 Each new lot intended for Rural Residential use has adequate area to allow for:</p> <p>(i) a dwelling house and ancillary buildings and structures to be erected in a location that is convenient and, as far as practicable, avoids placing people and works, at risk from flooding or other hazard; and</p> <p>Open Space Zone Code</p> <p>4.103</p> <p>S2 Uses and works are consistent in type, character and scale with recreation purposes (picnic tables, barbeque areas, boardwalks, shelter and shaded areas, flood protection devices and public toilets).</p> <p>PS2 No probable solution prescribed.</p> <p>Myola Zone Code</p> <p>4.124 Overall Outcomes for Myola Zone Code</p> <p>(k) for Precinct E:</p> <p>(ii) development for urban residential purposes occurs on land that is free from flooding and allows natural stream flow processes to occur.</p> <p>For Myola Precinct B:</p> <p>S3 Each new lot is capable of being accessed via a road crossing of Barron River, directly linking Precinct A and Precinct B, with a flood immunity of greater than Q10.</p> <p>PS3 No acceptable solution prescribed.</p>
Use Codes	Yes
Details	<p>Child Care Centre Code</p> <p>Table 5</p> <p>S5 Location</p> <p>The development must be located to minimise:</p> <p>(c) flood damage or hazard</p> <p>PS5.1 The floor level of all habitable rooms is at least 300mm clear of the Q100 level.</p> <p>Animal Husbandry - Intensive Code</p> <p>Table 15</p> <p>S1 The site has a suitable shape and sufficient area to accommodate the use and is suitably located to ensure the use does not impact on the environmental values of the area.</p> <p>PS1.1 The site, or the portion of the site to be utilised for the activity:</p> <p>* does not occur below a Q50 flood line;</p>
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code</p> <p>S4 Each new lot intended for residential use has adequate useable area to allow for:</p> <p>(i) a dwelling house and ancillary buildings and structures to be erected in a location that is convenient and, as far as practicable, avoids placing people and works, at risk from flooding or other hazard; and</p> <p>PS4 No probable solution provided</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PSP 10 - Structure Planning Guidelines (refer PSP10 for full details)</p> <p>The scope of a Structure Plan is to be tailored to match the scale and likely impact of the individual development. All Structure Plans are to initially establish the broader physical and planning issues pertinent to the site, including environmental issues such as flooding, soil contamination, noise, air quality, health and safety, and urban infrastructure.</p>
Other	Yes
Details	<p>Desired Environment Outcomes</p> <p>3.1(3)</p> <p>(j) threats to public safety and health addociated with the natural and built environments, including flooding in the catchments of the Barron River and Mitchell River are minimised.</p>
Op Works Code	Yes
Details	<p>Filling and Excavation Code:</p> <p>6.3 Overall Outcomes for Filling and Excavation Code</p> <p>2 (a) To ensure that filling and excavation, does not cause stability, floodng and drainage problems, and a reduction in the visual amenity of an area or cause environmental harm.</p> <p>Table 12</p>

	S4 Filling or excavation does not result in a change to the runoff characteristics of a site that will have a detrimental affect upon the site and/or surrounding land or road reserves. PS4.2 Filling and excavation does not result in an increase in the flow of water across a site or any surrounding land or road reserves PS4.3 Filling and excavation does not result in an increase in the volume of water or concentration of water in a watercourse and overland flow paths.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	Explanatory Notes to the Planning Scheme also contain further information in relation to flooding (e.g. refer section 4.4.1 - Housing; and section 5.10 DEO relating to flooding in Barron River and Mitchell River catchments of the Explanatory Notes).

LGA	Toowoomba
Planning Scheme	Cambooya (Greenmount)
Adopted	29/10/2004
Flood Amendments	No
SPP Compliance	No
Details	<p>- The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme:</p> <p>3. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, except for Flood assessment provisions</p>
Mapped Q100 / DFE	Yes
Details	<p>Overlay Map 6 identifies the floodplains associated with the Condamine Basin.</p> <p>Q50 Used</p>
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	
Details	<p>Rural</p> <p>Plains Landscape</p> <p>The plains may be prone to erosion caused by concentrated, high velocity overland flow. Development that diverts or concentrates flows on the floodplains will not be favourably considered.</p>
Use Codes	Yes
Details	<p>6.6 Host Home Accommodation</p> <p>P3 Development is located where there is convenient access and minimal environmental impact.</p> <p>A3.1 The site is served with safe and convenient all weather access.</p> <p>A3.2 The host home accommodation facility is not located in premises which are less than 0.3m above the 1 in 50 year flood event.</p> <p>6.8 Intensive Animal Industry</p> <p>P1 The development is located and sited such that:</p> <ul style="list-style-type: none"> – natural flood and drainage processes and /or patterns are maintained; <p>A1.1 In partial fulfilment of P1:The development is located outside any constraint area (including good quality agricultural land, vegetation areas, vulnerable groundwater areas, floodplain and bushfire hazard areas). A decision support system may be used to facilitate this identification process.</p> <p>On Site Services, Car Parking and Access</p> <p>Purpose: To ensure that the standards of water supply, waste water treatment and disposal, stormwater drainage, electricity supply, roads, car parking and access provide for the needs of users, maintain high environmental standards and are safe and efficient.</p> <p>P2 Provision made for the treatment and disposal of human effluent is sustainable and:</p> <ul style="list-style-type: none"> – maintains water quality; – minimises other ecological impacts as a result of the system or as a result of increasing the cumulative effect of systems in the locality; and – maintains or enhanced levels of public health and safety <p>A2.4 The proposed on-site effluent disposal system is located on land:</p> <ul style="list-style-type: none"> – with a slope of less than 15% or where the land is terraced to receive the full disposal area; – no closer than 150m from the limit of the ponded waters of a water supply reservoir or a town water intake; – above the Q10 flood levels and not within 9m horizontal distance of this level; <p>PART B: Provisions Applicable to Code or Impact Assessable Development Only</p> <p>P4 On site drainage maintains current drainage paths and flood levels on adjoining land.</p> <p>A4.1 No acceptable solution is nominated.</p> <p>Residential Development Code</p> <p>PART A: Provisions Applicable to Houses in all Land Use Areas</p> <p>P1 Development maintains local residential character and amenity, and maximises public safety.</p> <p>A1.5 The house is not located within the floodplain as indicated on Overlay Map 6.</p> <p>Rural Development Code</p> <p>Purpose:</p> <p>To facilitate development in rural areas, particularly of rural activities, such that there is sustainable use of land and water resources through:</p> <ul style="list-style-type: none"> • minimising risk to life and property from landslide, bushfire and flood. <p>PART B: Provisions Applying to Code and Impact Assessable Development Only</p> <p>P8 Adverse impact on the natural environment is minimised by maintaining water quality, providing appropriate effluent disposal, avoiding potential erosion and protecting natural habitat.</p> <p>A8.4 Development is not located within the floodplain as indicated on Overlay Map 6</p> <p>Or</p> <p>A8.5 Natural drainage channels and flood flow paths are maintained and no adverse impacts on upstream or downstream drainage or flooding characteristics are created.</p>
ROL Code	Yes
Details	<p>6.10 Reconfiguring a Lot</p> <p>Part A: in the Rural Land Use Area</p> <p>P1 Lots are of an appropriate size and configuration to sustain the utility and productive capacity of the land for rural purposes, and to minimise potential impacts on the natural environment through improved land management practices</p> <p>A1.2 Lot boundaries relate to natural features such as ridges or other catchment boundaries, drainage lines or flood flows, or remnant stands of vegetation.</p> <p>Part B: In the Rural Residential Land Use Area</p> <p>P2 Rural residential lots are located and designed such that they:</p> <ul style="list-style-type: none"> – provide for an high level of residential amenity, access to services and facilities, and safety from risk of natural

	<p>hazards such as flooding, land slip and bushfire.</p> <p>A2.5 The location and layout of lots allows for the buffering of riparian vegetation and waterways.</p> <p>Part C: Provisions Applicable to Reconfiguring a Lot in Land Use Areas other than Rural</p> <p>P5 The reconfiguring of lots provides for protection of life and property from risk of flooding.</p> <p>A5.1 Lots are located 0.3m above the 1 in 50 year flood event.</p> <p>A5.2 The reconfiguring of lots does not change the existing patterns and levels of upstream and downstream drainage.</p> <p>P12 Provision made for the treatment and disposal of human effluent is sustainable and:</p> <ul style="list-style-type: none"> – maintains or enhanced levels of public health and safety. <p>A12.4 The proposed on-site effluent disposal system is located on land:</p> <ul style="list-style-type: none"> – no closer than 150m from the limit of the ponded waters of a water supply reservoir or a town water intake; – above the Q10 flood levels and not within 9m horizontal distance of this level; and – no closer than 25m to a cut or embankment.
Overlay Codes	Yes
Details	<p>Vulnerable Groundwater Areas and Floodplains Overlay Map</p> <p>Overlay Map 6 identifies the floodplains associated with the Condamine Basin. Intensive animal industries and other industrial development will be discouraged within these areas unless they can demonstrate adverse impacts on water resources can be adequately managed and the integrity of flow regimes can be maintained.</p>
PSPs	No
Details	
Other	Yes
Details	<p>DEOs</p> <p>3.1.2 Water, Land and Air Quality</p> <p>Development needs to be managed to ensure there is sufficient water available to meet demands, and there is a need to protect vulnerable groundwater areas, riparian zones and flood plains from activities that may cause potential impacts. The Eastern Downs Regional Planning Advisory Committee (EDRPAC) has adopted a Run-off and Flow Coordination Framework for the Condamine Floodplains (November 2001). This Framework identifies seven principles to guide development on the floodplains, including maintaining natural flow paths and floodplain capacity.</p> <p>Shire-wide Strategies</p> <p>3.1.2.2 Maintain, and where possible rehabilitate, the natural flow characteristics and flood detention capacity of the floodplain, thereby protecting both the ecological values of aquatic habitats and public health.</p> <p>Measures</p> <p>Major waterways, their floodplains and areas of high groundwater vulnerability are identified as an overlay to the scheme maps;</p> <p>New development within or near these areas will be required to demonstrate:</p> <p>Maintenance of downstream or up stream drainage and flooding characteristics</p>
Op Works Code	Yes
Details	<p>6.4 Filling and Excavation</p> <p>To ensure that filling and excavation is carried out in a manner that ensures:</p> <ul style="list-style-type: none"> • filling and excavation does not adversely impact on flooding of upstream, downstream and adjoining land. <p>P3 Existing drainage or flood flows, either upstream or downstream of the site, are maintained.</p> <p>A3.1 Filling or excavation does not cause ponding on the site or on nearby land.</p> <p>A3.2 Filling or excavation does not occur within any overland flow path or in the floodplain as identified on Overlay Map 6.</p> <p>A3.3 The works do not impact on the take of runoff water controlled under the provisions of a Water Resources Plan approved under the Water Act 2000.</p>
Overlay Code	Yes
Details	<p>Vulnerable Groundwater Areas and Floodplains Overlay Map</p> <p>Overlay Map 6 identifies the floodplains associated with the Condamine Basin. Intensive animal industries and other industrial development will be discouraged within these areas unless they can demonstrate adverse impacts on water resources can be adequately managed and the integrity of flow regimes can be maintained.</p>
PSPs	Yes
Details	<p>PSP 6 - Infrastructure Contributions for Transport Network</p> <p>3.4 FACTORS AFFECTING FUTURE DEVELOPMENT</p> <p>3.4.2 Physical Constraints on the Land</p> <p>The land available for future development, or developable area, is that land designated for development under the planning scheme that is not affected by absolute constraints under the Planning Scheme such as regional flooding (Q100 flood inundation), nature conservation and resumption plans etc.</p>
Other	No
Details	
Other Info	

LGA	Toowoomba
Planning Scheme	Clifton
Adopted	24/02/2003
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	Yes
Details	Q100 in provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Plains Landscape The plains may be prone to erosion caused by concentrated, high velocity overland flow. Development that diverts or concentrates flows on the floodplains will not be favourably considered.</p>
Use Codes	Yes
Details	<p>6.8 Host Home Accommodation P3 Development is located where there is convenient access and minimal environmental impact. A3.1 The site is served with all weather access. A3.2 . The house is not located within the floodplain as indicated on Overlay Map 7. 6.10 Intensive Animal Industry P1 The development is located and sited such that: <ul style="list-style-type: none"> • natural flood and drainage processes and /or patterns are maintained; A1.1 The development is located outside any constraint area. A decision support system may be used to facilitate this identification process. 6.11 On Site Services, Car Parking and Access P2 Provision made for the treatment and disposal of human effluent is sustainable and does not: <ul style="list-style-type: none"> • increase any adverse water quality or ecological impacts as a result of the system or as a result of increasing the cumulative effect of systems in the locality ; A2.2 (c) The proposed on-site effluent disposal system is located on land: <ul style="list-style-type: none"> • above the Q10 flood levels and not within 9m horizontal distance of this level; 6.13 Residential Development P1 Development maintains local residential character and amenity. A1.4 The house is not located within the floodplain as indicated on Overlay Map 7. 6.14 Rural Development To facilitate development in rural areas, particularly of rural activities, such that there is sustainable use of land and water resources through: <ul style="list-style-type: none"> • minimising risk to life and property from landslip, bushfire and flood. PART B: Provisions Applying to Code and Impact Assessable Development Only P8 Adverse Impact on the natural environment is minimised by maintaining water quality, providing appropriate effluent disposal, avoiding potential erosion and protecting natural habitat. A8.4 Development is not located within the floodplain as indicated on Overlay Map 7. A8.5 For areas within the floodplain, as indicated on Overlay Map 7, natural drainage channels and flood flow paths are maintained and no adverse impacts on upstream or downstream drainage or flooding characteristics are created.</p>
ROL Code	Yes
Details	<p>6.12 Reconfiguring a Lot Part A: in the Rural Land Use Area P1 Lots are of an appropriate size and configuration to sustain the utility and productive capacity of the land for rural purposes, and to minimise potential impacts on the natural environment through improved land management practices A1.2 Lot boundaries relate to natural features such as ridges or other catchment boundaries, drainage lines or flood flows, or remnant stands of vegetation. Part B: In the Rural Residential Land Use Area P2 Rural residential lots are located and designed such that they: – provide for an high level of residential amenity, access to services and facilities, and safety from risk of natural hazards such as flooding, land slip and bushfire. A2.5 The location and layout of lots allows for the buffering of riparian vegetation and waterways. PART B: Provisions Applicable to Reconfiguring a Lot in Other Land Use Areas P5 The reconfiguring of lots provides for protection of life and property from risk of flooding. A5.1 Each lot contains a building envelope with a minimum area of 600m² and access thereto above the floodplain as indicated on Overlay Map 7. A5.2 The reconfiguring of lots does not change the existing patterns and levels of upstream and downstream drainage. P12 Provision made for the treatment and disposal of effluent is sustainable and does not: <ul style="list-style-type: none"> • increase any adverse water quality or ecological impacts as a result of the system or as a result of increasing the cumulative effect of systems in the locality; A12.2 Where not in a sewerage scheme area (c) The proposed on-site effluent disposal system is located on land :above the Q10 flood levels and not within 9m horizontal distance of this level;</p>
Overlay Codes	Yes
Details	Vulnerable Groundwater Areas and Floodplains Overlay Maps

	<p>Map 7 identifies the floodplains associated with the Condamine Basin.</p> <p>Rural residential development, intensive animal industries and other industrial development will be discouraged within these areas shown on both overlay maps unless they can demonstrate adverse impacts on water resources can be adequately managed and the integrity of flow regimes can be maintained.</p>
PSPs	No
Details	
Other	Yes
Details	<p>DEOs</p> <p>3.1.2 Water, Land and Air Quality</p> <p>Development needs to be managed to ensure there is sufficient water available to meet demands, and there is a need to protect vulnerable groundwater areas, riparian zones and flood plains from activities that may cause potential impacts.</p> <p>Shire-wide Strategies</p> <p>3.1.2.2 Maintain, and where possible, rehabilitate waterways, natural hydrological processes and natural flowpaths including floodplains, thereby protecting both the ecological values of aquatic habitats and public health.</p> <p>Measures</p> <p>Major waterways, their floodplains and areas of high groundwater vulnerability are identified as an overlay to the scheme maps;</p> <p>New development within or near these areas will be required to demonstrate:</p> <p>Maintenance of downstream or up stream drainage and flooding characteristics</p>
Op Works Code	Yes
Details	<p>6.5 Filling and Excavation</p> <p>To ensure that filling and excavation is carried out in a manner that ensures:</p> <ul style="list-style-type: none"> • filling and excavation does not adversely impact on flooding of upstream, downstream and adjoining land. <p>P3 Existing drainage or flood flows, either upstream or downstream of the site, are maintained.</p> <p>A3.1 Filling or excavation does not cause ponding on the site or on nearby land.</p> <p>A3.2 Filling or excavation does not occur within any overland flow path or in the floodplain as identified on Overlay Map 7.</p> <p>A3.3 The works do not impact on the take of runoff water controlled under the provisions of a Water Resources Plan approved under the Water Act 2000.</p>
Overlay Code	Yes
Details	<p>Vulnerable Groundwater Areas and Floodplains Overlay Maps</p> <p>Map 7 identifies the floodplains associated with the Condamine Basin.</p> <p>Rural residential development, intensive animal industries and other industrial development will be discouraged within these areas shown on both overlay maps unless they can demonstrate adverse impacts on water resources can be adequately managed and the integrity of flow regimes can be maintained.</p>
PSPs	Yes
Details	<p>PSP 6 - Infrastructure Contributions for Transport Network</p> <p>3.4 FACTORS AFFECTING FUTURE DEVELOPMENT</p> <p>3.4.2 Physical Constraints on the Land</p> <p>The land available for future development, or developable area, is that land designated for development under the planning scheme that is not affected by absolute constraints under the Planning Scheme such as regional flooding (Q100 flood inundation), nature conservation and resumption plans etc.</p>
Other	No
Details	
Other Info	

LGA	Toowoomba
Planning Scheme	Crows Nest
Adopted	21/10/2008
Flood Amendments	No
SPP Compliance	Yes
Details	<p>State planning policies</p> <p>The Minister for Local Government and Planning has identified the following State planning policies as having been appropriately reflected in the planning scheme—</p> <p>2. 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Mapped Q100 / DFE	Yes
Details	Q100 Overlay Map
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>4.2.8 Specific Outcomes and Probable Solutions for the Rural Zone</p> <p>(Pii) Development does not establish in areas subject to inundation or not capable of being permanently drained.</p> <p>(ASii) Buildings and ancillary structures are constructed with floor levels 300mm above the Q100 flood for the locality. Land for a dwelling house is drained, or filled and drained to free drain at all time on minimum surface slope of 1 in 100.</p> <p>4.3.7 and 4.4.6 Specific Outcomes and Probable Solutions for Park Residential/Rural Residential Zone</p> <p>(Pii) Development does not:</p> <ul style="list-style-type: none"> - locate in flood prone areas <p>(ASii) Buildings and ancillary structures are constructed with floor levels 300mm above the Q100 flood for the locality and at least 100 m from the top bank of all water courses and storages</p> <p>4.5.6 Specific Outcomes and Probable Solutions for Residential Low Density Zone</p> <p>(Piii) Residential uses establish in localities:</p> <ul style="list-style-type: none"> - where exposure to natural hazards is minimal <p>(ASiii) Residential areas are developed on land which has the following characteristics.</p> <ul style="list-style-type: none"> - Is above the highest available flood level in the locality or the Q100 flood whichever is higher - Has all free draining lots - Are not located in areas identified as moderate, high or extreme landslide, flood prone or bush fire hazard identified on the Bushfire Zone Map <p>4.6.7 Specific Outcomes and Probable Solutions for Residential Zone</p> <p>(Pii) Residential uses are established in localities:</p> <ul style="list-style-type: none"> - where amenity is high and not in danger from natural hazards, or from deteriorating due to inadequate development standards <p>(ASii) Residential areas are developed on land which has the following characteristics.</p> <ul style="list-style-type: none"> - Above the highest available flood level in the locality or the Q100 flood whichever is higher and - All lots are free draining <p>4.10.6 Specific Outcomes and Probable Solutions for Industry Zones</p> <p>(Pi) Development occurs in localities with level or gently sloping land with safe public access and,</p> <ul style="list-style-type: none"> - Allotments are free draining at all times without creating pondage on adjoining land. <p>(ASi) Sites for development have the following characteristics:</p> <ul style="list-style-type: none"> - Well drained without flooding by Q100 flood on any part of the land. <p>(Piii) Development does not proceed in flood prone areas</p> <p>(ASiii) Buildings and associated structures are constructed with floor levels 300 mm above the Q100 flood for the locality .</p> <p>4.11.6 Specific Outcomes and Probable Solutions for Green Space Zones</p> <p>(Pii) Development is not sited on flood prone land.</p> <p>(ASii) Buildings and ancillary structures are constructed with floor levels 300mm above the Q100 flood for the locality.</p>
Use Codes	Yes
Details	<p>6.1.3 Specific outcomes and probable solutions for General Development Code</p> <p>(PSiii) Access and Drainage</p> <p>All developments ensure access to and drainage are:</p> <ul style="list-style-type: none"> - flood free and with systems that ensure all lots are free draining. <p>(ASiii) No probable solution proposed</p> <p>6.8.3 Specific Outcomes And Probable Solutions For Caravan Park Code</p> <p>(a) Caravan parks are located;</p> <p>(PSi) on land with ample area and flat gradient to ensure minimal potential to landslide and maximum usage and,</p> <p>(ii) on land above flood level</p> <p>(ASii) above the maximum recorded flood level for the area or Q100 whichever is higher.</p> <p>6.11.3 Specific outcomes and probable solutions for Child Care Centre Code</p> <p>(b) The development is located to minimise:</p> <p>(iii) flood damage or hazard</p> <p>(AS(b) The development is not located:</p> <p>(iii) on a site subject to flooding.</p> <p>6.14.3 Specific Outcomes And Probable Solutions For The Dwelling House Code</p> <p>(PSc) Dwelling houses and associated structures are sited,</p> <ul style="list-style-type: none"> ---to minimise the effects of flood inundation on the structure and its contents and, --to avoid land incapable of permanent drainage. <p>(ASc(i) Floor levels for habitable living areas are a minimum of 300 mm above the highest recorded flood level on the allotment, or the Q100 flood level whichever is higher.</p> <p>Land areas subject to permanent elevated water tables close to ground surface are filled and drained to a land slope of 1in 100 or steeper to</p>

	<p>cause no nuisance to adjoining properties.</p> <p>6.17.3 Specific Outcomes And Probable Solutions For Holiday Cabin Development Code</p> <p>(PSa) Developments provide areas for visitors to experience natural resources of the area in facilities which are compatible with nature and the ecology of the area.</p> <p>(ASiii) The sites are flood free and not constructed on land steeper than 1 in 8 nor in locations identified on Landslide and Flood Hazard Map as a moderate, high, or extreme bushfire hazard risk.</p> <p>6.21.3 Specific Outcomes And Probable Solutions For Intensive Rural Use Code</p> <p>(a) The development is located and sited such that:</p> <ul style="list-style-type: none"> - natural flood and drainage processes and patterns are maintained; <p>(ASa) No probable solutions proposed.</p>
ROL Code	Yes
Details	<p>6.3.3 Specific Outcomes and Probable Solutions for Lot Reconfiguration Code</p> <p>PSe) Creation of new lots does not expose residents to impacts from natural hazards of</p> <ul style="list-style-type: none"> (i) floods (ii) poor drainage <p>(ASe) Allotments are not created:</p> <ul style="list-style-type: none"> (i) Below the highest recorded flood level or Q100 flood level for the locality, whichever is higher. (ii) On land with a permanent water table at or within 200mm of the surface at any place is filled and drained.
Overlay Codes	Yes
Details	<p>(b) Overlay Codes:</p> <ul style="list-style-type: none"> (ii) Natural Hazards Overlay incorporating <ul style="list-style-type: none"> • Bushfire Risk • Landslide Risk • Floodable Land <p>5.2.3 Natural Hazards overlay code</p> <p>Floodable Land</p> <p>(PSa) Development maintains the safety of people on the development site from all floods up to and including a 1:100 year event.</p> <p>(ASa) Development is not sited on land subject to flooding during a 1:100 year flood event .</p> <p>(PSb) Development does not result in adverse impacts on people’s safety or the capacity to use land within the floodplain.</p> <p>(ASb) Works do not involve:</p> <ul style="list-style-type: none"> (i) any physical alteration to a permanent watercourse or floodway including vegetation clearing; or (ii) net filling exceeding 50 cubic metres. <p>(PSc) Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk.</p> <p>(ASc) The manufacture or storage in bulk of hazardous materials takes place above the level of a 1:100 year flood event .OR Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event.</p> <p>(PSd) Essential public utilities are available and maintain their function during flood events up to a 1:100 year flood event.</p> <p>(ASd) Infrastructure is secured by ;</p> <ul style="list-style-type: none"> (i) location above the level of a 1:100 year flood event; or (ii) design and construction to exclude water inundation or infiltration and hydrostatic and hydrodynamic forces as a result of inundation. <p>(PSe) Community Infrastructure is able to function effectively during and immediately after flood events .</p> <p>(ASe) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide Guidelines</p> <p>Footnote: Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP#</p> <p>6.6.5 Specific Outcomes and Probable Solutions for Catchment Management Code</p> <p>Stormwater Quality Management</p> <p>(PSa) To provide a stormwater drainage and waterways systems that:</p> <ul style="list-style-type: none"> adequately protects people and the natural and built environments, in terms of flooding immunity and water quality; <p>(ASii) Preparation of a detailed Stormwater Management Plan (SMP)</p> <p>Stormwater Management Plans should undertake adequate hydraulic, hydrologic and design studies to provide evidence that stormwater quality measures and development design achieve the following:</p> <ul style="list-style-type: none"> • peak discharges do not increase; • flood levels or volumes outside the boundaries of the site do not increased; • there are no adverse impacts on flooding of developed or developable areas; <p>Management of Effluent Disposal</p> <p>(PSc) Effluent is disposed of so there are:</p> <ul style="list-style-type: none"> • no increase in public health risks; <p>(AScii) Effluent treatment and disposal does not occur on lands where contamination may result and within the following limitations:</p> <ul style="list-style-type: none"> -within 400 metres from the upper flood margin level of an urban water supply storage (eg Cooby, Cressbrook or Perseverance Dams); <p>Management of Riparian Areas & Drainage Links</p> <p>(PSd) Vegetation and riparian land is protected and properly managed by: maximising infiltration of polluted runoff ensuring bank stability collecting sediment from overland flows protecting aquatic ecosystems.</p> <p>(ASdii) Manage identified riparian lands in all zones except for the Rural Zone in accordance with an approved Vegetation Management or Landscaping Plan demonstrating retention of trees and shrubs along the approved width of riparian land with supplementary planting of:species appropriate to soils and natural erosion activity as well as flood, drought and bushfire characteristics</p>

PSPs	No
Details	
Other	No
Details	
Op Works Code	Yes
Details	6.4.2 Overall Outcomes Of Filling And Excavation Code (b) Filling or excavation does not degrade: - the local watercourses - or increase flooding or surface flows
Overlay Code	Yes
Details	(b) Overlay Codes: (ii) Natural Hazards Overlay incorporating <ul style="list-style-type: none"> • Bushfire Risk • Landslide Risk • Floodable Land 5.2.3 Natural Hazards overlay code Floodable Land (PSa) Development maintains the safety of people on the development site from all floods up to and including a 1:100 year event. (ASa) Development is not sited on land subject to flooding during a 1:100 year flood event . (PSb) Development does not result in adverse impacts on people's safety or the capacity to use land within the floodplain. (ASb) Works do not involve: (i) any physical alteration to a permanent watercourse or floodway including vegetation clearing; or (ii) net filling exceeding 50 cubic metres. (PSc) Public safety and the environment are not adversely affected by the detrimental impacts of floodwater on hazardous materials manufactured or stored in bulk. (ASc) The manufacture or storage in bulk of hazardous materials takes place above the level of a 1:100 year flood event .OR Buildings or structures used for the manufacture or storage of hazardous materials are designed to prevent the intrusion of floodwaters up to the level of a 1:100 year flood event. (PSd) Essential public utilities are available and maintain their function during flood events up to a 1:100 year flood event. (ASd) Infrastructure is secured by ; (i) location above the level of a 1:100 year flood event; or (ii) design and construction to exclude water inundation or infiltration and hydrostatic and hydrodynamic forces as a result of inundation. (PSe) Community Infrastructure is able to function effectively during and immediately after flood events . (ASe) Community Infrastructure is designed and located in accordance with solutions 1.1 or 1.2 and 1.3 in Appendix 9 of the SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide Guidelines Footnote: Council may request a flood assessment report to assist in the assessment of whether or not the application achieves the relevant specific outcomes and probable solutions. For further details refer to PSP# 6.6.5 Specific Outcomes and Probable Solutions for Catchment Management Code Stormwater Quality Management (PSa) To provide a stormwater drainage and waterways systems that: adequately protects people and the natural and built environments, in terms of flooding immunity and water quality; (ASii) Preparation of a detailed Stormwater Management Plan (SMP) Stormwater Management Plans should undertake adequate hydraulic, hydrologic and design studies to provide evidence that stormwater quality measures and development design achieve the following: <ul style="list-style-type: none"> • peak discharges do not increase; • flood levels or volumes outside the boundaries of the site do not increased; • there are no adverse impacts on flooding of developed or developable areas; Management of Effluent Disposal (PSc) Effluent is disposed of so there are: <ul style="list-style-type: none"> • no increase in public health risks; (AScii) Effluent treatment and disposal does not occur on lands where contamination may result and within the following limitations: -within 400 metres from the upper flood margin level of an urban water supply storage (eg Cooby, Cressbrook or Perseverance Dams); Management of Riparian Areas & Drainage Links (PSd) Vegetation and riparian land is protected and properly managed by: maximising infiltration of polluted runoff ensuring bank stability collecting sediment from overland flows protecting aquatic ecosystems. (ASdii) Manage identified riparian lands in all zones except for the Rural Zone in accordance with an approved Vegetation Management or Landscaping Plan demonstrating retention of trees and shrubs along the approved width of riparian land with supplementary planting of:species appropriate to soils and natural erosion activity as well as flood, drought and bushfire characteristics
PSPs	Yes
Details	PSP 6 - Infrastructure Contributions for Transport Network 3.4 FACTORS AFFECTING FUTURE DEVELOPMENT 3.4.2 Physical Constraints on the Land The land available for future development, or developable area, is that land designated for development under the planning scheme that is not affected by absolute constraints under the Planning Scheme such as regional flooding (Q100 flood inundation), nature conservation and resumption plans etc.
Other	Yes
Details	2.4 Explanatory definitions

	Flood Plain means an area of land which is inundated periodically by flood waters.
Other Info	

LGA	Toowoomba
Planning Scheme	Jondaryan (Oakey)
Adopted	3/05/2005
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	Yes
Details	Q100 in provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>4.9 Specific Outcomes, Acceptable Solutions and Probable Solutions for the Rural Zone</p> <p>SO33.1 Development within the Rural Residential Investigation Area is to take into account relevant constraints.</p> <p>PS33.1 Proposals for development are to identify any area subject to flooding from Oakey Creek or that are poorly drained along with measures to avoid such problems.</p> <p>Division 3 Assessment Tables for the Rural Residential Zone</p> <p>2) The Overall Outcomes sought for the Rural Residential Zone are as follows:</p> <p>i) Development does not occur on steep land or on flood prone land.</p> <p>SO18 An open space system which incorporates drainage functions is provided.</p> <p>PS18.1 Any plan or layout submitted with a development application which includes sites within the drainage corridor/open space areas as illustrated on Map PSPM6.1 in Planning Scheme Policy No. 6 will be required to show such land as open space which will be acquired by applicant contribution at the time of development in accordance with Planning Scheme Policy No. 6.</p> <p>PS18.2 Council will acquire open space areas along designated drainage corridors of at least 70m wide (35m each side) or such width to accommodate major storm flows. The width shall be measured from:</p> <p>a) the centre line of the drainage channel as determined by survey; or</p> <p>b) the banks of the drainage channel where the channel has a defined bed and banks.</p> <p>PS18.3 Land below the 1 in 5 year ARI flood level shall be excluded for the purposes of calculating the parkland contribution.</p> <p>PS18.4 Development, including clearing of vegetation within or near riparian corridors and flood prone areas which is likely to encroach or have a deleterious effect on the drainage corridors must comply with the provisions of the Conservation Overlay.</p> <p>Division 8 - Assessment Criteria for the Township Zone</p> <p>2) The Overall Outcomes sought for the Township Zone are as follows:</p> <p>- Township development does not occur on steep land of greater than 15% slope, or on flood prone land.</p> <p>Element (vii) : PROVISIONS PARTICULAR TO WESTBROOK</p> <p>SO14 Natural drainage corridors are protected against erosion, disturbances and degradation thereby reducing potential for nuisance flooding*.</p> <p>PS14.1 Drainage corridors and associated reserves are incorporated into the open space system as shown on Map PSPM6.2 in Planning Scheme Policy No. 6.</p> <p>PS14.2</p> <p>All development is to comply with the approved points of stormwater discharge as shown on Map PSPM6.2.</p> <p>Division 10 Assessment Criteria for the Industry Zone</p> <p>2) The Overall Outcomes sought for the Industry Zone are as follows:</p> <p>- industrial development does not occur on steep land of greater than 15% slope, or on flood prone land;</p> <p>Division 12 Assessment Criteria for the Charlton/Wellcamp Regional Industry Zone</p> <p>ENVIRONMENTAL PERFORMANCE AND MANAGEMENT</p> <p>Buffer zones (drainage reserves) are provided and maintained either side of Dry Creek to prevent flooding or disturbances to natural flow regimes.</p> <p>SO1.3 Lot size and dimensions must enable buildings, structures and use areas to be sited and managed to:</p> <p>- respect site constraints including soil conditions, bushfire risk, flooding, erosion, drainage and buffers to incompatible land uses;</p> <p>PS1.1 Lot area and dimensions allow for site development to incorporate open space:</p> <p>-to creeks contained within, or along the boundary of the land zoned Charlton/Wellcamp Regional Industry, by providing for a minimum 70m wide corridor, or the corridor of flood prone land, to be established and maintained as a sustainably vegetated area along each side of the creek.</p> <p>SO1.13 The layout must incorporate natural and cultural features, allow for the control of soil erosion and sedimentation, and avoid inappropriate development on flood-prone land.</p> <p>PS1.13 No Probable Solution is prescribed.</p> <p>SO1.17The design of the layout must provide for:</p> <p>- a drainage system that maintains natural drainage patterns as much as possible,</p> <p>- drainage which does not cause damage or nuisance flows to adjoining, downstream or upstream lands,</p> <p>- a drainage system that has the capacity to convey stormwater flows so that acceptable levels of risk to people and property are achieved,</p> <p>- the safety and convenience of people using the area, and</p> <p>- maximum use of porous surfaces (on-site infiltration).</p> <p>PS1.9 The major drainage system design outflow is in accordance with the relevant provisions of the EDROC Regional Standards Manual - Part B (as applicable to industrial areas). AND</p> <p>All business and industry premises (excluding access driveways) are located above the 1 in 100 year flood level. AND</p> <p>Flows within the floodway are limited in flow depth, width and velocity flow using the design criteria outlined in the EDROC Regional Standards Manual - Part B (as applicable to industrial areas).</p>
Use Codes	Yes
Details	<p>Division 10 – Intensive Animal Husbandry</p> <p>SO3 The quality of ground or surface water is not adversely affected by the development by ensuring that the Intensive Animal Husbandry is of a scale and operated in a manner to not cause; deep drainage beyond the hydrological balance of that location; waterlogging; salinity, leaching of nutrients and/or pesticides into surface water, groundwater or areas offsite that may be at risk, particularly areas down slope.</p>

	PS3.1 Intensive Animal Husbandry is not located within the floodplain as identified on Overlay Map OM1C or areas with vulnerable groundwater resources as shown on Map PSPM1.
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Division 1 – Assessment Tables for the Conservation Overlays</p> <p>5.1 Conservation Overlays Description</p> <p>The Conservation Overlays mapping includes:</p> <ul style="list-style-type: none"> • Floodplain and erosion prone areas – Map OMIC. <p>Division 2 – Assessment Criteria for the Conservation Overlays</p> <p>2) The Overall Outcomes sought for the Conservation Overlays Code are:</p> <p>c) The quality of water resources and the integrity of flow regimes are protected from the adverse impacts of development. Intensive Animal Husbandry uses and other industrial development within the floodplain are discouraged unless they can demonstrate adverse impacts on water resources can be adequately managed.</p> <p>Element (iii) : VULNERABLE GROUNDWATER, FLOODPLAIN AND EROSION PRONE AREAS (MAP OMIC(A) AND OMIC(B)</p> <p>SO8 Development is carried out so as to protect flow regimes by:</p> <ul style="list-style-type: none"> -allowing runoff to maintain a natural flow pattern - minimising risk to adjacent natural resources. <p>PS8 Development is designed and located to minimise adverse impacts on flow regimes on the floodplain as shown on Map OMIC(a).</p> <p>Division 6 – Assessment Criteria for the Major Infrastructure and Corridor Overlays</p> <p>PART B PROVISIONS APPLICABLE TO CODE AND IMPACT ASSESSABLE DEVELOPMENT ONLY</p> <p>SO4 Stormwater runoff from development does not compromise the flood immunity of a Major Transport Corridor.</p> <p>PS4 Development of land upstream of a Major Transport Corridor will need to ensure that the rate of stormwater runoff from development sites does not exceed the predeveloped runoff.</p>
PSPs	No
Details	
Other	Yes
Details	<p>PART 3 DESIRED ENVIRONMENTAL OUTCOMES (DEOs)</p> <p>3) The desired environmental outcomes for the Jondaryan Shire are as follows:</p> <p>e) Places of cultural significance in the Shire are protected and a high quality built environment is achieved with development consistent with desired local character and sited so as to minimise the potential adverse impacts of flood, bushfire and landslide.</p>
Op Works Code	Yes
Details	<p>Table 16 Conservation Overlays Assessment Categories and Applicable Codes – Other Development</p> <p>Operational Works</p> <p>i) Filling or Excavation</p> <p>Code assessable where:</p> <ul style="list-style-type: none"> - where less than 200m3 of material is filled or excavated; and where the site is within a “Regional Significance” area on Map OMIA or the site is within an area identified as being a landscape feature of significance on Map OMIB or the site is within the Floodplain identified on Map OMIC.
Overlay Code	Yes
Details	<p>Division 2 – Assessment Criteria for the Conservation Overlays</p> <p>2) The Overall Outcomes sought for the Conservation Overlays Code are:</p> <p>c) The quality of water resources and the integrity of flow regimes are protected from the adverse impacts of development. Intensive Animal Husbandry uses and other industrial development within the floodplain are discouraged unless they can demonstrate adverse impacts on water resources can be adequately managed.</p> <p>Element (iii) : VULNERABLE GROUNDWATER, FLOODPLAIN AND EROSION PRONE AREAS (MAP OMIC(A) AND OMIC(B)</p> <p>SO8 Development is carried out so as to protect flow regimes by:</p> <ul style="list-style-type: none"> -allowing runoff to maintain a natural flow pattern - minimising risk to adjacent natural resources. <p>PS8 Development is designed and located to minimise adverse impacts on flow regimes on the floodplain as shown on Map OMIC(a).</p>
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Toowoomba
Planning Scheme	Millmerran
Adopted	15/11/2006
Flood Amendments	Yes
SPP Compliance	No
Details	<p>State Planning Policies</p> <p>The Minister for Local Government and Planning has identified the following State Planning Policies as having appropriately reflected in the planning scheme:</p> <p>3. State Planning Policy 1/03 Mitigating the Adverse Impact of Flood, Bushfire and Landslide, except for Flood assessment provisions.</p> <p>Approval to adopt this planning scheme is conditional upon the continued operation and effect of:</p> <p>2. Flood assessment provision State Planning Policy 1/03 Mitigating the Adverse Impact of Flood, Bushfire and Landslide</p>
Mapped Q100 / DFE	No
Details	Highest Known May be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Overall Outcomes for Town/Rural Zone Code</p> <p>(2) The code seeks to ensure that development within the Town Zone:</p> <p>(l) is located and designed in ways that minimise the need for flood and landscape mitigation, and to protect people and premises from such natural events;</p> <p>PC 13/15 Flooding</p> <p>Premises are designed and located so as:</p> <p>(a) not to adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and</p> <p>(c) not to have an undesirable impact on the extent and magnitude of flooding.</p> <p>AS 13.1 No solution specified.</p> <p>Footnote: 33 One way an applicant can demonstrate compliance with PC13 is to adopt the maximum recorded flood as an indication of flood level.</p>
Use Codes	Yes
Details	<p>Designation of Land for Community Infrastructure</p> <p>7.4 Standards for Stormwater Drainage</p> <p>(2) Australian Rainfall and Runoff (Volume 1 A guide to Flood Estimation).</p>
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	yes
Details	<p>1.12 Assessment Provisions</p> <p>(1) Exempt Development</p> <p>(v) development involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply and sewerage treatment plants;</p> <p>PSP1 - Information Council May Request</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable Council to accurately assess infrastructure requirements. The following information should be provided:</p> <p>- known or determined flood levels;</p> <p>2.10 Reconfiguring A Lot</p> <p>(1) Sufficient detail should be provided to enable Council to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>- details of any known flood levels;</p>
Other	Yes
Details	<p>Schedule 4 -</p> <p>3) Environmental Management Plan Guidelines</p> <p>Environmental Management Plan:</p> <p>i. An Environmental Management Plan shall be submitted with an application that conserves and protects areas identified b and/or considered by Council to be subjected to, or potentially subject to landslip, erosion, erosive flooding, salinity or any other form of land degradation; or for areas where building work may impact on the environment and amenity of the neighbourhood.</p> <p>ii. The Environmental Management Plan is required to address only the environmental issues relevant to the particular application. For example, if only flooding was identified for the application, the Environmental Management Plan will then only be required to address issues such as flooding and water quality.</p> <p>(m) Flooding</p> <p>Analyse inundation problems and proposes solutions acceptable to Council, that do not detrimentally impact upon adjacent landowners, natural water courses or flood levels in the general area.</p> <p>(n) Remedial Measures</p> <p>Detail remedial action to be taken in cases where natural watercourses, land or flood levels are adversely effected by the proposal.</p>
Op Works Code	Yes
Details	<p>PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS FOR THE FILLING AND EXCAVATION CODE</p> <p>PC 3 Drainage</p> <p>Existing drainage or flood flows, either upstream or downstream of the site, are maintained.</p> <p>AS 3.1 No solution specified</p>
Overlay Code	n

Details	
PSPs	Yes
Details	PSP 6 - Infrastructure Contributions for Transport Network 3.4 FACTORS AFFECTING FUTURE DEVELOPMENT 3.4.2 Physical Constraints on the Land The land available for future development, or developable area, is that land designated for development under the planning scheme that is not affected by absolute constraints under the Planning Scheme such as regional flooding (Q100 flood inundation), nature conservation and resumption plans etc.
Other	No
Details	
Other Info	

LGA	Toowoomba
Planning Scheme	Pittsworth
Adopted	19/12/2006
Flood Amendments	Yes
SPP Compliance	Yes
Details	1.3 State Planning Policies (b) SPP 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (flooding only).
Mapped Q100 / DFE	Yes
Details	Floodplain Area Mapped
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>1.8 Local Strategies for the Rural Zone</p> <p>3) Development on the floodplain is located in a manner which does not adversely impact upon natural drainage lines and catchments.</p> <p>(6) Intensive Animal Industry activities will be located in areas away from the floodplain.</p> <p>4.3 Urban/Rural Zone Code</p> <p>4.5 Overall Outcomes for Urban/Rural Zone</p> <p>(2) The specific outcomes sought for the Urban Zone are to ensure development;</p> <p>(m) is located and designed in ways that minimise the need for flood and landscape mitigation, and to protect people and premises from such natural events;</p> <p>Rural Zone Code</p> <p>PC 22 Drainage</p> <p>The use is sited such that drainage paths, including flood ways are not obstructed.</p> <p>AS 22.1 The use is not located in flood liable land as depicted on Map 10 – Floodplain Constraints.</p> <p>Intensive Animal Industry</p> <p>PC 33 Location</p> <p>The use is located and sited such that:</p> <p>(d) Natural flood and drainage processes and /or patterns are maintained;</p> <p>AS 33.1 The use is located outside any constraint area as identified through a decision support system.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>PART 6 - ASSESSMENT CRITERIA FOR DEVELOPMENT FOR A STATED PURPOSE OR OF A STATED TYPE</p> <p>(2) The code seeks to ensure that development in relation to Reconfiguring of a Lot:</p> <p>(e) minimises the need for flood, bushfire and landslide mitigation and protects people and premises from such natural events.</p> <p>A. Provisions for Reconfiguring a Lot in the Urban Zone (Residential and Village Areas)</p> <p>PC2 Sustainable Design of Multiple Lot Reconfiguration</p> <p>The lot design:</p> <p>(b) takes into account drainage lines, flood liability, landforms, retention of existing vegetation and the need to protect structures of cultural heritage or local significance value.</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>PART 7 – INFRASTRUCTURE</p> <p>7.1 Council Road Standards</p> <p>1.2 Rural Road To Service Up To 3 Lots or Dwellings</p> <p>1.3 Rural Road To Service Up To 7 Lots or Dwellings</p> <p>NOTE: Special requirements apply for construction in black soil/floodplain situations.</p> <p>1.4 Rural Road to Service More Than 7 Lots or Dwellings</p> <p>No causeways/floodways permitted.</p> <p>NOTE: Special requirements apply to construction in black soil/floodplain situations.</p> <p>7.4 Standards for Stormwater Drainage⁷⁶</p> <p>Standards for Stormwater Drainage</p> <p>(2) Australian Rainfall and Runoff (Volume 1 A Guide to Flood Estimation).</p> <p>Schedule 4 - Environmental Management Plan Guidelines</p> <p>(3) Environmental Management Plan:</p> <p>i. An Environmental Management Plan shall be submitted with an application that conserves and protects areas identified by and/or considered by Council to be subjected to, or potentially subject to landslip, erosion, erosive flooding, salinity or any other form of land degradation; or for areas where building work may impact on the environment and amenity of the neighbourhood.</p> <p>ii. The Environmental Management Plan is required to address only the environmental issues relevant to the particular application. For example, if only flooding was identified for the application, the Environmental Management Plan will then only be required to address issues such as flooding and water quality.</p> <p>(m) Flooding</p> <p>Analyse inundation problems and proposes solutions acceptable to Council, that do not detrimentally impact upon adjacent landowners, natural water courses or flood levels in the general</p> <p>(n) Remedial Measures Detail remedial action to be taken in cases where natural watercourses, land or flood levels are adversely affected by the proposal.area.</p>
Op Works Code	Yes
Details	4.6 Urban Zone Code

	<p>PC12 Excavation and Filling</p> <p>Excavation and filling of land ensures;</p> <p>(a) that both the amenity and safety of users of the site and adjacent land holdings; is maintained;</p> <p>AS 12.3 No excavation and filling is to occur in, or within 50 metres of a waterway or wetland.</p> <p>AS12.4 Excavation and filling does not occur within any overland flow path as depicted on Map 10 - Floodplain Constraints.</p> <p>PC 16 Drainage Development is sited such that drainage paths including flood ways, are not obstructed.</p> <p>AS 16.1 Development is not located on flood liable land as depicted on Map 10 – Floodplain Constraints.</p> <p>Rural Zone Code</p> <p>PC 19 Excavation and Filling</p> <p>Excavation and filling of land ensures;</p> <p>(d) there are no adverse impacts on drainage or flood flows either upstream or downstream of the site.</p> <p>(e) that land that is within an overland flow path as identified on Map 10 - Floodplain Constraints, does not cause adverse impacts on adjacent lands or natural resources,</p> <p>AS 19.4 No filling or excavation occurs in, or within 50 metres of, a waterway or wetland area unless it is required for location of a pump or other water resource facility.</p> <p>AS 19.7 Works do not cause ponding on the site or on adjacent properties.</p>
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Toowoomba
Planning Scheme	Rosalie (Goombungee)
Adopted	26/02/2008
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following State Planning Policies as having been appropriately reflected in the planning scheme: 2. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Bushfire only).
Mapped Q100 / DFE	Yes
Details	Overlay Map 2
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	4.7 RURAL ZONE Flood Plains More intensive forms of development will be discouraged within the flood plain areas unless it is demonstrated there are no adverse impacts in terms of safety, water quality and the integrity of existing flow regimes. Footnote: Flood Plains have been identified as part of the 'Upper Condamine Flood Plain Project'.
Use Codes	Yes
Details	6.2 CARAVAN PARK CODE P3 The location of caravan parks affords the residents an acceptable level of safety. A3.2 Caravan parks are not located in the flood plain areas as shown on Overlay Map 2. 6.8 HOUSE CODE P1 The proposed house must be: ☐ not be subject to unacceptable risk from flooding, bushfire, landslide or aircraft operations. A1.8 Houses on sites identified on Overlay Map 2 have finished floor heights 300mm above the 1988 flood level for Cooyar Creek or alternatively, where this level is not known or is not applicable to the site, the height of a 1% AEP flood event. P9 The location of the house affords the residents an acceptable level of safety. A9.1 All weather access arrangements are provided to each house. and A9.2 The house is not located in the flood plain areas as shown on Overlay Map 2. 6.10 INTENSIVE ANIMAL INDUSTRY CODE P1 The development is located and sited such that: natural flood and drainage processes and/or patterns are maintained; AS No acceptable Solution relevant to PC 6.11 KENNEL CODE P1 The site must be: - physically suited to use as a kennel. A1.5 The site of the kennel: - is not within 50 metres of a watercourse; - is not located in a flood plain area as shown on Overlay Map 2; - has flood immunity up to a 1 in 100 flood event 6.12 MULTI-UNIT DWELLING AND MOTEL CODE P8 Multiple dwellings and motels are not subject to unacceptable risk from flooding. A8 Multiple dwelling and motels on sites identified on Overlay Map 2 have finished floor heights 300mm above the 1988 flood level for Cooyar Creek or alternatively, where this level is not known or is not applicable to the site, the height of a 1% AEP flood event. 6.15 RURAL DEVELOPMENT CODE Part B – applicable only to Code and Impact Assessable Development P10 The impact on the natural environment, in terms of habitat, water quality and erosion, is minimised and the opportunity is taken to improve connectivity between existing areas of vegetation. A10.2 With the exception of development for forestry activities, a 50-metre wide buffer is provided to the top of the bank of any watercourse shown on a 1:250,000 scale topographic map. This buffer area is to be maintained in its natural state or, where possible, rehabilitated. This buffer does not apply to equipment such as pumps that are necessary to access water. and A10.3 Development, with the exception of agriculture, is not located within the floodplain as shown on Overlay Map 2. 6.16 SERVICING AND PARKING CODE P2 Provision is made for the sustainable treatment of waste in a way that does not: - increase any adverse amenity or ecological impacts on nearby environments as a result of the system itself, or as a result of increasing the cumulative effects of systems in the locality; - increase any health risk during a systems failure; A2.4 The proposed on-site effluent disposal system is located on land: ☐ no closer than 150 metres from the limit of the ponded waters of a water supply reservoir or a town water intake; ☐ above the relevant local flood level and not within 9 metres of the horizontal distance of this level;
ROL Code	Yes
Details	6.14 RECONFIGURATION OF AN ALLOTMENT CODE Part B – provisions applicable to subdivision in the Rural Residential and Park Residential Zones P5 Allotments are designed and located so that: - the risks associated with bushfire, flooding and land slide/subsidence are minimised. A5.3 Allotments are not located on flood plains shown on Overlay Map 2. and A5.4 Allotments have flood free access and house sites. and

	<p>A5.5 The minimum distance between a waterway and a building site is 50 metres.</p> <p>Part C – applicable to subdivisions in all zones</p> <p>P9 The subdivision must not result in residents, employees and property being exposed to unacceptable risks from flooding.</p> <p>A9.1 All habitable rooms are above the most recent flood levels or Q100 flood, whichever is the greater.</p> <p>A9.2 The subdivision is not located in a flood plain as shown on Overlay Map 2. and</p> <p>A9.3 The subdivision has no adverse impacts on drainage characteristics of adjoining properties.</p>
Overlay Codes	Yes
Details	<p>Overlay Map 2 - Flood Plain Areas⁴.</p> <p>4 The 'flood plain' areas are more accurately described as alluvial plains. The extent of the plans was based on data from Geoscience Australia which was primarily sourced from the 1:250,000 scale National Topographic Map Series and aerial photography. Detailed variations within the mapped areas can be obtained from the survey information at the Upper Condamine Floodplain Project (UCFP) Resource Inventory at the Department of Natural Resource and Water in Toowoomba. Not all the areas included in the flood plain area are subject to inundation. Some historic flood data is also available from the UCFP. The Department of Natural Resources and Water accepts no responsibility for the accuracy of this data. 5 Not yet included. This Map will be finalised and included</p> <p>Refer to PSP2,3,4</p>
PSPs	Yes
Details	<p>Desired Environmental Outcomes</p> <p>3.1.2 Protection of Water, Air and Land Resources</p> <p>While the allocation of water is primarily a state agency issue, a planning scheme can contribute by ensuring as part of the approval process:</p> <ul style="list-style-type: none"> - riparian areas and flood prone areas are free from inappropriate development. <p>Planning Approach</p> <ul style="list-style-type: none"> - there are no adverse impacts on upstream or down stream flooding characteristics; - Flood Plains (as indicated on Overlay Map 2) are to remain free of development that may obstruct their functioning. <p>PSP 2, 3, 4</p> <p>3. REMOTE SMALL LOT RURAL SUBDIVISION POLICY</p> <p>Whether flooding or other natural events adversely affect the land.</p> <p>Table 2 Overlay Assessment (applies to all affected zones)</p> <p>Flood Plain Areas.</p> <p>Site Characteristics</p> <ul style="list-style-type: none"> - the probable depth, volume and velocity of flows across the site; - the likely impact of the proposed development, including any associated earth works, both upstream and downstream from the site, particularly in terms of changes to the characteristics of flood waters and the duration of warning time; - likely impacts in terms of watercourse bank stability; - preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows; <p>Recommendations</p> <ul style="list-style-type: none"> - the use of flood resistant materials and construction techniques able to withstand relevant debris loads; - the location and height of means of ingress and egress, including possible flood escape routes; - the location and height of buildings, particularly habitable floor areas; - structural design, including the design of footings and foundations to take account of static and dynamic loads (including debris loads and any reduced bearing capacity owing to submerged soils); - the location and design of plant and equipment, including electrical fittings; - the storage of materials likely to be transported by inundation or stormwater flows; - the appropriate treatment of water supply and sanitation systems and other relevant infrastructure;
Other	No
Details	
Op Works Code	Yes
Details	<p>6.7 FILLING AND EXCAVATION CODE</p> <p>Purpose - To ensure that filling and excavation creating a significant change to natural ground levels is-</p> <p>=not likely to worsen flood or drainage impacts on neighbouring property.</p> <p>P4 Filling and/or excavation is not likely to</p> <ul style="list-style-type: none"> • worsen flood or drainage impacts on neighbouring property <p>A4.1 No filling is carried out in a waterway or on a flood plain identified on Overlay Map 2. and</p> <p>A4.2 Filling does not result in ponding on adjoining properties.</p>
Overlay Code	Yes
Details	<p>Overlay Map 2 - Flood Plain Areas⁴.</p> <p>4 The 'flood plain' areas are more accurately described as alluvial plains. The extent of the plans was based on data from Geoscience Australia which was primarily sourced from the 1:250,000 scale National Topographic Map Series and aerial photography. Detailed variations within the mapped areas can be obtained from the survey information at the Upper Condamine Floodplain Project (UCFP) Resource Inventory at the Department of Natural Resource and Water in Toowoomba. Not all the areas included in the flood plain area are subject to inundation. Some historic flood data is also available from the UCFP. The Department of Natural Resources and Water accepts no responsibility for the accuracy of this data. 5 Not yet included. This Map will be finalised and included</p> <p>Refer to PSP2,3,4</p>
PSPs	Yes
Details	<p>PSP 7 - Infrastructure Contributions for Transport Network</p> <p>3.4 FACTORS AFFECTING FUTURE DEVELOPMENT</p> <p>3.4.2 Physical Constraints on the Land</p> <p>The land available for future development, or developable area, is that land designated for development under the planning scheme that is not affected by absolute constraints under the Planning Scheme such as regional flooding (Q100 flood inundation), nature conservation and resumption plans etc.</p>
Other	No
Details	
Other Info	

LGA	Toowoomba
Planning Scheme	Toowoomba
Adopted	11/04/2003
Flood Amendments	Yes
SPP Compliance	No
Details	Not Stated
Mapped Q100 / DFE	No
Details	Q100 in provisions
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>4.9 Park Residential Zone Statement of Intent (1) Land in this Zone has: (c) natural drainage patterns (2) The intent is: (b) development that: i) minimises risk to human life and property; iii) protects natural stormwater flow patterns;</p> <p>4.14 Open Space Zone (1) The intent is: (a) the protection and enhancement of the hydrological and ecological processes, values and function of the creek system in accordance with adopted Stormwater Catchment Management Strategies;</p> <p>7.2 House Code P10 The development does not: - increase the risk to life or property from flood inundation. A10 The development meets the Acceptable Measures of the Future Infrastructure Corridors Code and the Minor Waterways Code.</p> <p>7.8 Child Care Centres Code P2 The Child Care Centre is located so that users are not subjected to: - flood risk. A2.1 The Child Care Centre is: - located with the principal access to a Local or Trunk Collector Road shown on the Regulatory Map and does not introduce non-local traffic into local streets; and - not located on a Site subject to the Q100 flood, or in an area where problems of flooding have been experienced and where all access points to the Child Care Centre could be cut by 'flash' flooding.</p> <p>7.12 Animal Keeping and Intensive Animal Husbandry Code P4 The development is on a Site which: - has adequate vehicle access; - is not subject to flooding;</p> <p>A4 The Site: - is not subject to the Q20 flood and is not otherwise low-lying;</p>
Use Codes	Yes
Details	<p>7.1 GENERAL DEVELOPMENT CODE P3 The development prevents or mitigates to an acceptable level any potential risk to life or property due to: ☑ natural hazards such as bushfire, landslide and inundation;</p>
ROL Code	Yes
Details	<p>Lot Reconfiguration Code COMMUNITY DESIGN ELEMENT 1: RESIDENTIAL NEIGHBOURHOOD, COMMERCIAL CENTRES AND INDUSTRIAL ESTATE DESIGN P8 The subdivision layout : - avoids development on land below the Q100 flood level. A8 The lot reconfiguration design and layout is in accordance with any applicable Structure Plan.</p> <p>ELEMENT 7: PUBLIC OPEN SPACE P2 Public open space provided for recreation purposes: ☑ is of a size, shape and location, and has physical attributes, suitable for the intended type of public recreation and leisure activities; A2.1 Except for public open space that is zoned Open Space or otherwise required by a Structure Plan, the public open space: - is above the Q2 flood line.</p> <p>ELEMENT 10: STORMWATER DRAINAGE AND INTEGRATED CATCHMENT MANAGEMENT Objective: To provide major and minor drainage systems that: (a) adequately protect people and the natural and built environments, in terms of flooding immunity and water quality; P3 All new lots have an acceptable level of risk of inundation with respect to property and public safety. A3.1 All urban Residential, commercial and industrial land lots are located above the Q100 flood level. P3 All new lots have an acceptable level of risk of inundation with respect to property and public safety. A3.2 For lots in the Park Residential Zone or Rural Zone: - at least 600 m2 of each lot is above the Q100 flood level and suitable for a building platform; and - an additional area of at least 1400 m2 is available on each lot at natural Ground Level but above the Q10 flood level and suitable for an effluent disposal system. P4 Floodways are designed such that there is an acceptable level of risk with respect to property and public safety. A4.1 Flows within floodways are limited in depth, width and velocity using the design criteria outlined in the EDROC Manual. A4.2 Flow depth, width and velocity on roads is limited using the design criteria outlined in the EDROC Manual.</p>

	<p>ELEMENT 11: STREETSCAPE</p> <p>P1 The streetscape design :</p> <ul style="list-style-type: none"> - maximises absorptive landscaped areas for infiltration of stormwater where appropriate; e) shows indicative treatment of floodways, drainage lines and, where relevant, noise-attenuation barriers;
Overlay Codes	Yes
Details	<p>8.4 Minor Waterways Code</p> <p>(1) The purpose of this code is to:</p> <p>(a) provide for the protection of the geomorphological stability, hydraulic capacity, water quality and landscape, ecological and cultural values of the City's minor waterways; and</p> <p>(b) reduce to an acceptable level the risk to life and property from natural processes.</p> <p>P1 The geomorphologic stability, hydraulic capacity and water quality of the minor waterways are protected and the risk to life and property from natural processes is minimised.</p> <p>A1.1 No building or structure is erected in the minor waterways shown on the Regulatory Map other than:</p> <ul style="list-style-type: none"> - a minor outbuilding or structure of less than 10 m² Gross Floor Area located no closer than 10 m to the centre of the minor waterways; or - a fence which, if it crosses the waterway, is made of wire strand or similar material that minimises disruption to flood flows.
PSPs	Yes
Details	<p>PSP1</p> <p>(1) In addition to the requirements of the Integrated Development Assessment System Form, applications for development specified as code or impact assessable in the Zone Assessment Tables of the planning scheme (see Chapter 4) are to include:</p> <p>(b) plans showing:</p> <p>v) the position of any watercourse, creek, dam, waterhole or spring and any land within the Q2 and Q100 flood;</p> <p>vi) the proposed drainage of the site;</p>
Other	Yes
Details	<p>DEO 2 - Liveability</p> <p>(6) Protect property and people from significant environment risks such as bushfire, land instability and flooding. Land that is potentially unstable, flood prone or bushfire prone has been identified and much of it zoned open space. In other cases, the extent and type of development is to be limited depending on the level of risk and mitigation measures.</p> <p>Chapter 12 – Performance Indicators</p> <p>DEO 2 – LIVEABILITY</p> <ul style="list-style-type: none"> - The mix of housing types achieved across the City. - Access by residents to housing and lifestyle choice. - Location of housing reflects environmental capability of land and provides access by residents to Centres, other employment areas, facilities, services and open space. - Housing not located where bush fire, land instability and flooding risks are high.
Op Works Code	Yes
Details	<p>Development Works Code</p> <p>P17 Any potentially adverse effect on:</p> <ul style="list-style-type: none"> - any property, watercourse or stormwater drainage works in the vicinity; or - any watercourse on the Site; <p>is prevented or adequately mitigated.</p> <p>A17 The Excavation and/or Filling does not:</p> <ul style="list-style-type: none"> - cause ponding on the Site or on any nearby land; - increase flooding on any land in the vicinity; - increase run-off characteristics for storm events up to at least the 1 in 2 year design storm; - reduce the waterway area available in any natural or artificial watercourse for either present or estimated future flood flows; - interfere with the flow of water in any overland flow path; or - reduce the volume within a flood plain available for the storage of flood waters.
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PSP 11 - Infrastructure Contributions for Transport Network</p> <p>3.4 FACTORS AFFECTING FUTURE DEVELOPMENT</p> <p>3.4.2 Physical Constraints on the Land</p> <p>The land available for future development, or developable area, is that land designated for development under the planning scheme that is not affected by absolute constraints under the Planning Scheme such as regional flooding (Q100 flood inundation), nature conservation and resumption plans etc.</p>
Other	No
Details	
Other Info	

LGA	Torres Shire Council
Planning Scheme	Torres Shire Planning Scheme
Adopted	17/07/2007
Flood Amendments	
SPP Compliance	Yes
Details	<p>State planning policies</p> <p>The Minister for Local Government, Planning, Sport and Recreation has identified the following State planning policies as having been appropriately reflected in the planning scheme:</p> <p>☑ SPP 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide; and</p>
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Residential Zone Code / Business Zone Code / Industry Zone Code / Special Purpose Zone / Non Urban Zone</p> <p>O4 Reconfigured lots are designed and developed with:</p> <p>☑ sufficient area and suitable proportions for preferred or consistent uses;</p> <p>☑ a range of allotment sizes;</p> <p>☑ adequate frontage providing safe and convenient vehicular and pedestrian access;and</p> <p>☑ do not expose people and works to unacceptable risks from flooding and other hazards.</p> <p>S4 (a) Other than reconfiguring for a Community Titles Scheme, allotments are developed with areas and dimensions that comply with the design standards set out in Table S1 below.</p> <p>O15 Development is immune to flood events which result to unacceptable risk to health and safety or unacceptable risk of property damage. NO AS</p> <p>Open Space and Recreation Zone Code</p> <p>O1 Uses are:</p> <p>☑ consistent with the overall outcomes sought for the Open Space and Recreation Zone, and</p> <p>☑ preferred for development in the zone; as follows:</p> <p>(a) Outdoor recreation:</p> <p>(i) not involving the construction of buildings or structures, or</p> <p>(ii) if involving the construction of buildings or structures, such buildings or structures are sited outside identified areas of constraint relating to:</p> <p>– inundation by floodwater or storm surge,</p> <p>– vegetation management, or</p> <p>– movement corridors for both fauna and people.</p> <p>O2 Provided uses are developed:</p> <p>☑ to be compatible with surrounding Recreation Purposes by being of similar scale, intensity and character, and</p> <p>☑ to support preferred uses, and</p> <p>☑ to not adversely affect the amenity of the locality; or</p> <p>☑ to provide recreational or community facilities that are appropriately located in the Open Space and Recreation Zone to facilitate community accessibility;</p> <p>the following are consistent with the overall outcomes sought for the Open Space and Recreation Zone:</p> <p>(a) Caretaker's residence;</p> <p>(b) Local utility; or</p> <p>(c) Recreation Purposes comprising Indoor entertainment or Indoor sports facility, provided:</p> <p>(i) not involving the construction of buildings or structures; or</p> <p>(ii) if involving the construction of buildings or structures, such buildings or structures are sited outside identified areas of constraint relating to:</p> <p>– inundation by floodwater or storm surge,</p> <p>– vegetation management; and/or</p> <p>– movement corridors for both fauna and people.</p> <p>O4 Reconfigured lots are designed and developed with:</p> <p>☑ sufficient area and suitable proportions for preferred or consistent uses;</p> <p>☑ adequate frontage for safe and convenient vehicular and pedestrian access;</p> <p>☑ regard to maintaining ecological functions and processes occurring within and adjacent to the site; and</p> <p>☑ do not expose people and works to unacceptable risks from flooding or other hazards. NO AS</p> <p>O9 Development is immune to flood events which result to unacceptable risk to health and safety or unacceptable risk of property damage. NO AS</p> <p>Conservation Zone Code</p> <p>O1 Uses are:</p> <p>☑ consistent with the overall outcomes sought by the Conservation Zone, and</p> <p>☑ preferred for development in the zone; as follows:</p> <p>(a) Outdoor Sport and Recreation</p> <p>(b) Park</p> <p>(c) Tourist facility</p> <p>where such uses:</p> <p>(i) Do not involve the construction of buildings or structures; or</p> <p>(ii) if involving the construction of buildings or structures, such buildings or structures are sited outside identified areas of constraint relating to:</p> <p>– inundation by floodwater or storm surge; and/or</p> <p>– vegetation management; and/or</p>

	<ul style="list-style-type: none"> – movement corridors for both fauna and people; and/or – high biodiversity or habitat for rare and threatened species. <p>O4 Reconfigured lots are designed and developed with:</p> <ul style="list-style-type: none"> ☑ sufficient area and suitable proportions for preferred or consistent uses; ☑ adequate frontage for safe and convenient vehicular and pedestrian access; ☑ do not expose people and works to unacceptable risks from flooding or other hazards; ☑ do not fragment areas containing native vegetation or possessing important ecological values; ☑ regard to maintaining ecological functions and processes occurring within and adjacent to the site; and ☑ are located so as to minimise the need for clearing and other works to create an access. <p>O9 Development is immune to flood events which result to unacceptable risk to health and safety or unacceptable risk of property damage</p>
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>Desired Environmental Outcomes</p> <p>(ii) Development minimises risks relating to health, safety, property damage and environmental harm resulting from natural and other hazards, including flooding, acid sulfate soils, storm surge, cyclonic weather events, landslip and disease (both flora and fauna), including mosquito borne disease.</p> <p>SCHEDULE 8 - FLOOD IMMUNITY FOR SPECIFIC PURPOSES</p> <p>Purposes - Probability of Event (% likelihood of occurrence in any one year)</p> <p>Residential Purposes All 1%, except:</p> <p>(a) Retirement Village 0.2%</p> <p>(b) Institutional Residence 0.2%</p> <p>Commercial Purposes All 1%, except</p> <p>(a) Market 2%</p> <p>Industrial Purposes All 1%, except:</p> <p>(a) Landscape Supplies 2%</p> <p>Rural Purposes All N/A, except:</p> <p>(a) Extractive Industry 2%</p> <p>Other Purposes All 1%, Except</p> <p>(a) Hospital 0.2%</p> <p>(b) Institution Use (excluding halfway house and drug rehabilitation centre). 0.2%</p> <p>(c) Park 30%</p> <p>(d) Public Utility (premises for the purposes of any installation or undertaking for the generation and/or supply of electricity or gas; storage and for treatment of water, sewerage or garbage; a gaol, reformatory or similar penal establishment; a depot operated by or for the Council, other public authority or statutory corporation.) 0.5%</p> <p>(e) Special Purpose (incorporating an activity namely, ambulance station, first aid station, fire brigade, police station, emergency service depot). 0.5%</p> <p>Roads All 1%, except:</p> <p>(a) Roads in the Non Urban Zone at watercourse crossings 50%</p> <p>(b) Other roads at watercourse crossings 20%</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Townsville
Planning Scheme	Thuringowa Planning Scheme
Adopted	7-Oct-03
Flood Amendments	No
SPP Compliance	No
Details	Does not reflect any of SPP 1/03.
Mapped Q100 / DFE	Yes
Details	Map 7.2 provides the Defined Flood Event. Defined Flood Event means the event relating to the flood line or level and is expressed as an average recurrence interval in years being the 50 year ARI for a locality, or as identified in Map 7.2
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	No
Details	
ROL Code	No
Details	
Overlay Codes	Yes
Details	Natural Hazards Code 5.4.1 Purpose The purpose of this part of the code is to ensure: (a) a level of flood immunity such that habitable areas are not inundated by a Defined Flood Event; and (b) development will not contribute to the worsening of flood conditions on premises, or elsewhere within the catchment. Applicability: this part of the code applies to self-assessable and assessable development of premises identified on map 7.2 Part A P1. Development of premises in the Residential, Industrial and Centres Planning Areas is free from risk of inundation by a Defined Flood Event. A1. The finished level of premises is at least above the Defined Flood Event. P2. Habitable areas of buildings are located above a Defined Flood Event. A2. All floor areas of habitable areas in buildings are at least 450mm above the Defined Flood Event. Part B P3. Development involving the excavation or filling of premises is carried out such that no increase in flood water levels or flow results, taking into account existing development and the ultimate form of development. A3. No acceptable solution prescribed.
PSPs	Yes
Details	Refer Natural Hazards PSP for full details in relation to provisions for flooding. The purpose of the PSP is to support specific parts of the Natural Hazards Code. The Natural Hazards Code is comprised of six distinct parts. The PSP is designed to provide guidance for parts 5.4.1, 5.4.2, 5.4.3 and 5.4.5, dealing with the issues of flooding, steep or unstable land, acidic sulfate soils and bushfire.
Other	Yes
Details	Desired Environmental Outcomes 2.2 Environmental Quality 2.2.2 DEO2 is intended to be achieved by: (d) providing a safe pattern of development that minimises the potential risk to people and property from: (ii) flooding
Op Works Code	Yes
Details	General Development Code 5.5.2 Filling and Excavation P3 Filling and excavation does not adversely impact on other premises as a result of stormwater drainage flows or flooding. A3. Filling or excavation - (a) does not impede the flow of water in any overland flow path;
Overlay Code	Yes
Details	Natural Hazards Code 5.4.1 Purpose The purpose of this part of the code is to ensure: (a) a level of flood immunity such that habitable areas are not inundated by a Defined Flood Event; and (b) development will not contribute to the worsening of flood conditions on premises, or elsewhere within the catchment. Applicability: this part of the code applies to self-assessable and assessable development of premises identified on map 7.2 Part B P3. Development involving the excavation or filling of premises is carried out such that no increase in flood water levels or flow results, taking into account existing development and the ultimate form of development. A3. No acceptable solution prescribed.
PSPs	No
Details	
Other	No
Details	
Other Info	Definitions Defined Flood Event means the event relating to the flood line or level and is expressed as an average recurrence interval in years being the 50 year ARI for a locality, or as identified in Map 7.2 Flood line means a line created by the intersection of the water surface if a flood event with the ground. New Planning Scheme A Flood Study (Townsville City Council, 2011) has been prepared to inform the preparation of the new Planning Scheme.

	<p>Council is currently undertaking updated and refined flood modelling and analysis, and has determined a defined flood event which will represent the benchmark for managing flood risk. These areas will be identified in the new planning scheme as an overlay map. The defined flood event will be established at 100 year average recurrence interval (or 1 in 100 probability of that flood event in any year).</p>
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LGA	Townsville
Planning Scheme	Townsville Planning Scheme
Adopted	30-Nov-04
Flood Amendments	No
SPP Compliance	No
Details	Reflects bushfire components only of SPP 1/03.
Mapped Q100 / DFE	No
Details	Waterways and Wetlands Overlay Map provided, but does not indicated mapped flood level
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	No
Details	
Use Codes	Yes
Details	<p>Caravan Park Code SO1 The site has useable area and dimensions which enable the siting and construction of accommodation and support facilities, the provision of open space and recreation facilities, and vehicle access and parking. PS1.1 The area of the site above a level equivalent to a Q50 (1 in 50 flood frequency) is no less than 1000m2.</p> <p>Child Care Centre Code SO3 The site is located and designed to ensure children and staff are not exposed to unacceptable levels of noise, unhealthy air emissions, or other environmental harm or nuisance. PS3.1 The site is located where: (d) the land is above the Q50 (one in fifty year frequency) flood level.</p>
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code SO14 An acceptable level of flood immunity in the event of a 1 in 50 year flood is provided. PS14.1 Roads providing access to lots are no less than: (a) 0.5m above the 1 in 50 year flood leve in District 1 Townsville Central City; OR (b) 0.5m above the 1 in 10 year flood where providing access to parkland only; OR (c) 0.5m above the 1 in 20 year flood otherwise.</p> <p>SO30 Well-distributed public open space is provided that contributes to the legibility and character of the locality, provides for a range of uses and activities that meet the needs of the community, is cost-effective to maintain, and contributes to stormwater management and the conservation of environmental values. PS30.2 Public open space: *has at least 10% of its area above the 1 in 50 year flood level;</p>
Overlay Codes	Yes
Details	<p>Waterways and Wetlands Code Overall Outcomes (b) The hydraulic capacity of wetlands and waterways and their natural flood mitigation function is maintained, and requires minimal or no human or mechanical intervention. SO8 Erosion and sedimentation control measures are put in place, including measures which manage the flow rate and velocity of overland water flows within acceptable limits. No probable solution provided. SO9 The existing water cycle and flow regime of existing wetlands is retained so as to protect vegetation and habitat areas that depend on periodic waterlogging or inundation. No probable solution provided.</p>
PSPs	No
Details	
Other	Yes
Details	<p>Desired Environmental Outcomes 3.1 (d) health and safety Ensure development is planned to reduce the risks of loss of life, injury, property damage resulting from landslip, flooding, bushfire, cyclones and other emergencies or disasters.</p> <p>Environmental management (g) Identify and implement provisions to manage land reclamation and filling where such activities have the potential to detrimentally effect downstream water quality or result in the concentration of flood water during peak events.</p>
Op Works Code	Yes
Details	<p>Works Code SO7 People and habitable buildings are provided with an acceptable level of flood immunity in the event of a 1 in 50 year flood. PS7.1 Access to the site is no less than 0.5m above the 1 in 50 year flood level. AND PS7.2 The habitable floor level of any building is 300mm above the Q50 level.</p>
Overlay Code	No
Details	
PSPs	Yes
Details	<p>City Plan Policy 1 - Supporting Information, contains Table 1 which provides suggested design storm recurrence intervals for various temporary drainage structures on building and construction sites It notes: [1] For simplicity, in most cases it is better to design for Q1. A design flow rate of 0.25 Q1 should only be used when designing for Q1 capacity is considered hydraulically impractical or financially unreasonable for the given site conditions. [2] For simplicity, in most cases it is better to design for Q2. A design flow rate of Q1 should only be used when designing for Q2 capacity is considered hydraulically impractical or financially unreasonable for the given site conditions. [3] If the design life is greater than 12 months, then design for 1 in 100 year; if failure of the structure is likely to result in a significant risk to life,</p>

	<p>then design for the Probable Maximum Flood (PMF).</p> <p>Refer Table 1 for full details.</p> <p>2.3 - Topography</p> <p>The shape of the slope controls the time taken for water to concentrate into channels and this affects the flooding potential along creeks.</p> <p>2.4 Vegetation</p> <p>Areas of remnant vegetation need to be assessed in terms of:</p> <ul style="list-style-type: none"> *their role in reducing flood hazard; <p>18.2 Information Requirements</p> <p>A groundwater resource assessment study should be undertaken by a qualified hydro-geologist. Such a study should include, at a minimum –</p> <ul style="list-style-type: none"> *consideration of the maximum ground water extraction rate attainable, proposed pumping rates, land slope, flooding, drainage, geology, ground water recharge potential, local experience, proximity to and protection from potential contaminants, soil characteristics (colour, texture, structure, permeability and presence of rock), percolation testing, direction of ground water flow, seasonal fluctuation in ground water levels, and the current degree of district and local extraction; <p>City Plan Policy 2 - Development Standards</p> <p>2.2 Requirements for Supporting Information</p> <p>To demonstrate compliance with the above criteria, Council may request that a groundwater resource assessment study be undertaken by a qualified hydro-geologist.</p> <p>Such a study should include, at a minimum –</p> <ul style="list-style-type: none"> *consideration of the maximum ground water extraction rate attainable, proposed pumping rates, land slope, flooding, drainage, geology, ground water recharge potential, local experience, proximity to and protection from potential contaminants, soil characteristics (colour, texture, structure, permeability and presence of rock), percolation testing, direction of ground water flow, seasonal fluctuation in ground water levels, and the current degree of district and local extraction; <p>Stormwater Drainage</p> <p>4.6 Filling or excavation must not cause any increase in flooding or drainage problems.</p> <p>(a) Lots are self- draining and have a minimum crossfall of 1 in 400 in the direction of the legal point of discharge, or an inter-allotment drainage system is provided in accordance with the Stormwater Drainage Element of this provision.</p> <p>(b) For development on flood prone land, the extent of excavation (cut) and fill does not involve a change to the natural ground level that results in:</p> <ul style="list-style-type: none"> *A reduction in the capacity of the floodplain to accommodate stormwater flows, or; *An increase in stormwater flow rates, or; *An increase in either upstream or downstream flood levels or ponding. <p>(c) Filling or excavation does not cause ponding on the site or on any nearby land.</p> <p>(d) Any increase in flooding will not actually or potentially, adversely affect the value, safety or use of any land; and</p> <p>(e) Any changes to run-off characteristics resulting from filling for storm events, up to at least the 1 in 2 year design storm, are minimised in an ecologically sensitive manner.</p> <p>(f) Filling or excavation does not adversely affect the flow of water in any overland flow path.</p> <p>(g) In catchments where regulation lines (ie. hydraulic contours delineating the level of stormwater for a given return period), have been determined by Council and are shown on the Flood Prone Areas Plan, no filling extends into the area between the regulation lines.</p> <p>(h) Filling does not:</p> <ul style="list-style-type: none"> *Affect the existing natural drainage of the area, and *Affect the area available in any natural or artificial watercourse for either present or estimated future flood flows, and *Materially reduce the volume within a flood plain available for the storage of floodwaters. <p>(i) Compliance with Aus-spec Development Design Specification D6 – Site Regrading Clauses D6.04(2) & (4) & D6.05(1), (2), (4) & (6).</p> <p>City Plan Policy 3 - Contributions</p> <p>Stormwater Trunk Infrastructure – means local government land, facilities, services and works:</p> <p>(i) for the safe and efficient conveyance and disposal of stormwater runoff converged from, and providing adequate tailwater conditions for, the non-trunk drainage systems of multiple small local catchments, to protect urban and rural-residential development from flooding due to the major design storm event, including: rivers; creeks; streams; channels or overland flow paths; detention basins; and wet retention basins or;</p>
Other	No
Details	
Other Info	<p>Definitions</p> <p>Wetland – an area of permanent or periodic/intermittent inundation, whether natural or artificial, static or flowing, fresh, brackish or saline and including:</p> <ul style="list-style-type: none"> • ponds; • billabongs; • lakes; • forest swamps; • marsh swamps; • salt marshes; • estuaries; and • floodplains.

LGA	Western Downs
Planning Scheme	Dalby
Adopted	31/07/2007
Flood Amendments	No
SPP Compliance	No
Details	
Mapped Q100 / DFE	No
Details	Maximum Recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>6.1 OVERALL OUTCOMES FOR TOWN CODE</p> <p>The overall outcomes for the Open Space Precinct are as follows:</p> <p>Development in the Open Space Precinct is managed to protect the purpose of the designation for flood storage, environmental and/or recreation.</p> <p>PC 22 Flooding</p> <p>Premises are designed and located so as:</p> <ul style="list-style-type: none"> - not to be adversely impacted upon by flooding; - to protect life and property; and - not to have an undesirable impact on the extent and magnitude of flooding. <p>Development shall comply with State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p> <p>AS 22.1 No solution specified.</p> <p>Footnote: To assist the applicant to demonstrate compliance, the maximum recorded flood may be adopted as an indication of flood level.</p> <p>7.2 RURAL ZONE CODE</p> <p>PC 13 Flooding</p> <p>Premises are designed and located so as:</p> <ul style="list-style-type: none"> - not to be adversely impacted upon by flooding; - to protect life and property; - not to have an undesirable impact on the extent and magnitude of flooding; - not to impact on existing overland flow patterns in the area; and - not to increase the velocity of floodwaters or afflux . <p>Development shall comply with State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>8.2 RECONFIGURING OF LOTS - ASSESSMENT CRITERIA</p> <p>PC 8 Flooding</p> <p>Development shall not occur in places known to be readily inundated by floodwater or areas that are known to be under flood heights.</p> <p>AS 8.1 No solution specified.</p> <p>Footnote To assist the applicant to demonstrate compliance, the maximum recorded flood may be adopted as an indication of flood level</p>
Overlay Codes	No
Details	
PSPs	No
Details	
Other	Yes
Details	<p>10.5 SCHEDULE 5 – Excavation and Filling Standard</p> <p>10.5.1</p> <p>The overall outcome sought for Filling and Excavation Standard is that excavation and filling does not adversely or unreasonably impact on the environment or on adjacent properties having regard to:</p> <ul style="list-style-type: none"> - Land instability - Flooding or drainage - Environmental values including water quality, water flows, and significant vegetation <p>11.0 Extrinsic Material</p> <p>HOW THE PLANNING SCHEME SEEKS TO ACHIEVE OUTCOMES</p> <p>Principles for Development General</p> <p>The development prevents or mitigates any potential risk to life or property due to natural hazards such as bushfire or flooding and/or human activities such as crime or pollution.</p>
Op Works Code	Yes
Details	<p>FOR THE TOWN CENTRE PRECINCT</p> <p>PC 97 Filling or Excavation</p> <p>Filling or excavation shall not take place unless it can be demonstrated that there is no adverse impact upon the flows of any drains, overland flow of water nor will the filling cause any off site flooding.</p> <p>AS 97.1 No solution specified</p> <p>RURAL ZONE CODE - ASSESSMENT CRITERIA</p> <p>PC 26 Excavation and Filling</p> <p>Excavation and filling shall not take place unless it can be demonstrated that there is no impact upon the flows of any drains, overland flow of water nor will the filling cause any off site flooding, or the development is identified as exempt development.</p> <p>Note: No net worsening of floodwater levels or storage at any location, not otherwise approved results from the excavation or filling 20.</p>

	AS 26.1 No solution specified. Footnote: One way an applicant may demonstrate compliance is to prepare a hydrology and hydraulics report that demonstrates excavation, filling or structures will no adversely 'affect flood levels' or flows on the site and downstream.
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Western Downs
Planning Scheme	Tara
Adopted	14/12/2005
Flood Amendments	No
SPP Compliance	No
Details	3. State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, except for Flood assessment provisions Approval to adopt this planning scheme is conditional upon the continued operation and effect of: 2. Flood assessment provisions State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide,
Mapped Q100 / DFE	No
Details	
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	6.16. RURAL ZONE AND RURAL RESIDENTIAL ZONE DEVELOPMENT CODE P10 The development: · is not subject to risk from flooding; and · maintains the site's drainage channels and overland flow paths and does not result in adverse drainage impacts either upstream or downstream of the site; and · maintains the quality of stormwater leaving the site. AS No solution specified.
Use Codes	Yes
Details	6.12 INTENSIVE ANIMAL INDUSTRY P2 Premises must be developed on a site that is suitable for the proposed activity. A2.3 The site is not flood prone and the natural drainage processes of the site and adjoining lands are not impacted on.
ROL Code	Yes
Details	6.14. RECONFIGURING OF A LOT CODE P7 The reconfiguration must not result in residents and property being exposed to unacceptable flood risk by ensuring: · the proposed allotments can accommodate buildings above the relevant flood level; and · the proposed reconfiguration has no adverse impacts on the drainage characteristics of adjoining properties AS No solution specified. P11 Stormwater drainage is managed so that it does not adversely impact on development on surrounding properties or the natural functions of adjoining waterway systems. A11 Road and stormwater drainage design complies with the "Soil Erosion and Sediment Control Guidelines for Queensland" and "The Queensland Urban Drainage Manual".
Overlay Codes	No
Details	
PSPs	yes
Details	7.0 PLANNING SCHEME POLICIES 7.1 RESIDENTIAL DEVELOPMENT ON HISTORICAL SUBDIVISIONS The various historical subdivisions are shown on overlay map 3. These sites are relatively remote, lack services and are not considered appropriate locations for closer settlement 7.1.2 Response In assessing impact assessable applications for a house in these areas, Council will give consideration to the following matters:- · Whether flooding or other natural events adversely affect the land
Other	Yes
Details	4.0 DESIRED ENVIRONMENTAL OUTCOMES While the allocation of water is primarily a state agency issue, a planning scheme can contribute by ensuring as part of the approval process: · riparian areas and flood prone areas are free from inappropriate development. Planning Approach New development will be required to demonstrate: » there are no adverse impacts on upstream or downstream flooding characteristics;
Op Works Code	Yes
Details	6.6 FILLING AND EXCAVATION CODE Purpose- To ensure that filling and excavation creating a significant change to natural ground level is – · not likely to worsen flood or drainage impacts on neighbouring property. P4 Filling and/or excavation does not35: · worsen flood or drainage impacts on neighbouring property; A4.1 No filling is carried out in a waterway. and A4.2 Filling does not result in ponding on adjoining properties. and A4.3 Filling or excavation does not result in an increase in the velocities of overland flow to the extent of causing erosion or damage to adjacent lands. 6.11 INFRASTRUCTURE, PARKING, SERVICING AND WASTE WATER CODE P2 Provision is made for the sustainable treatment of waste in a way that does not: · increase any adverse amenity or ecological impacts on nearby environments as a result of the system itself, or as a result of increasing the cumulative effects of systems in the locality; · increase any health risk during a systems failure; A2.3 The proposed on-site effluent disposal system is located on land: · with a slope of less than 15% or where the land is terraced to receive the full disposal area; · no closer than 150 metres from the limit of the ponded waters of a water supply reservoir or a town water intake;

	· above the relevant local flood level and not within 9m of the horizontal distance of this level;
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	

LGA	Western Downs
Planning Scheme	Chinchilla
Adopted	18/05/2006
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Maximum Recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	4.1.3 Rural “Zone” Code, 4.2 Rural Residential “Zone”, 4.3 Small Town “Zone”, 4.4.3 Urban “Zone” Code, 4.5.3 Commercial “Zone” Code, 4.6 Industrial “Zone”, 4.7 Mixed Use “Zone”, 4.8 Open Space and Recreation “Zone” 4.1.3.3 Code Purpose, 4.2.3.3 Code Purpose, 4.3.3.3 Code Purpose, 4.4.3.3 Code Purposes, 4.5.3.3 Code Purpose, 4.6.3.3 Code Purpose, 4.7.3.3 Code Purpose, 4.8.3.3 Code Purpose (4) Within the Rural “Zone”, “development”: - maintains the integrity of the Condamine flood plain; - is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria PC34 Flooding, PC33 Flooding, PC32 Flooding, PC32 Flooding, PC28 Flooding, PC28 Flooding, PC31 Flooding, PC33 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.* *to assist an applicant to demonstrate compliance with PC34, P33, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	PART 5 RECONFIGURING A LOT CODE 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events (3) “Reconfiguring a lot” protects: (c) the integrity of the Condamine flood plain.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 -Information Council May Request 2.0 Information Requirements 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	PART 1 INTRODUCTION 1.4 General Assessment Provisions (2) Exempt Development (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Schedule 1 Design and Construction Standards Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Western Downs
Planning Scheme	Murilla
Adopted	19/06/2006
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of the State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Maximum Recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	4.1 Rural “Zone” Code, 4.2 Small Town “Zone”, 4.3 Urban “Zone” Code, 4.4 Commercial “Zone” Code, 4.5 Industrial “Zone”, 4.6 Mixed Use “Zone”, 4.7 Open Space and Recreation “Zone” 4.1.3.3 Code Purpose, 4.2.3.3 Code Purpose, 4.3.3.3 Code Purpose, 4.4.3.3 Code Purposes, 4.5.33 Code Purpose, 4.6.3.3 Code Purpose, 4.7.3.3 Code Purpose, (4) Within the Rural “Zone”, “development”: - maintains the integrity of the Condamine flood plain; - is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria PC34 Flooding, PC32 Flooding, PC32 Flooding, PC27 Flooding, PC28 Flooding, PC31 Flooding, PC45 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.* *to assist an applicant to demonstrate compliance with PC34, P33, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	PART 5 RECONFIGURING A LOT CODE 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events (3) “Reconfiguring a lot” protects: (c) the integrity of the Condamine flood plain.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 -Information Council May Request 2.0 Information Requirements 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	PART 1 INTRODUCTION 1.4 General Assessment Provisions (2) Exempt Development (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Schedule 1 Design and Construction Standards Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	No
Details	

Other	No
Details	
Other Info	No

LGA	Western Downs
Planning Scheme	Taroom
Adopted	13/12/2006
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Maximum Recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	4.2 Rural Residential “Zone” Code, 4.3 Small Town “Zone”, 4.4 Urban “Zone” Code, 4.5 Commercial “Zone” Code, 4.6 Industrial “Zone”, 4.7 Open Space and Recreation “Zone” 4.2.3.3 Code Purpose, 4.3.3.3 Code Purpose, 4.4.3.3 Code Purposes, 4.5.33 Code Purpose, 4.6.3.3 Code Purpose, 4.7.3.3 Code Purpose, (4) Within the Rural “Zone”, “development”: - is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria PC33 Flooding, PC32 Flooding, PC32 Flooding, PC27 Flooding, PC28 Flooding, PC43 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.* *to assist an applicant to demonstrate compliance with PC34, P33, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	Yes
Details	PART 5 RECONFIGURING A LOT CODE 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events (3) “Reconfiguring a lot” protects: (c) the integrity of the Condamine flood plain.
ROL Code	Yes
Details	PART 5 RECONFIGURING A LOT CODE 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events (3) “Reconfiguring a lot” protects: (c) the integrity of the Condamine flood plain.
Overlay Codes	No
Details	
PSPs	Yes
Details	Planning Scheme Policy 1 -Information Council May Request 2.0 Information Requirements 2.5 Infrastructure (1) Sufficient detail should be provided to enable “Council” to accurately assess infrastructure requirements. The following information should be provided: (a) known or determined flood levels; 2.10 Reconfiguring a Lot (1) Sufficient detail should be provided to enable “Council” to accurately assess proposed reconfiguration of a lot. The following information should be provided: (j) details of any known flood levels;
Other	Yes
Details	PART 1 INTRODUCTION 1.4 General Assessment Provisions (2) Exempt Development (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Schedule 1 Design and Construction Standards Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	

PSPs	No
Details	
Other	No
Details	
Other Info	No

LGA	Western Downs
Planning Scheme	Wambo
Adopted	22/04/2005
Flood Amendments	No
SPP Compliance	No
Details	State Planning Policies The Minister for Local Government and Planning has identified the following relevant State Planning Policies as having been appropriately reflected in the planning scheme – 2. The bushfire and landslide components of State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	No
Details	Maximum Recorded may be used
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	4.1.3 Rural “Zone” Code, 4.2 Rural Residential “Zone”, 4.3 Small Town “Zone”, 4.4.3 Urban “Zone” Code, 4.5.3 Commercial “Zone” Code, 4.6 Industrial “Zone”, 4.7 Mixed Use “Zone”, 4.8 Open Space and Recreation “Zone”, 4.9 Bunya Mountains “Zone” 4.1.3.3 Code Purpose, 4.2.3.3 Code Purpose, 4.3.3.3 Code Purpose, 4.4.3.3 Code Purposes, 4.5.33 Code Purpose, 4.6.3.3 Code Purpose, 4.7.3.3 Code Purpose, 4.8.3.3 Code Purpose, 4.9.3.3 Code Purpose (4) Within the Rural “Zone”, “development”: - maintains the integrity of the Condamine flood plain; - is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events; Performance Criteria PC34 Flooding, PC33 Flooding, PC32 Flooding, PC32 Flooding, PC27 Flooding, PC28 Flooding, PC31 Flooding, PC45 Flooding, PC32 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.* *to assist an applicant to demonstrate compliance with PC34, P33, the maximum recorded flood may be adopted as an indication of flood level.
Use Codes	No
Details	
ROL Code	Yes
Details	PART 5 RECONFIGURING A LOT CODE 5.2 Code Purpose The following outcomes are the Purpose of the Code: (1) “Reconfiguring a lot”: (e) minimises the need for flood, bushfire and landslide mitigation, and protects people and premises from such natural events (3) “Reconfiguring a lot” protects: (c) the integrity of the Condamine flood plain.
Overlay Codes	No
Details	
PSPs	Yes
Details	PSP1 Information Council May request Known Flood Areas
Other	Yes
Details	PART 1 INTRODUCTION 1.4 General Assessment Provisions (2) Exempt Development (v) “Development” involving water cycle management infrastructure, including infrastructure for water supply, sewerage, collecting water, treating water, stream managing, disposing of waters and flood mitigation, but excluding water supply or sewage treatment plants; Schedule 1 Design and Construction Standards Division 5: Standards For Stormwater Drainage 5.1 Standards for Stormwater Drainage (1) Stormwater Drainage is in accordance with: Pilgrim, D. H. (Editor-in-chief), 2001, Australian Rainfall and Runoff : a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	PSP1 Information Council May request Known Flood Areas
Other	No
Details	
Other Info	No

LGA	Whitsunday
Planning Scheme	Bowen
Adopted	31-May-06
Flood Amendments	No
SPP Compliance	No
Details	Reflects bushfire and landslip components only of SPP 1/03. State Coastal Management Plan to continue to operate and have effect
Mapped Q100 / DFE	Yes
Details	<p>PS Map 2 - Don River Flood Plain - Planned Flood Profile, indicates defined flood contours (m AHD), based on planned flood discharge which has an AEP of 1%; flood plain area; and likely areas of high velocity >3m/s.</p> <p>Overlay Map 4 - Natural Features and Resources Overlay - Special Management Areas - Don River Flood Plain, indicates flood plain area</p> <p>Overlay Map 5 - Bowen Shire Storm Surge Hazard, indicates different precincts with differing AHD</p>
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone Code (Similar provisions contained in Park Residential Zone Code; Residential Zone Code; Business Zone Code; Industry Zone Code, Open Space Zone Code, Special Purpose Zone Code;</p> <p>O4 Reconfigured lots are designed and developed with: . . .</p> <p>* do not expose people and works to unacceptable risks from bushfire, landslip, flooding or other natural hazards, and</p> <p>X - Flood immunity²⁰</p> <p>²⁰ The flood immunity parameters listed in Schedule 7 include consideration of storm surge hazard. For further information that may assist applicants including mapping showing projected events refer to Bowen Shire Storm Tide Study – Final Report (September 2004).</p> <p>O14 Land on which buildings and structures associated with development nominated in Column 1 of Schedule 7 will be constructed, is immune from a flood event of at least the annual exceedence probability specified in Column 2 of Schedule 7 for the development.</p> <p>Open Space Zone Code</p> <p>Specific Outcomes</p> <p>O1 (b) The following use is consistent with, and preferred within the Open Space Zone:</p> <p>(i) Outdoor sport and recreation:</p> <p>- if involving the construction of buildings or structures, such buildings or structures are sited outside identified areas of constraint relating to:</p> <p>- inundation by floodwater or storm surge⁵⁰</p> <p>⁵⁰ Refer to Overlay Map O4 for areas constrained due to floodwater and Overlay Map O5A-O5I for areas constrained by storm surge.</p> <p>O2 Provided the following uses are developed:</p> <p>*to be compatible with surrounding Recreation Purposes being of similar scale, intensity and character; and</p> <p>*to support preferred uses; and</p> <p>*to not adversely affect the amenity of the locality; or</p> <p>*to provide recreational or entertainment functions that are appropriately located in the Open Space Zone to facilitate community accessibility;</p> <p>they are consistent within the Open Space Zone:</p> <p>(c) Recreation Purposes comprising Indoor entertainment or Indoor sports facility, provided:</p> <p>(ii) if involving the construction of buildings or structures, such buildings or structures are sited outside identified areas of constraint relating to:</p> <p>- inundation by floodwater or storm surge⁵⁰</p>
Use Codes	Yes
Details	<p>Animal Related Activities Code</p> <p>O1 Animal keeping and Intensive animal husbandry are located on premises that:</p> <p>* are not subject to flooding; and</p> <p>Forestry Business Code</p> <p>Purpose</p> <p>1 (b) (K) maintain the natural hydrological characteristics of the flooding and drainage systems in the locality, and</p>
ROL Code	No
Details	
Overlay Codes	Yes
Details	<p>Special Management Areas Code</p> <p>(c) Don River Flood Plain Special Management Area</p> <p>O3 Development has lawful and practical flood free access from a public road.</p> <p>O4 Development is designed and constructed to withstand all water generated forces⁶⁴ associated with the Planned Flood Discharge.</p> <p>O5 Floor levels for habitable rooms are set 300mm above the Planned Flood Profile as indicated on PSM 2 – Don River Flood Plain Planned Flood Profile.</p> <p>⁶⁴ For design purposes, a minimum velocity of 1 metre per second shall be adopted for the Planned Flood Discharge except in those areas identified as likely areas of high velocity as shown on PSM 2 – Don River Flood Plain – Planned Flood Profile, where a velocity of 3 metres per second shall be adopted.</p>
PSPs	Yes
Details	<p>PSP 3 - Flood Immunity for Development</p> <p>PART 1 - INTRODUCTION</p> <p>1.1 Policy position on flood immunity for development</p> <p>(1) Council's position is that all development within the Shire should be immune from inundation that may cause unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>(2) In all cases, a development proponent is responsible for achieving an acceptable level of risk for a proposed development.</p>

	<p>PART 2 - IMPLEMENTATION</p> <p>2.1 Exempt and self-assessable development</p> <p>(1) For exempt and self-assessable development, proponents should assure themselves that risk associated with flood events that may affect land on which development is proposed is acceptable.</p> <p>(2) As a guide, Council suggests that proponents should ensure that land on which development is proposed (particularly buildings/structures) has immunity from flood events of at least the annual exceedence probability given in schedule 7 to the planning scheme.</p> <p>2.2 Assessable development</p> <p>(1) For assessable development, the planning scheme includes specific outcomes that development must meet to achieve compliance with relevant zone codes.</p> <p>(2) For a proposal that cannot achieve the prescribed standards of the relevant zone code, Council may exercise discretion under the IDAS [refer to IPA s3.5.13] provided it is satisfied that the assessable development is immune to flood events that result in an unacceptable risk to health and safety or unacceptable risk of property damage.</p> <p>(3) Applicants for assessable development should support an application with information that establishes the designed flood immunity for development.</p> <p>(4) For applications that are not sufficiently supported with information about flood immunity, Council may make a request for further and better details as part of the Information and Referral Stage of the IDAS.</p> <p>PART 3 - FLOOD INFORMATION</p> <p>3.1 Information sources</p> <p>(1) Council has a limited amount of information about flood events that can be made available to development proponents [refer Schedule A attached].</p> <p>Planning Scheme Policy No. 3</p> <p>(2) In many circumstances, development proponents will need to engage appropriately qualified professionals to determine and interpret site specific flood information for use in the design and documentation of proposals for development.</p> <p>Schedule A</p> <p>Flood information held by Council</p> <ul style="list-style-type: none"> • Bowen Shire Storm Tide Study Report – Bowen shire Council – June 2004 – Connell Wagner • Molongle Creek Drainage Catchment Flood Study • Euri Creek Drainage Catchment Flood Study • Stormwater Drainage Study – January 2001 – Ullman & Nolan Pty Ltd • Queens Beach Flood Study – Nov 1998 – Ullman & Nolan Pty Ltd • Development Control Plan 2 – Don River Flood Plain • Report on Don River Flood Plain Management Study – Sept 1993 – Ullman & Nolan Pty Ltd • Flood Inundation Studies – Report on Don River and Euri Creek Flooding January 1980 – May 1980 – Queensland Water Resources Commission • Report on Don River Flood Investigation – March 1980 – Ullman & Nolan Pty Ltd
Other	Yes
Details	<p>2.2 - Desired Environmental Outcomes</p> <p>1 (c) Risks to safety, property and the environment are not increased by the interaction of development and natural or other hazards, including flooding, bushfire, disturbance of acid sulfate soils, storm surge, cyclonic weather events and landslide.</p> <p>Schedule 7</p> <p>(% likelihood of occurrence in any one year)</p> <p>Commercial Purposes</p> <p>All: 1%</p> <p><input checked="" type="checkbox"/> Garden centre 2%</p> <p><input checked="" type="checkbox"/> Market 2%</p> <p>Industrial Purposes</p> <p>All:1%</p> <p><input checked="" type="checkbox"/> Car wash 2%</p> <p><input checked="" type="checkbox"/> Extractive industry 2%</p> <p><input checked="" type="checkbox"/> Landscape supplies 2%</p> <p><input checked="" type="checkbox"/> Storage premises 2%</p> <p><input checked="" type="checkbox"/> Transport terminal 2%</p> <p><input checked="" type="checkbox"/> Vehicle depot 2%</p> <p>Residential Purposes</p> <p>All 1%</p> <p>Rural Purposes All:N/A</p> <p><input checked="" type="checkbox"/> Animal keeping 0.5%</p> <p><input checked="" type="checkbox"/> Aquaculture 0.5%</p> <p><input checked="" type="checkbox"/> Intensive animal husbandry 0.5%</p> <p>Community Purposes All: 1%</p> <p><input checked="" type="checkbox"/> Major Utility (premises for the purposes of any installation or undertaking for the generation and/or transmission of electricity or gas; storage and for treatment of water, sewerage or garbage; a gaol, reformatory or similar penal establishment; a depot operated by or for the Council, other public authority or statutory corporation.)</p> <p>0.5%</p> <p><input checked="" type="checkbox"/> Special purpose (hospital, nursing home or other residential health care facility) 0.2%</p>
Op Works Code	Yes
Details	<p>Filling and Excavation Code:</p> <p>O3 Filling or excavation does not adversely affect flooding or drainage on the site and/or in the vicinity by:</p> <ul style="list-style-type: none"> * ponding on the site or on nearby land; * impeding the flow of water in any overland flow path; * at the rear or side boundary of a premises, exceeding the level of the adjoining premises by more than 100mm, except if a retaining wall is provided with at least a 50mm parapet above the fill to ensure water is deflected from the adjoining premises.
Overlay Code	No

Details	
PSPs	No
Details	
Other	Yes
Details	Schedule 7 - Flood Immunity for Specific Purposes (refer to full schedule in Planning Scheme)
Other Info	

LGA	Whitsunday
Planning Scheme	Whitsunday
Adopted	17-Dec-08
Flood Amendments	No
SPP Compliance	Yes
Details	The Minister for Infrastructure and Planning has identified the following State Planning Policies as having been appropriately reflected in the Planning Scheme: 3. State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
Mapped Q100 / DFE	Yes
Details	Overlay Code
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	Open Space Zone Code S3. Uses, buildings and works are located, designed and operated to protect significant environmental features or processes, such as those listed below: (d) areas subject to flooding; No acceptable/probable solutions specified.
Use Codes	Yes
Details	General Development Code P/A24.8 Buildings with habitable rooms are sited so that the finished floor level is a minimum of 500mm above the 1% AEP flood or storm tide level.
ROL Code	Yes
Details	Reconfiguring a Lot Code S11. An acceptable level of flood immune access is provided to lots. P11.1 Roads providing access to lots are no less than: (a) 0.5 metres above the 1 in 50 year flood level for access to new lots in the Rural zone; or (b) 0.5 metres above the 1 in 10 year flood level where providing access to park land only; or (c) 0.5 metres above the 1 in 20 year flood level otherwise. P11.2 Reasonable building envelopes are provided above the 1 in 100 year flood level. P20.2 Public open space: (h) has at least 20% of its area above the 1 in 50 year flood level;
Overlay Codes	Yes
Details	Conservation Areas Overlay Code 5.1.4 - Overall Outcomes (k) natural hydrological regimes of wetlands and waterways and their natural flood mitigation function are maintained; Figure 4-2.1.2(b) Diagrammatic representation of the defining bank for waterway, which states: Where there is any doubt, the defining bank is the terrace or bank or, if no bank is present, the point on the active floodplain, which confines the average two year ARI flows, as illustrated below. Economic Resources Overlay Code No Specific Outcome P1.1 Lot boundaries relate to natural features such as ridges or other catchment boundaries, drainage lines or flood flows, or stands of remnant vegetation; and Natural Hazards Overlay Code 5.3.1 Development Assessment categories The Natural Hazards Overlay identifies: (e) Flooding and Storm Surge (NHOM 3 - 4). 5.3.4 Overall Outcomes The Overall Outcomes are the purpose of this Code. The outcomes are as follows: (a) only development which is compatible with the nature of bushfire, flood, storm surge and landslide events, is located within the natural hazard management area; (b) development is designed and located to minimises adverse impacts from bushfire, flood, storm surge and landslide; (c) the safety of people and property is protected from unacceptable risk from bushfire, flood, storm surge and landslide; (d) infrastructure necessary for the mitigation of bushfire, flood, storm surge and landslide is provided as a part of development; (e) where practicable, community infrastructure is located and designed to function effectively during and immediately after bushfire, flood, storm surge and landslide events; S5. Development does not result in adverse impacts on people's safety or the capacity to use land within the floodplain or coastal area that is potentially subject to storm tide. P5.1 Works do not involve: (a) any physical alteration to a waterway or floodway including vegetation clearing; or (d) net filling exceeding 500 cubic metres in a rural zone or 50 cubic metres in any other zone. OR P5.2 Development either: (a) avoids any reductions of on-site flood storage capacity and contains within the subject site any changes to depth/duration/velocity of flood waters of all floods up to and including the 1% Annual Exceedance Probability (AEP) event; or (b) does not change the flood characteristics at the 1% AEP event outside the subject site in ways that result in: (i) loss of flood storage; (ii) loss of/changes to flow paths; (iii) acceleration or retardation of flows; or

	<p>(iv) any reduction in flood warning times elsewhere on the floodplain; or (v) does not create an environment that deflects or is likely to intensify either the velocity or height of flood or storm tide waters within the immediate area or in relation to adjacent structures.</p> <p>S6. Development minimises the potential damage from flooding or storm tides to property on the development site.</p> <p>P/A6.1 Dwellings are sited so that the finished floor level is a minimum of 500mm above the 1% AEP flood level.</p> <p>P6.2 No probable solution stated for storm tide impact.</p> <p>S7 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater or storm tide waters on hazardous materials manufactured or stored in bulk.</p> <p>P7.1 The manufacture or storage in bulk of hazardous materials does not occur in the mapped inundation area for flood or storm tide event. OR P7.2 Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of flood or storm tide waters.</p> <p>S8. Essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) maintains its function during a 1% AEP flood or storm tide event.</p> <p>P8.1 Any components of the infrastructure that are likely to fail to function or may result in contamination when inundated by flood or storm tide water (e.g. electrical switchgear and motors, water supply pipeline air valves) are: (a) located above the 1% AEP flood or storm tide event; or (b) designed and constructed to exclude and withstand the force of flood or storm tide inundation.</p> <p>P8.2 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the 1% AEP flood or storm tide event.</p> <p>S9. Community infrastructure is able to function effectively during and immediately after flood events.</p> <p>P9.1 Community infrastructure is not located on land in a mapped flood or storm; OR P9.2 Community infrastructure is designed to prevent the intrusion of flood or storm tide waters based upon the Recommended Flood Level (RFL) specified for that community infrastructure in the following table:</p> <p>Emergency services - 0.2% AEP Emergency shelters - 0.5% AEP Police facilities - 0.5% AEP Hospitals and associated facilities - 0.2% AEP Stores of valuable records or items of historic or cultural significance (eg. galleries and libraries) - 0.5% AEP State-controlled roads; Works of an electricity entity not otherwise listed in this table; Railway lines, stations and associated facilities; Aeronautical facilities; Communication network facilities - No specific recommended flood level but development proponents should ensure that the infrastructure is optimally located and designed to achieve suitable levels of service, having regard to the processes and policies of the administering government agency. Power stations - 0.2%AEP Major switch yards -0.2 % AEP Substations - 0.5% AEP Sewage treatment plants - The Defined Flood Event (DFE) as nominated by the council Water treatment plants - 0.5 OR P9.3 The community infrastructure is located below the RFL but can function effectively during and immediately after the RFL flood event P9.4 Essential community infrastructure (emergency services and shelters, police facilities and hospitals, and associated facilities) has an emergency rescue area above the RFL.</p>
PSPs	No
Details	
Other	Yes
Details	<p>Desired Environmental Outcome</p> <p>3.2.2 Functional, efficient, attractive and safe local community areas that: * are protected as far as possible from natural hazards such as flooding, storm surge, erosion or inundation by the sea, bushfire and landslide;</p>
Op Works Code	No
Details	
Overlay Code	Yes
Details	<p>Natural Hazards Overlay Code</p> <p>5.3.1 Development Assessment categories</p> <p>The Natural Hazards Overlay identifies:</p> <p>(e) Flooding and Storm Surge (NHOM 3 - 4).</p> <p>5.3.4 Overall Outcomes</p> <p>The Overall Outcomes are the purpose of this Code. The outcomes are as follows:</p> <p>(a) only development which is compatible with the nature of bushfire, flood, storm surge and landslide events, is located within the natural hazard management area;</p> <p>(b) development is designed and located to minimise adverse impacts from bushfire, flood, storm surge and landslide;</p> <p>(c) the safety of people and property is protected from unacceptable risk from bushfire, flood, storm surge and landslide;</p> <p>(d) infrastructure necessary for the mitigation of bushfire, flood, storm surge and landslide is provided as a part of development;</p> <p>(e) where practicable, community infrastructure is located and designed to function effectively during and immediately after bushfire, flood, storm surge and landslide events;</p> <p>S5. Development does not result in adverse impacts on people's safety or the capacity to use land within the floodplain or coastal area that is potentially subject to storm tide.</p>

	<p>P5.1 Works do not involve:</p> <p>(a) any physical alteration to a waterway or floodway including vegetation clearing; or</p> <p>(d) net filling exceeding 500 cubic metres in a rural zone or 50 cubic metres in any other zone.</p> <p>OR</p> <p>P5.2 Development either:</p> <p>(a) avoids any reductions of on-site flood storage capacity and contains within the subject site any changes to depth/duration/velocity of flood waters of all floods up to and including the 1% Annual Exceedance Probability (AEP) event; or</p> <p>(b) does not change the flood characteristics at the 1% AEP event outside the subject site in ways that result in:</p> <p>(i) loss of flood storage;</p> <p>(ii) loss of/changes to flow paths;</p> <p>(iii) acceleration or retardation of flows;</p> <p>or</p> <p>(iv) any reduction in flood warning times elsewhere on the floodplain;</p> <p>or</p> <p>(v) does not create an environment that deflects or is likely to intensify either the velocity or height of flood or storm tide waters within the immediate area or in relation to adjacent structures.</p> <p>S6. Development minimises the potential damage from flooding or storm tides to property on the development site.</p> <p>P/A6.1 Dwellings are sited so that the finished floor level is a minimum of 500mm above the 1% AEP flood level.</p> <p>P6.2 No probable solution stated for storm tide impact.</p> <p>S7 Public safety and the environment are not adversely affected by the detrimental impacts of floodwater or storm tide waters on hazardous materials manufactured or stored in bulk.</p> <p>P7.1 The manufacture or storage in bulk of hazardous materials does not occur in the mapped inundation area for flood or storm tide event.</p> <p>OR</p> <p>P7.2 Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of flood or storm tide waters.</p> <p>S8. Essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) maintains its function during a 1% AEP flood or storm tide event.</p> <p>P8.1 Any components of the infrastructure that are likely to fail to function or may result in contamination when inundated by flood or storm tide water (e.g. electrical switchgear and motors, water supply pipeline air valves) are:</p> <p>(a) located above the 1% AEP flood or storm tide event; or</p> <p>(b) designed and constructed to exclude and withstand the force of flood or storm tide inundation.</p> <p>P8.2 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the 1% AEP flood or storm tide event.</p> <p>S9. Community infrastructure is able to function effectively during and immediately after flood events.</p> <p>P9.1 Community infrastructure is not located on land in a mapped flood or storm; OR</p> <p>P9.2 Community infrastructure is designed to prevent the intrusion of flood or storm tide waters based upon the Recommended Flood Level (RFL) specified for that community infrastructure in the following table:</p> <p>Emergency services - 0.2% AEP</p> <p>Emergency shelters - 0.5% AEP</p> <p>Police facilities - 0.5% AEP</p> <p>Hospitals and associated facilities - 0.2% AEP</p> <p>Stores of valuable records or items of historic or cultural significance (eg. galleries and libraries) - 0.5% AEP</p> <p>State-controlled roads; Works of an electricity entity not otherwise listed in this table; Railway lines, stations and associated facilities;</p> <p>Aeronautical facilities;</p> <p>Communication network facilities -</p> <p>No specific recommended flood level but development proponents should ensure that the infrastructure is optimally located and designed to achieve suitable levels of service, having regard to the processes and policies of the administering government agency.</p> <p>Power stations - 0.2%AEP</p> <p>Major switch yards -0.2 % AEP</p> <p>Substations - 0.5% AEP</p> <p>Sewage treatment plants - The Defined Flood Event (DFE) as nominated by the council</p> <p>Water treatment plants - 0.5</p> <p>OR</p> <p>P9.3 The community infrastructure is located below the RFL but can function effectively during and immediately after the RFL flood event</p> <p>P9.4 Essential community infrastructure (emergency services and shelters, police facilities and hospitals, and associated facilities) has an emergency rescue area above the RFL.</p>
PSPs	No
Details	
Other	No
Details	
Other Info	<p>Definitions</p> <p>"Floodway" an area where, at the 1 in 100 year flood event, the floodwater has:</p> <p>(a) a velocity–depth product of 0.3 square metres per second or greater; or</p> <p>(b) a velocity of one (1) metre per second or greater."</p> <p>"Natural Ground Level" means for any location on the site, the natural ground level is the ground level that exists at the time of creation of the lot and has not been modified by excavation and or filling. If filling of the land is required to overcome flooding or stormtide inundation, the level approved by the assessment manager.</p>

	<p>“Wetland” means a natural or purpose built area of permanent or periodic intermittent inundation that includes areas of open water and/or native marine and freshwater plants, with water that is static or flowing, fresh, brackish or salt. The term may include wetlands which lie within floodplains, but does not include the whole of a floodplain.</p>
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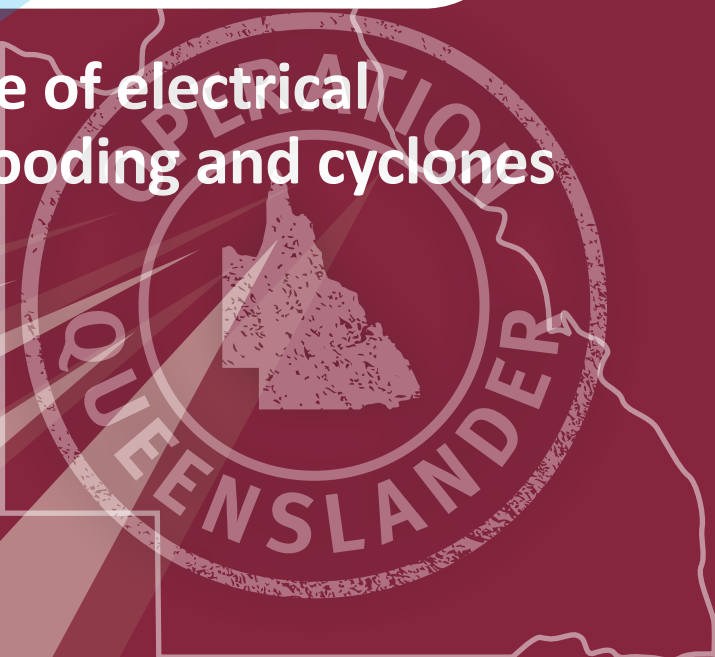
LGA	Winton
Planning Scheme	Winton
Adopted	16-Nov-06
Flood Amendments	No
SPP Compliance	No
Details	The Minister for Local Government and Planning has advised the Integrated Development Assessment System trigger for Department of Main Roads, and the flood provisions of State Planning Policy 1/03 continue to have effect.
Mapped Q100 / DFE	No
Details	The maximum recorded flood may be adopted as an indication of flood level.
Structure Plans (Etc)	No
Details	
Local Area Plans	No
Details	
Zone Codes	Yes
Details	<p>Rural Zone Code (Similar provisions also apply to the Rural Residential; Small Town; Urban; Commercial; Industrial; Mixed Use; and Open Space and Recreation Zone Codes)</p> <p>4.1.3.3 Code Purpose - Within the Rural "Zone", "development" -</p> <p>(k) is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;</p> <p>PC35 Flooding</p> <p>"Premises" are designed and located so as: (a) not to be adversely impacted upon by flooding;</p> <p>(b) to protect life and property; and(c) not to have an undesirable impact on the extent or magnitude of flooding.⁶</p> <p>⁶ To assist an applicant to demonstrate compliance with PC35, the maximum recorded flood may be adopted as an indication of flood level.</p>
Use Codes	No
Details	
ROL Code	Yes
Details	<p>Reconfiguring a Lot Code</p> <p>5.2 Code Purpose</p> <p>"Reconfiguring a lot":</p> <p>(e) minimises the need for flood and landslide mitigation, and protects people and premises from such natural events;</p>
Overlay Codes	No
Details	
PSPs	Yes
Details	<p>PSP 1 - Information Council May Request</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable "Council" to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable "Council" to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(j) details of any known flood levels;</p>
Other	Yes
Details	<p>Desired Environmental Outcomes</p> <p>3.1 The Environment</p> <p>In Winton Shire, ecological systems (including the Diamantina River System, its tributaries and floodplain) and the unique natural features (such as the Bladensburg National Park and Lark Quarry Conservation Park) and items and places of cultural and heritage significance are protected and enhanced by development.</p>
Op Works Code	No
Details	
Overlay Code	No
Details	
PSPs	Yes
Details	<p>PSP 1 - Information Council May Request</p> <p>2.5 Infrastructure</p> <p>(1) Sufficient detail should be provided to enable "Council" to accurately assess infrastructure requirements. The following information should be provided:</p> <p>(a) known or determined flood levels;</p> <p>2.10 Reconfiguring a Lot</p> <p>(1) Sufficient detail should be provided to enable "Council" to accurately assess proposed reconfiguration of a lot. The following information should be provided:</p> <p>(j) details of any known flood levels;</p>
Other	Yes
Details	<p>Schedule 1 - Design and Construction Standards</p> <p>Division 5: Standards For Stormwater Drainage</p> <p>5.1 Standards for Stormwater Drainage</p> <p>(1) Stormwater Drainage is in accordance with:</p> <p>Neville Jones & Associates and Australian Water Engineering, 1993, Queensland urban drainage manual, prepared for Department of Primary Industries Water Resources, Institute of Municipal Engineers Australia, Queensland Division and Brisbane City Council</p> <p>Pilgrim, D.H. (Editor-in-chief, 2001, Australian Rainfall and Runoff: a guide to flood estimation, (4th edition, 2001 reprint), Australian Institution of Engineers, Barton, ACT</p>
Other Info	



Planning for stronger, more resilient Electrical Infrastructure



Improving the resilience of electrical infrastructure during flooding and cyclones



DRAFT

Introduction

During the summer of 2010/2011 Queensland experienced unprecedented weather events that not only damaged about 165,000 homes, but also resulted in over 400,000 residences and businesses losing power for periods ranging from hours to weeks or months. In light of this all Queenslanders must ensure that they have an understanding of the electrical infrastructure network in our State and be prepared for the impact that natural disasters, specifically flooding and cyclones, can have on electricity supply.

To ensure that Queensland learns from the recent natural disasters the Queensland Reconstruction Authority (the Authority) has teamed up with ENERGEX Limited (ENERGEX) and Ergon Energy with the aim of investigating and implementing improvements to the resilience of electrical infrastructure in the future.

An outcome of this partnership is the development of this Guideline, entitled **Planning for stronger, more resilient electrical infrastructure – Improving the resilience of electrical infrastructure in flooding and cyclones**, which is intended to highlight key considerations in relation to electricity distribution, land use planning, emergency planning and management, building and design and for the homeowner.

Of particular note, it is important that each business has in place a Business Continuity Plan (BCP). Section 6 of this Guideline provides guidance on preparing a BCP and provides link to a Government endorsed template.

It is also important to highlight that the recommendations made in this Guideline do not replace the need for Queenslanders living in areas prone to natural disasters, including flooding and cyclones, to be prepared to evacuate.

About this Guideline

This Guideline has been developed to support greater resilience of electrical infrastructure in future flooding and cyclones in light of the events of the summer of 2010/2011 that resulted in the entire State being disaster activated. This Guideline is intended to:

- Inform Queenslanders about the electricity supply network in Queensland and the impacts that flooding and cyclones can have on electricity supply.
- Inform Queenslanders about the impact that the 2010/2011 events had on the electrical infrastructure network.
- Identify the lessons learnt from the recent natural disasters.
- Provide key considerations for electricity distribution, land use planning, emergency planning and management, building and design and the homeowner.

While you might not be directly affected by a flood or cyclone, your power supply may need to be disconnected because of the part of the network to which you are connected.

Expectations

Given the unprecedented events of last summer, it is critical that everyone has a better understanding of the electricity network in Queensland. Importantly, this understanding needs to extend to the legislative obligations of electrical distributors in the event of flooding and cyclones.

In flooding and cyclones it is inevitable that loss of power will occur through asset damage and to ensure the most effective safety measures are in place. Moreover, in some cases it is beneficial to pre-emptively disconnect power to ensure that less damage to electrical infrastructure occurs, which means that the power may be back on sooner.

The reality is that electricity and water do not mix and together can lead to serious life threatening and safety issues.

It is also important to understand that while you might not be directly affected by a flood or cyclone your power supply may need to be disconnected because of the part of the network to which you are connected. Therefore Queenslanders need to be prepared in disaster situations to be without power for a period of time.

This Guideline will assist in managing expectations for the reconnection of power to homes and businesses in floods and cyclones by explaining the reasons for disconnection as well as how Queenslanders can best prepare for loss of power.



Photo of Ergon Energy workers repairing the network courtesy of Ergon Energy

Queensland's Regulatory Framework

Legislative Environment

In Queensland, electricity distributors are responsible for distributing electricity to customers across the State. The *Electricity Act 1994* (The Act) and the *Electricity Regulation 2006* are the primary pieces of legislation that govern Queensland's electricity industry. It is the Act that gives electricity distributors the authority to operate in their areas of distribution. The Act governs the distributors in the following ways:

- Defines operational powers.
- Reviews and makes recommendations about standard practices.
- Administers electricity restrictions and rationing procedures.
- Approves standard customer contracts.
- Regulates technical aspects of distribution including supply voltages.

The Act includes a number of matters which are statutory functions of the Regulator, whose role is to regulate electricity distributors in Queensland. Under the Act, the Regulator is the Department of Employment, Economic Development and Innovation (DEEDI). Electricity distributors are also regulated to an extent by the Queensland Competition Authority.

1 – Understanding Electricity in Queensland

What is electricity?

Electricity is the most convenient form of energy that we know. It can be controlled easily, for example, with the flick of a switch. It can be transferred easily from one locality to another on overhead or underground powerlines. It can be converted readily to other useful energy forms such as heat in a stove, furnace or room heater, light in every form from domestic lamps to lasers and mechanical energy in motors.

Understanding Queensland's Electricity Network

Queensland's electricity network is complex and it is not expected that all Queenslanders have a full understanding of the network. However, it is important to gain a basic understanding of the electricity network.

The electricity supply system in Queensland has four interconnected components:

- Generation (Stage 1)
- Transmission (Stage 2)
- Distribution (Stage 3)
- Retail (Stage 4)

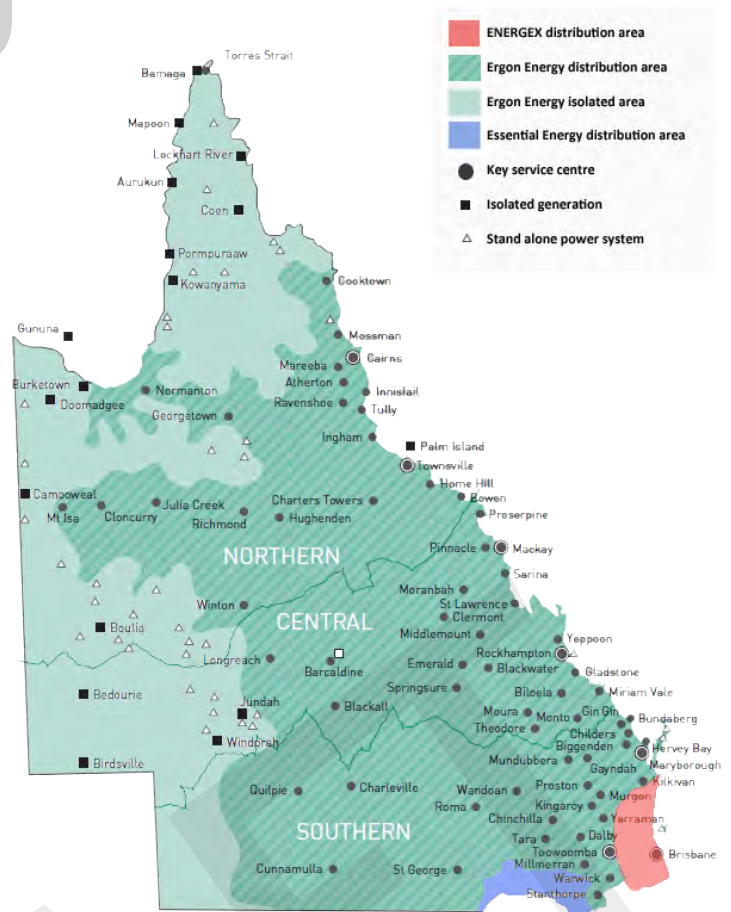
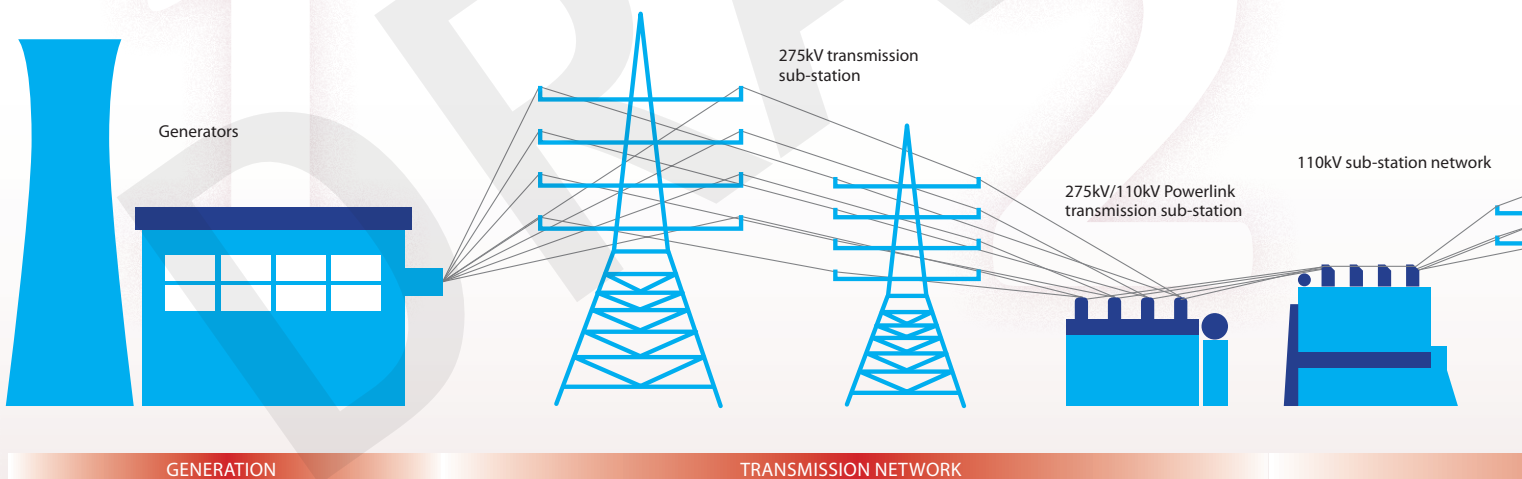


Figure 1: Map of electricity distributor jurisdictions in Queensland

Figure 2 shows the typical electrical path from a power station to a dwelling or business.

Figure 2: Queensland's Electricity Network



Stage 1 – Generation

Electricity is generated at power stations, which use various resources – fuels (coal, gas, oil, biomass), water (hydro), wind or solar to generate power. Since the national electricity market was established in 1998, \$8 billion has been invested in electricity generation in Queensland. Queensland's electricity generation is provided by Government Owned Corporations and a number of private companies.

Stage 2 – Transmission

The electricity is increased in voltage at the power stations and fed into the high-voltage transmission network, which transports the electricity to many distribution networks. The Government Owned Corporation Powerlink owns and operates the State's more than 13,000 circuit kilometre high voltage transmission network.

Queensland's electricity network – jurisdictions

Powerlink



Powerlink is responsible for planning and developing the electricity transmission network for the entire State of Queensland (**Stage 2 – Transmission**). This means that Powerlink carries out the State's network development to ensure that Queensland has a secure and reliable electricity supply and to address anticipated network limitations.

Powerlink's high voltage transmission network extends from north of Cairns to the New South Wales border and primarily transports high voltage electricity from generators to electricity distribution networks owned by ENERGEX, Ergon Energy and Essential Energy. Powerlink also transports electricity directly to large Queensland customers, such as aluminium smelters and New South Wales via the New South Wales/ Queensland Interconnector transmission line.

ENERGEX



ENERGEX as a distributor supplies electricity to a population of more than 2.8 million people and employs approximately 3800 employees. This includes the regions of Brisbane, Ipswich, Gold Coast and Sunshine Coast, as shown in Figure 1.

ENERGEX has 54,000 kilometres of powerlines and more than 600,000 power poles. ENERGEX's electricity distribution network spans more than 25,000 square kilometres throughout South East Queensland (SEQ), as shown on Figure 2 (**Stage 3 – Distribution**).

In the past 10 years the population has dramatically increased in these areas, leading to a 30 per cent growth in customer numbers and a consequent rise in overall energy demand.

Ergon Energy



Ergon Energy, as an generator, distributor and retailer (**Stages 1, 3 and 4**) has around 4600 employees and services around 690,000 customers across one million square kilometres – 97 per cent of Queensland.

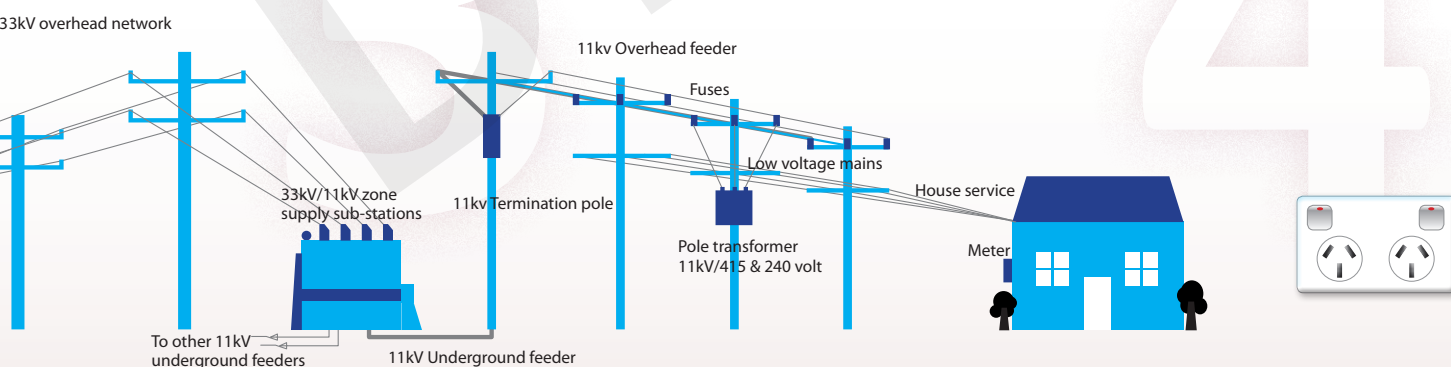
Ergon Energy's network consists of about 150,000 kilometres of powerlines and a million power poles (**Stage 3 – Distribution**). Around 70 per cent of Ergon Energy's powerlines run through rural Queensland covering vast distances in largely unpopulated area, as seen in Figure 1.

As a government-owned 'non-competing' electricity retailer Ergon Energy continues to play an important role engaging with the community around their electricity use (**Stage 4 – Retailers**).

Essential Energy



Essential Energy is a NSW Government-owned corporation, with responsibility for building, operating and maintaining an electricity network which delivers essential services to more than 800,000 homes and businesses across 95 per cent of NSW, parts of southern Queensland, including the town of Goondiwindi (as shown in Figure 1) and northern Victoria (**Stage 3 – Distribution**). It includes more than 200,000 kilometres of powerlines and 1.4 million poles.



Stage 3 – Distribution

The voltage of the electricity is progressively reduced at a series of sub-stations spread throughout the networks until it is at its final voltage of 240 V/415 V for supply to homes and businesses. In most of Queensland, the Government Owned Corporation's ENERGEX and Ergon Energy are responsible for the distribution of electricity, with a very small area by the NSW distributor, Essential Energy.

Stage 4 – Retailers

When customers arrange to have electricity connected, they contact an electricity retailer who makes the appropriate arrangements and bills the customer for the electricity used. There are a number of retailers operating in Queensland – they buy electricity from the generators and on sell to their customers.

Source: This information has been sourced and modified from the Department of Employment, Economic Development and Innovation

2 – What happened in summer 2010/2011

From July to December 2010, extremely heavy rainfall was experienced across large parts of eastern Australia, with Queensland experiencing its wettest spring on record. This rain pattern was influenced by the strongest La Niña effect in the Pacific Ocean since the mid-1970s and as a result, Queensland's catchment areas were significantly saturated before major rain events occurred during November 2010 to April 2011.

- On 25 December 2010, the Category 1 Tropical Cyclone Tasha crossed the Queensland coast between Gordonvale and Ravenshoe.
- Pre-existing weather conditions and sustained high rainfall from 23–28 December 2010 resulted in flooding in many parts of central and southern Queensland.
- On 29 December 2010, Theodore was the first town to be fully evacuated in the history of Queensland. Condamine became the second township and was evacuated twice.
- On 10 January 2011, the townships of Maryborough, Bundaberg and Gympie were affected by rising floodwaters, leading to the widespread inundation of houses and businesses. The Bruce Highway was also cut in several locations.
- On 10 January 2011, exceptionally heavy rainfall intensified in Toowoomba, culminating in unprecedented flash flooding within Toowoomba's Central Business District.
- On 10 January 2011, a further torrent of water hit the Lockyer Valley where the towns of Grantham, Murphy's Creek, Postman's Ridge, Withcott and Helidon were severely affected.
- On 11 January 2011, heavy rain continued in the Brisbane River catchment with flooding of Laidley and Forest Hill.
- On 12 January 2011, the Bremer River in Ipswich reached 18 metres while some low-lying Brisbane suburbs had already started to be inundated.
- On 13 January 2011, the Brisbane and Bremer rivers peaked at 4.46 metres and 19.5 metres respectively. These were lower than 1974 flood levels but the flooding caused significant inundation in both cities.

- On 30 January 2011, Category 2 Tropical Cyclone Anthony crossed the coast close to Bowen, battering the coastal strip between Townsville and Mackay, depositing significant rainfall on already saturated areas.
- On 3 February 2011, Category 5 Severe Tropical Cyclone Yasi struck. The largest severe cyclone to hit Queensland in recent times, it comprised a damaging core some 400 kilometres across with associated severe weather activity stretching 1000 kilometres of coastline, including a storm tide of over 5 metres peaking near Cardwell.

Establishment of the Authority

The Authority was established through State legislation on 21 February 2011 as a statutory authority for the efficient and effective coordination of the reconstruction effort.

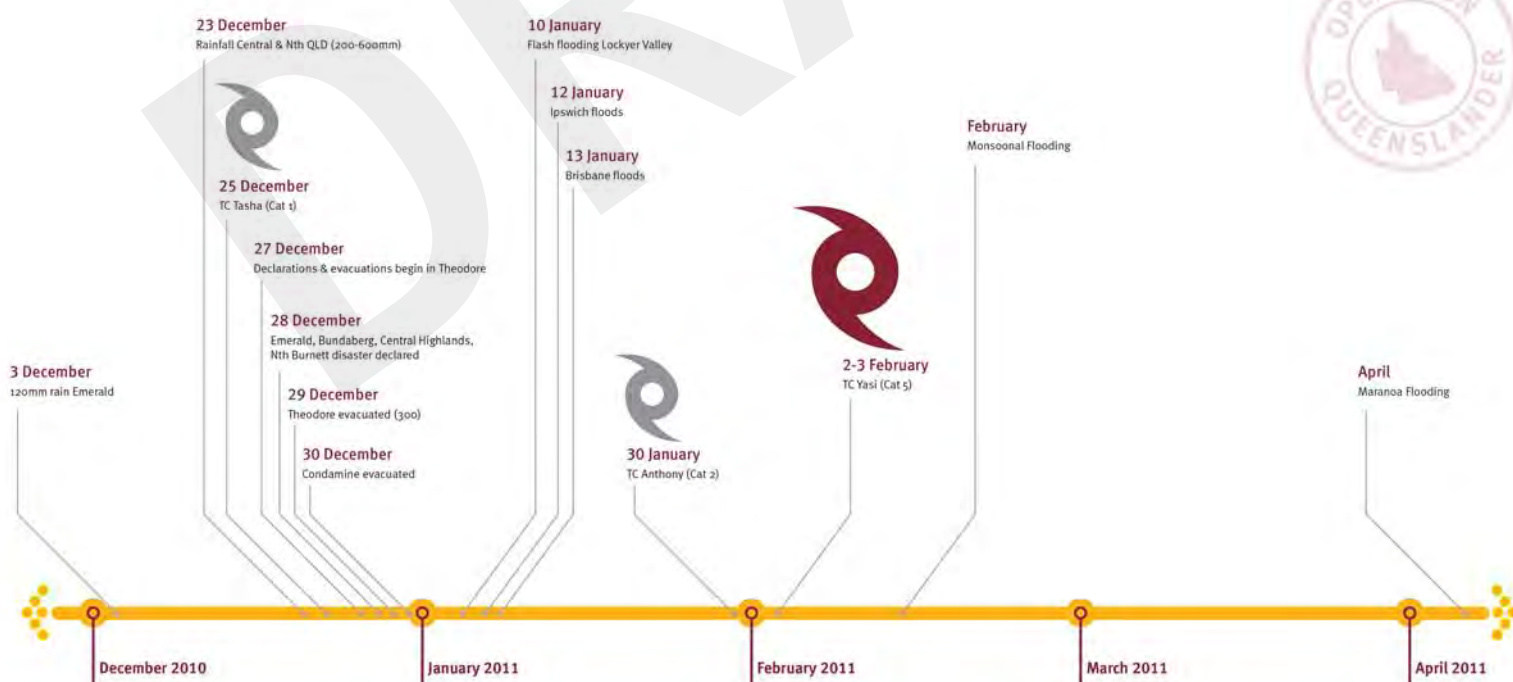
The Authority's mission is to reconnect, rebuild and improve Queensland, its communities and economy. This recognises that reconstruction starts house by house, street by street, community by community, industry by industry and results in a more resilient Queensland.

One of the core functions of the Authority is to respond to the disaster events of summer 2010/2011 and address both short term and longer term goals. The Authority has recognised a need for a greater understanding of the management of our floodplain specifically as it relates to land use planning outcomes.



Photo of fallen powerlines at Tully Heads provided courtesy of Queensland Government

2010/2011 Timeline of events



Damage and Response

During the flooding and cyclone events of summer 2010/2011 Queensland’s electricity distributors were required to initiate rapid response and recovery processes to ensure the electricity network sustained the least damage and that power was able to be restored as soon as possible. ENERGEX was faced with a major flood throughout South East Queensland (SEQ) while Ergon Energy was required to deal with regional flooding and cyclones including Cyclone Yasi. Their Summer Preparedness Plans allowed ENERGEX and Ergon Energy to deal quickly with the impact of these events.



The flooding and cyclones of summer resulted in the entire State being disaster activated. Entire towns were submerged, some repeatedly. In the first stage of any response the priority is on returning the supply to the transmission network, the Bulk Supply Points and then the high voltage backbone of the network to enable restoration to the largest number of customers as quickly as possible. At the same time there is a focus on restoring critical infrastructure, including hospitals and medical centres, schools, water treatment facilities and sewerage pumping stations, evacuation centres, key telecommunication sites and significant shopping centres, as well as the essential sites for Ergon Energy’s restoration effort.



Photo of repair works underway after Cyclone Yasi provided courtesy of Ergon Energy.

Fortunately during the flood events of December and January, in townships including Rockhampton, Bundaberg, Toowoomba, Maryborough, Emerald, Dalby and Theodore, Ergon Energy’s network did not sustain major damage. However for flood-related safety reasons, at least 10,500 homes and businesses had their power switched off due to regional flooding.

Unfortunately this was not the case for the cyclones that hit the Queensland coast – damage to Ergon Energy’s network and impact on residents was much greater. Table 1 provides data about the extent of impact to Ergon Energy’s customers, and the speed with which Ergon Energy worked to restore power.

Total Ergon Energy customers affected (including flooding and cyclone impact): approx. 255,000

During the three week operation for the Cyclone Yasi response, Ergon Energy acquired and/or used for repairs or rebuilds:

- around 600km of cable and conductor line
- almost 2300 poles and cross arms
- 25,000 fuses and lightning arrestors
- 6700 insulators
- 350,000 hardware items like bolts, screws, brackets and clamps
- 1,340 personnel and support staff on the ground.

“Despite dreadful conditions, the hard work and expertise of the Ergon crews backed up by their ENERGEX and interstate colleagues saw all but 20,000 of the 200,000 properties blacked out restored within a week – a remarkable effort.”

Hon Stephen Robertson, Minister for Energy and Water Utilities
Ministerial Statement in relation to Cyclone Yasi

Cyclone Yasi took out power supplies to nearly a third of Ergon Energy’s customer base with extensive damage to the network from Cooktown to Sarina and west to Mt Isa. All up, the system interrupted the power to more than 220,000 homes and businesses and at least 50 major substations (Stage 3 – Distribution) were off supply after the initial impact. In the worst affected areas the network had to be rebuilt from the ground up.

One of Ergon Energy’s key strategies in the overall restoration response was the deployment of a fleet of mobile generators throughout the communities hardest hit by Cyclone Yasi. Ergon Energy had 70,000kVA in generating capacity available for deployment, through both their own inventory and external providers. At the peak, to meet requirements, 155 generators were deployed in the field, with 109 generators running concurrently at one point while others were in transit or on standby. This meant that many communities were able to maintain basic services while repairs to the power network continued.

Table 1: Ergon Energy’s extent of cyclone impact and response time

EVENT	EXTENT OF IMPACT	RESPONSE TIME
Cyclone Tasha – 25 December 2010	About 8500 customers off supply	48 hours restore power, where safe to do so
Cyclone Anthony – 30 January 2011	About 15300 customers off supply	48 hours restore power, where safe to do so
Cyclone Yasi – 3 February 2011	About 220,000 customers off supply & 50 major sub-stations off supply	Restored power to 200,000 customers within 1 week, the balance within 3 weeks

This overall strategy saw supply restored to all but around 20,000 homes and business within the first week – an achievement recognised by the Hon Stephen Robertson, Minister for Energy and Water Utilities in Parliament – and to the 220,000 plus customers affected by Cyclone Yasi after three weeks.

By comparison, in Cyclone Larry there were about 90,000 customers off supply initially and Ergon Energy had brought this down to around 15,000 off supply by the end of the first week.

On Friday 25 February 2011, the restoration of supply was completed for all properties able to be connected, after 23 days of Ergon Energy and others crews working long hours in extremely difficult conditions.

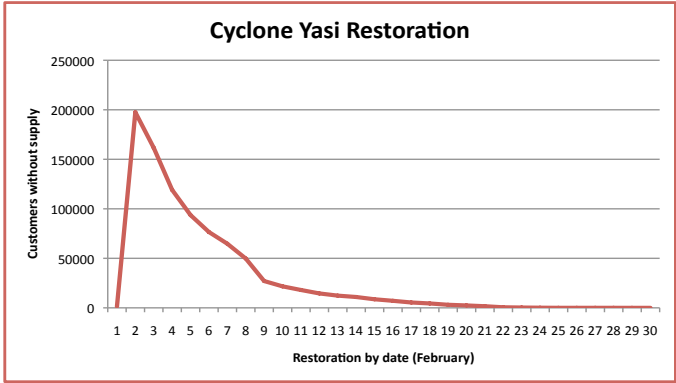


Figure 3: Ergon Energy’s restoration by customer and date
Note: While approx. 220,000 customers lost power in Cyclone Yasi, this did not occur at the same time



In January 2011 ENERGEX's assets were exposed to severe flooding across SEQ. The flash flood events in Toowoomba and the Lockyer Valley were followed by significant flooding in the Upper Brisbane Valley that resulted in flooding throughout SEQ not seen since the 1974 floods.

Damage to ENERGEX's infrastructure caused three significant effects for the ENERGEX electricity network:

1. Devastation of property including ENERGEX assets in the Lockyer Valley area.
2. Major pre-emptive interruption of electricity supply to approximately 150,000 customers in SEQ (mostly in Brisbane City Council and Ipswich City Council).
3. The clean up and restoration of power to around 60,000 (of the total 150,000) homes and businesses affected by flood waters.

ENERGEX was well prepared for the January 2011 flood events as a result of the implementation of the Summer Preparedness Plan, the Business Continuity Plan (BCP) and the Corporate Emergency Management Plan which incorporated the Flood Risk Management Plan 2010/2011 that was developed when the La Niña weather system was identified and a high likelihood of an increased rainfall was forecast.

During the 2011 flood events, ENERGEX undertook the following proactive responses:

- Adopted actions to minimise the risk of damage to vulnerable assets and infrastructure, including disconnecting vulnerable substations and powerlines, and removing equipment from those substations at risk from floodwater.
- Liaised with other stakeholders including local governments and local disaster management groups (LDMGs).

SEQ Flood January 2011 – Affected customers

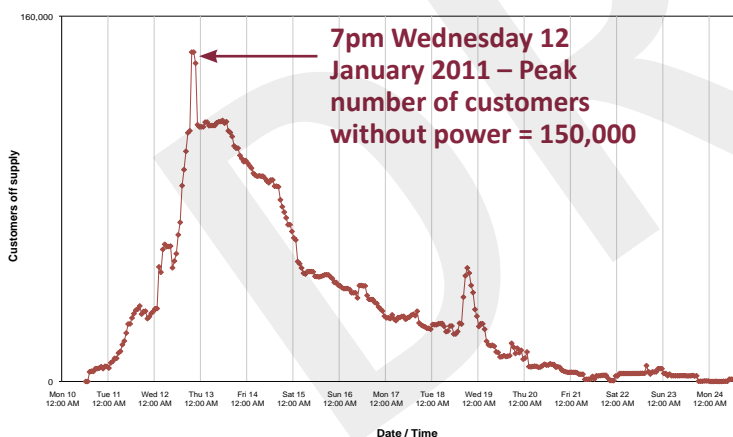


Figure 4: Graphical representation of ENERGEX response to the major flooding in SEQ

In Queensland, electricity distributors are required to prepare Summer Preparedness Plans annually to ensure that they are adequately prepared for the potential natural disasters often experienced during a Queensland summer.

- Determined what information needed to be provided to customers related to flood risks and public safety in a timely, efficient manner.
- Adopted a proactive, multi-faceted communications strategy to communicate with customers, industry stakeholders, government and employees to protect the safety of the community, minimise damage to assets and ensure the timely reconnection of electricity supply.

It was ENERGEX's paramount priority at all times to ensure that the safety of the community and ENERGEX employees was protected. ENERGEX's next objective was to restore power to the community as quickly as possible when it was safe to do so. This was to ensure that there were no electricity-related fatalities or injuries. There were no incidents that occurred during the flood that can be attributed to electrical faults or short circuits, which can be credited to ENERGEX's pre-emptive approach to managing the flood.

In the Lockyer Valley, the automatic switches that were tripped on the 33kV and 11kV powerlines worked as they should in an emergency situation and, as a result, there were no electricity related injuries or deaths.

On 21 January 2011, almost all customers that could be re-connected, were re-connected. At that time, there still remained many thousands of homes that were not capable of being re-connected or ENERGEX had not yet received advice that they could be re-connected. A small number of premises are still without power.

Total customers affected: approx. 150,000

Specific damage to ENERGEX's assets (Stage 3 - Distribution) as a result of the January 2011 flood events included:

- 25 zone substations (33kV to 11kV) were switched off due to flood inundation of the substation or loss of incoming supply lines due to the flood
- 6 zone substations (Archerfield, Milton, Jindalee, Oxley, Lowood and Esk) were directly affected by flood waters
- 95 poles had to be replaced, most in the western region of SEQ (including the areas of Lockyer Valley and Ipswich)
- 120 pad mount and ground distribution transformers were removed and replaced
- 98 kilometres of overhead conductors were replaced
- 10 major substations in Brisbane's CBD were impacted resulting in a loss of supply to some 21 CBD buildings, with 4 CBD substations out of services for 7 days.

Powerlink



Up to 20 per cent of Powerlink's assets (13,000 circuit kilometres of transmission network and 114 substations) were exposed to flood and cyclonic conditions during the statewide flooding and Cyclone Yasi. However, only 0.03 per cent of transmission assets sustained material damage this period. During the natural disaster events and immediate recovery period, 99.9 per cent of bulk electricity supplies were maintained via the transmission network. The network proved extremely resilient, despite being exposed to extreme rain, flooding and cyclonic winds.

3 – What have we learnt?

Summer 2010/2011 showed that no matter how prepared Queensland is for floods and cyclones, there are still lessons to be learnt and improvements to be made.

According to the Council of Australian Governments, disaster resilience can be defined as **‘the capacity to prevent, mitigate, prepare for, respond to and recover from the impacts of disasters’**¹. Building resilience will enhance Queensland’s ability to minimise the effects of future disaster events and to efficiently and effectively cope with their impacts. Resilience is a dynamic quality and is usually developed and strengthened over time. This can be achieved by guiding and supporting a range of resilience strategies in the key areas of built infrastructure, land use planning, emergency management and planning and community education capacity building.

Resilience, in the context of critical infrastructure, can be defined as the ability of an asset or system assets, to continue to provide essential services when threatened by an unusual event (e.g. a flood or cyclone) as well as its speed of recovery and ability to return to normal operation after the threat has receded². Resilience also involves designing an infrastructure asset, or adapting an asset so that although it comes into contact with threats such as flood waters or high winds during flooding and cyclone events, no permanent damage is caused, structural integrity is maintained and, where operational disruption occurs, normal operation can resume rapidly after the threat has receded.

This Guideline is aimed at ensuring that Queensland will have in place a resilient electrical infrastructure network that will be able to recover to normal operation as soon as possible after the threat of flooding or a cyclone has receded. In doing so this Guideline provides key considerations in relation to the following:

- Electricity Distribution
- Land Use Planning
- Emergency Management and Planning
- Building and Design
- The Homeowner

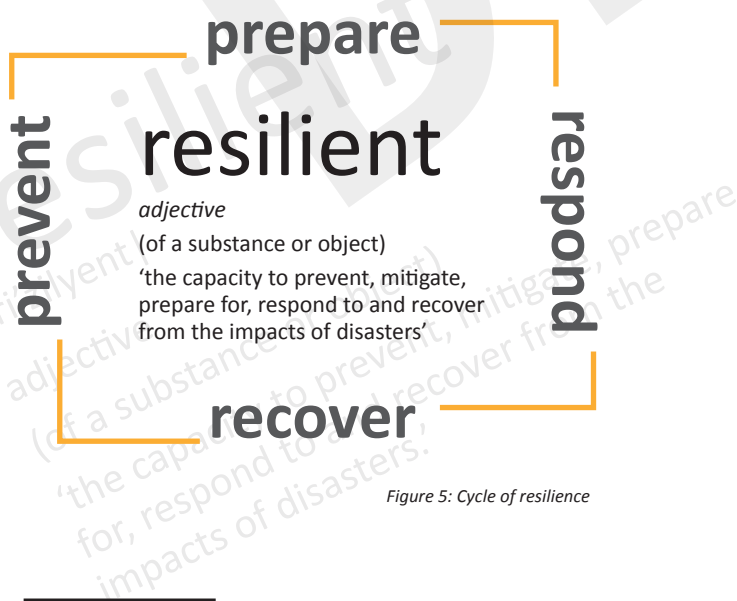


Figure 5: Cycle of resilience

1 Council of Australian Governments, 2009 ‘National partnership agreement on natural disaster resilience’

2 Ciria, 2010 ‘Flood resilience and resistance for critical infrastructure’

Key considerations

Electricity distribution



- Review the electricity network to identify and rectify any vulnerabilities following a flooding or cyclone event.
- Specific design recommendations for major electrical infrastructure in flood prone areas, that is to withstand a Q200 event.
- Specific design recommendations for major electrical infrastructure in cyclone prone areas.

Land Use Planning



- Continued consideration of *State Planning Policy 01/03 – Mitigating the adverse impacts of flood, bushfire and landslide (SPP1/03)*
- Consideration by local governments to the long term resilience of the settlement and land use patterns in the course of preparing the strategic frameworks for new Queensland Planning Provisions (QPP) compliant planning schemes.
- Electricity distributors and local governments liaise to highlight major and priority components of the network, allowing for greater protection.
- Ensure better protection of minor electrical infrastructure in future events by enforcing a level of immunity in private developments i.e. through the development assessment process.

Emergency Management and Planning



- Businesses are recommended to have a Business Continuity Plan (BCP) in place that takes into consideration the impacts of potential loss of power and a checklist for the critical BCP components.
- Ongoing vegetation management programs to be implemented to ensure that trees and branches are kept away from powerlines.
- Electricity distributors continue to have early and ongoing representation in disaster management groups (both local and statewide) in future flooding and cyclone events.
- Distributors, with local and State governments, to determine the appropriate strategies to be included in contingency plans for the most efficient restoration of power supply for critical infrastructure sites.

Building and Design



- In new high rise buildings raise electrical equipment, where possible, to improve resilience and provide greater protection
- When retrofitting existing buildings, at a minimum the low voltage switchboard to allow connection to generation.
- Potential review of existing regulation in order to, where possible, consider how design outcomes can be better regulated to ensure that electrical equipment in high rise buildings is designed to be more resilient.

Homeowner



- Understand reasons for disconnection of power supply in flooding or cyclones in order to manage expectation in future events.
- Ensuring electrical safety practices are undertaken before, during and after flooding and cyclone events.
- Where possible and known, homeowners are recommended to ensure greater resilience by locating, at least, their switchboards above the Defined Flood Level (DFL).

4 – Electricity Distribution



Despite the many successes of the electricity distributors in responding to the events of summer 2010/2011, there is still room for improvement. As a result, there are a number of recommendations for future practice identified to assist electricity distributors in ensuring that their assets are better protected and more resilient in future floods and cyclones. Furthermore, it must be recognised that expensive works have a direct effect on electricity prices, so all measures undertaken need to be cost effective and considered as part of a cost/benefit analysis and approved by the relevant regulator.

Placement

It is important to highlight at the outset that electricity distributors should locate, where possible, major electrical infrastructure including substations outside flood and cyclone prone areas. Strategic placement of assets is a critical factor and as long as electricity distributors continue to make informed decisions about the placement of major electrical infrastructure assets, this will serve to improve the resilience of Queensland's electricity network. However, where potential risks to substations cannot be avoided by locating infrastructure outside hazard areas, electricity distributors should implement the below recommendations to achieve greater short term, long term and ongoing resilience.

Load control and switching

By having appropriate control of network supply the risk of outages can be managed. Distributors should ensure that substations at potential risk have supply switching capabilities so that the majority of customers continue to have supply where it is safe to do so.

Review of network

Following flooding or a cyclone it is recommended that electricity distributors review their networks to highlight vulnerabilities and problems that were identified during the event.

Resilience in action:

For example, after the major flood in SEQ in January 2011, ENERGEX identified a vulnerability in the western Brisbane suburb of Bellbowrie where the network configuration meant that in a flood the local area including the shopping centre was required to be disconnected from power (despite not being directly affected). Since the event, ENERGEX has reconfigured the supply network to ensure that the local shopping centre can be supplied with a stand-by generator.

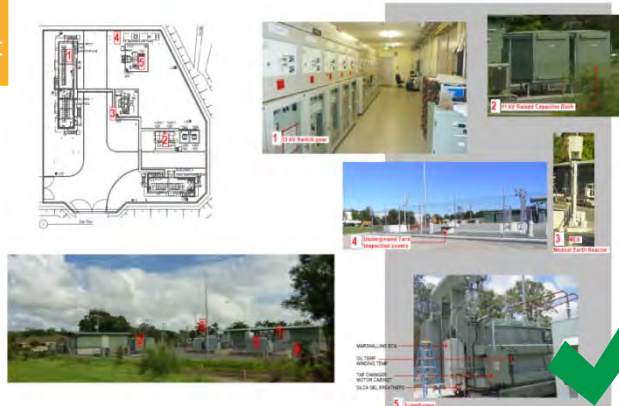


Figure 6: Example of resilient substation design



Photo 1: Example of an older, non-resilient substation design

Flood prone areas

Building resilience of electrical infrastructure in flood prone areas is quite different to that in cyclone prone areas. The following sections make recommendations specific to electrical infrastructure in flood prone areas.

Major substation design

Substations that supply areas that are subject to flooding are not required to function effectively during a flood event (power and water don't mix). It is however vital that they function immediately after the event. As required by SPP1/03 for community infrastructure, it is recommended that substations in flood prone areas, at least, ensure that the sensitive electrical equipment on site, for example transformers, control cabinets, neutral earth reactors and switch gear, are above Q200. As seen in Figure 6, while the entire substation is not raised above the Q200, the sensitive electrical equipment is raised to ensure greater resilience and ability to return to normal operation as soon as the threat of the flood has receded. This has occurred for major substations built after SPP1/03 and this resulted in impacts being largely restricted to older substations.

Distributor substations (in CBD)

For a distributor to ensure the resilience of its network, it needs to be able to ensure that the electricity supply to the building (generally 11kV), the switchgear and transformers (generally 11kV/low voltage) are located and designed above the DFL. Distributors do not currently have the ability to enforce this. Traditionally substations have been placed in basements rather than ground level (or above) due to the desire not to use prime retail space. Distributors are advised to undertake further discussions with their regulator in relation to this issue.

Powerlines

For major powerlines, distributors should ensure that the DFL for an area is taken into account during the design of the line. The linear nature of powerline corridors means that it is often impossible to avoid areas below the DFL. The poles/towers in the flood prone area should be designed to withstand the impacts of a flood event.

This approach will resolve the “Dry Islands” scenario where there are powerlines going through flood prone areas that have to be switched off, that supply predominantly unaffected premises. Where this is practical and cost effective, this should include:

- Ensuring the network’s ability to switch off flood affected powerlines that are “spurs” (preferably remotely).
- Reconfigure powerlines into “wet” and “dry” lines to limit the number of 11kV affected by a flood event (so that the network is structured so that “wet” powerlines only need to be switched off). While this would still result in some unaffected premises losing supply, the number and duration of impact would be greatly reduced.

Cyclone prone areas

The following section makes recommendations specific to electrical infrastructure in cyclone prone areas.

Australian Standards

With regard to structures in cyclone prone areas, electricity distributors are required to design substations in accordance with AS 1170.2 – *Structural Design Actions: Part 2 Wind Action*.

The objective of this Standard is to provide wind actions for use in the design of structures subject to wind action. It provides a detailed procedure for the determination of wind actions on structures, varying from those less sensitive to wind action to those for which dynamic response must be taken into consideration.

The Joint Committee is considering possible amendments to the Standard after the recent severe wind events, including Cyclone Yasi. The review of the Standard in light of the recent cyclone events is recommended and is considered to contribute to greater resilience of substations in cyclone prone areas in future events.

Key electrical infrastructure assets

It is recommended that investment in underground infrastructure and bundled overhead lines continues in cyclone prone areas of Queensland where it is safe to do so and in a similar manner to the Cyclone Area Reliability Enhancement (CARE) Program being run by Ergon Energy.

It is important to recognise that underground powerlines are not suitable for all locations. In particular, this relates to areas that are prone to storm tide inundation. In these locations, overhead bundled cable may be more appropriate, as seen in Photo 2.

It is recognised that it can be extremely costly to transfer electrical infrastructure underground, however it is recommended that where appropriate and subject to budgeting and a works program, considerations be given to undergrounding infrastructure.



Photo 2: courtesy of Ergon Energy - Highway through Cardwell post Cyclone Yasi, featuring overhead bundled cable

The transfer of major electrical infrastructure components underground where appropriate will aid in reducing the vulnerability of the overall network and will ensure that loss of power supply is lessened in future events. Securing the supply of electricity to key communities and activity areas is a priority when investigating undergrounding electrical infrastructure. Furthermore with an increase in protection of assets in cyclone prone areas, there may be a lower demand for generators and alternative power supplies during a cyclone event.

Additional considerations

Ongoing actions

Electricity distributors are recommended to undertake the following actions to ensure that ongoing improvements are made to the resilience of electrical infrastructure in Queensland:

- Annual reviews of emergency plans and BCPs.
- Annual reviews of Summer Preparedness Plans to ensure these documents reflect up to date data and incorporate best practice approaches for natural hazard resilience and mitigation and emergency response practices.
- Maintenance issues to improve the vulnerability of assets in floods and cyclones including vegetation management in collaboration with relevant local governments.
- Strengthen relationships with local governments to ensure better communication between electricity distributors and local governments in floods and cyclones.



Photo of powerlines damaged by fallen vegetation in Tully Heads, courtesy of Ergon Energy

5 – Land Use Planning



Land use planning has a critical and ongoing role to play in ensuring that planning, from the detailed development assessment level to the strategic high level, considers better protection of electrical infrastructure in flooding and cyclones. Efficient land use planning will also assist in ensuring minor electrical infrastructure in private homes and businesses will be better protected, which is a significant component of the statewide electricity network.

Statewide planning mechanisms

SPP 1/03 is a statewide planning document established under Queensland's planning legislation including the former *Integrated Planning Act 1997* and the current *Sustainable Planning Act 2009* (SPA). Under Queensland's planning legislation, SPP1/03 has effect in the assessment of development applications and in the making and amending of local government planning schemes. SPP1/03 encourages local governments across the State to adopt and identify hazard management areas (flood prone areas). It is recommended that local governments continue to ensure that SPP1/03 is considered in all land use planning decisions. SPP 1/03 is currently under review and local governments should ensure planning schemes reflect the updated guideline once released.

The *Queensland Coastal Plan* is a new statewide planning document which applies to the Queensland coastal zone. The plan has two parts: the State Policy for Coastal Management, containing policies for coastal land managers and the State Planning Policy for Coastal Protection, for planning and assessment decisions made under the SPA. Under the Coastal Plan, adaptation planning guidelines for local governments are being prepared to assist councils in addressing risks faced by communities over the long-term. It is recommended that local governments in the coastal zone commence preparation of adaptation plans to minimise the exposure of communities to the risk of adverse coastal hazard impacts. This includes the better protection of critical infrastructure including electrical as it relates to development in the coastal zone.

Strategic Planning

In the course of preparing the strategic frameworks of new QPP-compliant planning schemes under the SPA, consideration should also be given by local governments to the long term resilience of the settlement and land use patterns within the local government area to these events. While it is acknowledged that this is a matter to be implemented over the long term, the preparation of these new planning schemes offers the unique opportunity now to ensure the strategic planning framework includes consideration of resilience in directing future growth, infill and land use compatibility in these areas specifically in relation to natural hazards.

Coordination

For both flooding and cyclone prone local government areas, it is recommended that local governments and electricity distributors coordinate their planning activities to highlight major and priority components of the electrical infrastructure network. This coordination could result in the development of a database, for example a GIS layer, that identifies key electrical infrastructure assets across the local government area. Once these assets are known, it is important that local governments ensure these assets are protected not only from the impacts of flooding and cyclones but also from inappropriate encroaching development through making informed land use planning decisions.

Development assessment

It is important to consider the location and design of electricity infrastructure in relation to development occurring in flood prone areas. There are two main scenarios that need to be considered: new development and existing development approvals.

Proposed new development (including Building Works)

There needs to be consideration of new developments (particularly high rise buildings and other major developments that require a substation on-site) and new subdivisions (large enough to be supplied from a pad mount transformer). See section 6 'Building and Design Recommendations' of this Guideline for detailed recommendations into place and design of electrical equipment in commercial and residential buildings.

For proposed subdivisions that are large enough to be supplied from a pad mount transformer it is crucial that local governments and developers work together to design an efficient layout. Typically, in these cases the pad mount transformers have been placed on the least valuable part of the land which is usually low lying and therefore more likely to be affected by flood waters. It is recommended that local governments have the necessary discussions in encouraging developers of new large lot subdivisions to locate electrical infrastructure above the DFL, or if the DFL is unknown at least in an area that is considered less likely to flood (See Figure 7).

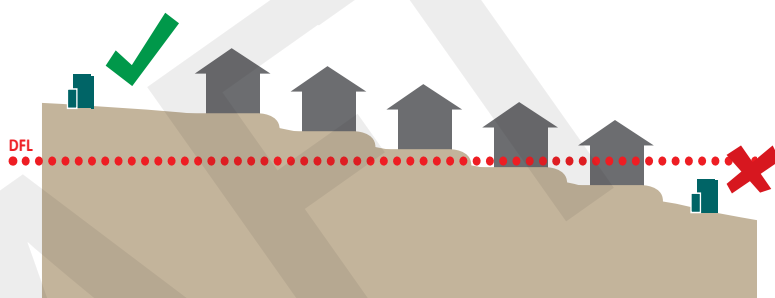


Figure 7: Recommended and not recommended placement of padmount transformers supplying a subdivision development

There needs to be consideration of existing buildings undergoing retrofitting exercises that have not triggered the need for further planning approval. For example a high rise building in a flood prone area undergoing retrofitting may only trigger the need for building approval and not additional planning approval. Therefore it is important that local governments not only consider improving the resilience of electrical infrastructure when making land use planning decisions, but also that local governments, engineers, architects, certifiers and builders are similarly aware and make informed decisions when dealing with building approvals.

Existing development approvals (where construction has yet to commence)

There needs to be further consideration prior to issuing development permits for proposed development in flood prone areas. For example, it is possible that there are several projects for high rise buildings in flood prone areas that are soon to be constructed without ensuring that the electrical infrastructure is made resilient. It is important that local governments and developers consider opportunities for developments that have yet to gain building approval to potentially be re-designed to ensure greater resilience in future flooding and cyclone events. It is recognised that this can bring significant cost and therefore this needs to be considered as part of a cost/benefit analysis however this cost needs to be considered in respect of downtime, loss of rent and repair bills.

6 – Emergency Planning and Management



Business Continuity/Preparedness Plans

Preparing for a natural disaster event is a crucial step in ensuring better understanding and performance during and after flooding or a cyclone. It is everyone's responsibility to be prepared for natural disasters, including businesses. DEEDI has developed a basic template for a Business Continuity Plan (BCP) to ensure that businesses of all types and sizes are adequately prepared in Queensland for future natural disasters.

To access a copy of the Queensland Government Business Continuity Template visit: www.business.qld.gov.au/documents/business_continuity_plan_template.doc. An example table of contents for a BCP is also provided in Schedule 1 of this Guideline.

Resilience in action:

Through lessons learnt from Cyclone Larry, Dairy Farmers in North Queensland were well prepared for Cyclone Yasi. After Cyclone Larry it was 22 days until all Dairy Farmers in Atherton Tableland could access the main power supply.

As a result the majority of farmers invested in backup systems that could run their dairy plant and milk vats during extended power outages.

Thanks to business continuity planning and investment, recovery from Cyclone Yasi was much easier on farmers across the Tableland, with only two farms having significant difficulties.



Vegetation management

One of the most challenging aspects in relation to loss of power supply is tree damage to powerlines. Initial investigations revealed the bulk of the outages in some communities were caused by fallen trees, branches and vegetation coming into contact with powerlines.

Ongoing vegetation management programs implemented by electricity distributors regularly keep trees and branches away from powerlines. However, the destructive winds of Cyclone Yasi blew hundreds of trees, in some cases large distances, into powerlines as seen in Photo 3. In SEQ, major storms can also cause tall trees to bring down powerlines.

Tree planting policies and species lists are currently developed in collaboration with local governments as part of the Plant Smart program. Significant progress has been made in this area over the past few years. To further understand the extent of the impact of vegetation on the electricity network, Townsville City Council and Ergon Energy have engaged Greening Australia to prepare a report on tree damage in light of Cyclone Yasi. This sort of collaborative work is encouraged and seeks to improve resilience of electrical infrastructure.

It is recommended that electricity distributors and local governments undertake the following actions to ensure better vegetation management in relation to electrical infrastructure in the future:

- Commit to achieving a greener environment while minimising the impacts of trees on powerlines.
- Continue to work collaboratively to run campaigns urging people to carefully choose their replacement trees after a cyclone.
- Refine lists of tree species suitable for planting and management actions such as formative pruning and introduction of more stable material into tree planting holes to improve tree stability.

Smarter choices when planting near powerlines and in cyclone prone areas may be able to reduce the impact of storms and cyclones on the electricity network in the future. For further information visit: www.ergon.com.au/community--and--our-network/trees-and-powerlines/plant-smart



Photo 3 courtesy of Ergon Energy — Repairing the network in Tully



Figure 8: Business Continuity Planning Process

BCP Checklist

It is accepted that key industries will want power restored as soon as possible after an event. As has been outlined in this Guideline, there are a number of reasons why the power is sometimes required to be switched off and therefore businesses have a responsibility to ensure that they have their own preparedness plan in place.

It is essential that industry and businesses have a well defined and regularly reviewed BCP that has electricity supply as a priority component if this is a critical element of the business operations.

To ensure your business is adequately prepared it is recommended that your BCP at least includes the following components:

1. Risk management
2. Business impact analysis
3. Incident response plan
4. Emergency kit
5. Roles and responsibilities
6. Contact list
7. Events log
8. Recovery



Access

Adequate access was a major issue for electricity distributors, particularly Ergon Energy working in regional and remote Queensland, during the events of summer 2010/2011 (as seen in Photo 4). Restricted access can create significant problems for electricity distributors in floods and cyclones as it can impede staff mobilisation, the movement of equipment and the supply of basics such as food and bottled water to crews. The limited access also left some regional Ergon Energy employee. It is recommended that electricity distributors continue working with the Queensland Government through the State Disaster Coordination Committee (SDCC) to address the issue of access, particularly in relation to road closures and accommodation requirements, for future events.

Local Disaster Management Groups (LDMGs)

While electricity distributors coordinated the allocation of generation to critical infrastructure sites with the LDMGs in the events of summer 2010/2011, discussions are being held with local government and State government partners to ensure enhanced business continuity and preparedness in the future.

It is crucial that in future floods and cyclones LDMGs and electricity distributors have open lines of communication and continue to work collaboratively. This includes LDMGs ensuring that distributors are aware of crucial electrical services and assets within the local government areas prior to an event.

Distributors will turn off the power for safety reasons but this occurs in consultation with the LDMGs. Due to this crucial relationship between distributors and LDMGs during floods and cyclones, it is recommended that there continue to be representation of electricity distributors on all LDMGs and disaster committees around Queensland during floods and cyclones.

Critical infrastructure

The events of summer 2010/2011 highlighted the need for electricity distributors to work more closely with local governments and State government agencies to improve emergency planning and management in relation to critical infrastructure. It is recommended that the relevant bodies undertake a review to identify the power supply security of critical infrastructure including the following:

- medical centres
- schools
- water treatment facilities
- sewerage pumping stations
- evacuation centres
- telecommunication sites
- significant shopping precincts.

It is crucial that the relevant bodies work together to determine the appropriate strategies to be included in local government contingency plans for the most efficient restoration of power supply to critical infrastructure sites. Supply security for critical infrastructure sites should be given priority in each local government's business continuity planning.

It is important to highlight that the 2010/2011 summer events saw a significant rise in the use of telecommunications and the internet, particularly social media, which should be considered as part of emergency plan reviews undertaken by telecommunication providers.

Additionally, there is a need to continue the conversations about identifying where emergency evacuation centres will be and to confirm the supply/emergency generation requirements, via LDMGs, prior to a disaster situation.

Restoration of power to critical infrastructure sites such as those listed above is crucial as this will ensure that, where possible, communities affected by floods and cyclones will at least be able to maintain basic services while repairs to the network continue.



Photo 4 Flood inundation of a motorway in Goodna resulting in road closure
courtesy of Queensland Government



Photo courtesy of Queensland Government - Brisbane business owner back on track after
January 2011 event

Responsibilities of business owners

As a business owner you have obligations under the *Electrical Safety Act 2002* and *Electrical Safety Regulation 2002*. They set specific requirements about electrical equipment and installations to ensure safe use of electricity in the workplace.

The legislation outlines what you must do as a minimum, including:

- inspecting, testing and tagging electrical equipment and extension cords on a regular basis
- using safety switches in certain situations
- removing defective equipment from service
- removing safety switches from service if they are defective
- only using power boards which incorporate a safety switch or overload protection device
- having a licensed electrical contractor to install extra electricity outlets if necessary
- protecting extension leads and flexible cables from damage, e.g. using a flexible cover to provide protection against crushing or other damage in pedestrian and vehicle traffic areas.

Talk to your licensed electrical contractor, the ESO, ENERGEX or Ergon Energy to ensure the safe use of electricity in your workplace.

7 – Building and Design



Building and design in disaster areas

In a flooding situation, the electricity infrastructure that supplies a development must be located and designed to be as resilient as practicable during and after the event. The level of resilience is not only determined by the development's ability to withstand the flood event but also its ability to return to the same level of function after the flood event occurs in a timely and cost efficient manner. In addition, the level of resilience can be improved by the building owners' and tenants' awareness of the level of resilience that the electricity infrastructure has been designed for, their expectations of the consequences of this level of resilience and the implementation of relevant mitigation strategies to best cope in and following an event.

New buildings

Building owners need to be aware that flood inundation and other impacts on a building's electrical equipment can lead to costly repairs and significant impacts on the building. These impacts can be minimised by implementing resilience measures when designing the building. Architects, builders and property developers can propose to allocate floor space above a DFL to ensure that the building's electrical services are located in a more appropriate and protected location.

Elevation

The elevation of utilities and equipment within a building is a way of reducing the risk associated with flooding. By raising utilities and equipment above a DFL, water inundation of electrical equipment can be avoided and the equipment be put back into use sooner as it will have sustained less or no damage during the event. See Figure 8 for examples of resilient and non-resilient electrical fit out designs.

Is there generation connection available?

It is critical that when designing new buildings there is a connection for generation available and that this connection point is easily accessible. This will ensure that, where possible, in a flood or cyclone building owners and/or operators may be able to organise temporary power supply through the use of a generator.

Resilient Materials

The use of resilient materials in construction can provide longevity to the structural integrity of a building. Materials such as solid timbers, steel and concrete are more resilient to flood waters.

Equipment Protection

Through the implementation of various design and avoidance techniques, the protection of key electrical equipment can be achieved. Wet flood proofing is a method of component protection that aims to prevent flood water from inundating vital components within buildings in flood prone areas – meaning allowing for the water to enter the building but protecting the critical components from damage. Sandbagging water entry points and elevating equipment are methods of wet flood proofing.

Dry flood proofing is another method of component protection where measures are taken to keep flood water completely outside a structure – meaning that water is not meant to enter the area where the equipment is stored and if it does there is likely to be minimum damage. In relation to electrical infrastructure, sandbagging water entry points, creating water channels to redirect water flow and the use of portable diversion devices (inflatable levies and barriers) are ways of dry flood proofing.

Retrofitting existing buildings

There may also be potential to retrofit existing services for greater resilience. The best outcome to ensure that electrical infrastructure is flood resilient is to ensure that the supply to the building is located above the DFL. In many instances this is cost prohibitive and the size of the equipment to be moved could mean the destruction of a large area to make space available. This may not be an option in many circumstances (e.g. a heritage building). However where possible, a cost efficient option is to raise the low voltage switchboard above the DFL. Further resilience can be achieved in this case by ensuring that the raised low voltage switchboard also has an emergency generation connection point. This will ensure that the building is reconnected to power supply as soon as possible due to less damage being sustained.



Photo 5: Low voltage switchboard courtesy of Queensland Government

For existing buildings, where it is not cost efficient or possible to raise the low voltage switchboard (as seen in Photo 5), building owners should at least aim to ensure that there is an emergency connection point above the DFL which allows for a greater level of resilience to be achieved in the recovery stage.

Review

It may be beneficial to review existing regulations in order to, where possible, consider how design outcomes can be better regulated to ensure buildings and in particular electrical equipment in buildings, are designed to be more resilient to the impacts of flooding and cyclones.

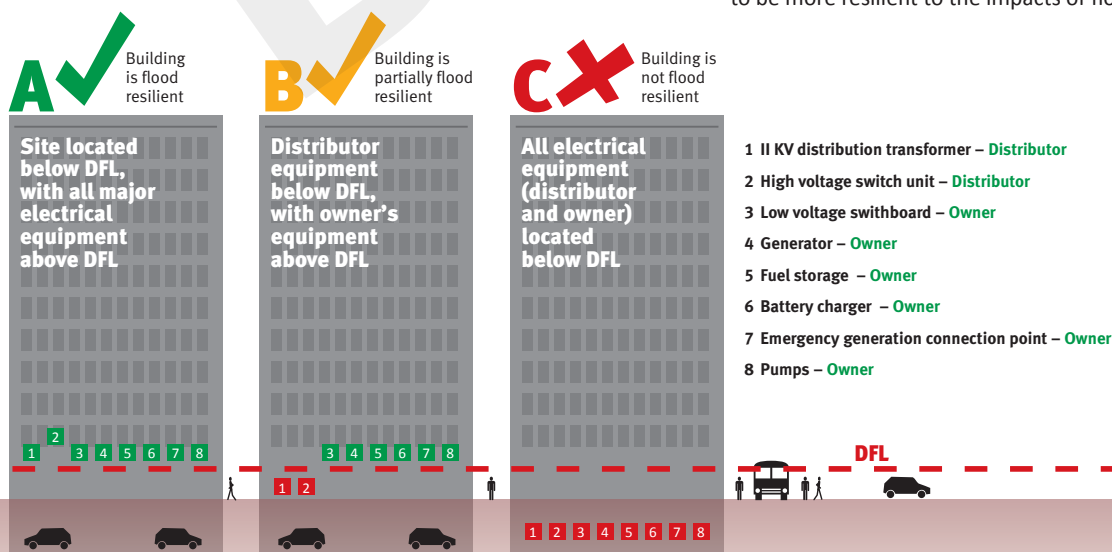


Figure 8: Scale of resilience of electrical equipment in CBD buildings

Resilience in action:

Rio Tinto Building, 123 Albert Street, Brisbane CBD

- Undergoing construction in January 2011 when the building experienced some flooding.
- Developer redesigned the electrical equipment fit-out during the construction phase.
- Reinstalled low voltage switchboard above the DFL to ensure greater resilience in future.

8 – The Homeowner



Why does the power go off?

To assist in preparing for future natural disasters, it is important that Queenslanders in all capacities have an understanding as to why sometimes it is necessary for the power to be disconnected. Power is often required to be disconnected in floods and cyclones for safety reasons. Water and electricity do not mix and it is important that the electricity network is managed in flooding and cyclones to ensure that people do not sustain electricity-associated injuries during such events. While being without power can be an inconvenience, it is important to understand that this is done for the benefit and safety of everyone. Furthermore, pre-emptively disconnecting power ensures that electrical infrastructure sustains less damage during a flood or cyclone event meaning that power can therefore be restored more quickly.

It is impossible to be precise in relation to duration without power following cyclone impact, because circumstances vary widely due to factors such as intensity, location, population density, extent of infrastructure damage, tides at impact and weather before and after creating access difficulties. However, to assist in managing expectations about the approximate period of time that you may be without power during a cyclone, please consider the following general estimates:

- Category 4/5 – power restoration more than one month.
- Category 3 – power restoration up to a month.
- Category 2 – power restoration between one and two weeks.

For floods, it is more difficult to estimate the expected period of time that you may be without power as this depends on a number of factors including:

- The damage to the dwelling's electrical installations.
- The scale of the flooding event.
- The location of your house and what part of the network to which you are connected.
- The estimated time of the peak of the event and estimated time it will take for water to recede.

Due to the possibility that your household may be without power for an extended period (in the event of both flooding and cyclones), it is critical that you are adequately prepared.

Electrical safety in floods and cyclones

This information has been sourced from the Department of Community Safety, Queensland Government. Electrical safety is critical for all people at all times. Natural disasters such as flooding and cyclones raise the risk of electricity-related incidents so a higher level of vigilance is needed. The following tips are recommended to prevent electrocution or injuries from electricity in the event of a flood or cyclone:

Before

- Install a surge protector in your home to help protect sensitive electronic equipment.
- If you are in a flood prone area, consider relocating your switchboard and any wiring in your home that may be below previous DFLs.
- Tidy up unsecured objects around your home and yard and trim loose or dying branches. Call a professional tree trimmer if they're near powerlines.

- Ensure mobile phone batteries are fully charged and have a cord phone ready as cordless phone base stations do not work without electricity.
- Turn off and unplug electrical appliances including computer, TV, DVD and VCR aerial cables and move electrical equipment to higher ground.

During

- Follow instructions from authorities, listen to a battery-operated radio for official advice and power restoration information, and be prepared to evacuate if necessary (where a battery operated radio is unavailable, the car radio may be useful for a short time).
- **Do not** check the state of your electrical appliances during a natural disaster event.
- **Do not** operate electrical appliances or switches while standing in water.
- If moving around your area in boats, be aware of reduced powerline height clearances as flood waters will make you closer to the powerlines and power poles can also move from the force of flood waters.

After

- Stay well away from fallen power lines. Always assume they are 'live' and dangerous. Report them immediately to Triple Zero (000) or the electricity distributor's emergency number.
- If you experience tingles or shocks from an electrical appliance or water taps or if you are hurt call Triple Zero (000), call your local electricity supplier to notify them and call your licensed electrical contractor to check your electrical wiring immediately.
- Unplug and do not use all electrical appliances affected by water and have them inspected by a licensed electrical contractor before use.

Take extra care around your switchboard if it's outside and wear synthetic or rubber-soled shoes. If you are in any doubt about the switchboard's safety, stay clear and call your licensed electrical contractor.

Generators

It is extremely dangerous to use generators in an enclosed place. Please ensure that if you use a generator in your home to provide temporary power supply that you do not place the generator in an enclosed place as this can lead to carbon monoxide poisoning, which can kill you in a matter of minutes (see Figure 9).

When using a generator you must ensure it is outside.

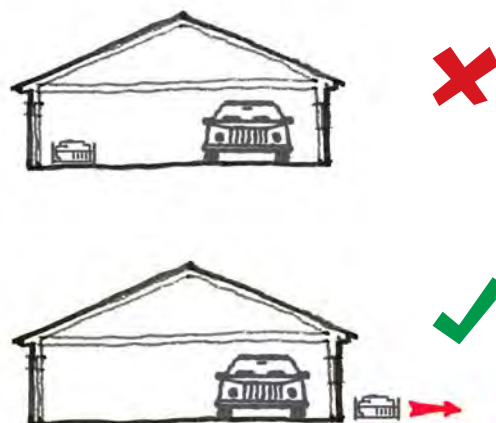


Figure 9: Correct location for home generators

Do not modify and plug generators directly into powerpoints in the home or into any part of the distribution network. Plugging a generator into a powerpoint will send electricity through the switchboard and into powerlines either on the ground or poles. That poses a significant safety risk to Electricity staff working on powerlines or neighbours cleaning up around fallen powerlines. Note:

- Appliances can be plugged directly into the generator but always read the manufacturer's instructions carefully.
- Use a heavy-duty extension cord rated for outdoor use.
- Always follow the manufacturer's recommendations for earthing the generator.

If you want to energise your household wiring have a licensed electrical contractor install an isolating switch to provide a safe and permanent connection from your generator to your household wiring. This will prevent your generator from back feeding powerlines, avoiding a safety hazard to you, your family, neighbours, and power workers, and preventing possible damage to your generator when mains power is restored.

Is your electrician licensed?

Check here: www.deir.qld.gov.au/elis

Electrical equipment - mains power supply

As a homeowner in a flood prone area, it is recommended that where possible you ensure greater resilience of your own electrical utilities by locating your switchboard and meter boxes above the DFL, as seen in Figure 10. If the DFL is known, it should be specified by your relevant local government authority, usually through the local planning scheme.

It may also be beneficial to locate a powerpoint above the DFL to provide power supply during the clean up operation when supply becomes available and it is safe to use appliances. This is a low cost solution that can greatly improve the resilience of the property after the event. A good location is at the switchboard. It may then be possible to supply power to that powerpoint so that you do not need to use a generator to run gurneys in the cleaning process or to supply a fridge.

If you do choose to elevate your switchboard or meter box, it must be in a position that allows sufficient access for electricity distributors and/or qualified electricians who may need to access your equipment. The meter must be able to be read by a meter reader, which in some instances may need to be below the DFL and separate from the switchboard. Separating the meter and the switchboard in this case will allow the switchboard at least to be above the DFL.

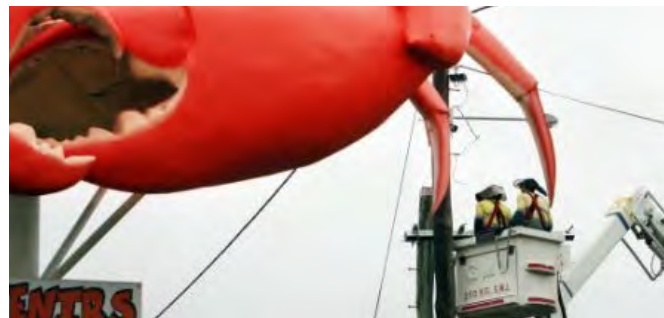


Photo of repairs in Cardwell provided courtesy of Ergon Energy

The purpose of elevating electrical equipment in your home is to ensure that your equipment will not be inundated in a flooding event. It is important to understand that elevating the electrical equipment will not mean that you won't lose power. Rather, it will assist you in sustaining less damage to the electrical equipment in your house, which will ultimately mean you will be reconnected to power supply sooner.

Preparedness

Regardless of the type of natural disaster your house may be susceptible to, be it flooding or cyclones, it is crucial that you are adequately prepared. It is important to plan ahead and be prepared so that during an emergency you and your household know what to do, where to go, how to keep in touch with each other and how to contact emergency services as required.

It is recommended that you undertake the following basic steps to ensure you are prepared for future natural disasters:

- **Prepare an emergency plan and prepare for evacuation.**
- **Develop your emergency plan** – with as many household members as possible to ensure everyone understands the risks and appropriate actions to take in an emergency.
- **Prepare an emergency kit** – this should include at least: food and water, medical and sanitation supplies, light, communications, clothing and footwear, tools and supplies and important documentation.
- **Prepare your home** – the best time to do this is before the event.

For further assistance relating to disaster preparation and evacuation planning including a checklist to prepare your own evacuation plan visit www.emergency.qld.gov.au/emq/css/beprepared.asp

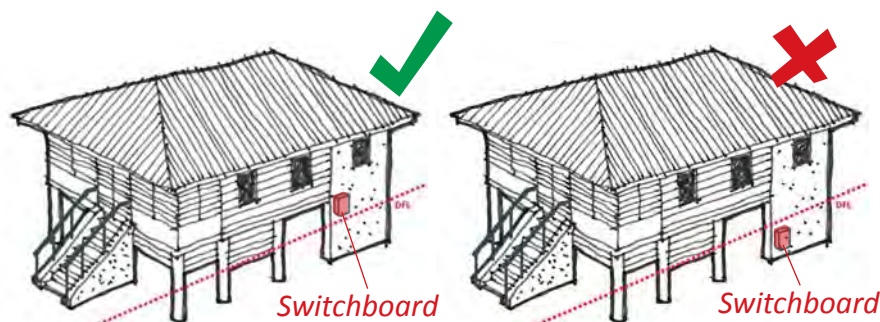


Figure 10: Recommended positioning for dwelling switchboard

For more information on electrical safety in flooding and cyclones visit:

www.justice.qld.gov.au/corporate/floods

or contact:

Ergon Energy on **13 10 46**

ENERGEX on **13 12 53**

Essential Energy on **13 20 80**

Electrical Safety Office on **1300 650 662**

Schedule 1

Example Table of Contents for a Business Continuity Plan

Business Continuity Plan	1
Distribution List.....	2
References and related documents	2
Table of Contents	3
Executive Summary (optional)	4
Objectives	5
Glossary	6
Risk Management	7
Business Impact Analysis	9
Business Impact Analysis	12
Incident Response Plan	13
Immediate Response Checklist	13
Evacuation Procedures.....	14
GO Pack.....	14
Roles and Responsibilities.....	16
Key Contact Sheet	17
Event Log.....	18
Recovery	19
Recovery Plan.....	20
Incident Recovery Checklist	21
Rehearse, Maintain and Review	22

Notes

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Temporary State Planning Policy

[INSERT]/11 Planning for Stronger, More Resilient
Floodplains

DRAFT AND CONFIDENTIAL

Sustainable Planning Act 2009
TEMPORARY STATE PLANNING POLICY
Planning for Stronger, More Resilient Floodplains
September 2011

Making the temporary State planning policy

This temporary State planning policy was made by the Honourable Paul Lucas MP, Deputy Premier and Attorney-General, Minister for Local Government and Special Minister of State under Chapter 2, Part 4, Division 3 of the *Sustainable Planning Act 2009*.

Commencement

This temporary State planning policy takes effect on [INSERT DATE].

Prepared by:

Queensland Reconstruction Authority

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August 2011

Contents

Explanatory statement

Planning for Stronger, More Resilient Floodplains Outcome sought by the Temporary SPP

Effect of the Temporary SPP

Implementing the Temporary SPP

1. Policy outcome

Policy outcome sought by the State Planning Policy

2. Application of the State Planning Policy

State Planning Policy and State Planning Policy Guideline

Areas to which the SPP applies

3. Making or amending a planning instrument

Achieving the policy outcome through a local planning instrument

4. Information and advice about the SPP

Sources of information and advice

Operation of the Temporary SPP

Annex 1

Natural Hazard Management Area (Flood)

Explanatory statement

Planning for Stronger, More Resilient Floodplains

During July to December 2010, extreme rainfall was experienced across large parts of eastern Australia, with Queensland experiencing its wettest Spring on record. As a result, Queensland's catchment areas were significantly saturated prior to major rain events that caused severe flooding throughout Queensland between November 2010 and April 2011.

Most of Queensland's major towns and cities are located on a floodplain, both inland and coastal. In order to ensure the resilience of these town and cities and the subsequent safety of their residents from threats of future flood events, these towns and cities must, to the greatest extent possible, be capable of withstanding or minimising the effects of future flood events.

Development within Queensland is principally regulated by local government planning schemes which provide guidelines for acceptable types of development within the boundaries of local government areas. By understanding how floodplain systems operate, future development within Queensland can incorporate measures aimed at ensuring that planning and development continues whilst minimising the effects of future flood events by incorporating specific and consistent floodplain management measures into existing planning schemes, where appropriate.

Temporary State Planning Policy (insert number): Planning for stronger more resilient floodplains (the SPP) has been developed to support the designation of Natural Hazard Management Areas (Flood). Through the identification of NHMA (Flood) Local Governments can amend their existing planning schemes and incorporate planning scheme provisions to regulate assessable development within the NHMA (Flood).

Outcome sought by the Temporary SPP

This SPP seeks to ensure that development is planned, designed and constructed to minimise potential flood damage to towns and cities and to improve safety of individuals and communities.

This outcome supports the objective of the *Sustainable Planning Act 2009*.

Effect of the Temporary SPP

The effect of the SPP is to:

- Suspend the effect of paragraphs A3.1 and A3.2 of Annex 3 of State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
- Make a Temporary State Planning Policy dealing with and giving effect to the matters suspended in paragraphs A3.1 and A3.2 of Annex 3 of State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide by providing local government with information necessary to determine the Natural Hazard Management Area (Flood) and then adopt an associated overlay map(s) and code by way of an amendment to an existing planning scheme.

Implementing the Temporary SPP

The Temporary SPP is to be implemented by:

- Allowing a local government to amend existing planning scheme to incorporate a Natural Hazard Management Area (Flood) in accordance with Annex 1; and to
- Informing strategic land use planning decisions for the preparation of new *Sustainable Planning Act 2009* planning schemes

The Temporary SPP will influence planning and development decisions wholly or partially within a Natural Hazard Management Area (Flood).

The Temporary SPP is supported by the Guideline: Planning for Stronger, More Resilient Floodplains, which gives further information and advice on the implementation of this Temporary SPP.

The Temporary SPP is supported by an extensive mapping process evaluating floodplains across Queensland.

1. Policy outcome

Policy outcome sought by the Temporary SPP

- 1.1 State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide requires the identification of natural hazard management areas. The identification of the natural hazard management area for flood (the Natural Hazard Management Area (Flood)) is dependent upon a local government adopting a flood event for the management of development in a particular locality.
- 1.2 To promote a better understanding of floodplains via a correlation between land use planning and floodplain management, the State government has prepared a number of tools which may be adopted by a local government to assist in identifying the Natural Hazard Management Area (Flood), and in regulating development partially or wholly within a floodplain.

2. Application of the Temporary SPP

State planning policy and State planning policy guideline

- 2.1 The Temporary State Planning Policy: Planning for Stronger, More Resilient Floodplains is a statutory instrument under the *Sustainable Planning Act 2009*.
- 2.2 The Temporary State Planning Policy Guideline: Planning for Stronger, More Resilient Floodplains (SPP guideline) provides advice about implementing the SPP and is declared to be extrinsic material under the *Statutory Instruments Act 1992*, s. 15.
- 2.3 When designating land for community infrastructure, a Minister or local government must consider the development outcomes set out in the code in Annex 1 of this policy.
- 2.4 Terms used in the SPP, code and SPP guideline have the same meaning as defined in the *Sustainable Planning Act 2009* and the *Sustainable Planning Regulation 2009*. The glossary explains particular words used in the SPP and the SPP guideline.

Areas to which the Temporary SPP applies

- 2.5 The Temporary SPP applies to all Local Government Areas.

3. Making or amending a planning instrument

Achieving the policy outcome through a local planning instrument

- 3.1 A local planning instrument achieves the policy outcome in section 1.1 to 1.2 of this Temporary SPP if it results in an amendment to a local government planning instrument, or a new local government planning instrument, which designates a Natural Hazard Management Area (Flood) as per Annex 1.

4. Information and advice about the Temporary SPP

Sources of information and advice

- 4.1 The Queensland Reconstruction Authority and the Department of Environment and Resource Management (DERM) can provide advice about implementing and interpreting the SPP, and on reflecting the SPP in a planning instrument.
- 4.2 The Guideline contains further information about the maps and code.
- 4.3 The Department of Local Government and Planning can provide advice about reflecting the SPP in a local planning instrument, and the operation of the Integrated Development Assessment System (IDAS).

Operation of the Temporary SPP

- 4.4 The Temporary SPP will operate for up to 12 months.

Annex 1

NATURAL HAZARD MANAGEMENT AREA (FLOOD)

Where proposing amendments to an existing planning instrument under the *Sustainable Planning Act 2009*, a Natural Hazard Management Area (Flood) is:

- 1) land inundated by a Defined Flood Event (DFE) and identified in a planning instrument; or
- 2) the Interim Floodplain Assessment Overlay mapping and Model Code provided by the Queensland Reconstruction Authority; or
- 3) the Interim Floodplain Assessment Overlay mapping and Model Code as amended by the relevant Local Government.

Where proposing a new planning instrument under the *Sustainable Planning Act 2009*, a Natural Hazard Management Area (Flood) is:

- 1) land inundated by a Defined Flood Event (DFE) and identified in a planning instrument; or
- 2) the Interim Floodplain Assessment Overlay mapping and Model Code provided by the Queensland Reconstruction Authority; or
- 3) the Interim Floodplain Assessment Overlay mapping and Model Code as amended by the relevant Local Government.



Planning for stronger, more resilient floodplains



Part 1 – Interim measures to support floodplain management in existing planning schemes





In developing this toolkit, the Queensland Reconstruction Authority has consulted more than 10 Local Governments and the Local Government Association of Queensland (LGAQ).

The sheer scope and scale of the weather events which affected Queensland last summer meant that to build and plan stronger, more resilient communities into the future, Councils need more comprehensive data to make informed decisions about how and where we build.

To assist Queensland Councils the Authority has undertaken the single largest floodplain mapping exercise in the State's history. The maps contained in the toolkit - *Planning for Stronger, more Resilient Floodplains* are drawn from evidence of past flooding, including soils, topography and satellite imagery.

They are informed by the 2010/11 summer disasters but do not represent the actual flood line for that period. Why? Because while the whole of Queensland was affected last summer, we know there have been larger floods in some areas in the past. What the maps do show are areas where inundation has previously occurred or is likely to occur. At the conclusion of this mapping exercise, floodplain mapping will be available for the whole of Queensland.

The State's river systems do not stop at local Government boundaries and so for the first time, these floodplain maps have also been developed on a catchment-by-catchment basis. And with them, comes the opportunity for Councils to adopt the floodplain maps and supporting developmental controls into existing planning schemes.

This guideline provides Councils – especially those who have perhaps historically lacked the resourcing capacity to undertake these types of studies - with a ready-made toolkit to help assess future development applications and the opportunity to better align floodplain management and land use planning.

The Queensland Reconstruction Authority wishes to thank in particular the Banana Shire Council and the Fitzroy Basin Association who have made significant contributions to the pilot program and who, along with the LGAQ, have provided input and support for its development.



Planning for stronger, more resilient floodplains

Queensland is a State of meteorological extremes, with floods occurring regularly across many parts of the State. From July to December 2010, this was no better demonstrated as Queensland experienced its wettest spring on record. In total, 13 major river catchments reached their highest recorded peak levels and 210 townships and suburbs were affected by flooding.

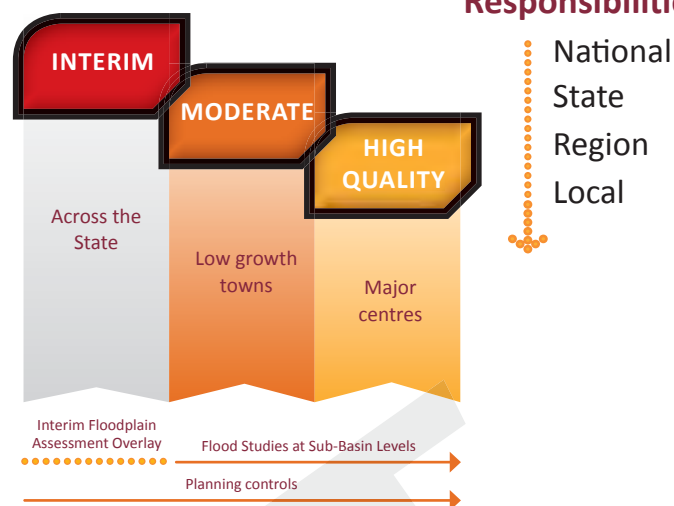
Most of our towns and cities are located on floodplains, both inland and coastal. This is an historical fact, principally for reasons associated with water supply, transportation, waste disposal, advantageous points for river crossings, access to productive soils or recreation purposes. Hence, these towns and cities will be subject to flooding from time to time.

Put simply, if we are to use floodplains for these purposes, we need to acknowledge and plan for flooding in a way that improves resilience of our built form and encourages the safety and well being for our communities and individuals.

Seeing significant change in Queensland's floodplains will be generational – the full implementation of this improved resilience will be seen over time through specific shifts in local land use planning policy and development assessment decision-making that take account of the vulnerabilities of development in the floodplain. However, through interim changes to the way development is addressed in these risk areas, real steps can be taken now to ensure new development in Queensland's floodplains considers and responds to adverse flood events.

The key to ensuring our State copes with these flood events is improving the resilience of our communities. In response, the Queensland Reconstruction Authority (the Authority) has prepared this two part guideline **Planning for stronger, more resilient floodplains**.

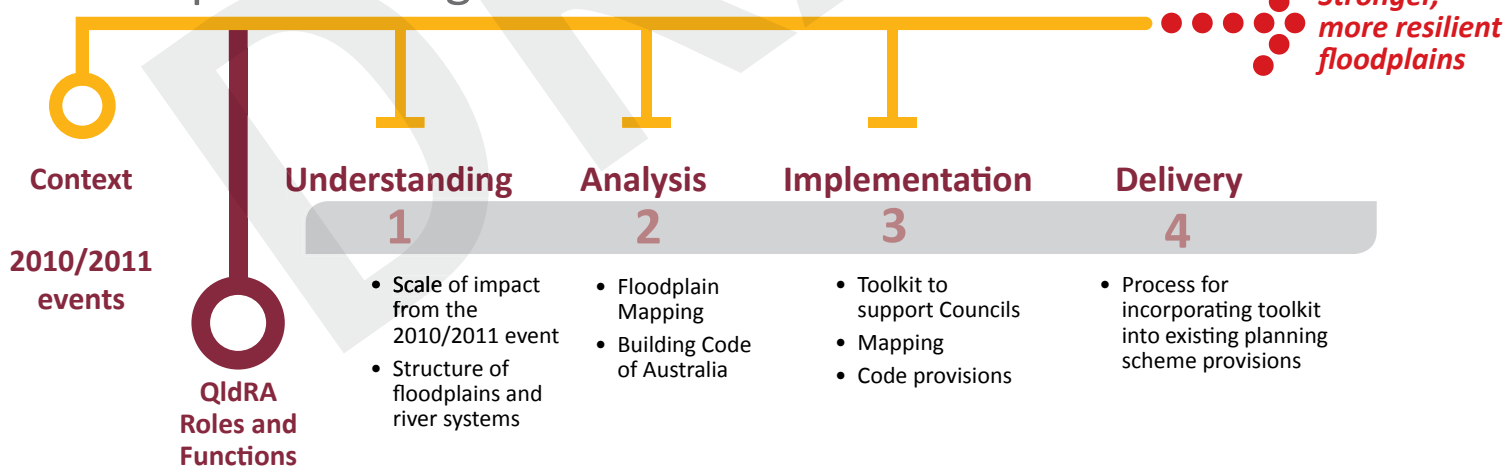
Responsibilities



As demonstrated above, an important aim of **Planning for stronger, more resilient floodplains** is to provide a fit for purpose response to help Councils introduce consistent and specific planning controls to manage flood risks in the floodplain assessment area.

Part 1 represents a interim response that can be applied across the entire State. Part 1 includes the development of an *Interim Floodplain Assessment Overlay* incorporating a mapping product and supporting planning scheme provisions. A major driver of this Guideline is the ability to provide low growth Councils with workable products now, in lieu of detailed flood studies which will take significant time and resources to complete across the State. It is recognised that not all Councils will benefit from Part 1 as some Councils are well advanced with flood mapping and planning scheme provisions. However, all Councils can learn from recent events and incorporate the principles of floodplain management in the development and preparation of their new planning schemes.

Floodplain Management



The Authority acknowledges the following organisations that have provided their support to this important program of work:

- Geoscience Australia
- Banana Shire Council
- Fitzroy Basin Association
- Bureau of Meteorology
- CSIRO

Key information is provided throughout this Guideline. It is marked with this symbol. It has been provided courtesy of the Queensland Floods Science, Engineering and Technology Panel *Understanding Floods – Questions and Answers*.

A full copy of this document can be downloaded from: www.chiefscientist.qld.gov.au/



Introduction

During Summer 2010/2011 Queensland experienced unprecedented events that resulted in the entire State being disaster activated. Whilst flooding in Queensland is not rare, between November 2010 and April 2011, 91 per cent of the State was disaster activated as a result of flooding. The scale of the event of summer 2010/2011 has never before been seen.

The management of our floodplains is complex. Balancing the role of the floodplain from protection of agriculture and the environment, to stimulating economic growth and supporting new population growth is a difficult process to manage. Each has its role and arguably each is as important as the other.

To ensure that Queensland learns from the recent natural disasters the Authority has partnered with the Department of Local Government and Planning (DLGP) including Building Codes Queensland (BCQ), the Department of Environment and Resource Management (DERM) and the Department of Community Safety (DCS) to deliver a body of work supporting greater resilience and understanding of our floodplains and to better inform and influence the land use planning process.

An outcome of this partnership is the development of this Guideline, entitled **Planning for stronger, more resilient floodplains**. This is a two part Guideline aimed at raising awareness and represents the start of a journey to improve floodplain management throughout Queensland utilising the land use planning process.

To support this process, the Authority has partnered with Banana Shire Council (BSC), a Council that was significantly affected by events in December 2010/ January 2011. Together with the Fitzroy Basin Association (FBA) the BSC will embark on a journey to help improve the management of floodplains through the land use planning process.

Part 1 – **Interim measures to support floodplain management in existing planning schemes** delivers a toolkit that includes interim planning scheme measures and supporting mapping to those Councils who currently do not have any floodplain mapping. The mapping has been produced with the support of DERM and the mapping product provided represents an Interim Floodplain Assessment Overlay (Floodplain Maps). The Guideline also identifies a clear implementation path for those Councils that choose to adopt the interim code provisions and mapping.

Part 2 – **Standard planning scheme provisions and flood study template** will provide more detailed floodplain assessment guidance to Councils who are looking to prepare their new Planning Schemes under the Sustainable Planning Act 2009 (SPA).

An important aim of this Guideline is to help Councils introduce consistent and specific planning controls to manage flood risks in the floodplain assessment area.

About this Guideline

This Guideline has been developed to support Councils by offering interim fit for purpose measures to ensure that potential flooding impacts can be considered as part of the development assessment process. The Guideline is divided into four key parts:

1 Understanding

- Scale of impact from the 2010/2011 event
- Structure of floodplains and river systems

2 Analysis

- Floodplain planning
- Building Code of Australia

3 Implementation

- Interim Floodplain Assessment Overlay – Mapping
- Interim Floodplain Assessment Overlay – Code provisions

4 Delivery

- Proposed amendment process for existing planning schemes

Part 1 principally focuses on providing Councils with an assessment trigger allowing consideration of a development proposal's potential impact on the floodplain. As an interim solution, this Guideline does not offer a comprehensive solution for managing new or existing development in floodplain areas. It does however, offer those Councils and indeed applicants, additional scheme provisions to ensure that there is due consideration as to what and how a development proposes to respond to a potential flood impact. This toolkit does not replace or override any existing engineering development standards, such as local road design manuals or the *Queensland Urban Drainage Manual*. Critically, it also does not replace or diminish the need for disaster warning and response plans or evacuation procedures. Even after adopting the recommendations in this Guideline, people should not become complacent to the risk of flood.

Objectives

The main objectives of the Guideline are to:

- Promote a greater understanding of the scale and extent of floodplains in Queensland and their management
- Promote a greater correlation between floodplain management and land use planning
- Provide Councils with an information toolkit that they can adopt in a timely manner to provide interim measures to support development assessment
- Support a more resilient built form outcome in flood prone areas through additional interim planning scheme measures.

What will Part 2 contain?

Queensland is in a unique position as the majority of Councils are resolving to prepare new SPA compliant planning schemes. As Part 1 is an interim measure supporting existing planning schemes, Part 2 will build upon Part 1 to work towards a consistent approach of floodplain management in new planning schemes. To support this approach, Part 2 will address the following matters:

- Fit for purpose flood study template to help inform the strategic planning process developed in partnership with CSIRO and Bureau of Meteorology
- Standardised floodplain management provisions
- Advice on transition strategies for land uses, zoning recommendations and other key land use policy matters which effectively translates flood studies and floodplain management plans into land use plans using the Queensland Planning Provisions (QPP).

1 Understanding

Overview of events

During July to December 2010, extremely heavy rainfall was experienced across large parts of eastern Australia, with Queensland experiencing its wettest spring on record. This rain pattern was influenced by the strongest La Niña affect in the Pacific Ocean since the mid 1970s and as a result, Queensland's catchment areas were significantly saturated before major rain events occurred during November 2010 to April 2011.

- On 25 December 2010, the Category 1 Tropical Cyclone Tasha crossed the Queensland coast between Gordonvale and Ravenshoe
- Pre-existing weather conditions and sustained high rainfall between 23–28 December 2010 resulted in flooding in many parts of central and southern Queensland
- On 29 December 2010, Theodore was the first town to be fully evacuated in the history of Queensland. Condamine became the second township. Each was fully evacuated twice.
- On 10 January 2011, the townships of Maryborough, Bundaberg and Gympie were affected by rising floodwaters, leading to the widespread inundation of houses and businesses. Additionally, the Bruce Highway was cut in several locations
- On 10 January 2011, exceptionally heavy rainfall intensified in Toowoomba, culminating in unprecedented flash flooding within Toowoomba's Central Business District
- On 10 January 2011, a further torrent of water hit the Lockyer Valley where the towns of Grantham, Murphy's Creek, Postman's Ridge, Withcott and Helidon were severely affected
- On 11 January 2011, heavy rain continued in the Brisbane River catchment with flooding of Laidley and Forest Hill
- On 12 January 2011, the Bremer River in Ipswich had reached 18 metres while some low-lying Brisbane suburbs had already started to be inundated

Flooding snapshot 2010/2011

- 210 towns and suburbs were affected by flooding
- 13 river catchments recorded their highest peak levels
- Total evacuation of a township, Theodore and Condamine (twice)
- Critical infrastructure was affected
- Rockhampton airport was closed
- Water purification systems were flooded hampering clean up efforts and access to safe drinking water
- 50,000 km of road requires rebuild or repair
- Damage bill from all disasters is \$6.8B

- On 13 January 2011, the Brisbane and Bremer Rivers peaked at 4.46 metres and 19.5 metres respectively. These were lower than 1974 flood levels but the flooding caused significant inundation in both cities
- On 30 January 2011, Category 2 Tropical Cyclone Anthony crossed the coast close to Bowen, battering the coastal strip between Townsville and Mackay, depositing significant rainfall on already saturated areas
- On 3 February 2011, Category 5 Severe Tropical Cyclone Yasi struck. The largest severe cyclone to hit Queensland in recent times, it comprised a damaging core some 400 kilometres across with associated severe weather activity across 1000 kilometres of coastline, including a storm tide of more than five metres, peaking near Cardwell.

2010/2011 Timeline of events



Establishment of the Queensland Reconstruction Authority

The Authority was established through state legislation on 21 February 2011 as a statutory authority for the efficient and effective coordination of the reconstruction effort.

The Authority's mission is to reconnect, rebuild and improve Queensland, its communities and economy. This recognises that reconstruction starts house by house, street by street, community by community, industry by industry and results in a more resilient Queensland.

One of the core functions of the Authority is to respond to the disaster events of summer 2010/2011 and address both short and long term goals. The Authority has recognised a need for a greater understanding of the management of our floodplain specifically as it relates to land use planning outcomes.

Flooding and floodplains

Australia's floodplains are the commercial, social and ecological arteries of the nation. As such they constitute a national asset: an asset subject to damage when floods occur.

Most of our towns and cities are located on floodplains, both inland and coastal. This is an historical fact, principally for reasons associated with water supply, transportation, waste disposal, advantageous points for river crossings, access to productive soils or recreation purposes. Hence, these towns and cities subject to flooding from time to time.

Over time, uses in these areas have also become entrenched and in more recent times lifestyle, mobility and consumer sentiment has meant that these areas continue to be used for a range of commercial, social and ecological purposes. While these uses remain, so too will the potential risks when floods occur.

Put simply, if we are to use floodplains for these purposes, we need to acknowledge and plan for flooding in a way that improves resilience of our built form and encourages the safety and well being for our communities and individuals.

In Australia, flooding can be caused by four different mechanisms: heavy rainfall, storm surge, tsunami and dam failure. Rainfall and storm surge flooding create the most common and significant threats to social and economic well being of flood-prone communities. Tsunami and dam failure can result in catastrophic damage and likely loss of life. The probability of this type of flooding in Australia is low.

Thus, as devastating as recent events have been, they are not unique: 77 floods were recorded in Australia in the last 35 years of the 20th century; eight major floods were recorded in Australia in the 19th century and six in the first decade of the 21st century. Nature will undoubtedly continue to surprise us.

Floodplains are generally the more fertile areas of the continent. A significant proportion of Australia's agricultural output is produced on floodplains including irrigated agriculture. Regular flooding of these areas enhances agriculture by increasing soil moisture.

A floodplain is an essential component of a catchment, and floodplain management is a critical part of overall catchment management.

Cost of flooding

In Australia, floods are the most expensive type of natural disaster with direct costs for the period from 1967 to 2005 estimated at an average of \$377 million per year (calculated in 2008 dollars).¹

Until recently, the most expensive year for floods in Australia was 1974, when floods affecting New South Wales, Victoria and Queensland resulted in a total damage bill in today's figures of \$2.9 billion. The Queensland Government estimates costs for the 2011 floods will exceed this figure with the damage to local government infrastructure estimated at \$2.5 billion and the total damage to public infrastructure across the State at \$6.8 billion. Conversely, and as discussed in section 3 – Implementation, flooding should be the most manageable type of natural disaster.

History of floodplain management

Floodplain management in Australia has evolved through four successive phases:

1. structural works
2. planning
3. flood emergency management
4. all-embracing management

During the structural works phase, predominantly in the 1970s, structural works (typically levees) were used to protect existing properties at risk. Little consideration was given to the use of levees and their potential impact on the environment, risk management planning or even land use planning. However, in 1974 a series of severe floods in New South Wales, Victoria and Queensland caused widespread and significant damage. The outcome was that a better understanding and regulation of levees was required.

In the 1980s and 1990s the importance of flood emergency management was brought into focus predominantly by the New South Wales Bogan River flood in April 1990 which required the forced evacuation of the town of Nyngan.

From the early 1990s the importance of an all-embracing approach to floodplain management was apparent with the States / Territories being far more advanced than previously in an integrated approach to floodplain management.

1 Floodplain Management in Australia, Best Practice Principles and Guidelines, SCARM Report 73, CSIRO Publishing



What factors contribute to floods?

Rainfall is the most important factor in creating a flood, but there are many other contributing factors. When rain falls on a catchment, the amount of rainwater that reaches the waterways depends on the characteristics of the catchment, particularly its size, shape and land use. Some rainfall is 'captured' by soil and vegetation, and the remainder enters waterways as flow. River characteristics such as size and shape, the vegetation in and around the river, and the presence of structures in and adjacent to the waterway all affect the level of water in the waterway.



So what exactly is floodplain management?

The objectives of floodplain management as determined by the Standing Committee on Agriculture and Resource Management (SCARM) are to:

- limit to acceptable levels the effect of flooding on the well-being, health and safety of flood-prone land, individuals and communities
- limit to acceptable levels the damage caused by flooding to private and public property
- ensure that the natural function of the floodplain – to convey and store floodwaters during a flood – is preserved
- encourage the planning and use of floodplains as a valuable and sustainable resource capable of multiple, but compatible, land uses of benefit to the community

Floodplain Management Process

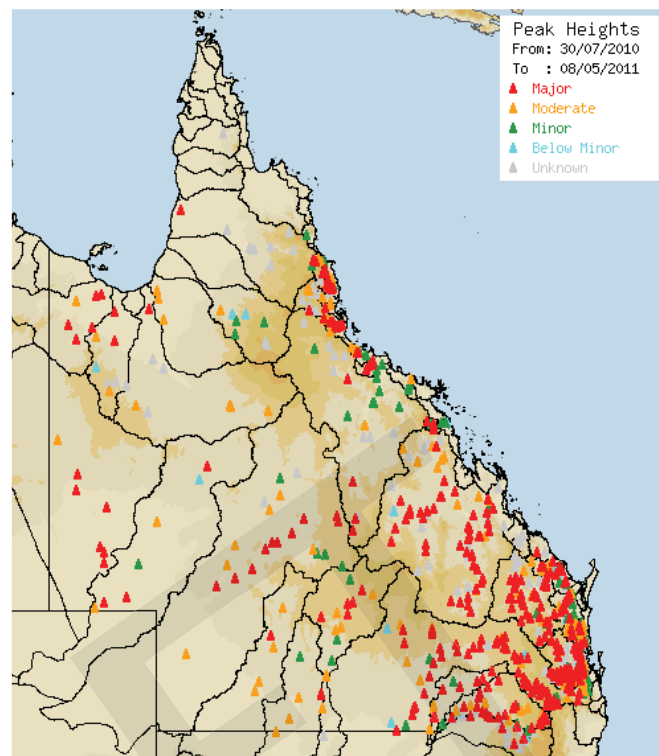
Ultimately the best way to manage our floodplains is through an integrated and appropriate mix of measures which are specific for each floodplain area.

The floodplain management process typically encompasses three sequential stages²:

- Flood Study – a technical study to determine the nature and extent of flooding
- Floodplain Risk Management Study – an options assessment which evaluates management measures and options for the floodplain in respect to both existing and future development
- Floodplain Management Plan – formal adoption of a plan of management for the floodplain.

The time scale for this process can be in excess of 2 years and includes extensive community consultation. It is well understood that comprehensive community consultation throughout the floodplain management process leads to greater community acceptance of the outcomes. Without appropriate community consultation the estimate of flood risk can often be incorrect. This Guideline should be seen as part of a continuum towards best practice in mapping and managing risk in floodplains.

² Mark Babister, WMA Water. Natural Disaster Insurance Review August 2011



Peak heights during the 2010/2011 summer event. Source: Bureau of Meteorology

Six major floods occurred in Brisbane between 1885 and 1910, followed by more than 60 years without a major flood

Size of Flood (chance of occurrence in any year) ARI/ (AEP)	Probability of Experiencing the Given Flood in a Period of 70 Years	
	At least once	At least twice
1 in 10 (10%)	99.9%	99.3%
1 in 20 (5%)	97.0%	86.4%
1 in 50 (2%)	75.3%	40.8%
1 in 100 (1%)	50.3%	15.6%
1 in 200 (0.5%)	29.5%	4.9%

Probabilities of experiencing a given size flood once or more in a lifetime. Modified from *Floodplain Development Manual: the management of flood liable land, NSW Government, 2005*

ARI – Average recurrence interval

AEP – Annual Exceedance Probability

How do we estimate the chance of a flood occurring?



Understanding the chance of different sized floods occurring is important for managing flood risk. The chance of a flood event can be described using a variety of terms, but the preferred method is the Annual Exceedance Probability (AEP). A flood with a 1% AEP has a one in a hundred chance of being exceeded in any year. Currently, the 1% AEP event is designated as having an 'acceptable' risk for planning purposes nearly everywhere in Australia. However, good planning needs to consider more than just the 1% AEP flood.

Understanding the River Systems

Understanding Australia's river systems is integral to developing an appropriate interim land use planning and mapping solution. This exercise has been instrumental to guide and direct how to best map, plan and therefore manage appropriate land use responses.

In Australia there are twelve drainage divisions (Figure 1). Drainage divisions do not stop at state or territory boundaries and they continue until they terminate at the sea, ocean or inland lake.

Queensland hosts part of five (5) of these drainage divisions including:

- Northeast Coast (1)
- Gulf of Carpentaria (9)
- Murray Darling Division (4)
- Bulloo – Bancannia Division (10)
- Lake Eyre Division (11)

Within each drainage division there are several major river basins. Like the national drainage divisions, there are no river basins in Queensland that correlate with Local Government Areas. Therefore, the majority of Local Government Areas will contain several major river basins. There are 246 major river basins nationally, 75 of which are located in Queensland (Figure 2):

- Northeast Coast Division – 46 River Basins
- Gulf of Carpentaria Division – 19 River Basins
- Murray Darling Division – 5 River Basins
- Bulloo – Bancannia Division – 1 River Basin
- Lake Eyre Division – 4 River Basins

Major river basins usually comprise multiple rivers that converge on the river after which the river basin is named. For example, the Fitzroy River Basin includes the prominent rivers of Dawson and Nogoa, which drain into the Fitzroy River. Therefore, each river basin is usually comprised of one or more Sub-Basins. Again, for example, the Fitzroy River Basin is further divided into the following Sub-Basins:

- Isaac River Sub-Basin
- Nogoa River Sub-Basin
- Comet River Sub-Basin
- Dawson River Sub-Basin
- Mackenzie River Sub-Basin
- Fitzroy River Sub-Basin

Just like the major river basins, Sub-Basins do not correlate with Local Government Area (LGA) boundaries. Figure 3 shows the Dawson River Sub-Basin.

By understanding how our major river systems are governed, it can help identify the best way to adopt a standardised approach to land use planning provisions. Given the importance of what happens within a sub-basin, it is recommended that the best management of floodplains is for planning to be undertaken at a sub-basin level. This means that every LGA is likely to have more than one sub-basin within their LGA boundaries and the size of the sections of Sub-Basins they contain will vary. This underlines the need for the preparation of the Floodplain Management Plans to be a collaborative exercise and the traditional means of relying on individual local governments to prepare these plans should be reconsidered.

Local Government boundaries do not correlate with river systems or basin boundaries.

Drainage Divisions

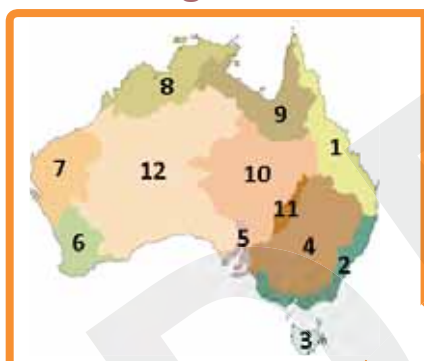


Figure 1 – National drainage divisions

River Basins

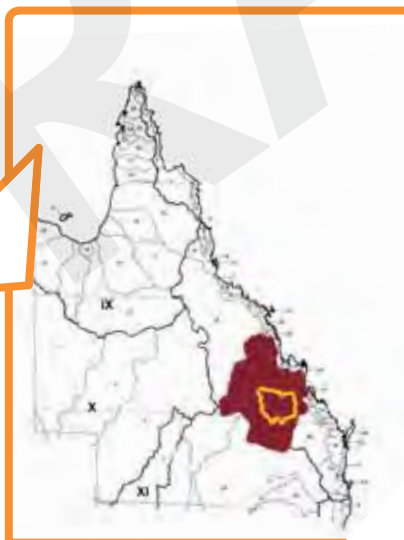
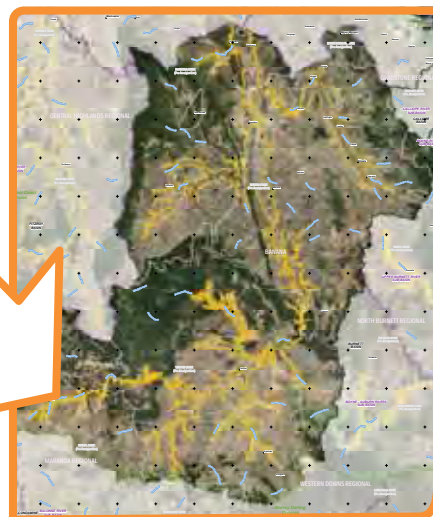


Figure 2 – Qld River Sub-Basins

Sub-Basins



EXAMPLE

Dawson River – Sub-basin

Drainage Division	1 – NorthEast Coast
River Basin	30 – Fitzroy
Sub-basin	Dawson River
Applicable LGAs	Banana Shire Central Highlands Maranoa Regional Western Downs Regional Rockhampton Regional Woorabinda Aboriginal

2 Analysis

Australia, and in particular Queensland, is prone to a long list of natural hazards, including flooding, cyclones, severe storms, bushfire, landslide and earthquakes.

The recent flood events seen across the State have highlighted the importance of considered land use planning that responds to the risks presented by natural hazards and particularly flooding.

Understanding how our river systems work here in Queensland acknowledges that an integrated approach to land use planning on floodplains is required to bring together the diverse issues and stakeholders that affect, or are affected by, floodplain management. This approach takes flooding behaviour, flood risk and flood hazard into account, along with all other relevant planning factors.

The end product of this process is a floodplain management plan that facilitates the use of the floodplain for appropriate purposes; limits flood hazard, and damage to socially acceptable levels; enhances the waterway and floodplain environment; and fosters flood warning, response, evacuation, clean-up and recovery in the onset and aftermath of a flood.

Floodplain Management in Australia – Best Practice Principles recommends the adoption of an approach to floodplain management at a total catchment (sub-basin) level beyond the LGA boundaries.

This sub-basin perspective is needed in order to manage effectively the result of existing development and the cumulative effects of future development on stormwater and mainstream flooding. This perspective includes both the upstream and downstream implications of proposed land use developments and floodplain management activities.

This approach will require collaboration from many stakeholders to support the ultimate goal of integrated management of our floodplains. This approach should extend beyond the development assessment process.

Traditionally a flood study is a comprehensive technical investigation of flooding behaviour that defines the extent, depth and velocity of floodwaters for floods of various magnitudes.

There are two principle components to a flood study:

Hydrologic analysis or estimation of flood discharges for floods of various magnitudes.

Hydraulic analysis or determination of the extent, depths and velocities of flooding.

This level of detail is not always required to facilitate improved floodplain management and therefore in recognition of the time and cost to prepare flood mapping and studies, the Authority, together with DERM, commenced an interim mapping exercise to propose an area within which a Council may choose to test a range of activities for compatibility to withstand the affects of flooding.

The dataset to inform the interim mapping product to be identified as *Interim Floodplain Assessment Overlay* (Floodplain Maps) which was developed using the following overall principles:

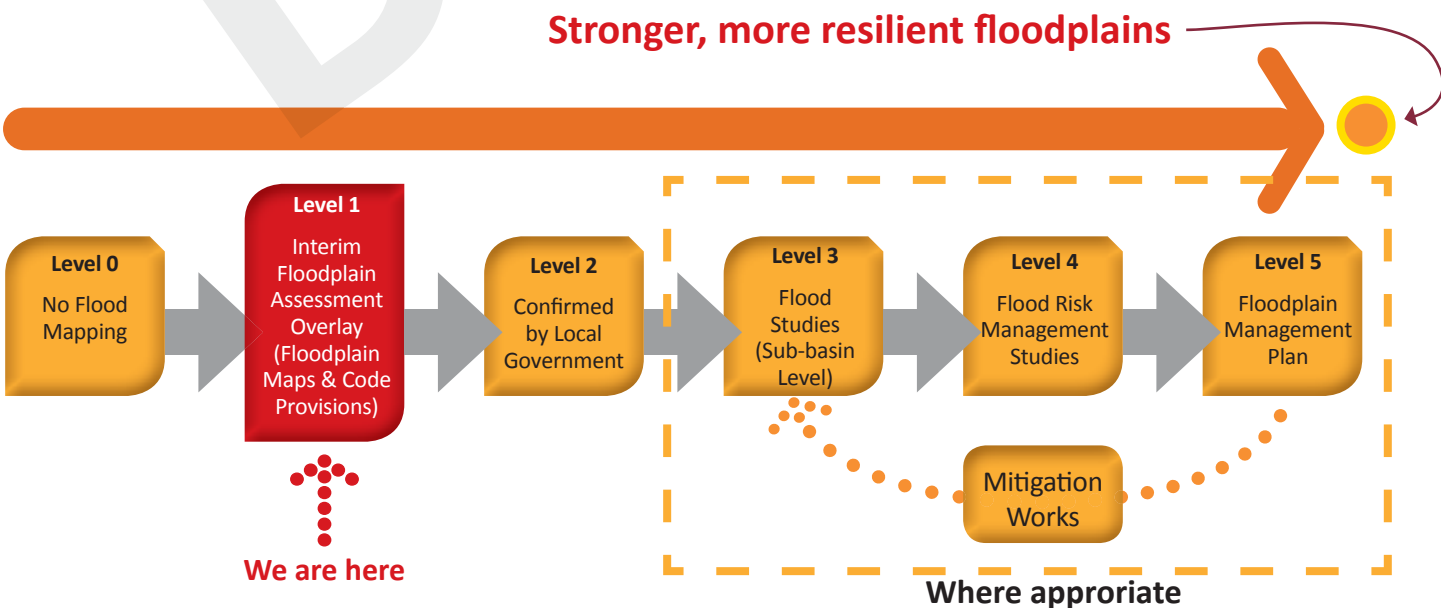
- suitability for a Statewide approach
- a consistent approach
- repeatable if more accurate data is available in the future
- evidential and justifiable

In terms of a maturity model for floodplain mapping, the Floodplain Maps are at level one and provide a framework for communities to decide priorities for more detailed flood studies (*Refer to Figure 3*).

Flood Mapping Maturity Levels

Level 0	No Flood Mapping
Level 1	Sub-Basin 'Interim Floodplain Assessment Overlay Mapping'
Level 2	Confirmed (by local govt) Floodplain Assessment Overlay Mapping. Potential to adopt as equivalent to Probable Maximum Flood defined at Sub-Basin level.
Level 3	Flood Studies completed in priority areas.
Level 4	Flood Risk Management Study
Level 5	Implemented Floodplain Management Plan

Figure 3 – Flood Maturity Mapping Model



The following is an overview and summary of each dataset used in the compilation of the floodplain maps:

Land zone 1



general term: estuarine (tidal flats and beaches)

Quaternary estuarine and marine deposits subject to periodic inundation by saline or brackish marine waters. Includes mangroves, salt pans, off-shore tidal flats and tidal beaches. Soils are predominantly Hydrosols (saline muds, clays and sands) or beach sand.

Land zone 3



general term: alluvium (river and creek flats)

Quaternary alluvial systems, including floodplains, alluvial plains, alluvial fans, terraces, levees, swamps, channels, closed depressions and fine textured palaeo-estuarine deposits. Also includes estuarine plains currently under fresh water influence, inland lakes and associated dune systems (lunettes). Excludes talus slopes, colluvial deposits and pediments. Includes a diverse range of soils, predominantly Vertosols and Sodosols, also with Hydrosols in higher rainfall areas.

SALI Soil Limitation Mapping

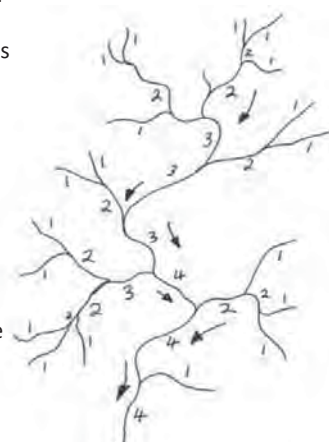
Refers to a soil type which has a limitation of flooding. Soil qualities and limitations are properties that can be assessed on an individual soil material basis and can affect the viability and sustainability of land uses.

Contours

Contour data with 10 metre vertical intervals available over the whole State has been used. In some selected cases to aid the visual interpretation, other available contour information has been used.

Stream Orders

Starting at the headwater, the stream is assigned number one to be made 1st order. As several 1st order streams converge the resultant stream becomes 2nd order. Two 2nd order streams converging form a 3rd order, etc. This is known as the Strahler Method. The number of orders in Queensland's Sub-Basins vary. The Dawson River sub-basin for example is classified to a 9th order. Flooding can occur in the headwater streams (ie. 1st order), but is more likely to be significant in higher order streams. For each sub-basin the appropriate stream orders have been selected to use in developing the Floodplain Mapping.



Imagery

Aerial imagery across the State is captured using different modes. The most common is through Landsat 5. Landsat 5 is the fifth satellite of the Landsat program. It was launched on 1 March 1984, with the primary goal of providing a global archive of satellite images. The program is managed by United States Geological Survey (USGS), and data from Landsat 5 is collected and distributed from the USGS's Center for Earth Resources Observation and Science. Australia like many countries has an agreement with the USGS where new satellite imagery is downloaded every 16 days and provided to Geoscience Australia. The imagery has a pixel resolution of 30 metres. In addition to Landsat more detailed aerial photography captured at the time of a flood over a town and cities has been used where available. During the summer 2010/2011 events, approximately 100 towns were captured with high resolution aerial imagery.

What are Land Zones?

Land zones represent major differences in geology and in the associated landforms, soils, and physical processes that gave rise to distinctive landforms or continue to shape them (Sattler and Williams 1999). Land zones are generally derived by amalgamating a range of geological, land system and/or soil mapping units at 1:100 000 to 1:250 000 scale. *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland. Version 3.1. Updated September 2005. Queensland Herbarium*

This is the largest mapping exercise currently underway in Australia. The mapping has been undertaken at a sub-basin level. Many Councils may have more than one sub-basin within their Local Government Area.

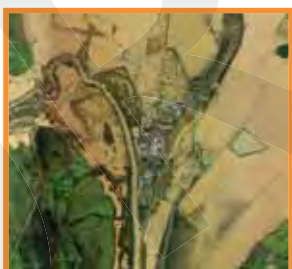
-



Landsat



Stream Orders



Aerial Taken – Theodore



Example: Interim Floodplain Assessment Overlay for the town of Biloela

- a Mapbook (a series of A3 Mapsheets covering the whole sub-basin) in both electronic and hard copy format;
- digital data compatible with geographic information systems (GIS) and
- interactive lot and plan search
- all mapping is available at www.qld.gov.au/floodcheck
- Until the mapping is locally verified and checked by Council it will remain as interim.

- a Mapbook (a series of A3 Mapsheets covering the whole sub-basin) in both electronic and hard copy format;
- digital data compatible with geographic information systems (GIS) and
- interactive lot and plan search
- all mapping is available at www.qld.gov.au/floodcheck
- Until the mapping is locally verified and checked by Council it will remain as interim.

3 Implementation

Planning for stronger, more resilient floodplains is a journey towards achieving better floodplain management through the land use planning process. Whilst not all Councils require assistance in achieving this objective, some do and may benefit from the use of this Guideline.

Floods are the most manageable of all natural disasters. Unlike other natural disasters, generally there is an understanding of where floods will occur and estimates of the likelihood of flooding, flood behaviour and the consequences of flooding in some cases. On the other hand the unpredictability of Severe Tropical Cyclone Yasi meant it was not known when it would make landfall until just hours before it crossed the coast. Therefore, through a combination of learning from the Yasi experience and analysing its aftermath, we can plan more efficiently for similar events and, at the same time, create more resilient communities.

New Construction Standards

The Australian Building Codes Board has developed a draft national Standard for Construction of Buildings in Flood Hazard Areas (draft Standard), which is scheduled to be introduced into the Building Code of Australia (BCA) in 2013, following appropriate consultation. The scope of the draft Standard is limited to class 1 (houses and townhouses), class 2 (units and flats), class 3 (hotels, motels and backpackers), class 4 (caretakers dwelling), class 9a (health care) and class 9c (aged care) buildings. It provides specific performance requirements and deemed-to-satisfy (DTS) provisions for the design and construction of new buildings in a flood hazard area, as designated by the relevant authority (ie. Local Government).

DLGP is proposing early adoption of the draft Standard as a new mandatory part of the Queensland Development Code (QDC). Additional non-mandatory provisions, which are currently outside the scope of the draft Standard, are also proposed to be included in the QDC to be adopted by Local Governments on a voluntary basis through a planning scheme, Temporary Local Planning Instrument, or by resolution. It is proposed that the new QDC will apply to new buildings and additions to existing buildings, but not generally to building alterations (for example, internal repairs such as adding bathroom or removing a wall).

However, unless there is appropriate mapping to indicate a building is within a flood prone area, these new provisions may not be triggered.

Temporary State Planning Policy

To assist in this process the Authority partnered with DLGP to implement a new Temporary State Planning Policy (TSPP) – Planning for stronger, more resilient floodplains – which creates the statutory mechanism by which a Local Government may look to adopt the Interim Floodplain Assessment Overlay as part of their existing planning scheme.

The TSPP suspends the effect of paragraphs A3.1 and A3.2 of Annex 3 of State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, which identifies the process by which a Local Government may designate a Natural Hazard Management Area (Flood) (NHMA).

The effect of the TSPP is to allow amendments to an existing planning instrument under the SPA for a Natural Hazard Management Area (Flood) to include:

- 1) land inundated by a Defined Flood Event (DFE) and identified in a planning instrument; or
- 2) the Interim Floodplain Assessment Overlay mapping and Model Code provided by the Queensland Reconstruction Authority; or

- 3) the Interim Floodplain Assessment Overlay mapping and Model Code as amended by the relevant Local Government.

The TSPP therefore gives effect for a Local Government to designate a NHMA (Flood) to be adopted either in the current form provided by the Authority or as amended by the Local Government following a visual assessment through a minor planning scheme amendment process, provided that the amendment does not deviate from the intent of the interim provisions and the purpose as outlined in this Guideline and the TSPP. A Temporary Local Planning Instrument (TLPI) may also be an option for adoption of the mapping and code provisions however, preference is for a minor scheme amendment process be followed.

The TSPP remains in effect for a period of 12 months. It is expected that these amendments will be taken into consideration in the review of the SPP1/03 and an amendment of SPP1/03 will be undertaken prior to the expiry of the TSPP.

Interim Toolkit supporting the TSPP

Part 1 of this Guideline provides a voluntary interim toolkit which includes the Interim Floodplain Assessment Overlay (IFAO). The IFAO includes:-

- Interim Floodplain Assessment Overlay Maps (Floodplain Maps) prepared by the Authority in both digital and hard copy; and
- Interim Floodplain Assessment Overlay Model Code (Model Code).

It is acknowledged that not all local governments require this interim tool. Councils with adequate provisions and mapping will not need this Guideline. The response needs to be fit for purpose recognising the differing needs of each local government. However, even for those Councils who feel that there are adequate provisions within their existing scheme, the floodplain maps may help to:

- inform the strategic planning process for the preparation of their new QPP compliant planning scheme; and
- identify an area for the purpose of triggering the relevant building assessment provisions, if their existing flood mapping does not already perform this function.

For those Councils wishing to adopt the interim provisions, this can be done through incorporating a new section into the existing planning scheme, titled “Interim Floodplain Assessment Overlay” and incorporating as a minor amendment to the planning scheme. Alternatively, a Council may use a TLPI however the minor amendment process is preferred given the limited timeframe associated with TLPIs. Further advice in relation to the interim tool and how it can be implemented is provided in section 4 of this Guideline.

The Floodplain Maps provided (as well as an adopted flood level) can also be used by Councils to trigger the relevant building assessment provisions for construction of buildings in flood hazard areas. This applies to both the current suite of building provisions and those soon to be implemented through the proposed amendments to the QDC.

It is also important to note the adoption of the Floodplain Maps is not proposed to alter the level of assessment for development within the overlay area. It simply utilises the existing levels of assessment prescribed in the Table of Development for an area. Therefore, the adopted Floodplain Maps will be used as a trigger for already Assessable Development to be assessed against the Model Code. Any changes to the levels of assessment will require specific consideration by Council and DLGP as part of the amendment process.

Mapping

The Interim Floodplain Assessment Overlay (Floodplain Maps) are being produced across the State. As per section 2 of this Guideline, the Floodplain Maps have been derived by overlaying best available statewide information sources. Individual maps have been designed for display with the cadastre at 1:50,000 scale to allow for properties to be located in respect to the floodplain area.

By the end of October 2011, this project will have mapped 40 per cent of the State's area, which when combined with existing flood mapping represents coverage for approximately 90 per cent of the State's population. By mid 2012, Floodplain Maps for relevant areas of the entire State will be available.

Further information on the mapping products, including current coverage and availability can be found at www.qld.gov.au/floodcheck



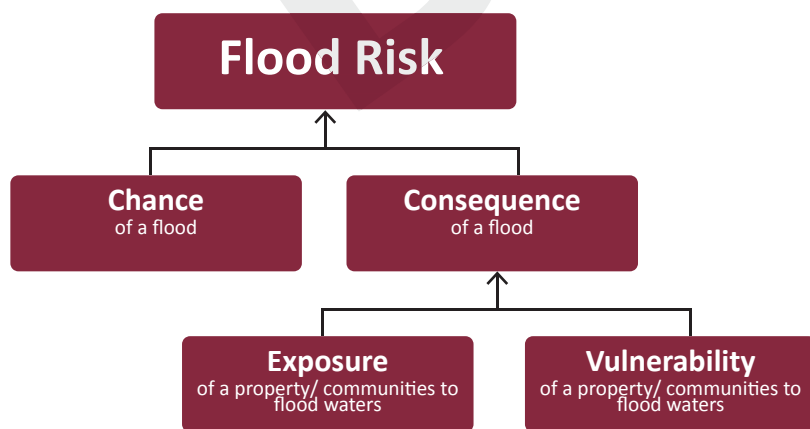
Brisbane River in flood 1974



Example:- Interim Floodplain Assessment Overlay for the town of St George in Balonne Shire Council



Brisbane River in flood 2011



Components of Flood Risk

Source:- Queensland Floods Science, Engineering and Technology Panel
Understanding Floods – Questions and Answers

How do we manage flood risks?



Flood risk includes both the chance of an event taking place and its potential impact. Land use planning informed by floodplain management plans can reduce risk for new development areas. Flood risk is harder to manage in existing developed areas; however modification measures such as dams or levees can change the behaviour of floodwaters. Similarly, property modification measures can protect against harm caused by floods to individual buildings, and response modification measures help communities deal with floods.

Planning scheme provisions – Model Code

To support the Floodplain Maps an Interim Floodplain Assessment Overlay Model Code (Model Code) can be applied in assessing any assessable development on land wholly or partially within the area shown on the Floodplain Maps.

A Model Overlay Introductory Statement which sets out the Intent for the Overlay Area is provided in Schedule 1 of this Guideline. The Model Code is provided in Schedule 2.

Councils may decide on the types of development to which the Model Code applies.

The purpose of the code is to manage built form outcomes in the floodplain so that risks to life and property during future flood events are minimised, and to ensure that future development does not increase the potential for flood damage on site or any other property.

For clarity and consistency, all development-related terms defined elsewhere in other Queensland legislation (such as the Sustainable Planning Act 2009, Dangerous Goods Safety Management Act 2001) have the same meaning in this Guideline and its Schedules.

To demonstrate the practical application of the Interim Floodplain Assessment Overlay (including the Floodplain Maps and the Model Code) in a development assessment context, a number of case studies are provided in Appendix 1 of this Guideline. This identifies how certain types of assessable development would be assessed against the Model Code.

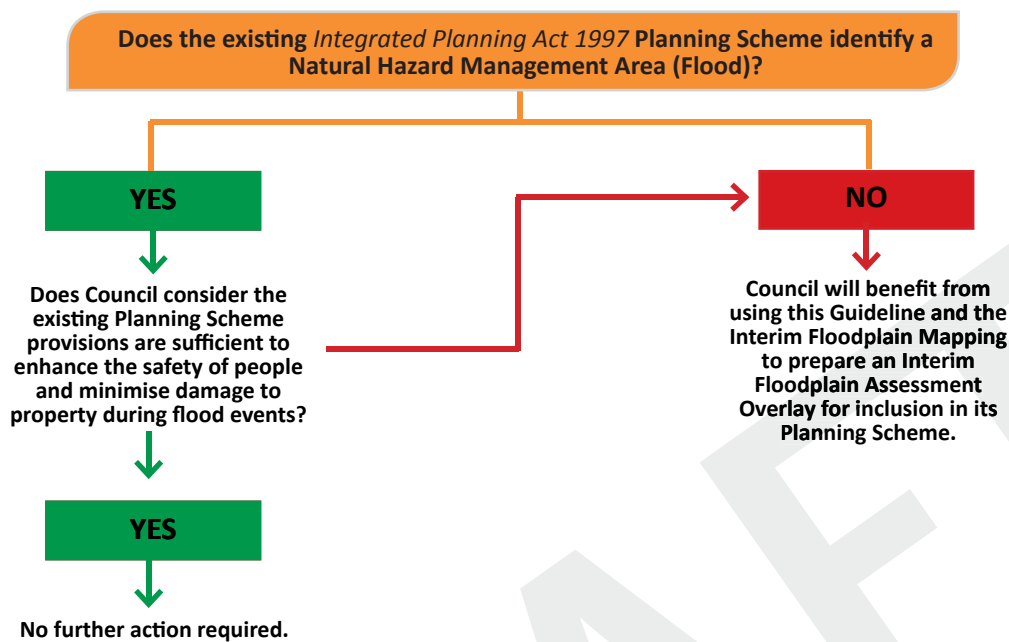


Images sourced from:- Queensland Image Library and Getty Images

**The traditional
'Queenslander' style
home was designed to
allow the cool breezes
to circulate through the
house in the hot summer
and to let flood waters
flow underneath.**

4 Delivery

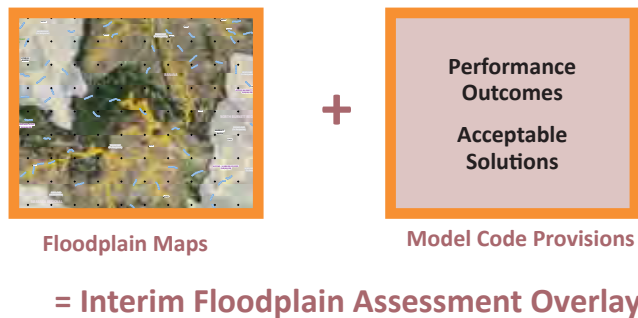
The following flow chart has been prepared to help Councils decide if the interim solution should be considered and adopted within their existing planning scheme.



Understanding the operation of an overlay

The IFAO includes the Floodplain Maps that for already assessable development will trigger assessment against the additional provisions included in the Model Code. The IFAO can be incorporated into the planning scheme as a new section titled "Interim Floodplain Assessment Overlay". In other words, development identified within the specific mapped area (Floodplain Maps) will trigger an additional set of provisions (Model Code) that will be used to assess development applications within the overlay area.

The Interim Floodplain Assessment Overlay does not necessarily change the level of assessment for development within the mapped overlay area. However, Councils can use the Interim Floodplain Assessment Overlay to change levels of assessment if they choose to do so.



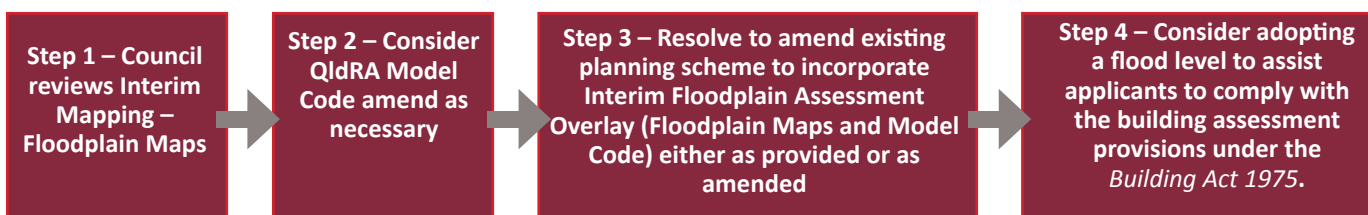
Incorporation into existing Planning Schemes

Existing planning schemes in Queensland utilise a number of approaches to trigger additional provisions for certain areas and sensitive development within Local Government areas. The Table below provides a simplified explanation of how the Interim Floodplain Assessment Overlay might be incorporated into different planning schemes across the State.

Existing planning scheme	Incorporation method
Planning scheme uses overlays which, when assessing development in a particular (mapped) area to which the overlay applies, triggers an additional set of provisions or regulation. <i>For example some Planning Schemes may include existing overlays such as Acid Sulphate Soils Overlay, Conservation Overlay and Road and Rail Noise Impacts Overlay.</i>	Include an additional overlay in the "Overlays" part of the planning scheme entitled 'Interim Floodplain Assessment Overlay' which will include reference to the Floodplain Maps and the additional provisions included in the Model Code.
Planning scheme does not include an 'Overlays' section, rather uses the 'Codes' Part of the planning scheme to identify area codes that are based on mapping and trigger additional provisions for development within that area. <i>For example some planning schemes may include existing area codes such as Biodiversity Code, Heritage Place Code and Aviation Area Code.</i>	Include an additional code in the "Codes" Part of the planning scheme entitled 'Interim Floodplain Assessment Code' which will act as an area code and will include reference to the Floodplain Maps that will trigger the additional provisions included in the new 'Interim Floodplain Assessment Code'.

Process

If Councils decide this Guideline is applicable to their local government area, Councils can follow the steps below to adopt an Interim Floodplain Assessment Overlay within their existing Planning Scheme.



Step 1 Review Interim Floodplain Assessment Overlay – (Floodplain Maps)

The Authority will provide all Local Governments with a copy of the relevant Floodplain Maps for their Local Government Area. The Floodplain Maps have been developed using the best data available statewide to the Authority. More detailed data, information, local knowledge and records may be readily available to Local Governments. Accordingly, while Councils can choose to adopt the Floodplain Mapping in its current form, the Authority strongly encourages local governments to consider the Floodplain Mapping and ascertain whether it identifies all of the areas within the Local Government Area that are potentially subject to flooding.

Councils can amend the Floodplain Maps prior to inclusion in a planning scheme.

In particular, it is important to recognise that larger, rarer floods may be experienced which exceed the adopted floodplain maps, which might require further consideration by Councils particularly if more detailed local information is available. In reviewing and adopting the IFAO, Councils should have regard to:

- the extent of inundation experienced during the Summer 2010–2011 flood event
- the extent of inundation experienced during other flood events
- other available data sources such as historic records, flood studies or floodplain modelling.

Step 2 Review Interim Floodplain Assessment Overlay (Model Code)

The Model Code has been prepared by the Authority to provide a standard tool for Assessment Managers to ensure suitable measures are adopted by development in areas potentially at risk of flooding.

The Model Code may be adopted without amendment by Councils as an interim measure for floodplain management. This will be the case particularly for those Councils who currently have no planning scheme measures to regulate flooding or floodplain management in their existing planning schemes.

Alternatively, Councils may decide to enhance the Model Code with additional or alternative provisions that better reflect their area's local topographical or hydrological circumstances prior to adoption. This is particularly relevant for those Councils that already have an assessment code in their planning schemes that deals with flood hazard.

As the Model Code has been oriented to local government areas without flood mapping, Councils with existing planning scheme provisions related to flood may in fact have more robust planning provisions than the Model Code for the assessment of flood hazard. It would be prudent for those Councils to consider how the Model Code would integrate into that existing suite of flood hazard provisions. It will be important for those Councils to ensure that the adoption of the Model Code does not in fact reduce the capability of Councils to assess and decide development applications in flood hazard areas.

Step 3 Resolve to amend the Planning Scheme

The IFAO can be incorporated into the planning scheme as a new section titled "Interim Floodplain Assessment Overlay", which includes the Floodplain Maps that trigger assessment of Assessable Development against the Model Code.

To adopt these measures and incorporate them into the planning scheme, Council must resolve to:

1. Adopt the Floodplain Maps either as provided or as amended
2. Adopt the Model Code either as provided or as amended
3. Adopt the Floodplain Maps as a NHMA (Flood)
4. Make an Amendment to the Planning Scheme to include:
 - A new section titled "Interim Floodplain Assessment Overlay" including the Interim Floodplain Assessment Overlay Maps and the Model Code
 - The Model Statement (See Schedule 1) within the Introductory Chapter describing the application of the Interim Floodplain Assessment Overlay Maps and Model Code.

The amendment to the Planning Scheme must be undertaken in accordance with the Guideline prepared by the Planning Minister under Section 117 of the SPA (Making and Amending a Local Planning Instrument).

It is acknowledged that a TLPI is an option available for the adoption of the Interim Floodplain Assessment Overlay however, this process is not preferred given timeframes and the need for State Interest Review. It is preferred that Councils follow the Guideline and the intent of the TSPP which supports a Minor Amendment to be considered by the Planning Minister.

Minor Vs Major Amendment

The TSPP allows for Councils to undertake a planning scheme amendment that can be considered as a minor amendment, in order to adopt the interim provisions as outlined in this Guideline.

It is intended that the amendment to the Planning Scheme will be classified as a “Minor Amendment” where the scope of the amendment does not deviate from the intent and scope of the interim provisions as outlined in this Guideline. Accordingly, following the consultation period of this Guideline, those Councils wishing to adopt the amendments (including changes to the Floodplain Maps and the Model Code) are likely to be able to do so following the Minor Amendment process which can be quickly incorporated into the Planning Scheme, as long as the intent of the interim solutions remains unaffected.

Where a Council seeks to undertake further amendments to the Planning Scheme, beyond the scope of those outlined in this Guideline, the amendment may be classified as a “Major Amendment”. Any change deemed to deviate from the intent will therefore need to undergo the Major Amendment process before being adopted into a Planning Scheme.

Step 4 Adopting a Flood Level

Councils may consider adopting a flood level based on historical highest recorded flood levels (or another level that may be more locally appropriate) across their Local Government area to give greater regulatory coverage to development in flood-prone areas. The adoption of a flood level, and the adoption of the Floodplain Maps which would be amended to reflect the adopted flood level, will trigger the relevant building assessment provisions under the Building Act 1975 related to flooding – the proposed ‘deemed to satisfy’ QDC amendments in particular have very detailed flood hazard building requirements that specifically relate to setting habitable room levels.

Therefore, Councils may adopt a flood level that can be used to assess building applications against the proposed QDC. Council may also wish to set a ‘freeboard’ level – an additional height above the flood level to provide a factor of safety – if this is to be higher than the minimum 300mm freeboard under the proposed QDC. This will ensure that all structures within the Floodplain Maps will be built to the latest standards.

If a flood level is not or cannot be adopted, it is still important to adopt the Floodplain Maps as this mapping will still trigger the relevant building assessment provisions. In this case, building applications will need to prove, through engineering first principles, that structures are fit for purpose in these flood areas.

The following table may assist in determining how to adopt a level within a planning scheme area.

DATA	APPLICATION
Historical Flood Data	Where historical flood data exists, it may be possible to use this information to help inform the adoption of a level. Historical data may include: <ul style="list-style-type: none"> formally recorded gauge height records for a number of floods; formally surveyed peak flood levels throughout the area of interest; photographs of a historical flood; ‘high-water’ marks recorded on public or private property; and interviews with long-term residents.
Existing Flood Studies	A number of river systems in Queensland have been the subject of a flood study. In many cases, these studies were either limited in their scope or performed a number of years ago. Ideally, they should be updated with current data and techniques and/or extended to cover the full range of floods and incorporate catchment development changes as well as future scenarios.
Topography	There may be circumstances where the topography suggests floods are not an issue (i.e. large elevated areas such as plateaus with no significant watercourses). Care should be taken in making such a determination, as land subject to flood hazards is not always obvious.

Floods can vary in size

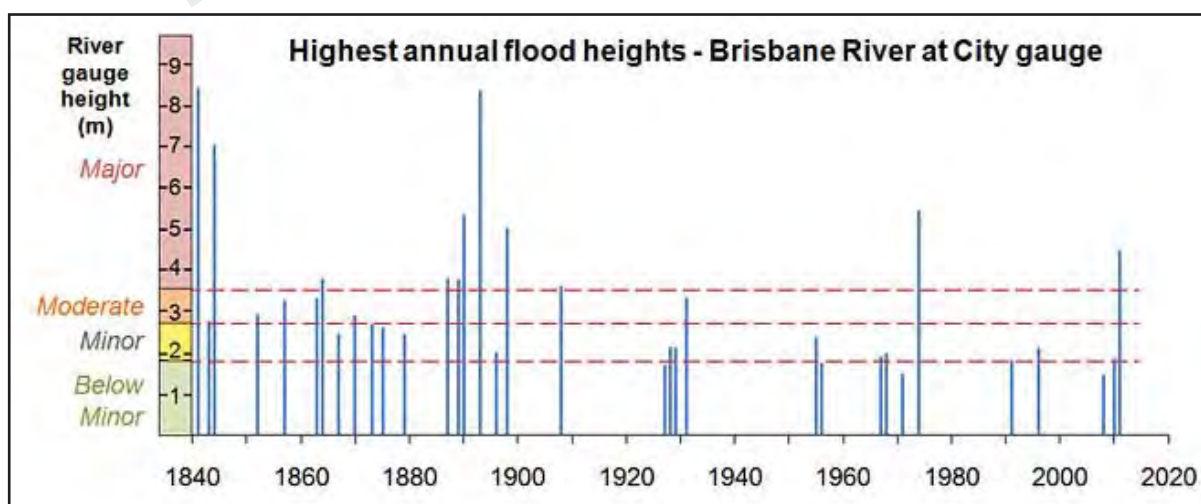
The flood magnitudes are usually classified by their height, and the *Bureau of Meteorology* uses three general categories of flooding related to water level:

Major: This causes inundation of large areas, isolating towns and cities. Major disruptions occur to road and rail links. Evacuation of many houses and business premises may be required. In rural areas, widespread flooding of farmland is likely

Moderate: This causes the inundation of low lying areas requiring the removal of stock and/or the evacuation of some houses. Main traffic bridges may be closed by floodwaters.

Minor: This causes inconvenience such as closing of minor roads and the submergence of low level bridges and makes the removal of pumps located adjacent to the river necessary.

Source: Bureau of Meteorology



Schedule 1 – Model Interim Floodplain Assessment Code

1. Application

This Code is an applicable code for assessable development prescribed by a level of assessment table in a zone and/or local plan and involving land wholly or partially within the Interim Floodplain Assessment Overlay Area, as defined by the Interim Floodplain Assessment Overlay Map. It does not apply for assessable development prescribed only by another overlay code within this planning scheme.

This Code is a Queensland Planning Provision (QPP)-compliant Code. For the avoidance of doubt, the following QPP-specific terms in this Code have the following meanings under Integrated Planning Act 1997 (IPA)-compliant planning schemes:

QPP Compliant Term	Corresponding IPA- compliant Term
Overall Outcome	Overall Outcome
Performance Outcome	Specific Outcome
Acceptable Outcome	Acceptable Solution/Probable Solution
Zone	Area, Precinct, Domain or District or other term commonly understood as a zoning mechanism

Compliance with the Acceptable Outcomes should not be regarded as satisfying all elements of the Performance Outcomes.

The Code must be considered together with other relevant planning scheme codes that are applicable to the subject development.

Note: The Overlay Map may also be used to trigger additional design requirements related to flooding for building work assessable under the building assessment provisions, as set out in the Building Act 1975.

2. Purpose

The purpose of the code is to manage development outcomes in the floodplain so that risk to life, property, community and the environment during future flood events is minimised, and to ensure that development does not increase the potential for flood damage on site or to other property.

3. Overall Outcomes

The purpose of the code will be achieved through the following overall outcomes:

- Development maintains the safety of people on the development site from flood events and minimises the potential damage from flooding to property.
- Development does not result in adverse impacts on people's safety, the environment or the capacity to use land within the floodplain.

4. Performance Outcomes and Acceptable Outcomes

Performance Outcomes	Acceptable Outcomes
PO1. Development siting and layout responds to flooding potential and maintains personal safety at all times.	For Material Change of Use and Building Work AO1.1. New buildings are: <ul style="list-style-type: none">located outside the overlay area, or;located on the highest part of the site to minimise entrance of floodwaters; orelevated; andprovided with clear and direct pedestrian and vehicle evacuation routes off the site. <i>Note: If part of the site is outside the Interim Floodplain Assessment Overlay area, this is the preferred location for all buildings.</i>
	For Reconfiguring a Lot AO1.2. New lots are: <ul style="list-style-type: none">located outside the overlay area; orwhere possible, located on the highest part of the site to minimise entrance of floodwaters. <i>Note: If part of the site is outside the IFA Overlay area, this is the preferred location for all lots (excluding park or other relevant open space and recreation lots).</i> <i>Note: Buildings subsequently developed on the lots created will need to comply with the relevant building assessment provisions under the Building Act 1975.</i>

Performance Outcomes	Acceptable Outcomes
Cont'd. PO1. Development siting and layout responds to flooding potential and maintains personal safety at all times.	AO1.3. Road and/or pathway layout provides a safe and clear evacuation path: <ul style="list-style-type: none"> • if a flood level is adopted¹, by locating entry points into the reconfiguration above the flood level and avoiding culs-de-sac or other non-permeable layouts; or • by direct and simple routes to main carriageways.
	AO1.4. Signage is provided on site (regardless if land will be publicly or privately- owned): <ul style="list-style-type: none"> • indicating the position and path of all safe evacuation routes off the site; and • if the site contains or is within 100m of a floodable waterway, hazard warning signage and depth indicators are also provided at key hazard points, such as at floodway crossings or entrances to low-lying reserves.
PO2. Development is resilient to flood events by ensuring design and construction account for the potential risks of flooding.	For Material Change of Use and Building Work (Residential Uses) AO2.1. Residential dwellings are not constructed as single-storey slab on ground. <i>Note: The highset 'Queenslander'-style house is a resilient low-density housing solution in floodplain areas. Higher density residential development should ensure only non-habitable rooms (e.g garages, laundries) are located on the ground floor.</i>
	For Material Change of Use and Building Work (Non-Residential Uses) AO2.2. No Acceptable Outcome specified. <i>Note: The relevant building assessment provisions under the Building Act 1975 apply to all building work within the IFA Overlay area and must take account of the flood potential within the area.</i> <i>Note: Resilient building materials for use within the IFA Overlay area should be determined in consultation with Council, in accordance with the relevant building assessment provisions.</i>
PO3. Development directly, indirectly and cumulatively avoids any significant increase in water flow, velocity or flood level, and does not increase the potential for flood damage either on site or on other properties.	For Material Change of Use, Building Work, Reconfiguring a Lot and Operational Works AO3.1. Works in urban areas ² associated with the proposed development do not involve: <ul style="list-style-type: none"> • any physical alteration to a watercourse or floodway including vegetation clearing; or • a net increase in filling. AO3.2. Works in areas other than an urban area ² either: <ul style="list-style-type: none"> • do not involve a net increase in filling greater than 50m³; or • do not result in any reductions of on-site flood storage capacity and contain within the subject site any changes to depth/duration/velocity of flood waters; or • do not change flood characteristics outside the subject site in ways that result in: <ul style="list-style-type: none"> o loss of flood storage; o loss of/changes to flow paths; o acceleration or retardation of flows; or o any reduction in flood warning times elsewhere on the floodplain.
PO4. Development avoids the release of hazardous materials into floodwaters.	For Material Change of Use and Building Work AO4.1. Materials manufactured or stored on site are not hazardous in nature; or AO4.2 If a flood level is adopted ¹ , material manufacturing equipment and containers are located above this level, or AO4.3. If a flood level is not adopted, material manufacturing equipment and containers are located on the highest part of the site to enhance flood immunity. <i>Note: Refer to the Dangerous Goods Safety Management Act 2001 and associated Regulation, the Environmental Protection Act 1994 and the relevant building assessment provisions under the Building Act 1975 for requirements related to the manufacture and storage of hazardous substances.</i>
PO5. Community Infrastructure is able to function effectively during and immediately after flood events.	For Material Change of Use AO5.1. No Acceptable Outcome specified.

¹ Council has adopted a habitable floor level of Xm AHD (Xm AHD flood level + 0.3m freeboard) for the purposes of this Code and the relevant building provisions of the *Building Act 1975*.

²As defined in the Sustainable Planning Regulation 2009.

Case Study 1

Material Change of Use – Residential (Six Townhouses)

Site Location:

Substantially within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages higher density residential development

Proposed Development:

6 x 3-storey townhouses with ground floor car accommodation

Assessment against IFA Overlay Code:

This proposed development complies with the Model Code, as:

- Council sought a flood/hydraulic study identifying a flood level for the site, which the applicant provided
- Buildings are elevated above this level and development has a simple direct evacuation route off site
- Dwellings are not single storey slab on ground – habitable rooms are elevated through ground floor used as car accommodation
- Site is in urban area and no alteration to watercourse or filling is proposed
- No hazardous materials to be stored on site
- Not a Community Infrastructure item

Application is supported by Council



Case Study 2

Material Change of Use (Service Station)

Site Location:

Substantially within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages service station development

Proposed Development:

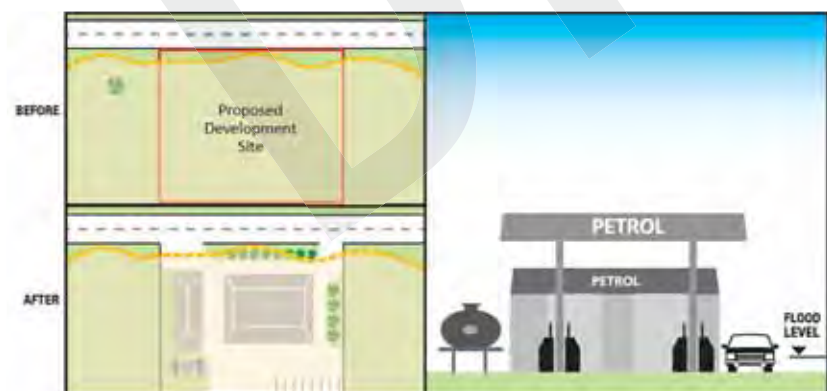
Service Station

Assessment against IFA Overlay Code:

This proposed development complies with the Model Code, as:

- Council sought a flood/hydraulic study identifying a flood level for the site, which the applicant provided
- Development located on highest part of site
- Development has simple & direct evacuation route off site
- Site is in urban area and no alteration to watercourse or filling is proposed
- External gas storage (hazardous material) is elevated above flood level and designed in accordance with relevant legislation, while underground tanks are also designed in accordance with relevant legislation
- Service station will have a Business Continuity Plan in place to provide direction on operation during flood events

Application is supported by Council



Case Study 3

Reconfiguring a Lot – Residential (1 into 8)

Site Location:

Part of site within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages residential reconfiguration of a lot



Proposed Development:

Residential Subdivision 1 into 8 lots

Assessment against IFA Overlay Code:

This proposed development complies with the Model Code, as:

- Council requested verification of flood level through flood/hydraulic study during application stage, which applicant provided
- All proposed new lots located outside of IFA Overlay Area, with a balance park within the overlay area – while not mandatory, this is the most appropriate design outcome to ensure house lots will not be inundated
- Road layout is direct & simple to allow for evacuation during flood
- Appropriate signage is provided indicating evacuation routes
- Site is in urban area and no alteration to watercourse or filling is proposed

Application is supported by Council

Case Study 4

Building Work (New Residential Dwelling)

Site Location:

Substantially within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages low density residential development



Proposed Development:

New residential dwelling that is not assessable development under the Planning Scheme (e.g. exempt or self-assessable)

Assessment:

- Relevant assessment provisions are those under the Queensland Development Code (QDC) (including those for flood hazard triggered by the Overlay Map acting as a Natural Hazard Management Area (Flood).
- Interim Floodplain Assessment Code will not apply in this instance.
- Other self-assessable components of the Planning Scheme may still apply as normal (e.g. a Residential Zone Code).
- Assessment can be undertaken by private certifier, or Council as required.

Feedback

Planning for stronger, more resilient floodplains has been developed as a toolkit for Councils to support their land use planning process. The Authority will work closely with Councils during the consultation process to provide advice on both the Guideline and the floodplain mapping.

Where mapping has been completed, a hardcopy of the Mapbook and a copy of the digital datasets will be provided to relevant Councils.

Councils are invited to contact the Queensland Reconstruction Authority on 3008 7200 or alternatively by email to floodplain@qldra.org.au

Feedback on the floodplain mapping can be received by using the feedback button on the interactive mapping website www.qldreconstruction.org.au/maps/interactive-map

Formal submissions during the consultation period can be mailed to the Authority.

Att: ***Planning for stronger, more resilient floodplains***

PO Box 15428

City East

Queensland Q 4002

DRAFT



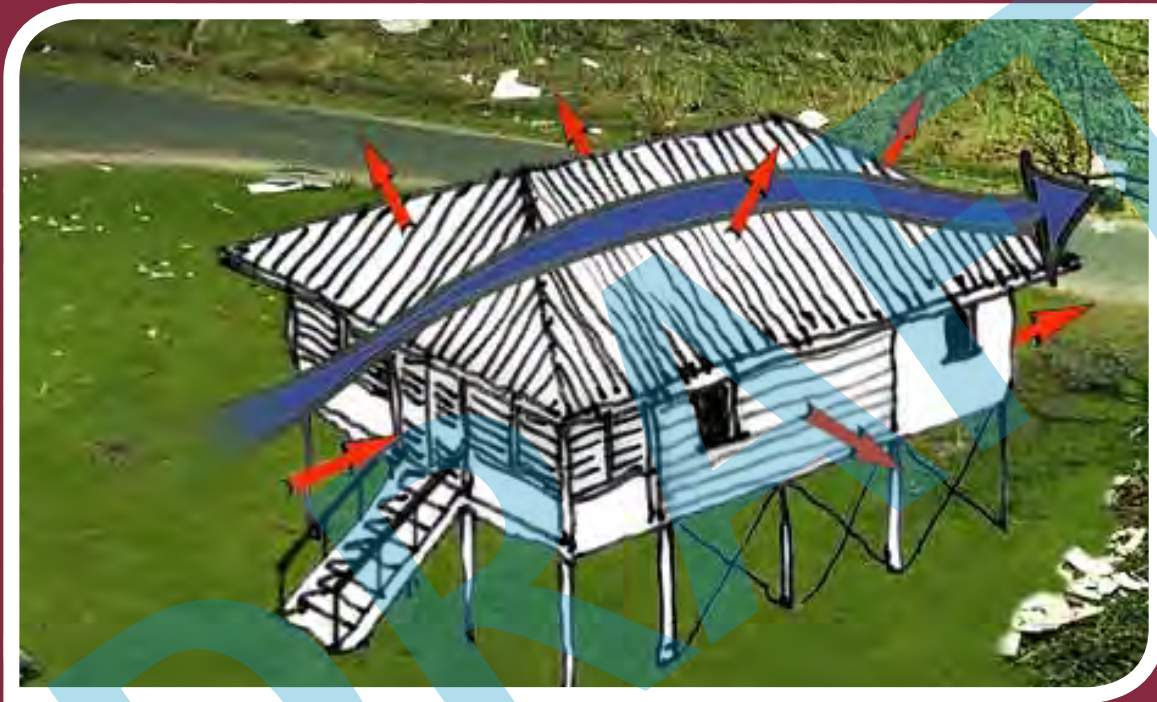
Rockhampton Source: Queensland Image Library

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Planning for a stronger, more resilient North Queensland



Part 2

Wind resistant housing



Planning for a stronger, more resilient North Queensland

Part 1 - Rebuilding in storm tide prone areas: Tully Heads and Hull Heads

Part 2 - Wind resistant housing (Draft July 2011)

Part 3 - Preparing for a cyclone (Draft September 2011)

Part 4 - Building in low lying coastal areas (Draft November 2011)

Introduction

We enjoy a wonderful climate and lifestyle in Queensland, however, natural disaster events such as tropical cyclones, severe storms and flooding are an inevitable part of our Queensland lifestyle. Queenslanders cannot afford to be complacent about the dangers natural disasters present.

This guideline, is the second in a series - *Planning for a stronger, more resilient North Queensland* to help you and other North Queensland residents rebuild and repair your homes following Severe Tropical Cyclone Yasi (Cyclone Yasi). Many of the elements and recommendations within this guideline are of relevance to any homes new or old in areas susceptible to cyclones particularly in raising awareness regarding ongoing maintenance during the dry season.

Part 1 of the series, *Rebuilding in storm tide prone areas – Tully Heads and Hull Heads*, provided recommendations on what you should consider when rebuilding or repairing your home after the storm tide event that occurred as part of Cyclone Yasi.

This guideline, *Part 2 - Wind resistant housing* provides recommendations on what you should consider to ensure that your home is repaired and rebuilt to meet current standards for wind loads associated with cyclones and other severe wind events such as thunderstorms.

This guideline focuses on ensuring that your home is better prepared for severe wind conditions and highlights hidden dangers which you should be aware of. Whilst your home may seem protected, a thorough check will ensure that you are prepared for the next season. Most of the wind damage associated with Cyclone Yasi was as a result of homes not meeting or being maintained to the current design standards. Homes built to meet the current standards generally performed well. It is therefore crucial that you ensure your home meets the current standards.

The current building design provisions as required by law in Australia are based on historical wind speed data and show significantly higher design wind speeds for the cyclone regions. All houses in Queensland must be designed and constructed to these standards. You need to ensure that you are complying with these standards to ensure that you and your family and your home are as safe as possible in any future cyclone or severe wind event.

Whether you are repairing or rebuilding in northern Queensland, there is specific knowledge about the current requirements for wind loads that you should know. It is important that you ensure that any builder, designer or engineer you engage is fully aware of the existing standards for wind loads, as outlined in Appendix A of this Guideline.

During a cyclone or storm, your personal safety and that of your family is paramount. You need to take steps before, during and after any of these events to help reduce potential loss of life and property damage.

In the case of a cyclone or storm event, houses built in accordance with current standards should be able to withstand the wind speeds of a cyclone, however regular maintenance before and after any cyclone season will ensure that it will continue to perform to the appropriate standards.

About this Guideline

This guideline, like Part 1, has been developed to support better rebuilding and repair of homes as a result of damaged caused by Cyclone Yasi, which crossed the Queensland coastline on 3 February 2011. This guideline is intended to:

- Advise you as a home owner of key issues associated with rebuilding, repairing and maintaining your home as you reside in an area prone to severe wind conditions associated with tropical cyclones and storms
- Provide guidance to assist in ensuring design outcomes are compatible with the tropical climate, the character of the local area and the needs of the residents and
- Outline the approvals process including building certification.

Objectives

The main objectives of the guideline are to:

- Improve the resilience of residential dwellings to the impact of severe wind conditions predominately caused by a tropical cyclone
- Assist in safeguarding property in a severe wind event by outlining the current codes and standards for wind resistance to ensure your house, and any building or structure that you might own, meets the current standards and
- Improve the broader long term sustainability of dwellings and local communities.

Existing design standards for housing

In Australia we have comprehensive building standards to enable buildings to resist wind loads. This work has evolved over many years and has resulted in a very good understanding of effective house design to resist severe thunderstorms and tropical cyclones.

During Cyclone Yasi, homes built to the current wind load standards generally performed well. So in repairing and rebuilding after wind damage, it is important that the current codes and standards are followed. This will give your house the best chance of performing well and safeguarding the lives of you and your family during these type of events in the future. It is however important to remember that whilst your home may seem okay, you still need to check for hidden dangers especially after the winds that were experienced during Cyclone Yasi.

This guideline provides relevant information to assist you to ensure that repairs and rebuilds meet the current standards which should provide protection during any future severe wind events. Any rebuilding or repair work must comply with all aspects of current codes and standards.

Many of the elements and recommendations within this guideline are of relevance to any homes new or old in areas susceptible to cyclones particularly in raising awareness regarding ongoing maintenance during the dry season

You need to ensure that your contractor is aware and understands mandatory design standards for wind loads as required by current Australian law

1 Understanding Cyclones

What is a Cyclone?

Tropical cyclones are low pressure systems which develop over warm oceans in the tropics and can affect tropical and subtropical regions of Australia. They produce very strong winds rotating clockwise around a calm centre. Very strong winds, heavy rainfall with flooding, and storm surge (which is produced with wind over the ocean) are all elements of a tropical cyclone.

Strong winds generated during severe tropical cyclones can cause extensive property damage and turn wind-borne debris into missiles. Tropical cyclones can also produce heavy rainfall over extensive areas which can cause further damage to property and infrastructure and potential injury and loss of life. As well, the low central pressure and strong winds over the ocean can lift the sea water surface to produce a storm tide, and this effect is covered in Part 1 of these guidelines.

Categories of cyclones

The severity of a tropical cyclone is described in terms of the Australian Cyclone Severity Scale. This five-category system is based on the wind speeds generated by the cyclone. The Bureau of Meteorology quotes wind speeds measured under standard conditions – at a height of 3m above the ground and measured in flat, open terrain (similar to that at airports). The wind speeds measured under standard conditions can be different from those at house sites even in the same area, as the wind speeds at house sites are affected by the proximity of buildings and topographic landscape features.

The following table presents maximum expected sustained winds and estimated wind gusts near the centre of a tropical cyclone measured under standard conditions. The Bureau of Meteorology uses a 10 minute averaging time for reporting the sustained winds. By comparison, gusts are a wind peak lasting for just a few seconds.

Cyclone Category	Estimated sustained wind speeds (km/hr)	Strongest Gust (km/hr)	Typical effect (indicative only)
1	63 - 88	Below 125	Tropical cyclone causing negligible house damage. Damage to some crops, trees and caravans. Watercraft may drag moorings.
2	89 - 117	125-164	Tropical cyclone causing minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small watercraft may break moorings.
3	118 - 159	165-224	Severe tropical cyclone causing some damage to roofs and structural damage on older houses. Some caravans destroyed. Power failure likely.
4	160 - 199	225-280	Severe tropical cyclone causing significant roofing loss and structural damage on older houses. Many caravans destroyed and blown away, Dangerous airborne debris. Widespread power failures.
5	Over 200	Above 280	Severe tropical cyclone. Extremely dangerous with potential for widespread destruction.

Source:- <http://www.bom.gov.au/cyclone/faq/>

Wind classification of a house

Every house in Australia can be wind-classified based on the wind region and site conditions (Figure 1). In Queensland, the coastal areas of the north of the state are in wind region C and the design wind event is a severe tropical cyclone. The design gust wind speed for housing is approximately 250 km/hr (related to standard measurement conditions – height of 3 metres above the ground in flat, open terrain). Because most houses are not built in flat open terrain similar to airfields, a different design wind speed needs to be calculated for each house based on the expected standard wind speed for the region.

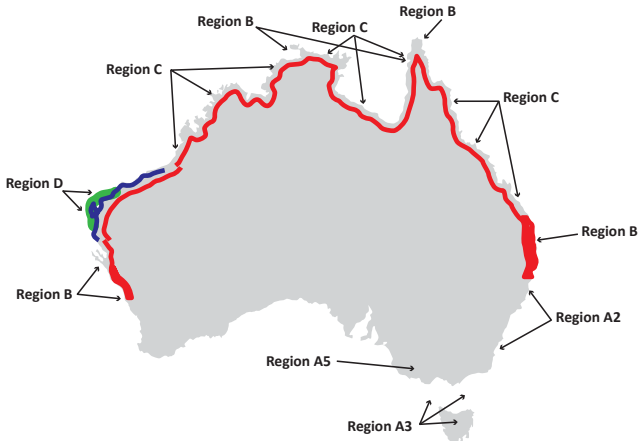


Figure 1 - Cyclone Regions as identified in AS1170.2-2002 Wind load standard

For houses built in cyclonic wind regions C (the majority of coastal Queensland), there are four wind classifications: C1, C2, C3, and C4. A house with a higher classification number means that the wind speed at the site will be higher than that for a house built somewhere else with a lower classification i.e. C4 house should be stronger and more resistant to winds than a C1 house.

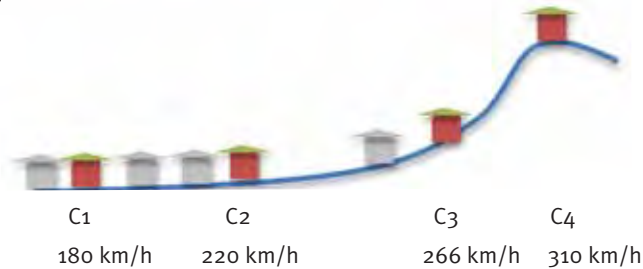
Three site conditions are used to establish the wind classification of a house: (a) the roughness of the surrounding landscape and terrain, (b) its topography and (c) the density and proximity of obstructions of similar or bigger size to that of the house. The wind classification relates to the wind speed expected at the roof level of the house given a design wind speed measured under standard conditions. In Region C of Queensland, this is a 250 km/hr wind.

Wind Classification	Design gust wind speed	
	m/sec	km/hr
C1	50	180
C2	61	220
C3	74	266
C4	86	310

Relationship between the wind classification and design wind speed. As houses are affected by each gust in the wind stream, it is the gust wind speed that is used in design and all wind speeds in the rest of the guide refer to gust wind speeds.

Houses built on hillsides, especially near the top of hills where very little shelter exists, are subjected to stronger winds than houses built on flat terrain which may be shielded by neighbouring buildings of a similar or bigger size. Houses located on unobstructed terrain including those facing the sea, or on the edge of a golf course or in a large field are also susceptible to stronger winds.

The following plot (figure 2) shows the difference that location can make. For a given event, the houses on a hill top can experience three times the wind forces of those in flat locations. The design wind speed at each site is derived from a single design wind event with a 250 km/hr speed. Once the wind classification of your house is known, you will be able to readily determine the wind forces that your house should be built to withstand.



2 Key considerations

In understanding Cyclone Yasi it is important to understand the ocean conditions at the time when Yasi first formed.

Signs of a developing La Niña emerged during autumn 2010 as the Western Pacific ocean cooled rapidly at the end of the 2009-10 El Niño. La Niña events are usually associated with above average rains in many parts of Queensland during the wet season and more cyclone activity than normal.

By July 2010, La Niña conditions were established and most of Australia experienced significantly higher than average rainfall over the next eight months. The Bureau of Meteorology predicted in its Seasonal Outlook that the 2010/2011 summer would be a very active cyclone season due to the effects of La Niña.

Peaking between late 2010 and early 2011, this La Niña event was one of the strongest observed, in a record dating from the late 1800s. Record high rainfall occurred across much of northern and eastern Australia during this event, leading to widespread flooding in many regions between September 2010 and February 2011.

This event saw Australia experience its wettest September on record, the wettest “dry” season on record in northern and central Australia, and the wettest summer on record in Victoria. The calendar year 2010 also ranked as Australia’s second wettest year on record with September and December the wettest on record.

Cyclone Yasi, possibly the strongest cyclone to make landfall in Queensland since the strong La Niña event of 1918, crossed the coast between Cairns and Townsville on the 3 February 2011.

Cyclone Yasi wind speeds – can they happen again?

Estimates of the gust wind speed in built up areas surveyed following Cyclone Yasi suggested that they were marginally less than the current design wind speed for housing in these areas. On its approach to the coast, the Bureau of Meteorology classified Cyclone Yasi as a marginal Category 5 event and the significant damage to Bureau facilities on Willis Island showed that it had extremely high wind gusts off shore. The Cyclone Testing Station used damage to simple structures to estimate wind gust speeds near building sites in the coastal region between Innisfail and Ingham and these studies showed maximum gusts in the worst affected areas of 240 km/hr (see Figure 3). Homes in the area in which Cyclone Yasi hit, are required under a current standard to withstand winds at 10m in flat, open country (standard conditions) of approximately 250 km/ hr.

The current codes and standards should provide adequate structural performance to houses under wind loads for these events; hence houses constructed and maintained to these standards should provide safe refuge from the wind in tropical cyclones with the same intensity as Cyclone Yasi. However, where your house is also in a storm surge zone, early evacuation remains the single best way to protect life during a storm tide event even if your house has been properly constructed and maintained to resist wind.

The gust wind speeds shown in Figure 3 are estimates based on assessment of wind loads on simple structures and modelling of the wind field. There are uncertainties associated with these estimates in the order of +/- 10%, and Figure 3 shows the upper limit of this range. The gust wind speeds are referenced to 10 m height in flat open terrain. To convert these speeds to site gust wind speeds for individual houses, factors to account for hills, shielding, height, etc need to be applied for the specific site. (Reference Cyclone Testing Station Technical Report TR57). Using these factors, each house would have experienced an actual gust wind speed marginally less than the design wind speed.

Whilst unlikely, there is a low but finite probability of the same or higher wind speeds again occurring within the life of your home. The wind gust speeds in Cyclone Yasi have a less than 10% chance of occurring within any 50 year period at any location within Queensland’s cyclone region.

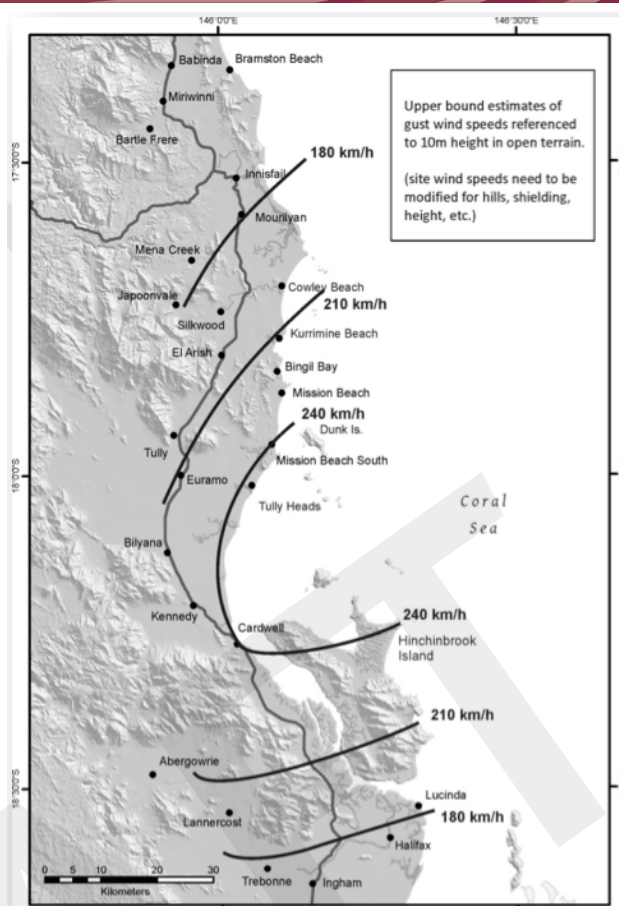


Figure 3 - Estimates of gust wind speeds in standard conditions (10m height in flat, open country). Map courtesy of the Cyclone Testing Station, James Cook University.

‘Risk-based’ design

Tropical cyclones have a range of strengths and sizes, and there is no way of accurately predicting the worst wind speed that will occur in the life of any house. However, historical records have been analysed and studies of cyclone formation and movement have been used to predict the probabilities of occurrence of severe wind events in the future.

These studies have given an implied level of risk of wind damage for all locations in Australia. There is a small chance that the design wind speed will be exceeded during the life of some structures and there is no way of knowing whether it will be early in its life or later (or happen more than once). However the consistent level of risk adopted throughout the country means that all new buildings have a very good chance of sustaining no damage from the more frequent wind events and a reasonable chance of surviving even the rare events. However, it should always be remembered that there may be some events that exceed the design wind speed.

Climate Change considerations

It is difficult to assess what the medium term effects of climate change on wind speeds are likely to be. However, within the life of houses that are built or repaired now, the probability of occurrence of the current design wind speed will remain much the same for each of the various current climate change scenarios.

Housing designed and built to the current standards will be appropriate for wind speeds in climate change predictions for the next few decades.

Therefore it is recommended that all housing designs meet at least the current standards for wind design to minimise the potential of any significant damage from future events.

3 Understanding wind loads

External wind pressures

As wind passes around a building, it applies pressure and suction to all external surfaces of the building.

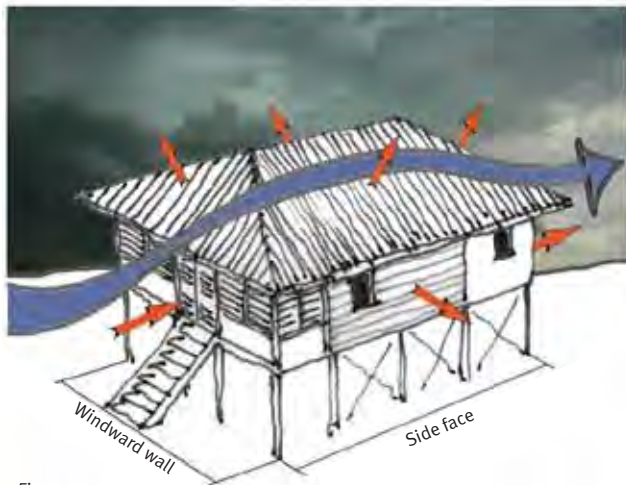


Figure 4

Figure 4 above demonstrates the external windward wall that is facing the approaching wind. The windward wall is unique as it applies pressure that tends to push that surface inwards. All other surfaces generally have suctions on them tending to pull that surface outwards. These pressures act directly on the cladding material and are transferred to the structural elements underneath them. All of those forces must be carried successfully by elements in the structure all the way to the ground.

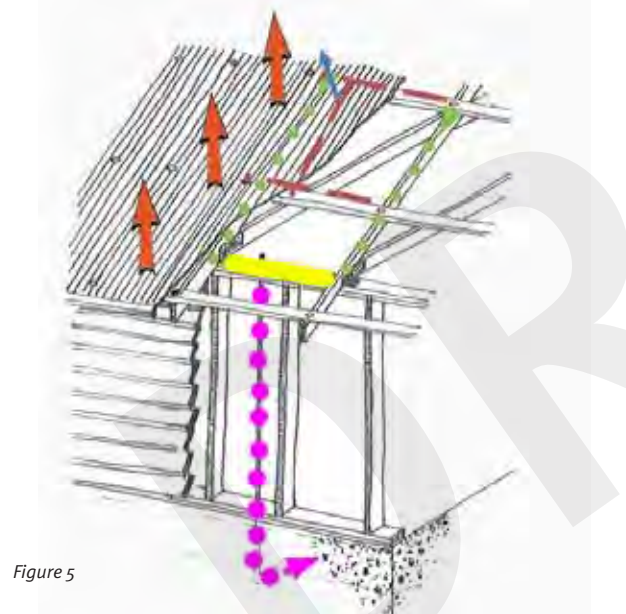


Figure 5

Figure 5 shows the wind pressure at one location on the roof indicated by the blue arrow being transmitted up and down the roofing by the red line, then into the roof batten through the roof fasteners and sideways through the battens as illustrated by the red lines. The forces are transferred to the rafters by the batten fasteners and the rafters carry the loads to the wall plates illustrated by the inclined green lines. The rafters transfer their loads to the top of the wall where it is carried to the tie-down rods as shown by the horizontal yellow line. The tie-down rods carry the loads to the footings as shown by the vertical pink line.

Internal wind pressures

In tropical cyclones, the sustained winds over a number of hours can cause windows, doors or cladding to open. Where this happens, some of the external pressure can be transferred to the inside of the building through the opening (Figure 6). These openings can be caused by wind-borne debris which can break windows or doors and in some cases can fracture wall cladding. They can also be caused by failure of door and window latches or hinges, or simply by having a door or window left open at the time of the cyclone.

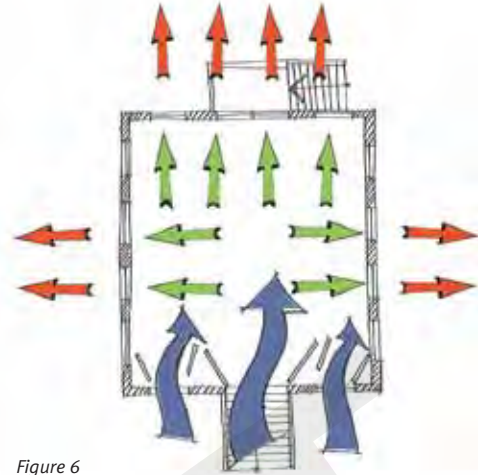


Figure 6

Where the opening is created on a windward wall by windows or doors breaking under either wind pressure or debris impact, the opening will allow the building to have higher internal pressures (Figure 7). The higher internal pressures push upwards on the underside of the roof and this effect adds to the upward forces caused by suction on the external roof surfaces. Hence all roof elements should be designed for the higher forces that come from the addition of internal pressures and external suction. Under these circumstances, all surfaces other than the windward wall surface have to resist higher loads as a result of an opening on the windward wall.

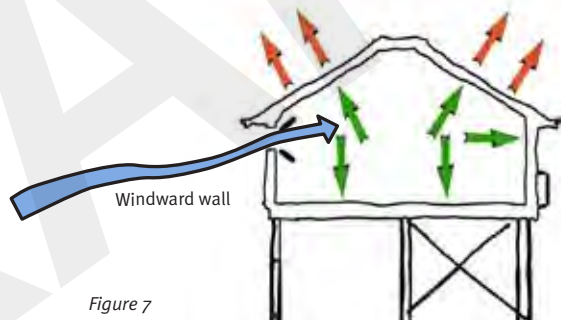


Figure 7

Where the opening is on any other surface (Figure 8), then the air inside the building will have a low pressure and will cause suction on all internal surfaces. This combines in an adverse way with the external pressure on the windward wall and significantly increases the load that must be resisted by the windward wall and any structural elements (eg windows) in that surface.

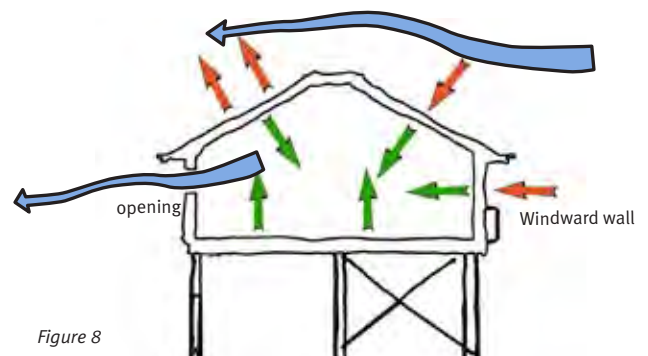


Figure 8

Wind loading standards

There are two wind load standards that can be used in the design of houses in Australia and these are the standards that you need to ensure that your designer and builder are aware of:

- AS/NZS1170.2 – Design actions, Part 2 wind actions. This is a general wind load standard that can be used for most types of buildings and all houses regardless of size.
- AS4055 – Wind loads for houses. This is a standard that can only be used on houses that are within some geometric constraints.

Most houses can be designed using wind loads found from AS4055, but where they are particularly big (e.g. three storeys or very large plan area), they will fall outside the scope of AS4055, and AS/NZS1170.2 must be used.

Where wind loads are evaluated using AS4055, the internal pressures used take into account the additional loading from dominant openings, however where using AS/NZS1170.2 appropriate pressure coefficients must be selected to model these openings. It is very important that your building designer, architect or engineer uses the correct standard when designing your house.

Site wind speed

All structures designed in accordance with the standards should resist the wind likely to be expected at the site. The design wind speeds are a function of the location and exposure of your house. Some factors that may give a particular site high exposure include all or some of: absence of shielding buildings; close proximity (a few hundred metres) to open water, large parks, or open fields; or elevated topography. These factors are taken into account in both AS4055 and AS/NZS1170.2.

A rough guide as to the degree of exposure can be related to the view from the site.

If you can only view adjoining houses from your site, it often indicates a low exposure site; if you have a view over or past the surrounding houses this will probably indicate a medium exposure site; whilst a view over the surrounding suburb or neighbourhood will often indicate a high exposure site.

Most house sites are categorised using wind site classifications given in AS4055. The following are most common classifications for cyclonic regions in Queensland:

- C1 is used only for low exposure sites, with good shielding and no view.
- C2 is the most common classification and appropriate for low exposure
- C3 is used for medium exposure sites
- C4 or above is used for high exposure sites

You should make sure that you know what classification has been used for your house and that it is marked on the plans or contract prior to construction. The design wind speeds or site classification have a large effect on the wind loads that your house must resist during a cyclone. Houses in more exposed locations must be designed to resist larger wind forces.

Effects of wind actions

Where houses were designed and built appropriately to resist the wind forces and the structure was able to withstand wind in Cyclone Yasi, some minor debris damage may have occurred despite the building withstanding this severe event. However, some combinations of design or construction errors or omissions may have contributed to wind damage. The following photos track the important connections on the load path from the roofing to the ground.

Photos provided courtesy of the Cyclone Testing Station, James Cook University.



Picture 1 – roof has resisted loads near the design wind load in spite of minor debris damage and roller door failure

Roof

Roller door



Picture 2 – roofing fasteners not installed in accordance with manufacturer's recommendations

Roof



Picture 3 – inadequate batten to rafter connections (common in older housing)

Roof



Picture 4 – inadequate roof truss anchorage

Roof



Picture 5 – inadequate tie down through the entire structure

Roof

4 Strategy for repair, rebuilding, maintenance to resist Cyclone winds

The Building Code of Australia requires buildings to be designed and constructed to resist the design wind forces. This means that all cladding, windows, doors and garage doors must be built to resist the possible combinations of design wind pressures at the design wind speed. It also requires all structural elements to be designed and constructed to resist the wind pressures.

All building work (repair or new construction) should be undertaken by licensed trades' people. Building work may also need a building approval and you may check whether this is the case for your house with a building certifier or Council or the Building Services Authority.

Site design wind speed or classification

Whether the job entails repairing or rebuilding, the first step is always to determine the wind classification of your house site:

- Where the house complies with the scope of AS4055, then the wind classification will be C1, C2, C3 or C4. (An amendment has been proposed to AS4055 that will use the maximum slope of a hill or ridge to determine the topographic class of the site, and it is recommended that this be used in practice)
- In all other cases, AS/NZS1170.2 is to be used and will result in site design wind speeds. These are then used to determine wind pressures assuming a dominant opening on the worst surface for each building element.

The site wind classification or wind pressures should then be used to specify the required performance for all structural elements of your house.

Building

When selecting building elements, consideration should be given to wind classification and pressures to determine suitability. This includes external wall and roof cladding, windows, doors, garage doors and soffits.

It is important that each component of your house is matched to the wind requirements for the site. Higher exposure sites will require elements that have a higher wind rating. Loads on building elements are also a function of their location in the building. In cyclone areas it is not possible to predict whether an element will be on a windward, leeward or side face, so all elements must be able to perform regardless of the wind direction. However, their location on a wall can make a difference. For example in ordering doors or windows for houses, it is necessary to indicate the wind classification and whether or not the element will be close to a corner of the building.

Building structure

All of the building's structural elements provide a load path to resist the wind forces on your house and transmit them to ground. Each connection in your house structure will be required to resist wind forces when the wind is coming from one or more directions. Assistance from an appropriately qualified person should be obtained for specification details and supervising building work.

Footings

Footings provide the link between your house and the ground. Footings transmit lateral forces and should be designed to have sufficient weight or embedment to resist uplift forces.

Sheds

Sheds are often of very light weight, yet have substantial wind loads. This means that they must be fastened together securely and anchored to a footing system that can resist the substantial uplift loads. If you have a shed, it is vital that it is designed to the correct wind loads and is designed for internal pressures that may result from an opening after failure of windows or doors.

All components of sheds – doors, windows or roller doors must also be specified using the site wind speed.

Ancillary items

Many ancillary items including fences, guttering, vegetation and water tanks are also subjected to significant pressures in cyclonic winds. They should all be detailed to reduce the potential for damage to those items or to other buildings if the ancillary items become wind-borne debris which may damage your or your neighbour's homes.

It is very difficult to design cost effective fencing that can resist the lateral forces of wind loads. However, it is possible to design the base of fence posts so that if they fail, they still remain attached to the ground. In this way if your fencing fails during a cyclone event it does not become wind-borne debris and will still be fastened to its footings.

Guttering is not normally considered a structural element, and can fail in tropical cyclones. The cost of its repair can prove substantial where scaffolding is required, and the lost guttering can become wind-borne debris. However, increasing (doubling) the number of guttering clips will greatly improve its wind resistance.

Full water tanks have sufficient weight to resist the wind forces on most tanks; however, empty or partially full tanks can fail by local deformation of the tank itself or by overturning of the complete tank. Tank stands and footings should be appropriately designed and constructed for these severe wind loads. It is best to make sure that your tanks are full before the approach of any cyclone.

Buildings in storm tide zones

If you live near the sea, other features of your house should be planned for to avoid the effects of storm tide. Part 1 in this series provides information on the construction of houses located in storm tide prone areas. The measures in Part 1 should be applied in addition to the recommendations of this guideline.

Where construction is in a storm tide prone area, it is recommended that all metal components are well protected against corrosion. This should be considered for both exposed and hidden components.

In cyclone areas it is not possible to predict whether an element will be on a windward, leeward or side face, so all elements must be able to perform regardless of the wind direction



Repair of houses damaged by Cyclone Yasi

Where part of your house has been damaged, there are some basic principles for the repair of the building.

- Where elements have failed due to their own weakness, it is recommended that they be replaced with stronger elements. Where the damage was caused by wind forces rather than by direct debris attack, then it indicates a systematic problem with some elements of your home. If the elements are replaced with similar ones, then your repaired house may have the same weaknesses built in. One way to improve the resilience of your home to future cyclones and to reduce the liability for the owners and insurers is to ensure that the building repairs are to an appropriate standard.
- Where damage exposes weaknesses in the structure, all such weaknesses should be replaced whether they failed during Cyclone Yasi or not. Where the wind forces damaged only some elements of your house, but the same elements are repeated through the rest of the building, then the remaining elements may be susceptible to damage in future events unless they too are upgraded. Your repaired house will only have improved resilience if all of the weak details are improved. Remember that the wind direction may be different for another severe cyclone event.
- Check and upgrade the whole structural system if part of it is damaged. The loss of part of your house structure may have meant that lower elements in the building were not subjected to the full load in this event. If the damaged elements are replaced with stronger ones, but the elements lower in the structure are left unimproved, then the weak link may have been moved lower in the building. It is important to ensure that all elements have the required capacity to perform in future events.

The Yasi Summary according to BoM



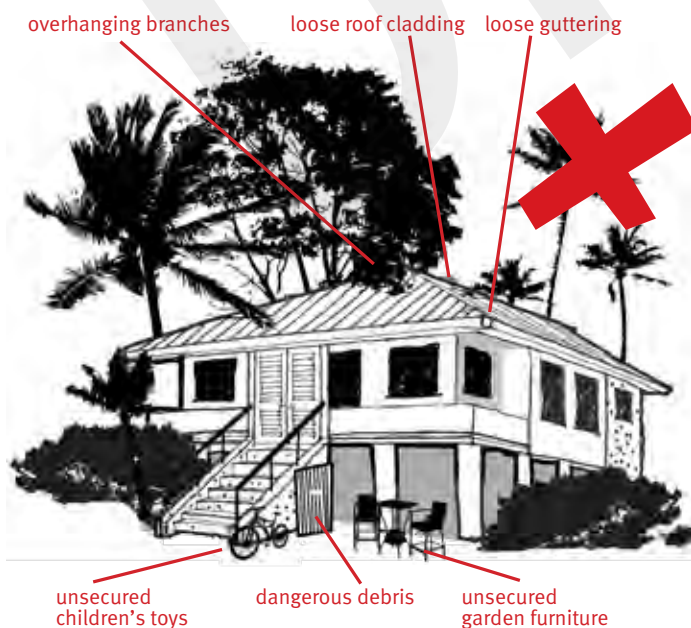
Severe Tropical Cyclone Yasi began developing as a tropical low northwest of Fiji on 29 January 2011 and started tracking on a general westward track. The system quickly intensified to a cyclone category to the north of Vanuatu and was named Yasi at 10pm on the 30 January 2011 by Fiji Meteorological Service. Yasi maintained a westward track and rapidly intensified to a Category 2 by 10am on 31 January 2011 and then further to a Category 3 by 4pm on the same day.

Yasi maintained Category 3 intensity for the next 24 hours before being upgraded to a Category 4 at 7pm on 1st February. During this time, Yasi started to take a more west-southwestward movement and began to accelerate towards the tropical Queensland coast.

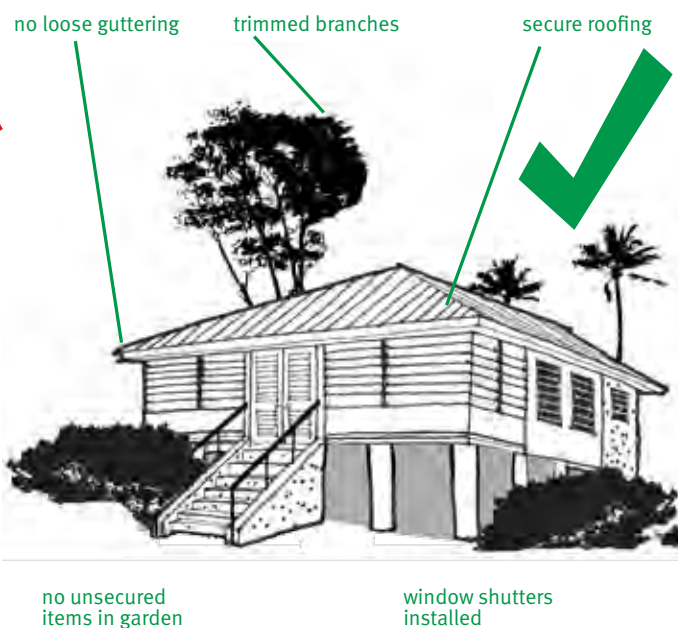
Yasi showed signs of further intensification and at 4am on 2nd February and was upgraded to a marginal Category 5 system. Yasi maintained this intensity and its west-southwest movement, making landfall on the southern tropical coast near Mission Beach between midnight and 1am early on Thursday 3rd February. Being such a strong and large system, Yasi maintained a strong core with damaging winds and heavy rain, tracking westwards across northern Queensland and finally weakened to a tropical low near Mount Isa around 10pm on 3rd February.



Map Legend: ■ Very Destructive Winds ■ Destructive Winds ■ Gale Force Winds



NOT RECOMMENDED



RECOMMENDED

Figure 9



5 Building components

Materials selection

Building products used in cyclone regions need to be fit for the purpose. Not only must they withstand wind loads but issues of weathering/durability (or loss of strength from e.g. UV degradation, corrosion, rusting, and timber rot or termite attack).

Products that are part of the structural fabric of the house (including roof and wall cladding, windows, skylights, etc) should be selected by considering manufacturers' data to show that their products have passed tests to relevant standards and are suitable for use in North Queensland.

Care needs to be taken in the selection of metallic components for your house (including nails) where the building is sited either within 500 metres of the high tide line or in a storm tide zone. Either heavily galvanized steel or stainless steel elements should be used in accordance with manufacturers' specifications and maintenance should be scheduled to check their condition regularly.

The Building Code of Australia requires buildings to be constructed to prevent water entry. However, in a tropical cyclone, water may enter the roof space and be driven into your house through windows, doors and other flashing elements. Where possible, you should select materials that can sustain some wetting and drying without deterioration. This will mean that future events will not require substantial work to address water ingress issues.

For houses in low exposure areas (C2 sites), can select appropriate elements using Department of Local Government and Planning (DLGP) - Growth Management Queensland publication "Repair of sheet metal roofs in cyclonic areas", but for other wind classifications, details can be sourced in AS1684.3:2010.

Review to DLGP website link - <http://www.dlgp.qld.gov.au/resources/guideline/building/floods/repair-roof-after-cyclones.pdf>

Installation

Just as it is important that the correct details are selected for each element in the load path, it is equally important that they be correctly installed. This entails the use of the right connectors, the correct number of nails or screws, and correct placement of fasteners. Building standards (such as AS1684.3) the appropriate elements and product installation guidelines need to be followed.

Regardless of the age of your building there are building standards to ensure your roof can withstand cyclonic winds.

Roof cladding

Roofing systems (e.g. metal cladding or concrete tiles) are subjected to large fluctuating uplift forces tending to pull the roofing off the building during a cyclone. These forces are well in excess of the weight of the roofing, so fasteners are needed to hold the roof on the building. For metal cladding, typically screws are installed through the cladding into the battens below. For concrete tiles, each tile should be secured to the batten by a clip or fixing.

There are hundreds of roof fasteners in a single house and each one is important in keeping the roof on.

Roof battens

Roof battens must be anchored to the rest of the structure well enough to carry all of the forces from the cladding. Neglecting to anchor roof battens to the rest of the structure is a common weakness in older houses. If your house was built prior to the 1980s it is important that you get either a builder, engineer or building certifier to carefully check that the batten to rafter connections are strong enough to carry future wind loads.

Guidelines for the retrofitting of older timber construction is given in HB132.2 Structural upgrading of older houses – part 2:cyclone areas.

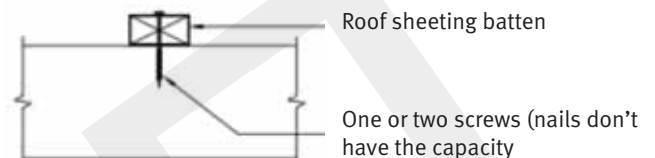


Figure 10

For houses in C2 wind classification areas (ie. low exposure), the battens can often be secured by two No 14 Type 17 screws, provided the spacing of battens is close and within 1200 mm of the edges of the roof. For C3 (ie. medium exposure) classified houses, straps or framing anchors must generally be used to deliver the higher strength required by the higher wind exposure sites.

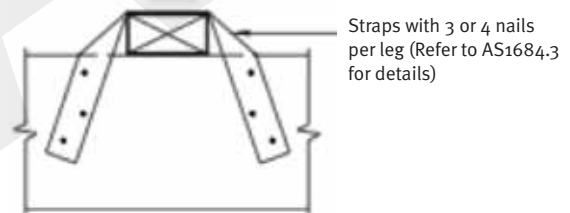


Figure 11

Rafters or trusses

The rafters and trusses themselves need to be designed to be appropriate for the wind classification. In the case of prefabricated trusses, the supplier will need to be given the wind classification in the specification. Rafters can be sized using AS1684.3:2010.

The tie down of the trusses or rafters to the rest of the structure needs to be sized for the wind classification, spacing of trusses and span of the trusses. It is particularly important to recognize that girder trusses have significantly higher tie down requirements, so their anchorage must be much stronger.

There are many different acceptable details for anchorage of trusses and rafters including bolted metal brackets between the wall and the truss, thin metal straps over the trusses or U shaped bolts that go over the trusses. In some cases over-battens have been used to hold down trusses.

Tie downs

A typical house structure relies on multiple continuous chains of tie down elements; from the roof cladding, through battens, trusses or rafters, into the walls, down through the walls and into the subfloor structure including the footings.

Tie-down rods in timber framed construction, and steel frame elements transmit uplift forces from the roof down through the wall structure and eventually to the ground below.

Wall systems must be correctly anchored to the subfloor including concrete slab for slab on ground construction. Particular care is needed at the sides of openings as higher forces can be transmitted there.

The required anchorages for your house are determined by the wind classification and the area of the structure that contributes load to the building element. Some alternatives are given for each element in the tie-down system in AS1684.

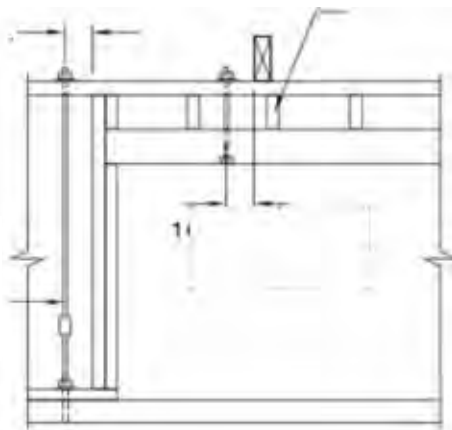


Figure 12

A common method for tie down through timber framing

Because the weight of all of the elements in the tie-down chain helps to resist the uplift forces, the net uplift force decreases as elements are deeper in the structure. However, for most houses, you should be able to trace tie-down elements that carry the forces from the roof all the way to the footings and ground below.

Bracing

Wind pushes on the sides of your house and unless there is adequate bracing in the structure of the house, the top can move relative to the bottom of the house. The total force to be resisted by the bracing is a function of the face area of the house above the lateral bracing. Unlike the uplift forces discussed above, the lateral forces on a house increase the further down the structure you go. Hence the lateral bracing at or below floor level has the highest forces applied as it has the full area of the house to attract the load.

Bracing elements in the walls are required to transmit lateral load from the roof level to the floor. On houses built above the ground, bracing elements between the floor and the ground are required to transmit the lateral forces to the ground.

Bracing can be provided by shear panels such as plywood and plasterboard or by cross bracing elements such as steel straps or timber members.

AS4055 has a section that provides methods for calculating the bracing resistance required. Methods for providing the resistance are detailed in product standards and manuals such as AS1684 for timber framing.

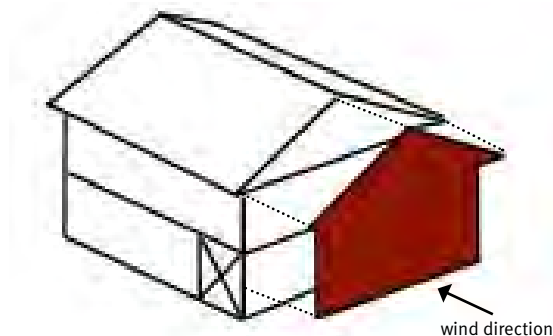


Figure 13 - Bracing panel to resist the shown wind forces

Wall cladding

External wall cladding must resist wind forces and may be required to resist debris impact. Resilient cladding that can absorb the impact of small to medium sized debris works best.

Internal wall cladding may be required to contribute to the bracing strength of the building and also has the potential to get wet in a cyclone. Small amounts of moisture may be blown inside the building, but where some flashing or a window or door fails, it is possible for substantial amounts of water to enter into the building. Less repair work is required where wall and ceiling linings do not deteriorate when wet, so the choice of resilient building materials is very important.

Windows and doors

Your windows and doors form part of the building and need to resist the wind pressures for both positive pressure (windward wall) and suction (leeward and side walls).

Damage investigations from Cyclone Yasi revealed some windows that were not properly installed were blown into (or sucked out of) houses due to lack or inadequate fixings of the frames to the house structure. Glass panels also need to be correctly sized for the wind loads, and the window or door frame also must be adequately fixed to the rest of the building.

Standard entrance door locks with simple striker plates into the doors jamb may not be adequate to resist cyclonic wind loads. Additional support for external doors (e.g. Barrel bolts, or Dead locks etc) may be required.

The Australian Window Association 'Guide to the Correct Fixing of Windows and Doors' gives the correct number of nails/screws to be used. The Guide is available from AWA website - www.awa.org.au



Photo provided courtesy of the Cyclone Testing Station, James Cook University.

Garage doors

One of the common failures observed in Cyclone Yasi was disengagement of roller doors from their tracks. This left the door free to flap in the opening and allowed wind and water to enter the garage, and in some cases into the house. On some buildings, the change in internal pressure caused other damage to the structure. Failure through buckling of sectional doors was also observed.

When reinstating a garage door, you should ensure that doors that are specified to resist the design wind speed for your house location. These doors may have wind locks or other braces to help resist the wind loads. The wind locks transfer additional load from the ends of the roller doors into the tracks and then into the wall. The walls need to be strengthened to resist this additional load.

Debris protection

Because tropical cyclones cause very high winds over a sustained period (a number of hours), debris that may have come from failures in other buildings, or from trees, or from other materials, are picked up by the wind and may crash into your house.

There are some things that you can do to improve the debris resistance of your house. Installing debris screens on the windows can absorb the impact of debris and lessen the chances of windows breaking during a cyclone. Preventing windows from breaking will then reduce the amount of water that is blown into the house. Debris screens can be permanently fixed screens that may double as security screens, or can be specially fitted before the arrival of the cyclone. Temporary screens can be as simple as sheets of plywood securely fastened across the window.

Some debris observed after cyclones can be very large (eg whole roofs). Large debris is likely to exceed the capacity of most screens and may damage external walls. Impact from large debris increases the risk of harm to people that are sheltering in the house. However, by ensuring that the small rooms in which people will shelter during a cyclone are strengthened, the risk to occupants can be reduced. Incorporating plywood and / or sheet metal in the walls and ceiling linings of those rooms will strengthen them for impact, uplift and racking, providing a strong compartment for emergency shelter.

One of the common failures observed in Cyclone Yasi was disengagement of roller doors from their tracks.... When reinstating a garage door, ask for doors that are specified to resist the design wind speed for your house location. These doors may have wind locks or other braces to help resist the wind loads



Photo provided courtesy of the Cyclone Testing Station, James Cook University.



There have been 214 known impacts from tropical cyclones along the east coast of Australia since 1858. Tropical cyclones that have significantly impacted communities include:-

1890 Cardwell	1949 Rockhampton
1893 Brisbane	1954 Gold Coast
1898 NSW	1967 Dinah, Southern Queensland
1899 Bathurst Bay	1970 Ada, Whitsunday Islands
1918 Innisfail	1971 Althea, Townsville
1918 Mackay	1974 Wanda, Brisbane
1927 Cairns and inland areas	2006 Larry, Innisfail
1934 Port Douglas	2011 Yasi, Mission Beach

The convention of naming Australian tropical cyclones began in 1964. The first Western Australian named cyclone was Bessie that formed on 6 January 1964. Female names were used exclusively until the current convention of alternating male and female names commenced in 1975.

6 Approvals

Why building approval is needed?

In Queensland, it is a requirement to obtain building approval prior to commencement of building works other than for minor repairs. Building approvals are required to set standards in the structural requirements of buildings and the safe and appropriate use of materials during construction. These standards represent a means of protecting the public's health and safety, welfare of the structure and its surrounds, and allow for Councils to implement a standard of construction it wants to see practiced within its boundaries.

Exemptions from obtaining building approval only apply for minor structural work where the work does not affect more than 20 per cent of the building's structural components of the same type. Owners and occupiers should also take steps to find out whether their building's fire safety installations have been damaged or affected by wind damage before allowing the building to be re-occupied.

Difference between planning and building approval

Planning and building approvals deal with different issues in the construction process. Generally, planning approvals determine what uses and activities can occur on the land to minimise any potential impacts on surrounding properties. Building approvals ensure buildings are constructed to standards that address health and amenity, safety (structural and fire) and sustainability.

An application for planning approval is assessed against a Council's planning scheme, whereas an application for building approval is assessed against a set of building provisions including the Building Code of Australia and the Queensland Development Code.

Building Approval Process

The normal building approval process will apply when seeking approval to commence construction. A building approval will need to be granted by a building certifier and/or Council. The certifier will need to confirm the proposed building complies with the relevant building codes and standards before any construction begins. Building certifiers are required to inspect that the work is being constructed to the relevant codes and standards.

Buildings in areas prone to cyclones and severe wind events are recommended to be designed in accordance with this guideline and the relevant Australia Standards. However, it is important to note that in some individual circumstances this document could conflict with provisions under the Building Act 1975, such as siting requirements. In these cases, the requirements of the Building Act 1975 will prevail over this guideline. It is recommended that you and any builders you engage check with your building certifier or Local Government for clarification of the requirements for your individual circumstances.

Further information regarding the approvals required to rebuild should be sought from your relevant Local Government.

It is recommended that you ensure that all building designers / architects / contractors that you engage are aware of the issues raised in this guideline.

Other useful contacts include:

Building Codes Queensland, freecall 1800 534 972

www.dlqp.qld.gov.au/our-services/building-codes-queensland-2.html

Disclaimer: This publication contains or refers to factual data, analysis, opinion, references to legislation and other information (together Information). The Queensland Reconstruction Authority and the State of Queensland make no representations and give no guarantees or warranties regarding the accuracy, completeness or suitability for any particular purpose of such Information. You should make your own enquiries and take appropriate advice on such matters. Neither the Queensland Reconstruction Authority nor the State of Queensland will be responsible for any loss or damage (including consequential loss) of any kind howsoever arising that you may suffer from using or relying upon any of the Information. By using or relying on any of the Information you agree to indemnify the Queensland Reconstruction Authority and the State of Queensland against any loss or damage arising out of or in relation to your use or reliance.

Appendix A - Relevant codes and standards

Australian Building Codes Board (2010) "Building Code of Australia (BCA)" ed., ABCB, Canberra.

Standards-Australia (1999) "HB 132.2:1999 Structural upgrading of older houses: Cyclone areas", Standards Australia, Sydney, NSW

Standards-Australia (2002a) "AS/NZS1170.0:2002 Structural design actions: General principles." Standards Australia, Sydney, NSW.

Standards-Australia (2002b) "AS/NZS 1170.2:2002 Structural design actions: Wind actions." AS/NZS 1170.2:2002, Standards Australia, Sydney NSW, Australia.

Standards Australia (2002c) "AS 2050-2002 Installation of roof tiles", Standards Australia, Sydney, NSW

Standards-Australia (2006) "AS 4055 Wind Loads for Housing." Standards Australia, Sydney, NSW.

Standards Australia (2010) "AS 1684.3:2010 Residential timber-framed construction – Cyclonic areas", Standards Australia, Sydney, NSW, Australia.

Web links:

<http://www.awa.org.au/Industry/Downloads>

<http://www.nash.asn.au/nash/publications.html>

<http://www.bsadisasterrecovery.qld.gov.au/Contractor/Pages/default.aspx>

Notes

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DRAFT



Planning for a stronger, more resilient North Queensland



Part 1

Rebuilding in storm tide prone areas:
Tully Heads and Hull Heads

Foreword



Message from the Premier of Queensland and Minister for Reconstruction

Storms and cyclones are part of life in Queensland, but the summer of 2010/2011 reminded every Queenslanders that we can never take nature for granted.

Our State was devastated by cyclones and floods that not only took lives but also tore apart communities and left behind a \$6.8 billion damage bill.

Facing a rebuilding program of post-war proportions, I established the Queensland Reconstruction Authority to oversee the task. The Authority is charged with ensuring we built it back better and smarter to create a stronger, more resilient Queensland.

This guideline *Rebuilding in storm tide prone areas: Tully Heads and Hull Heads* is the first in a series of four guides that will help us achieve that aim.

Rebuilding in storm tide prone areas: Tully Heads and Hull Heads contains practical recommendations for people who are rebuilding, as well as advice on cyclone safety and storm tide measures.

Although it is aimed at residents of Far North Queensland, the guide also recognises that many of our coastal communities are cyclone-prone and could experience severe storms, and therefore it has relevance for communities from the tip of the Cape to the Sunshine Coast.

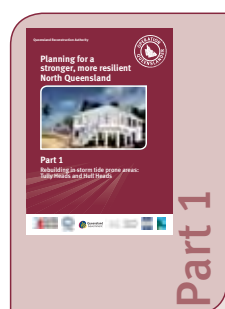
This past summer also reminded us that cyclones do not only affect our coast. The effects of Cyclone Yasi were felt on the coast, where it devastated local communities, and 1500 kilometres west in Mount Isa.

Therefore, the guide has benefit for communities around Australia and anywhere in the world where serious storms like typhoons and hurricanes are prevalent.

This guide is an Australian first. It has been developed in a unique partnership between the Queensland Reconstruction Authority and leading cyclone and architecture experts at James Cook University's Cyclone Testing Station, CSIRO, Australian Institute of Architects, GHD and Cassowary Coast Regional Council.

By sharing our experiences and our expertise, together we can rebuild, and prepare for the future, with greater resilience.

Anna Bligh MP
Premier of Queensland and Minister for Reconstruction



Part 1

Part 2 - wind resistant housing

Part 3 - Preparing for a cyclone

Part 4 - Rebuilding in low lying coastal areas

Planning for a stronger, more resilient North Queensland

Part 1 - Rebuilding in storm tide prone areas: Tully Heads and Hull Heads

Part 2 - Wind resistant housing (Draft July 2011)

Part 3 - Preparing for a cyclone (Draft September 2011)

Part 4 - Building in low lying coastal areas (Draft November 2011)

Introduction

We enjoy a wonderful climate and lifestyle in Queensland, however, natural disaster events such as tropical cyclones, severe storms and flooding are an inevitable part of our Queensland lifestyle. Queenslanders cannot afford to be complacent about the dangers natural disasters present.

This Guideline, is the first in a series to help you and other North Queensland residents rebuild and repair your homes following severe Tropical Cyclone Yasi (Cyclone Yasi). This guideline is **not mandatory however it is recommended that all building designers / architects / contractors consider the issues raised in this guideline**. The principles outlined in this guideline are of relevance to other low lying coastal areas where cyclones pose a threat.

This Guideline Part 1 - *Rebuilding in storm tide prone areas: Tully Heads and Hull Heads*, provides recommendations on what you should consider when rebuilding or repairing your home after Cyclone Yasi incorporating both cyclone safety measures and storm tide events associated with cyclones. The Guideline focuses on ensuring that your property is better prepared for future storm tide events given that a large portion of damage was as a result of the storm tide event associated with Cyclone Yasi.

Subsequent guidelines will focus on cyclone preparedness and the importance of maintaining your property to ensure you are ready for the next cyclone season.

This guideline does not replace the need to evacuate prior to a storm tide event. During a flood or storm surge event, your personal safety and that of your family is paramount. You need to take steps before, during and after any disaster to help reduce potential loss of life and property damage. Timely evacuation, based on the advice of emergency services personnel is paramount to saving lives during a severe natural disaster event. If you live in a storm tide prone area it is important that you are prepared in case you need to evacuate. For further assistance relating to disaster preparation and evacuation planning including a checklist to prepare your own evacuation plan visit www.emergency.qld.gov.au/emq/css/beprepared.asp

About this guideline

This guideline has been developed to support a better rebuild of homes, especially in the areas of Tully Heads and Hull Heads, as a result of damage caused by Cyclone Yasi, which crossed the Queensland coastline on 3 February 2011. This guideline is intended to:

- Advise you as a home owner of key issues associated with rebuilding in a storm tide prone area
- Provide guidance to assist in the design of dwellings to improve their resilience in the event of a storm tide inundation
- Provide guidance to assist in ensuring design outcomes are compatible with the tropical climate, the character of the local area and the needs of the residents
- Outline the approvals process including building certification.

This guideline does not replace the need to evacuate prior to a storm tide event.

Objectives

The main objectives of the Guideline are to:

- Improve the resilience of residential dwellings to the impact of a storm tide event predominantly caused by a tropical cyclone
- Assist in safeguarding property in a storm tide
- Improve the broader long term sustainability of dwellings and their local context.

Existing design standards for housing

In Australia we have extensive building standards to resist wind loads. This work has evolved over many years and has resulted in a very good understanding of effective house design to resist severe wind loads associated with storm events such as a tropical cyclone. During Cyclone Yasi, homes built to the current wind load standard performed well. **In contrast to wind events, there are no Australian housing design standards for resisting storm tides.**

This Guideline has been prepared to encourage design considerations for improved storm tide resilience, to complement existing Australian standards for wind loads. You should ensure that your contractors are aware of these Guidelines. It remains important that as part of the rebuilding process you ensure that your building designers / architects / contractors are fully aware of the existing standards for wind loads, which will be assessed as part of the building certification process.

Locality context

Tully Heads and Hull Heads



Source: Google maps

This guideline was released as a draft at a community meeting in Tully Heads on 20 April 2011. Comments were sought from members of the community, state agencies and industry bodies. These comments were considered and have informed the finalisation of this guideline.

A “meet the experts” session was held on 7 May 2011 where residents were able to discuss the guideline recommendations with architects, engineers and builders.

1 Understanding storm surges and storm tide

When commencing the rebuilding process in a storm tide area there are a number of matters you should consider and properly understand.

What is a Storm Surge?

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

What is a Storm Tide?

Storm Surge + Normal Tide = Storm Tide

The combination of storm surge and normal (astronomical) tide is known as a 'storm tide'. The worst impacts to property will occur if the storm surge arrives on top of a high tide. When this happens, the storm tide can reach areas that might otherwise have been safe. On top of this storm tide are pounding waves generated by powerful winds. In the event of a tropical cyclone, the extent of sea water flooding as a result of a storm tide may extend along the coast for more than 100 kilometres, with water encroaching several kilometres inland if the land is low lying. The combined effects of the storm tide and waves can damage or destroy buildings, wash away roads and run ships aground. Being caught in your home or in a car when a significant storm tide arrives is a life threatening situation.

The storm surge during Cyclone Yasi raised the ocean level to more than five metres above the normal tide at Cardwell and up to three metres higher than normal at Clump Point. As some houses in Tully Heads and Hull Heads are built on lower-lying areas than Cardwell, the storm tide flooded some of these houses to a depth of more than one metre with a storm tide of 3.5 metres above normal tide. The storm tide was responsible for the majority of housing damage experienced in Tully Heads and Hull Heads.

The Cyclone Yasi storm tide – can it happen again?

Based on the surveyed estimates of the storm tide water levels experienced at Tully Heads and Hull Heads, the probability of a similar event happening again is relatively low.

However, the height of the storm tide experienced in Cyclone Yasi can happen again.

Accordingly, if residents act to ensure that their properties are more resilient to a storm tide (based on the Cyclone Yasi event), then the level of protection attained will be broadly consistent with the protection attained for wind resistance when designed in accordance with the Australian building standard for housing wind resistance.

Building above the storm tide height experienced in Cyclone Yasi will provide protection from storm tides that may be seen on average once in 50 years (2% Annual Exceedence Probability (AEP)). Building even higher will mean that the floor level is at a height above a storm tide that may only be seen once in 500 years (0.2% AEP).

By way of comparison, new houses are built to withstand wind speeds from cyclones that are predicted to be experienced once in 500 years (0.2% AEP). Therefore it makes sense to raise houses to a level that takes into account a once in 500 year storm tide event.

Existing storm tide risk studies in the area affected by Cyclone Yasi

Tropical cyclone storm tide studies previously completed for Cassowary Coast Regional Council cover the region affected by Cyclone Yasi and provide estimates of the expected risk of storm tide inundation in present and future climate scenarios.

These studies indicate that the risks increase southwards, mainly as a result of the varying exposure relative to the Great Barrier Reef and the large bays such as Rockingham Bay at Cardwell, which tends to concentrate the storm surge. These studies, completed over the past few years, have successfully reproduced the impacts from other tropical cyclones in the region, including tropical Cyclone Larry in 2006.

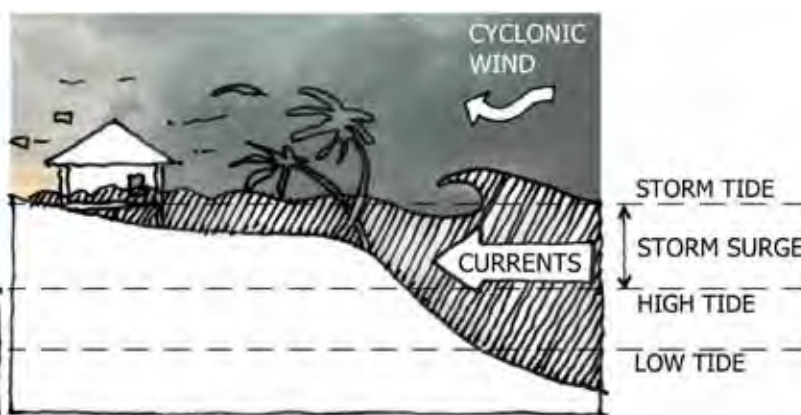
For further information on these studies please contact Cassowary Coast Regional Council.

Storm Surge + Normal Tide = Storm Tide

Normal



During a tropical cyclone crossing at high tide



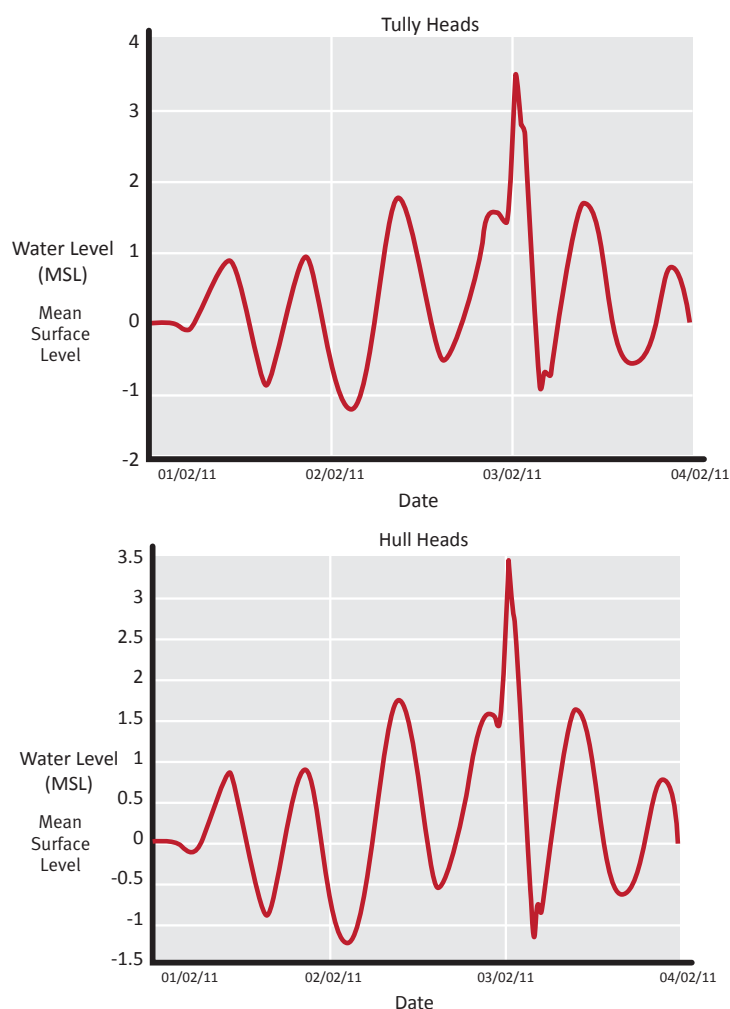
Source: Bureau of Meteorology - www.bom.gov.au/cyclone/about/

Returning after the event

Residents returning after Cyclone Yasi would have found varying degrees of damage to buildings depending on the location of the home, the type of building and the materials used in its construction. Events of this nature will invariably involve some form of damage depending on size/scale of the tropical cyclone.

The purpose of these guidelines is to raise awareness in rebuilding to improve resilience for future events.

Storm tide levels for Tully Heads and Hull Heads during Cyclone Yasi.



Source: Department of Environment and Resource Management

This Guideline has been prepared to encourage design considerations for improved storm tide resilience

'Risk-Based' design

It is very difficult, if not impossible, to design houses that are capable of resisting all possible extreme events. For example, houses are designed to be fire-resistant but not fire-proof and houses are not designed to resist vehicle or aircraft impacts. To allow for every possible threat to housing would be uneconomic and wasteful of resources.

Therefore, the Building Code of Australia adopts an 'implied level of risk' and includes standards for events such as wind resistance and many other functional, health and safety considerations.

The preferred method of long term defence against storm tide impacts on new communities, especially with the threat of rising sea levels due to climate change, is avoidance of the risks through the use of responsible long term land use planning.

Where communities have already been established and where a storm tide threat exists, it is recognised that residents may wish to live in these locations despite the risk. The intention of this Guideline is to enable residents to adopt a level of protection against storm tide impacts for their homes and properties, which is broadly equivalent to the level of risks adopted for wind damage from tropical cyclones.

Climate change considerations

Climate change research* suggests that tropical cyclones may gradually increase in intensity, therefore higher storm surges (and higher wind speeds) may be possible. Conversely there is also an expectation that tropical cyclones may decrease in number.

Climate change projections further indicate that sea levels are likely to continue to rise. The Queensland Government now requires that land use planning schemes allow for a sea level rise due to climate change of 0.8 m by the year 2100. The regional storm tide studies have assessed the risks due to climate change and the results indicate that the effect of sea level rise will be the dominant influence. As a result, sea level rise, combined with more intense cyclones will mean that low lying coastal areas are more likely to experience storm tide impacts.

You should therefore consider the value of making additional allowance for sea level rise in addressing the impacts to housing over the long term.


* United Nations' Intergovernmental Panel on Climate Change (IPCC) 2007.

There is no such thing as a cyclone-proof house

The following photos show damage to homes relative to the level of water through the property.

Water height above ground

House type

Block 
Timber 

Damage scale




If less than 200mm, only minimal structural damage but possible water damage to flooring and plasterwalls

Block 



Minimal structural damage if floor heights are above level of water inundation

Storm tide level (approx)

Timber 



Approximately 600mm and minimal structural damage to reinforced concrete block construction, but still significant damage to the interior fixtures and fittings

Block 



If more than 1m, significant damage to interior of house, fixtures and fittings

Block 



Greater than 1m and significant damage to unreinforced masonry

Block 



Photos courtesy of the Cyclone Testing Station.

3 Building in the storm tide zone

Storm tide waves are extremely powerful, capable of destroying houses and sweeping away heavy items such as cars, caravans, trees and large boulders at high speed causing damage to anything in their path. Whilst the impacts of storm surge can be severe, building outside of storm surge zones is not always possible. If you choose to accept this risk then the careful consideration of your house design and location can reduce the extent of damage to your property and those around you.

The impact of storm tide will be affected by the distance of your property from the shoreline, the height of waves travelling across your property and the shape of the land and roads around it. During a storm tide the most damage will be experienced where a property is directly exposed to incoming ocean waves. This will typically be within 100 to 200m of the open shoreline and in such conditions, it can be expected that the first line of houses will always experience the greatest impact.

Whether a particular property will be wave-affected, and to what extent, should be assessed by a qualified professional coastal engineer. Councils are required to adopt a minimum planning level for storm tide in accordance with the guidelines outlined by Department of Environment and Resource Management. To determine the level you need to adopt, contact the Cassowary Coast Regional Council.

Site planning - Locating your house, landscaping and other structures on the site.

The initial destructive forces of storm tide come from the open waterfront and in most cases travel at 'right-angles' to the beach. The impact of surge waves may be affected by the height of foreshore dunes and surge resistant vegetation, although these effects may be minor at times of severe exposure as was seen at Tully Heads and Hull Heads.

Any structures above the ground will be at severe risk of being swept away and cause further damage to your house or your neighbours. Care should be taken to avoid building structures such as boulder walls, fences and garden sheds or if necessary to then locate and build these to minimise their exposure to wave forces.

Fences can catch debris, be torn out and then swept against houses. Plastic or metal water tanks may similarly be swept by waves or the ebbing water as it returns to the sea. Consideration should be given to reinforced concrete tanks with footings or supports to resist wave forces.

Mature and healthy coastal tree species such as coconut palms and Calophyllums (Coastal Touriga) may reinforce soft dunes against storm erosion although their condition and maintenance is important if they are not to become dangerous debris in a Cyclone.

Damage to buildings in the storm tide inundation zone

The effects of the waves are dependent on the height of the storm tide. Houses experiencing storm tide impacts will generally suffer damage caused by:

- Seawater inundation
- Water currents that break through walls and move whole buildings off their foundations
- Water currents and high winds that drive debris into the building
- Breaking waves

In addition to the damage caused by the storm tide waves as they wash ashore, the sea water will cause further damage as the storm tide subsides and the water recedes back into the ocean. The flow of this 'ebbing' water is guided by the shape of the land, the roadways, houses and other structures in its path. As a result, the direction of water flow may be quite different to that of the initial storm tide as it erodes new channels and applies different forces to houses and buildings.

The inundation zone covers all water-front properties below the defined storm tide height and can extend hundreds of metres inland in low lying areas.

Building resistance to storm tide

Under the Building Code of Australia, a building or structure must perform adequately under all reasonably expected design actions and withstand extreme or frequently repeated design actions. In a storm tide prone area this may include scour, seawater currents and wave forces. The consideration of these design actions may necessitate building techniques such as using reinforced concrete construction.

If housing is on the ground then it must be made capable of withstanding the considerable seawater current and wave forces, which necessitates use of reinforced concrete construction. If the building is a two storey construction sufficient strength must be available to support the upper level. This might involve allowance for the breakaway of some non-load-bearing ground level walls to reduce the sea water forces or generous window and door openings to permit the flowthrough of the expected currents.

A range of specific considerations is provided on pages 10 – 12.



Fences, sheds and water tanks may be swept away and may become a risk to your house and your neighbour's house.

4 Building design recommendations

Avoiding waves and water

Building outside of storm tide zones is not always possible. If a house or building is to be located in the inundation zone then strategies should be considered to minimise the damage caused by the storm tide.

The best protection for property involves building above the defined storm tide planning level in an elevated (high-set or low-set) house, similar to a traditional Queenslander. Ideally all valuables should be secured above storm tide height.

Large valuables like vehicles, boats, caravans and trailers should be evacuated when emergency warnings are announced. Not only are they at risk of being damaged in the storm tide, but they may also cause severe damage to your home and other homes if they are moved by the seawater. You should develop a plan to move these items to a pre-determined location on higher ground. Your plan to move these items should ensure it is done early enough so you do not put yourself or your family evacuation plan at risk.

'Flow-through' design

Where living areas are built above the storm waves it is also important that the ground level is designed to allow for the flow-through of water and waves whilst supporting the house above. Lower-level enclosure should be avoided as partition walls, battens or roller doors etc can be torn off and become dangerous projectiles.

Lower level walls should be avoided or, if absolutely necessary, be designed to withstand the forces of waves and allow for reasonably easy repair afterwards. If solid walls on the ground floor are essential to the structure they should be aligned perpendicular to the coastline so that they offer the least possible resistance to the progress of the storm tide.

The ground level walls and supports must be braced extensively to withstand both cyclonic winds and storm surge. Building methods such as small bracing walls, cantilevered columns or stumps and open portal frames (rather than long solid walls that obstruct the flow of water) should be used.

Reinforced and fully core-filled concrete block walls or cast concrete panels may be the only common building materials that can resist these forces.

Consideration should also be given to the potential damage from the storm surge on important services such as electricity, permanent fixtures and plumbing. They should be elevated or protected from the impact of waves.

Repairs after the storm tide

As well as surviving the impact of storm tide, a well designed house will allow for a reasonably easy clean up and repair after inundation from a storm tide. Materials resistant to wave damage and immersion should be chosen for any construction below the storm tide level (as outlined in the building materials section below). Solid walls have the advantage that debris and mud cannot become lodged in them, however you should be aware that solid material such as masonry and concrete will take considerable time to fully dry out and so you should delay repainting such walls until they are fully dry. Cavity construction is not recommended, however if used then the cavity must be fully cleaned of mud and debris after inundation from a storm tide. This can be facilitated by use of an extra large skirting board which when removed post inundation, provides easy access to the cavity. If hollow cell insulation is used and has been wetted (e.g. batts) it will need to be removed and replaced. Closed cell insulation should survive a short immersion. Mud may also be trapped in other places around the home – under hidden bottoms in cupboards, vanities etc and these also should be cleaned out. Electrical wiring and plumbing should be checked by a qualified tradesperson.

In general, carpets and linings will need to be replaced after being inundated. Solid timber floors should survive if they have not been physically damaged, however timber boards may have cupped due to immersion in water. A key message is to ensure that all surfaces are dry before re-decorating.

Building materials used below storm tide

There are two primary building material requirements that should be considered when building in a storm tide prone area. Wherever possible, building materials used below the storm tide level should be:

- resistant to impact damage arising from the storm surge waves and debris
- resistant to moisture damage and able to hold their strength when wet

As noted earlier, solid materials (reinforced and fully core-filled concrete masonry walls or cast concrete panels) are more likely to be resistant to waves and debris impacts than cavity construction (brick veneer or double brick) or studwork (steel or timber).

If framed construction is used, timber cladding is recommended over fibre cement. Inside the home (for furnishings and doors), solid timber will withstand greater impact and moisture damage than hollow core or particle board. Durable internal linings should be selected such as timber panelling in place of particle board.

Appendix A shows the susceptibility of common building materials to water damage and should be considered when homes are being designed in high risk storm tide areas.

Building materials in storm tide prone areas should be resistant to impact and moisture damage

Building design recommendations

When reconsidering rebuilding or repairing your home the following considerations should be taken into account for your ultimate building design.

It is generally recommended that the building floor level needs to be located sufficiently above the design storm tide level such that it is clear of the tops of the waves extending across the coastline. Wave heights will be of primary concern to the most seaward row of buildings and progressively less important with distance inland. Wave crests can be expected to reach at least a height of about 1.5 times the local seawater depth.

Breakaway walls on the structure below the floor level need to be incorporated into the design so as to reduce the load on the structure from the increase in water level and associated flows.

Given the need to provide a clear passage for the storm tide and the storm debris in the water, standard types of cross bracing will need to be replaced by upgraded connections between the foundation piers, end walls, piles and the floor to maintain the lateral strength of the building.

All foundations need to be designed with an allowance for scour and erosion caused by currents generated by the storm tide inundation and, where applicable, wave action.

The principal defence against storm tide is to elevate housing above the adopted level of storm tide inundation risk

Where living areas are built above the storm tide it is also important that the ground level is designed to allow for the flow-through of water and waves whilst supporting the house above



Storm tide waves are extremely powerful and are capable of sweeping heavy items such as vehicles, caravans, trees and boulders inland at high speed causing damage to anything in their path

High-set houses on stumps

In high risk locations, usually in areas closest to the coast, high-set construction is always recommended. High-set housing may make universal access requirements very difficult to satisfy, but it provides the best safeguard against property damage during a storm tide.

Do not enclose underneath. Major forces during a storm tide are transferred from fixed wall structures into the structural frame and should be avoided. Where possible design for flow-through water movement.

Consider openable enclosure. For security of vehicles and valuables consider the use of vertically rolling, sliding or stacking garage doors that can be enclosed in day-to-day use but fully retracted in storm surge alert.

Reinforce any lower level enclosure. Where there are enclosed spaces at the lower level, they should be built strong and compactly. Small laundry or workshop areas should be strong and fully lockable and as compact as possible for minimum resistance.

Use minimal profile bracing systems. Use steel or timber bracing sets rather than shear walls for lower floor bracing. Consider transverse portal framing for wide column free openings.

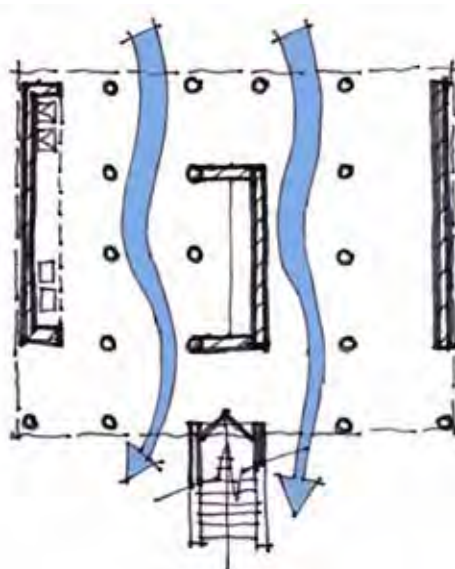
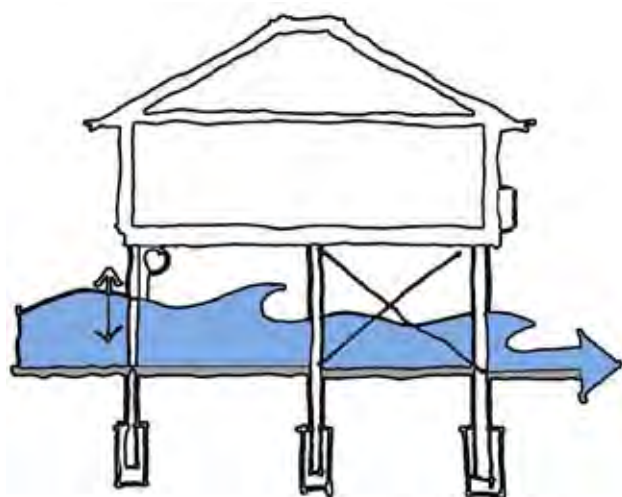
Consider impact resistance to tall columns. Storm surges may propel vegetation, boulders or vehicles against the structure. Consider the impact resistance of tall columns and bracing sets. Consider more substantial column cross-sections than are required for wind-forces alone, and consider additional bracing sets to provide a degree of structural redundancy to cover for impact damage.

Ensure house is designed in accordance with Australian Standards for wind loads



RECOMMENDED

IN HIGHER RISK AREAS



- 1 Design for flow-through water movement.
- 2 Reinforce any lower level structures.
- 3 Construct lower level structures such that they do not impede water movement.
- 4 Use steel cross bracing instead of sheer walls that would impede water flow.
5. Meter box above storm tide level.

Low-set houses on stumps

In many cases a low-set designed house will be the preferred housing type where an individual or family desires universal access. Where ramped access or minimal steps to the house are required, it is still recommended that the principal floor level is raised as high as possible to reduce the risk of storm tide damage. Low-set houses on stumps are also acceptable away from high-risk locations.

Raise the floor level as high as practicable. Because of the unpredictability of storm tide occurrence and possible heights, the higher the floor the better.

Use robust and impact resistant construction. For framed construction, timber or thick plywood cladding can provide greater protection than thin fibre-cement or metal sheeting. Maintain and use storm shutters on external windows.

Consider carefully the location and orientation of stairs and ramps. Where possible, orient these elements with the smallest dimension perpendicular to the beach frontage to minimise impact forces. Where using ramps to provide universal access, utilise landscaped path ramping as much as possible to reduce the size of built elements.

Minimise impact resistance of subfloor structures. Use cantilevered bracing columns or steel or timber crossing sets in preference to subfloor walls or bracing panels for bracing. Do not enclose the subfloor area with lightweight battening as this too can become dangerous debris.

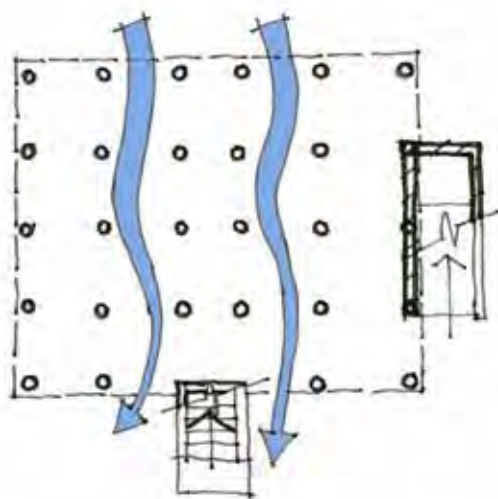
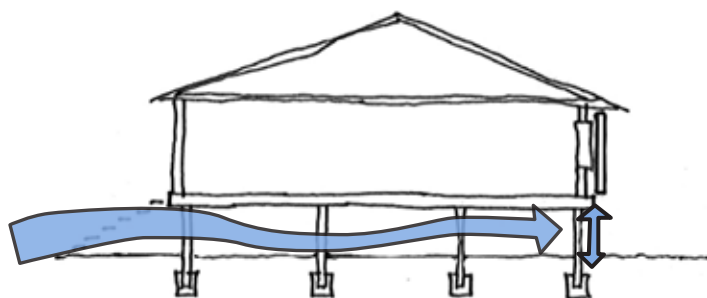
Additional lightweight walled sheds, garages and structures are not recommended.

Ensure house is designed in accordance with Australian Standards for wind loads.



RECOMMENDED

IN LOWER RISK AREAS



- 1 Raise the floor level as high as practicable.
- 2 Carefully locate stairs and ramps to not impede water flow.
- 3 Do not batten or enclose the area beneath the house.
- 4 Use Robust and Impact resistant columns and cladding.

Slab-on-ground construction

Lower storey of two storey construction

Where the floor of the lower storey of two storey construction is below the storm tide design level, then only building materials that can cope with inundation should be used for all internal and external walls. There are two strategies for the design of the lower storey:

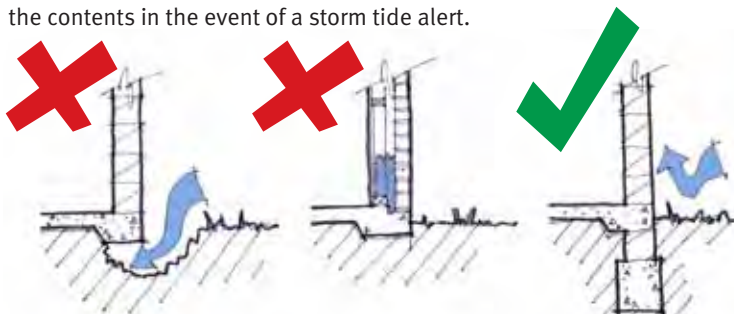
- In the wave zone, or where inundation is expected to be greater than 1 metre above the floor level, the lower floor should incorporate large windows, and an open design to allow surge water and debris to flow through the lower storey with as little resistance as possible. In the event of a storm tide event, all possessions can be stored in the second storey.
- Outside of the wave zone and where inundation is expected to be less than 1 metre, the lower storey should be designed to force the water to flow around the building. In this case strong walls and small windows well protected with heavy storm shutters, may absorb wave and debris impact. While the lower floor will still be inundated, it should be protected from waves and currents.

In either of these cases, the following guidance will minimise repair costs:

- Keep all electrical wiring and installations as high as possible.
- Have a means of quickly raising all furniture and valuables to the second storey.
- Take extra precautions for footings to minimise undermining by storm surge or ebb flow.
- Avoid the use of cavity walls in construction of the lower storey.
- Ensure that the house is designed in accordance with Australian Standards for wind loads.

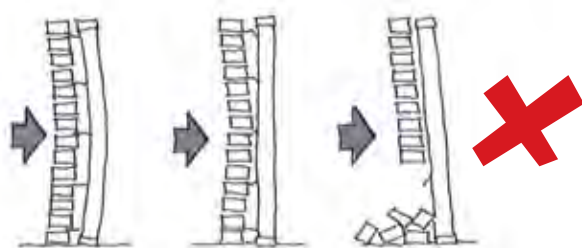
Single storey slab on ground

This construction is not recommended for sites in which the storm tide level will be above the floor slab level. However, if this type of construction cannot be avoided, the guidance on lower storey of two storey construction above should be followed. In addition, it must be recognised that the contents of the building are likely to be inundated in the event of a design storm tide. Plans should be made to evacuate all of the contents in the event of a storm tide alert.

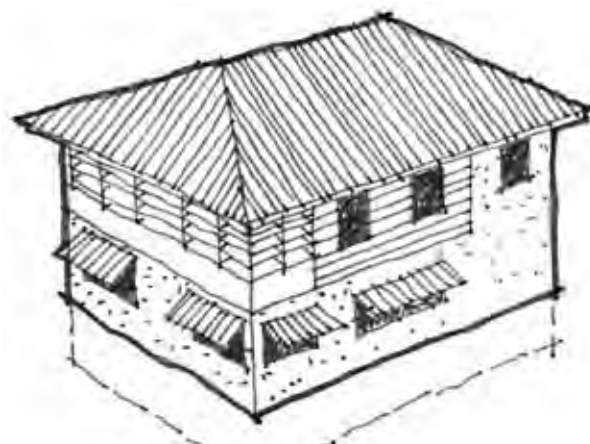


Standard footings can be undermined by the storm surge.

Building deep footings and utilising bored piers reduces the likelihood of undermining.



Walls with cavities can buckle and collapse under flood loads and should be avoided in storm surge prone areas. Cavities are also difficult to repair after inundation.



RECOMMENDED

IN LOWER RISK AREAS

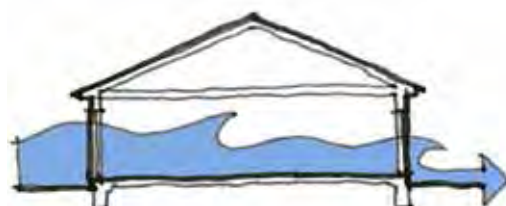


NOT RECOMMENDED

IN HIGHER RISK AREAS



- 1 Design stairs to allow easy furniture movements upstairs.
- 2 Use strong impermeable construction materials on the lower level.
- 3 Design for inundation – avoid plasterboard and other materials that degrade when wet.



- 1 Use strong construction methods and avoid cavities in walls – core filled concrete masonry or concrete panel construction is recommended.
- 2 Provide for reinforced storm shutters.
- 3 Build deep perimeter footings to prevent undermining.

5 Approvals

Queensland Coastal Plan

The Queensland Government has approved the Queensland Coastal Plan which will commence in August 2011.

The Coastal Plan recognise circumstances in which the policies do not apply including where:

- Building work is only assessable against the Building Act 1975
- The gross floor area is less than 1000 square metres
- Building work is landward of existing built structures not on State coastal land
- There is a development commitment (subject to achieving policy outcomes to the maximum extent possible)

This means that you can replace like with like in terms of the existing use. For example you can replace a single dwelling house with another single dwelling house. The new single dwelling house may be of a different design but will need to keep within the **relevant planning guidelines and building regulations that apply.**

Building Approval Process

The normal building approval process will apply when seeking approval to commence construction. A building approval will need to be granted by a building certifier and/or Council. The certifier will need to confirm that the proposed building complies with relevant building codes before any construction begins. Building certifiers are required to inspect that the work is being constructed to the relevant codes and standards.

Buildings in the storm tide zone are recommended to be designed in accordance with this guideline. However, it is important to note that in some individual circumstances this document could conflict with provisions under the *Building Act 1975*, such as siting requirements. In these cases, the requirements of the *Building Act 1975* will prevail over this guideline. It is recommended that homeowners and builders check with their building certifier or Local Government for clarification of the requirements for their individual circumstances.

Further information regarding the type of approval required should be sought from Cassowary Coast Regional Council on (07) 4030 2222.

It is recommended that all building designers / architects / contractors consider the issues raised in this guideline.

Other useful contacts include:

Building Codes Queensland, freecall 1800 534 972
www.dlqp.qld.gov.au/our-services/building-codes-queensland-2.html

For Professional Engineering advice:

Consult Australia – www.consultaustralia.com.au

Engineers Australia – www.engineersaustralia.org.au/nccoe

Board of Professional Engineers Qld – www.bpeg.qld.gov.au

STORM TIDE HISTORY



Historically the worst storm tide to impact the east-coast of Queensland was that caused by Cyclone Mahina in 1899 in Princess Charlotte Bay on Cape York Peninsular. The estimated highest water level (including wave run up) was reported to be in the order of 14m above mean sea level and extended inland approximately five kilometres, sinking more than 100 vessels and taking more than 400 lives. The most serious storm surges to impact the Queensland coast in the last 100 years occurred in 1918 approximately seven weeks apart and both were reported to have peaked around high tide. The first, affecting Mackay in January 1918, with a storm surge estimated at between 3.5metres and 5.5 metres. Only a few weeks later, Innisfail was hit by a powerful cyclone which at Mission Beach produced a storm surge, which, in combination with the tide resulted in a storm tide of approximately 3.5 metres and sweeping hundreds of metres inland. These three cyclones are reported to have produced the most severe storm surge damage on the east coast of Queensland since European settlement. Since 1918 and there have been several severe cyclones to cross the Queensland coast recording peak storm surge heights of between two and three metres which could have resulted in major damage had the Cyclones crossed the coast at high tide.

Be aware

To meet building, electrical and plumbing standards use only licensed tradespeople to repair or rebuild your home. To check that tradespeople approaching you for repairs are licensed for the work that they intended to undertake, refer to:

Queensland Building Services Authority
www.bsa.qld.gov.au

Electrical Safety Office
www.electricalsafety.qld.gov.au

Plumbing Industry Council
www.dip.qld.gov.au/plumbing/plumbing-industry-council.html

Disclaimer: This publication contains or refers to factual data, analysis, opinion, references to legislation and other information (together Information). The Queensland Reconstruction Authority and the State of Queensland make no representations and give no guarantees or warranties regarding the accuracy, completeness or suitability for any particular purpose of such Information. You should make your own enquiries and take appropriate advice on such matters. Neither the Queensland Reconstruction Authority nor the State of Queensland will be responsible for any loss or damage (including consequential loss) of any kind howsoever arising that you may suffer from using or relying upon any of the Information. By using or relying on any of the Information you agree to indemnify the Queensland Reconstruction Authority and the State of Queensland against any loss or damage arising out of or in relation to your use or reliance.

Appendix A – Performance of buildings materials below storm tide level

COMPONENT	SUITABLE*	MILD EFFECTS*	MARKED EFFECTS*	SEVERE EFFECTS*
Floor, Sub-Floor Structure	<ul style="list-style-type: none"> - slab-on-ground - suspended concrete 	<ul style="list-style-type: none"> - timber T&G (with ends only epoxy sealed and provision of side clearance for board swelling) or plywood 	<ul style="list-style-type: none"> - standard grade plywood 	<ul style="list-style-type: none"> - particleboard flooring close to the ground
Walls Support Structure	<ul style="list-style-type: none"> - reinforced or mass concrete - large windows low to the ground 	<ul style="list-style-type: none"> - full brick/block masonry 	<ul style="list-style-type: none"> - brick/block veneer with venting (stud frame) cavity brick 	<ul style="list-style-type: none"> - inaccessible openings
Wall and Ceiling Linings	<ul style="list-style-type: none"> - fibre cement sheet - face brick or blockwork - cement render - ceramic wall tiles - galvanised steel sheet - glass and glass blocks - stone, solid or veneer - plastic sheeting or tiles with waterproof adhesive 	<ul style="list-style-type: none"> - common bricks - solid wood, fully sealed - exterior grade plywood fully sealed - non ferrous metals 	<ul style="list-style-type: none"> - exterior grade particleboard hardboard - solid wood with allowance for swelling - exterior grade plywood 	<ul style="list-style-type: none"> - particleboard fibreboard or strawboard - wallpaper - cloth wall coverings - standard plywood - gypsum plaster plasterboard
Doors	<ul style="list-style-type: none"> - solid panel with waterproof adhesive - flush marine ply with closed cell foam - aluminium or galvanised steel frame 	<ul style="list-style-type: none"> - flush or single panel marine ply with waterproof adhesive - painted metal construction - timber frame, full epoxy sealed before assembly 	<ul style="list-style-type: none"> - standard timber frame 	<ul style="list-style-type: none"> - standard flush hollow core with PVA adhesives and honeycomb paper core <p>Note: lowest cost and generally inexpensive to replace</p>
Window frames	<ul style="list-style-type: none"> - aluminium frame with stainless steel or brass rollers 	<ul style="list-style-type: none"> - timber frame, full epoxy sealed before assembly with stainless steel or brass fittings 		<ul style="list-style-type: none"> - timber with PVA glues - mild steel fittings
Insulation	<ul style="list-style-type: none"> - plastic/polystyrene boards - closed cell solid insulation 	<ul style="list-style-type: none"> - reflective foil perforated with holes to drain water if used under timber floors 		<ul style="list-style-type: none"> - materials which store water and delay drying open celled insulation (batts etc)
bolts, hinges, nails, fittings and connections	<ul style="list-style-type: none"> - brass, nylon/stainless steel, removable pin hinges 	<ul style="list-style-type: none"> - galvanised steel, aluminium 		<ul style="list-style-type: none"> - mild steel
floor covering	<ul style="list-style-type: none"> - clay/concrete tiles - epoxy or cementitious floor toppings on concrete - rubber sheets (chemically set adhesives) - vinyl sheet (chemically set adhesive) 	<ul style="list-style-type: none"> - terrazzo - rubber tiles (chemically set adhesives) - polished floor and loose rugs - ceramic tiles 	<ul style="list-style-type: none"> - loose fit nylon or acrylic carpet (closed cell rubber underlay) 	<ul style="list-style-type: none"> - wall to wall carpet - wall to wall seagrass matting - cork - linoleum

Adapted from CSIRO

- These materials or products are relatively unaffected by submersion and flood exposure and are the best available for the particular application.
- These materials or products suffer only mild effects from flooding and are the next best choice if the most suitable materials or products are too expensive or unavailable.
- These materials or products are more liable to damage under flood than the above category.
- These materials or products are seriously affected by floodwaters and have to be replaced if inundated.

Acknowledgements

The Queensland Reconstruction Authority would like to thank the following for their contributions to the production of this Guideline:

- Cyclone Testing Station, James Cook University and in particular Dr Geoff Boughton and Dr David Henderson
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- Architectural Practice Academy
- Board for Urban Places in particular Mr Gordon Beath
- Cassowary Coast Regional Council

Contributions were also made by:

- Queensland State Government Agencies
- Planning Institute of Australia
- Timber Queensland
- Consult Australia
- Engineers Australia





Rebuilding Grantham together



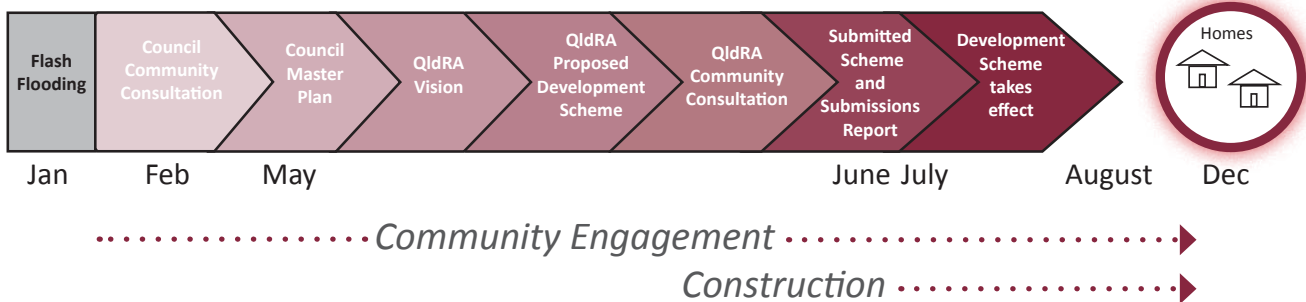
Development Scheme
Grantham Reconstruction Area

Context

The Development Scheme for the Grantham Reconstruction Area outlines the blueprint for the reconstruction of Grantham after the devastating events of 10 January 2011. The Queensland Reconstruction Authority (the Authority) together with the Lockyer Valley Regional Council (Council) have worked in consultation to develop a plan which provides for a prosperous future for Grantham and the Lockyer Valley.

The journey in developing this blueprint has been ongoing since February 2011 and has involved extensive community consultation and public notification. The figure below identifies the steps that have been undertaken to support this collaborative approach allowing construction of the new residential area to commence mid 2011.

Grantham Reconstruction Area Timeline



Photos taken from Community Consultation sessions held on 19, 23 and 26 March 2011, Lucky 7 Store Opening, Grantham Sod Turning and the new land.

Table of Contents

Vision	5
Grantham Timeline 1843 - 2011	6
Council Master Plan	8
Locality Context Plan.....	10
Planning Context	12
Development Scheme	13
Part 1 - Land Use Plan	14
Part 2 - Infrastructure Plan	44
Part 3 - Implementation Strategy.....	51
 Reference Plans	
Map 1 - Reconstruction Area	54
Map 2 - Land Use Plan	55
Map 3 - Land Use Plan - Inset A.....	56
Map 4 - Precinct Plan	57

Vision for Reconstruction Area

It has been two years since the dreadful events of January 2011, and our community of Grantham has rebuilt itself in a way which shows great pride, strength and resilience, while staying true to our history and character and respecting those who suffered during those tragic events.

The main street along Anzac Avenue is thriving again, with the new store, hotel and information centre proudly rebuilt stronger and better. Members of our community and visitors alike have embraced the businesses in the main street so they are more prosperous than ever. The main street is a strong heart to our once again strong community.

The former residential area west of Harris Street is now a park much valued by our community as a place to reflect. Some of the flood-affected areas west along the Gatton-Helidon Road have converted back into rural uses, although a few strong highset homes have been built by those who have chosen to stay and rebuild in the area.

As I enter William Street I notice distinctive and colourful shade structures which are home to weekend fruit stalls and are a hive of activity with residents and visitors buying their weekly produce. There are a few cafés located under the camphor laurels in William Street which are very popular as a meeting place for friends to catch up and share a light meal whilst overlooking the natural areas of Sandy Creek. Passing under the railway line, the restored butter factory sits proudly at the entry to this part of the town and is used every day by different members of the community.

Travelling along Victor Street, I can hear children in the primary school running and laughing and watching as a train passes by. Houses opposite the school are much as they have always been.

The big change is on land north of here, off Boxmoor Street, where a major new part of town has been built up nice and high overlooking the cropping lands and flood plain to the south. Just two years on, many of our residents have proudly rebuilt their homes and lives in this part of town. Children can be heard kicking a football and playing on the swings in the new parkland which is central to this new part of town. The road into this new area stitches the community together providing a high level of access for residents and visitors between the main street and the old and new parts of town.

There are many different lot sizes in the new part of town and I know that as I get older, I'll be able to move to a smaller lot and stay close to my family without leaving the town that I know and love.

Major new facilities have started to emerge as well. There are plans to expand the town further north and east, and introduce more community facilities and parks in the new part of town. Whilst not developed yet, the new showgrounds which are planned adjacent to the Warrego Highway will be a great addition to our town when they are built.

There are noticeably more jobs in town now, with some new rural businesses that have been built to the east of the main street supporting the farming and rural activities which are the foundation of our town.

Grantham is an amazing place – we have endured tragedy and emerged stronger and prouder, with a wonderful mix of history and character and strong and vibrant new areas that are helping us achieve a safe and bright new future.

GRANTHAM TIMELINE ~ 1843 - 2011



James 'Cocky' Rogers, brings 300 sheep onto the Grantham Run.

1843

Jagara tribesmen are resisting the intruders who are now occupying their ancestral hunting grounds.

1844

Charles William Pitts now holds the Grantham Run, which has an estimated carrying capacity of 8000 sheep.

1848



The railway line is built through Sandy Creek (the original name for the siding at Grantham).

1866

James Craig becomes licensee of the first watering hole at Grantham - the Sandy Creek Hotel.

1871

The Queensland Government starts resuming land under the Crown Lands Alienation Act of 1868, and the Homestead Areas Act of 1873. The Grantham Run is thrown open for free selection.

1873

Orchards are established in the district by Stationmaster Charlie Wilkinson who was related to Grantham's first blacksmith, Albert Wilkinson. Albert's blacksmith shop was on the creek bank in William Street across from the Post Office.

1880s

Andrew Scott buys part of the original Grantham Run, including the homestead, on the death of A.V. Carpendale. Grantham Station, which now comprises about 250 sq miles, is stocked with cattle.

1884



First land sales establish Grantham Town in the Lockyer Valley. The town is named by the first white settlers after their former home town of Grantham in Lincolnshire, 108 miles (174km) north of London.

1886

Major flooding: The Lower Tent Hill spills its banks and the Lockyer Creek flows into north Gattoon and Grantham flats are covered. The flood waters are five feet (1.52m) above the previous floods of 1863, '64, '87 and '89. Further flooding occurs in 1893.

1890

Albert Scott, the founder of Wanstead at Veradilla, settles on the land near Grantham. Two years later he builds a family home from large slabs and shingles, cut from timber grown on the property.

1895



Grantham Scrub School opens on the corner of Scrub Road and Poole's Road.

1896

The Grantham Dramatic Group and Orchestra start providing regular and popular entertainment.

1920s

The School of Arts acquires land on the former railway reserve opposite the Butter Factory and establishes Grantham's first library.

1917/18



The Baltzer family establishes a bootmaking and saddlery business opposite a bakery in Harris Street.

1918

The Grantham Hotel on Sandy Creek is destroyed by fire. On July 16 Grantham's new State School opens.

1917



New cattle and pig yards are built at the railway station.

1916

The railway line from Grantham to Helidon is duplicated.

1914



Rugby League is now in full swing and the Grantham Rugby League team goes on to win the Lockyer premiership from 1919 to 1922

1913

One of the first important land sales with sub-divisions from the Grantham Estate gets underway on May 10.

1910



The Grantham Butter Factory opens and the Grantham Cattle Dip Company is formed to control ticks.

1907



Grantham State School opens on January 23. There are now 800 dairy farmers in the Lockyer Valley

1905



During the year 4313 tons of agricultural produce are loaded onto railway wagons at Grantham.

1901



G William Henderson becomes the first licensee of the Grantham Hotel on the banks of Sandy Creek.

1900



'Jack' Nagina Singh opens Grantham General Store, selling everything from a pin to an anchor.

1926

A loan is available for a water supply for Grantham residents. Bores and windmills with troughs are installed in Gattoon, Helidon and Anzac Avenue, Grantham.

1927



National Bank of Australasia moves into a new timber triangular building known locally as the 'Wedge of Cheese'.

1928



Residents meet at the School of Arts on April 30 to establish St Gabriel's Anglican Church.

1931

In August, the first street lights in Grantham are switched on.

1936



Electricity is installed at the railway station.

1938



Fire destroys the Coronation Hotel for a second time. WWII declared.

1939

School children practice putting a cork in their mouth and cotton wool in their ears to protect them from bomb blasts. No bombs fall on Grantham and no enemy aircraft are seen.

1940s

John 'Jack' Lund, bullocky and timber getter is in charge of a team of 12 or more bullocks hauling timber from the Sandy Creek district for Hood's Sawmill at Gattoon.

1941



Mortleman's Store opposite the telephone exchange closes.

1940/41

Fire destroys the Coronation Hotel...again.

1941/42



The Grantham Boys Cricket Club formed.

1944

The Armstrong family's fruit and vegetable shop opens on the highway. More and more fruit and vegetable stalls are opening in Grantham during the main fruit and vegetable seasons.

1964



Kevin and Shirley Toohill (a vigoro team coach) begin operating K & S Toohill Transport Pty Ltd.

1962



Dwyers Manufacturing Company opens on the highway. The company also operates Grantham Motors.

1961

Grantham's soccer team the 'Lockyer Stars' continues playing strongly throughout the 1960s and 1970s.

1960s

Floodwaters inundate Grantham. At about this time plant and sand pumping by Readymix concrete starts at the creek.

1959

Hailstorm strikes Grantham smashing windows at the Butter Factory and Grantham State School. Much of the district's fruit crop is wiped out.

1956

Twomacs Garage is built on the Warrego Highway. It's run by Tommy Grice and 'Mac' Crust. A radio program is exchanged between England and Australia. The program is called 'Namesake Towns - Grantham to Grantham'.

1952



Grantham Scrub School closes.

1951



The Water Melon Carnivals begin to celebrate the harvesting of citrus fruit.

1950s

The Grantham Amateur Players stage their first variety show in McGarva's Hall on June 4.

1949

Street signs are requested for Grantham in readiness for the town's first letter delivery service.

1947

Padget's travelling picture show arrives in Grantham with carbon arc projectors and a slide show for audiences in McGarva's Hall - later known as Grantham Hall.

1945

Grantham Post Office is destroyed by fire. Operations are transferred to a former butcher's shop.

1965



The Grantham Hotel moves in April from William Street, after 50 years, to a new site on the Warrego Highway.

1967

The Lockyer Little Theatre operates a small theatre at Grantham.

1968

The Warrego Highway is rerouted through Grantham.

A mini-tornado rips through Grantham in November. Citrus trees are stripped, vegetable crops ruined and buildings damaged.

1971

Land on the corner of William and Railway Streets becomes Bugler Park in recognition of the Bugler family which has been prominent in the Grantham district for 85 years.

1973



More flooding causes substantial damage to businesses and houses.

1974

David Topp opens a hot bread kitchen.

1975



Singh's General Store, which opened in 1926, closes its doors.

1976



The first Orange Festival is held to raise money for charities

1978

Fire, started by children playing with matches, destroys the produce business of W.E. Morgan and Sons.

1979

Public toilets are constructed alongside the Warrego Highway at Grantham.

Flooding: Lockyer Creek peaks at 12 metres and floodwaters build up at Dinner Corner - named for the area where drovers had dinner before bedding down for the night.

1983

An old iron overhead footbridge, no longer in use at the Toowoomba Railway Station is installed across Sandy Creek to link the two ovals.

1985



Grantham is an amazing place which has emerged stronger and prouder, with a wonderful mix of history and character and strong and vibrant new areas that are helping achieve a safe and bright new future.

2013



June 7, the Lockyer Valley Regional Council Mayor and Deputy Premier turn the first sod in stage one of a major new housing development on higher ground.

2011

January 10, flash flooding devastates Grantham, Murphy's Creek, Postman's Ridge, Helidon and Withcott. Deaths and property losses are recorded.

2011



Grantham State School celebrates its centenary.

2005

More flooding affects business life in 1999. The Grantham Water Tower, which has been a landmark for many years, is removed in August.

1999/2000



A major employment boost comes in July with the opening of Morex Meat Australia. The company later changes its name to Valley Beef Company.

1997



The Grantham Meat Mart, moves to a new shopping centre at Withcott, due to declining trade caused by the Grantham bypass.

1996

Grantham Post Office closes.

1994



Falling patronage forces the closure of the Grantham and Forest Hill Railway Stations on July 31.

1992



Computers are introduced to students at Grantham School.

1990s

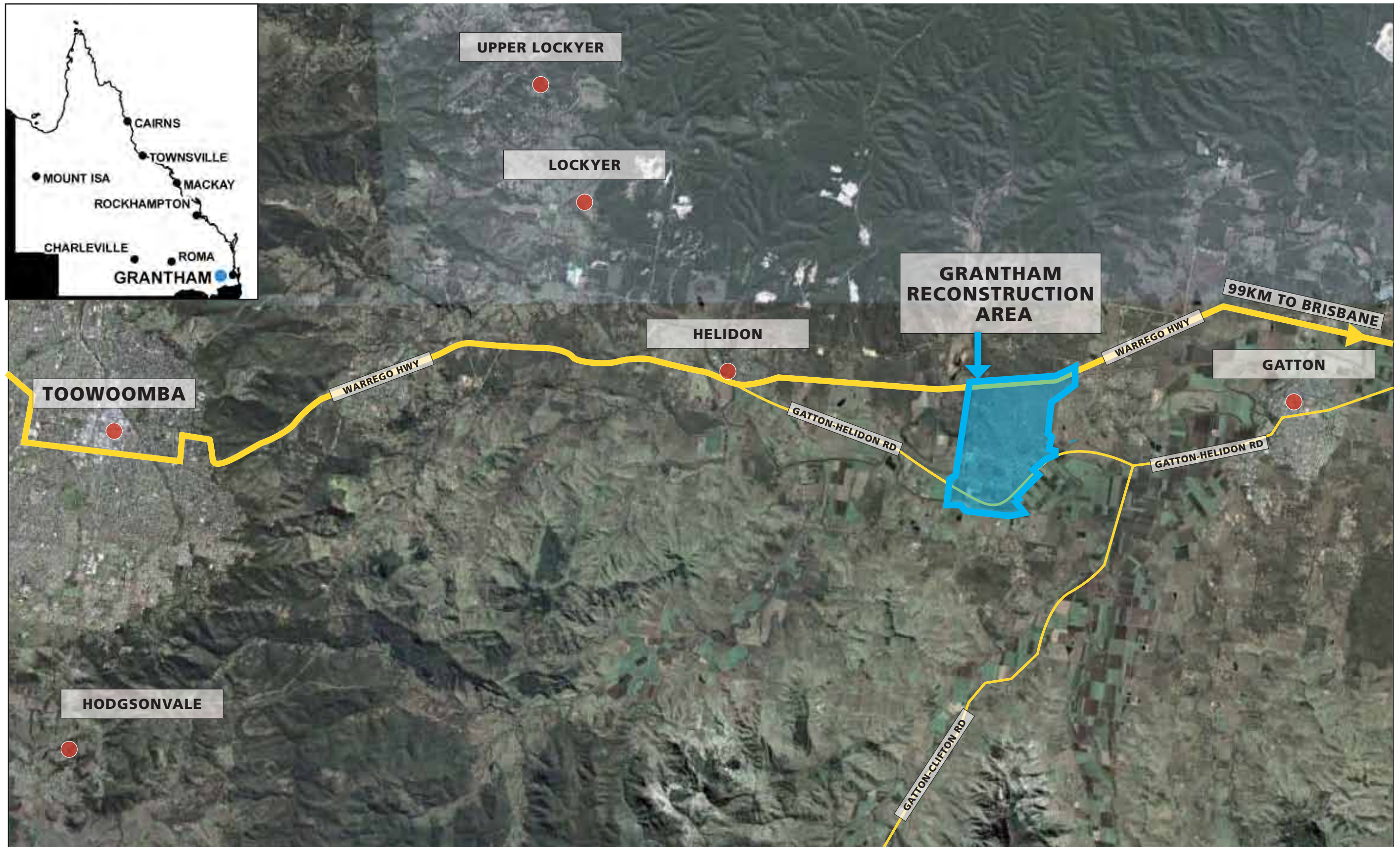
The \$10 million Gattoon Bypass comes into operation and traffic is diverted away from Grantham. The Grantham Rural Fire Brigade is formed in August.

1989

More flooding with major crop losses. The first Tourist Information Centre and café opens in Grantham in the former Singh's store.

1988

Grantham Reconstruction Area Locality Context



Planning Context

The Queensland Reconstruction Authority (the Authority) is a statutory authority under the Queensland Reconstruction Authority Act 2011 (the QldRA Act).

The main purpose of the QldRA Act is to provide for appropriate measures to ensure Queensland and its communities effectively and efficiently recover from the impacts of disaster events between December 2010 to April 2011.

The Authority is working with Council, members of the community and state government agencies to facilitate the recovery of Grantham and the Lockyer Valley in an accelerated reconstruction program.

Reconstruction Area

The Grantham Reconstruction Area (Reconstruction Area) was declared by regulation on 8 April 2011. The Reconstruction Area is shown on Map 1.

South East Queensland Regional Plan 2009-2031

The Reconstruction Area is included in the Regional Landscape and Rural Production Area South East Queensland Regional Plan 2009-2031 (SEQRP). Whilst the proposed development involves the creation of additional lots outside the Urban Footprint, under section 78 (2) of the QldRA Act this Development Scheme will suspend the SEQRP Regulatory Provisions.

The Development Scheme provides for the economic, environmental and cultural values of Grantham and provides for a mix of housing types to accommodate the needs of the community, now and into the future.

The SEQRP provides that the future of rural villages outside the Urban Footprint can be considered through the planning scheme review process to help them achieve long term sustainability and self contained employment. This Development Scheme brings forward the review of a long term sustainable Grantham consistent with this intent.

The economy of the region is typically dominated by rural industry and associated activities on rural lands. The expansion of rural industries are supported where they provide for a greater level of self containment of jobs and for the processing and packing of local produce, as well as expanding associated cottage industries and small to medium scale incubator businesses. The expansion of rural and low impact industries in Grantham will support and complement Gatton as the Principal Regional Activity Centre for Lockyer Valley and will provide a greater level of self containment for Grantham and the Lockyer Valley.

The expansion of the Grantham township as outlined in this Development Scheme has been subject to detailed land capability and suitability assessments, riparian corridor protection and an assessment of infrastructure requirements. Each of the matters has been thoroughly considered in the preparation of this Development Scheme.

The provision of approximately 400 additional lots in Grantham will assist Council in achieving the forecast 11,500 additional dwellings required in the Lockyer Valley by 2031 without compromising principle 8.2 of the SEQRP.

Statutory Effect of the Scheme

The Development Scheme for the Grantham Reconstruction Area will continue to apply until the new planning scheme for the Lockyer Valley Regional Council takes effect. If at the time the QldRA Act expires (section 139 of the QldRA Act) and Council's new Sustainable Planning Act 2009 compliant planning scheme is not in effect, powers under section 112 of the QldRA Act may be exercised to ensure that the Development Scheme continues to have effect.

Development Scheme

The Development Scheme for the Grantham Reconstruction Area has been prepared in accordance with section 66 of the QldRA Act and is applicable to all development on land within the boundaries of the Reconstruction Area. The Proposed Development Scheme was subject to public notification carried out for a period of 30 business days. Matters raised within the public consultation period were duly considered as part of the finalisation of this scheme. The Development Scheme is a statutory instrument and has the force of law.

The purpose of the Proposed Development Scheme is to:

- Establish the Vision and Master Plan for the Reconstruction Area;
- Calibrate the regulation of development to achieve the Vision; and
- Identify infrastructure and other strategies and mechanisms to achieve the Vision.

In the making of the Development Scheme the Authority has considered the requirements under 63 (4) of the QldRA Act.

In accordance with section 78 (2) of the QldRA Act, the Development Scheme suspends that part of the current Gatton Planning Scheme which regulates development within the Reconstruction Area, save for the provisions expressly referred to in the Development Scheme .

Elements of the Development Scheme

The Development Scheme consists of:

- A land use plan;
- An infrastructure plan; and
- An implementation strategy.

Vision – The vision seeks to articulate the community aspirations for Grantham and provides the basis for the land use plan, infrastructure plan and implementation strategy.

Land Use Plan – similar to a Local Plan that translates the vision and master plan into a Queensland Planning Provision (QPP) compliant land use plan that calibrates and regulates development through clear statements of intent and tables of assessment that support the achievement of the vision.

Infrastructure Plan – supporting the land use plan with specific details relating to elements of infrastructure including roads, water supply, sewer, stormwater, parks, electricity, telecommunications and community facilities.

Implementation Strategy - supports the implementation of the land use plan and the infrastructure plan recognising the importance of Council's land swap program whilst providing sufficient flexibility to cater for changes and evolution that will occur during the life of the Development Scheme.

Referral Agencies

Under section 64 of the QldRA Act a Development Scheme may provide that an entity that would otherwise be a referral agency for a development application for the reconstruction area, is not a referral agency for the development application. In accordance with section 64 of the QldRA Act, under this Development Scheme the referral triggers under schedule 7, table 2, item 39 (relating to reconfiguring a lot to which division 3 of the state planning regulatory provisions for the South East Queensland Regional Plan applies) and schedule 7, table 3, item 12 (relating to a material change of use to which division 2 of the state planning regulatory provisions for the South East Queensland Regional Plan applies) of the Sustainable Planning Regulation 2009 do not apply to development within the reconstruction area.

All other Referral agency jurisdictions continue to apply for assessable development.



PART 1

LAND USE PLAN



Land Use Plan

The Land Use Plan has the following zones and precincts, which are shown on Map 2 - Land Use Plan. The following zones and precincts have been identified using the Queensland Planning Provisions (QPP) developed by Department of Local Government and Planning.

	Page
1.0 Community purposes zone	16
a. Community precinct	16
b. Showgrounds precinct	17
c. Parkside precinct	17
2.0 Limited development (constrained land) zone	21
3.0 Local centre zone	24
4.0 Low impact Industry zone	27
5.0 Recreation and open space zone	30
a. Harris Street precinct	31
6.0 Residential living zone	33
a. Residential living 1 precinct	33
b. Residential living 2 precinct	34
7.0 Rural residential zone	36
a. Rural residential 1 precinct	36
b. Rural residential 2 precinct	37
8.0 Rural zone	40
a. Rural agriculture precinct	40
b. Rural general precinct	40
Using this Land Use Plan	41

Information captions

Information captions identified by the symbol on the right are provided throughout the Development Scheme for historical context only. They are non-statutory and for information purposes only.



1.0 Community purposes zone

Purpose

The purpose of the Community purposes zone is to provide for community related activities and facilities whether under public or private ownership.

These may include provision of municipal services, public utilities, government installations, hospitals and schools, transport and telecommunication networks and community infrastructure of an artistic, social or cultural nature.

Overall Suggested Outcomes

Community precinct

This precinct provides for a range of community uses, including the Grantham State School, the Butter Factory community centre and utility installations.

These are important areas providing for uses central to the community of Grantham and surrounding areas, and are protected to ensure they can be used appropriately for their intended community purpose.

The Grantham Butter Factory

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In 1907 the Grantham Butter Factory opened. As production increased extensions were made to the factory and the foundation stone for a brick building is laid in 1926. For years, smoke coming from the tall 92ft (28m) chimney (that was replaced in the 1950s) and the sun shining on the red brick façade of the big factory marks growing prosperity and the principal landmark of Grantham. At its peak the factory had 450 cream suppliers and produced 1000 tons of butter annually. When it closes on June 30, 1971 the factory was down to 130 suppliers and about three tons of butter a week. It operated for 64 years and its closure was part of deregulation and the down-grading of the dairying industry in Queensland. In 2011, the Toowoomba Rotary Club purchased the Butter Factory to refurbished as a new Community Centre for the residents of Grantham.



Showgrounds precinct

The Showgrounds precinct is intended to house a significant showground site for the Lockyer Valley. The precinct will cater for a broad range of events, including large agricultural and industry shows that require a significant area of land.

Functions within the Showgrounds precinct can include:

- Show Arenas
- Spectator Seating
- Large Covered and Enclosed Pavilions
- Toilet Facilities
- Catering and Food
- Short Term Accommodation
- Stables

The Glossy-black cockatoo can be found foraging within the She-Oaks in the south-western edge of the precinct. Their habitat should be protected in the development of the showgrounds precinct.

Low Impact Industry uses ancillary to the principal showgrounds use of the site (ie. Veterinary, rural produce store) will also be premitted within the precinct when developed in accordance with a Master Plan prepared for the precinct.



Parkside Precinct

The Parkside precinct is intended to provide for uses which are complimentary to the recreation and open space zone and residential living zone and may include education facilities, child care, retirement village facilities or similar. It is recognised that a historical cattle dip has been identified as existing within this precinct and that Lot 2 on RP204243 is listed on the Contaminated Land Register as containing a Livestock Dip or Spray Race. Any Master Plan prepared for this precinct will need to address the remediation options and will be subejct to concurrence agency review by the Department of Environment and Resource Management.

Table of assessment

The following table identifies the levels of assessment for development in the Community purposes zone:

Development	Assessment criteria
Exempt development	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level	
Club if in the Community precinct	
Market	
Park	
Temporary Use	
Utility installation	
Compliance assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
If in the Community precinct: Community use Educational establishment	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code, except A2.2(a); and (vi) Vehicle access, parking and on-site movement code AO1.1 and AO1.2 of Part A of the Community purposes zone code
If in the Community and Showgrounds precinct: Operational works not associated with a material change of use	Gatton Planning Scheme: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2; and (iv) Vehicle access, parking and on-site movement code
If in the Community precinct: Operational works for reconfiguring a lot	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code
If in the Community precinct : Reconfiguring a Lot	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a Lot code, except A2.1 , A2.2, A19.4(a), A19.4(b)(iii)II and III , A27.1, A34.1, A36.1, A36.2; (ii) Earthworks code; (iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2; and (iv) Vehicle access, parking and on-site movement code AO2.1 of Part A of the Community purposes zone code.
Code assessable development	Assessment Criteria
Caretaker's accommodation (if not exempt)	Gatton Planning Scheme: (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2); and (iii) Vehicle access, parking and on-site movement code Community purposes use zone code.

Development	Assessment criteria
Code assessable development	Assessment criteria
Development if consistent with the intent of the precinct and in accordance with a master plan prepared for the precinct, or part of the precinct, by the Council or the Government.	Gatton Planning Scheme: (i) Earthworks code; (ii) Landscaping code; (iii) Lighting code; (iv) Services and infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code. AO1.1 of Part B of the Community purposes zone Code.
If in the Parkside precinct: Community Use Education Establishment Residential Care Facility Retirement Village	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code, except A2.2(a); (v) Vehicle access, parking and on-site movement code; and (vi) Accommodation Unit and Dual Occupancy code AO1.1 and AO1.2 of Part A of the Community purposes zone code
If in the Parkside Precinct: Operational works	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code
If in the Community precinct : Reconfiguring a Lot	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a Lot code, except A2.1 , A2.2, A19.4(a), A194(b)(iii)II and III , A27.1, A34.1, A36.1, A36.2; (ii) Earthworks code; (iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2; and (iv) Vehicle access, parking and on-site movement code AO2.1 of Part A of the Community purposes zone code
If in the Community or Parkside precinct: Indoor sports and recreation	Gatton Planning Scheme: (i) Earthworks code; (ii) Landscaping code; (iii) Lighting code; (iv) Services and infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site movement code.
Impact assessable development	Assessment criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Grantham State School

In 1896 the Grantham Scrub School opened on the corner of Scrub Road and Poole's Road. It was said that some 15 children in the district had neither gone to school nor had they since they came to live in the locality. The school continued to operate until 1951 when it closed and most of the children were transferred to Grantham State School.

On 23 January 1905 the Grantham State School opened.

History of Bugler Park

In 1973, land on the corner of William and Railway Streets is given to the then Gatton Shire Council by produce merchant Mick Bugler. It becomes Bugler Park in recognition of a family which has been prominent in the Grantham district for 85 years.



Community purposes zone code

Performance outcomes	Acceptable Outcomes
PART A Community and Parkside Precinct	
PO1 The height and setbacks of buildings and structures are similar to the height and setbacks of existing buildings and structures in the precinct.	<p>A01.1 New buildings and structures have a maximum height of 11m above natural ground level.</p> <p>A01.2 Buildings and structures are setback</p> <ul style="list-style-type: none"> (a) 10m from the street frontage if located opposite a residential living zone or recreation and open space zone; (b) 6m from the street frontage in any other location; (c) 10m from any side or rear boundary with a residential living zone or the recreation and open space zone; (d) 2m from the side and rear boundaries in any other location.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	A02.1 Minimum lot size is 1Ha.
PART B Showgrounds Precinct	
PO1 Development does not compromise the future development of the Showground precinct	A01.1 Development in the showground precinct is in accordance with a Council approved master plan for the precinct.
PO2 Noise and light generated by the showground activities do not impact negatively on residential development.	No acceptable outcome is nominated.
PO3 Buildings and structures have a height and setback in accordance with an approved master plan for the precinct.	No acceptable outcome is nominated.
PO3 Development does not compromise the protection of the Glossy-black cockatoos foraging habitat.	A03.1 Foraging habitat is protected in accordance with the Environmental Protection Area identified on Map 4 - Precinct Plan.



Origins of the Grantham Rural Fire Brigade

The Grantham Rural Fire Brigade formed in August 1989. The Fire Station is in William Street opposite the Post Office. Earlier the district was served by the Grantham Volunteer Fire Brigade which had a four-man double-action pump and water tank mounted on a trailer with solid tyres.

2.0 Limited development (constrained land) zone

Purpose

The purpose of the Limited development (constrained land) zone is to identify land known to be significantly affected by one or more development constraints (such as past or future mining activities, flooding, land contamination, defence requirements, historical subdivisions and buffer areas).

Such constraints pose severe restrictions on the ability of the land to be developed for residential purposes.

Suggested Overall Outcomes

This zone will contain some houses where there are existing development entitlements, but primarily provides a range of low key rural activities which are agricultural in nature and which are compatible with the remaining residential uses.

It caters for uses such as flower farms, plant nurseries, turf farming, garden supplies, equine uses and other activities that are related to rural activities.

No new subdivision of lots is intended in this zone and amalgamation of lots is encouraged so existing lots can be aggregated for the intended agricultural uses.

Whilst not preferred, it is acknowledged that some residents may wish to remain in this area and therefore, if a dwelling house existed on the subject land on 10 January 2011, a new dwelling house or rebuilding of a dwelling house will require habitable floor levels to be at least 300mm above the defined flood level.

History of the Grantham's earliest orchards

In the 1880s orchards were established in the district. When Stationmaster Charlie Wilkinson retired in 1914, he sold his land with 100 fruit trees. He was related to Grantham's first blacksmith, Albert Wilkinson, who was succeeded by his son Les Wilkinson. The blacksmith's shop was on the creek bank in William Street across from the Post Office.



Table of assessment

The following table identifies the levels of assessment for development in the Limited development (constrained land) zone:

Development	Assessment criteria
Exempt development	
Animal husbandry	
Cropping	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level	
Intensive horticulture	
Market	
Park	
Permanent plantations	
Roadside stall	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Agricultural supplies store	Gatton Planning Scheme: (i) Rural service industry code, except A4.1 and A4.2; (ii) Lighting code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle Access, Parking and On-Site, Movement code PO1 and PO2 of the Limited development (constrained land) zone code.
Bulk landscape supplies	
Garden Centre	
Wholesale nursery	
Reconfiguring a lot where for boundary realignment	Gatton Planning Scheme Reconfiguring a Lot Code A7.1, A7.2 and A7.3.
Compliance assessable development	Assessment Criteria
Operational works where not involving the physical alteration to a watercourse or floodway including vegetation clearing or where net filling does not exceed 50m ³ .	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code.
Code assessable development	Assessment criteria
Rural industry	Gatton Planning Scheme: (i) Rural service industry code except A4.1 and A4.2 ; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site, movement code. Limited development (constrained land) zone code.
Impact Assessable development	Assessment Criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Limited development (constrained land) zone code

Performance outcomes	Acceptable Outcomes
PO1 Residential development is not preferred and in the limited circumstances where it is constructed it is constructed to provide an acceptable level of flood immunity.	AO1.1 Habitable floor level of residential development is 300mm above the defined flood level.
PO2 The height and setback of buildings and structures are similar to the height and setback of existing buildings and structures in the area.	AO2.1 Buildings and structures have a maximum height of 11.0m above natural ground level. AO2.2 Buildings are setback: (i) 6m from the street frontage; (ii) 10m from the side or rear boundary with a residential use; (iii) 6m from the side or rear boundary with a non residential use.
PO3 Non residential uses provide a 10m setback from any common boundary with a residential use so as to minimise impacts from noise or light on the residential use.	AO3.1 Buildings are setback a minimum of 10m from any boundary with a residential use. AO3.2 A 1.8m high fence is erected along the boundary with a residential use
PO4 Where practical, essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) are located above the defined flood level.	No Acceptable Outcome is provided.

History of Grantham Street Names

Street names are listed here with their origins in parenthesis.

Anzac Avenue (after WWI, probably early 1920s)

Armstrong Road (Armstrong family, orchardists)

Boxmoor Street (Boxmoor Village in Hertfordshire, England)

Christopher Street (Christopher a young boy who died accidentally)

Citrus Street (Connors' orchard and packing shed)

Connors Road (Clarrie Connors, orchardist)

Harris Street (Harris Robinson, farmer)

Lawlers Road (Lawler family, farmers)

McGarva Road (Evan McGarva and McGarva families, orchardists)

Philps Road (Colin Philp, Ringwood, orchardist)

Railway Street (1870s)

Robert Street (Robert McGarva, son of William and Daisy McGarva, who died aged 2 years in 1936)

Victor Street (Victor Clem, bank manager)

William Street (William Henderson, publican)

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4.0 Local centre zone

Purpose

The purpose of the Local centre zone is to provide for a limited range of land uses and activities to service local needs.

It includes local shopping, local employment nodes, commercial, cafes and dining, entertainment and community services and residential development where it can integrate and enhance the fabric of the activity centre, but it is not the predominant use.

Suggested Overall Outcomes

The Local centre zone is the heart of Grantham - a vibrant market place featuring a mix of uses and activities that provide day-to-day services for the town, its broader community and visitors. It is focused on Anzac Avenue, and includes shops, cafes, arts and crafts, an art gallery, a museum and a hotel.

On weekends, the local centre is transformed into a significant local produce and industry market with temporary and permanent stall facilities under covered shade structures. The whole main street of Anzac Avenue has a rural town character and builds on the amenity of the nearby parks. Landmark entry structures mark "Fruit Stall" corner where William Street and Anzac Avenue meet.

William Street provides the ideal setting for cafes and a pleasant walk up to the Butter Factory Community Centre from the Local centre.

New residential development is not preferred in the Local centre zone. However it is acknowledged that some residents may wish to remain and therefore, if a dwelling house existed on the subject land on 10 January 2011, a new dwelling house or rebuilding of a dwelling house will require habitable floor levels are to be at least 300mm above the defined flood level. Where achievable and practical, commercial, business and retail uses are encouraged to rebuild having regard to the defined flood level, noting requirement to maintain equitable access.



History of the Singh Store

In 1926 Singh's Grantham General Store opened. It is understood that the store sold everything from a pin to an anchor and was run by an Indian hawker 'Jack' Nagina Singh. Singh's store, which closed in 1976, enjoyed the longest history of any store in Grantham.



Table of assessment

The following table identifies the levels of assessment for development in the Local centre zone:

Development	Assessment criteria
Exempt development	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level	
Market	
Park	
Roadside Stall	
Sales Office	
Temporary facility for the purposes of a shop, hotel, roadside stall, service station or service industry	
Temporary Use	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Community use	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code, except A2.2(a); and (v) Vehicle access, parking and on-site movement code. AO2.1, AO2.2 and PO4 of the Local centre zone code
Community care centre	
Place of Worship	
Food and drink outlet	Gatton Planning Scheme: (i) Commercial premises and shops code, except A1.1, A2.5, A3.1(a); (ii) Earthworks code except A1.2; (iii) Landscaping code; (iv) Lighting code; (v) Services and Infrastructure code except A2.2(a); and (vi) Vehicle access, parking and on-site movement code. AO2.1, AO2.2 and PO4 of the Local centre zone code
Health care services	
Hotel	
Office	
Service industry	
Shop	
Shopping centre	
Theatre	
Service station	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Service station and car wash code, except A1.1 and A2.5; (iii) Landscaping code; (iv) Lighting code; (v) Services and Infrastructure code except A2.2(a); and (vi) Vehicle access, parking and on-site movement code. AO2.1, AO2.2 and PO4 of the Local centre zone code
Compliance assessable development	Assessment Criteria
Operational works where not involving the physical alteration to a watercourse or floodway or where net filling does not exceed 50m ³ .	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code.

Development	Assessment criteria
Compliance assessable development	Assessment Criteria
Operational works for Reconfiguring a Lot	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code
Reconfiguring a Lot	Gatton Planning Scheme probable solutions: (i) Section (A) and (C) of the Reconfiguring a lot code, except A1.5, A2.1, A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code AO3.1 and AO3.2 of the Local centre zone code
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Local centre zone code

Performance outcomes	Acceptable Outcomes
PO1 Residential development is not preferred and is only provided where there is an acceptable level of flood immunity.	A01 The habitable floor level of residential development is 300mm above the defined flood level.
PO2 The height and setback of buildings and structures is similar to the height and setback of existing buildings and structures in the area	A02.1 Buildings and structures have a maximum height of 11m. A02.2 Buildings and structures are set back: (a) 0m from the street; (b) 0m from the rear boundary if next to a non residential use and 6m if next to a residential use; and (c) 0m from the side boundary if next to a non residential use and 3m if next to a residential use.
PO3 The size of proposed new lots reflect the intent of the precinct and are sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations	A03.1 Minimum lot size is 400m ² . A03.2 Minimum frontage is 10m.
PO4 Where practical, essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) are located above the defined flood level.	No Acceptable Outcome is provided.

5.0 Low impact industry zone

Purpose

The purpose of the Low impact industry zone is to provide for service and low impact industry uses.

It may include non-industrial and business uses that support the industrial and rural/agricultural activities of Grantham.

Activities considered appropriate in this zone are defined as low impact industry or service industry.

Suggested Overall Outcomes

This zone provides employment opportunities for the Grantham community, taking advantage of its proximity to the facilities offered by the Local centre which support a greater level of self containment of jobs for local residents.

Industry in this area is to be low impact, such as a vehicle workshop and a small engine repair workshop, and is not to affect the successful operation and enjoyment of surrounding uses.

Where achievable and practical, proposed uses are encouraged to build with regard to the defined flood level.

History of the Twomacs Garage

In 1952, Twomacs Garage was built alongside the then Warrego Highway. It was run by Tommy Grice and 'Mac' Crust. The garage and service station ceased trading on January 1, 2000.

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Table of assessment

The following table identifies the levels of assessment for development in the Low impact industry zone:

Development	Assessment criteria
Exempt development	
Car park	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level	
Market	
Park	
Sales office	
Temporary Use	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Low impact industry	Gatton Planning Scheme:
Research and technology facility	(i) Industrial development code except A1.1 , A2.5 A10.1, A11.1, A12.1;
Veterinary services	(ii) Landscaping code;
	(iii) Lighting code;
	(iv) Services and Infrastructure code except A2.2(a); and
	(v) Vehicle access, parking and on-site movement code;
	AO1.1, AO1.2 and PO3 of the Low impact industry zone code
Compliance assessable development	Assessment criteria
Operational works for reconfiguring a lot	Gatton Planning Scheme probable solutions:
	(i) Earthworks code except A1.2;
	(ii) Services and infrastructure code; and
	(iii) Vehicle access, parking and on-site movement code
Reconfiguring a Lot	Gatton Planning Scheme:
	(i) Section (A) and (C) of the Reconfiguring a lot code, except A2.1 , A2.2, A19.4(a), A34.1, A36.1, A36.2;
	(ii) Earthworks code except A1.2;
	(iii) Services and infrastructure code except A2.2(a); and
	(iv) Vehicle access, parking and on-site movement code
	AO2.1 and AO2.2 of the Low impact industry zone code
Operational works where not involving the physical alteration to a watercourse or floodway or where net filling does not exceed 50m³.	Gatton Planning Scheme probable solutions:
	(i) Earthworks code;
	(ii) Landscaping code;
	(iii) Services and Infrastructure code except A2.2(a)
	(iv) Vehicle access, parking and on-site movement code
Code assessable development	Assessment criteria
Service Station	Gatton Planning Scheme:
	(i) Service station and car wash code except A1.1;
	(ii) Landscaping code;
	(iii) Lighting code;
	(iv) Services and Infrastructure code except A2.2(a);
	(v) Vehicle access, parking and on-site movement code
	AO1.1, AO1.2 and PO3 of the Low impact industry zone code

Development	Assessment criteria
Code assessable development	Assessment criteria
Service industry	Gatton Planning Scheme: (i) Commercial premises and shops code; (ii) Landscaping code; (iii) Lighting Code; (iv) Services and Infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site movement code; AO1.1, AO1.2 and PO3 of the Low impact industry zone code
Showroom	
Warehouse	
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Low impact industry zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures are similar to the height and setbacks of existing buildings and structures in the area.	AO1.1 Buildings and structures have a maximum height of 11.0m above ground level. AO1.2 Buildings and structures are setback: (i) 6m from the street frontage; (ii) 0m from the side boundary with non residential uses and 3m from the boundary with residential use.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 Minimum lot size is 1,000m ² . AO2.2 Minimum frontage is 20m.
PO3 Where practical, essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) are located above the defined flood level.	No Acceptable Outcome is provided.

The telephone exchange

In 1936, Grantham's manual telephone exchange closed. The first Royal Automatic Telephone Exchange in Queensland was installed in Grantham in a building in the railway yard near the railway bridge. In later years it was relocated to premises in William Street.



6.0 Recreation and open space zone

Purpose

The purpose of the Recreation and open space zone is to provide for a range of sporting, recreation, leisure, cultural and educational activities.

The zone provides for local, district and regional scale parks which serve the recreation needs of residents and visitors and may include areas for conservation.

Areas within the zone such as parks, playing fields and playgrounds are generally accessible to the public; however, access may be limited in certain areas and at certain times.

Where required to meet community needs, development may include built structures, such as shelters, amenity facilities, picnic tables, clubhouses, gymnasiums and tennis courts, and other infrastructure to support the activities, provide safe access and support essential management.

Suggested Overall Outcomes

This zone provides for a range of parks and open space areas, used for a variety of recreation and sporting activities, which support the residents of Grantham and surrounding areas. Some of these activities are organised and formal, like sporting clubs, but others are informal, such as playgrounds, and picnic areas. These areas also provide other facilities that meet community needs, such as shelters, picnic tables and clubhouses.

The zone also includes some areas which contain vegetation and other environmental values that are to be protected including the foraging habitat of the Glossy-black cockatoo within the park adjacent to Bowtells Road in the north-western corner of the site.



Sporting history in Grantham

Grantham has a strong and proud sporting history. Rugby League football was in full swing by 1913 and the Grantham Rugby League team went on to win the Lockyer premiership from 1919 to 1922. In 1944, a meeting of parents decided to form the Grantham Boys Cricket Club. They played their first game at the Grantham Recreation Ground against the Gatton Convent on March 10, 1945, and won by 23 runs. Grantham's soccer team the 'Lockyer Stars' continued playing through the 1960s and 1970s.



A large park established on Victor Street acts as a new focal space for the Grantham community. This park caters for a range of recreational needs, such as a cricket club and AFL club, rugby league and soccer providing a home to re-establish the previously prominent sports of Grantham. This park also caters for a skate park, picnic, BBQ facilities, walking and cycling tracks supporting the local community.

Harris Street Precinct

The land in the Harris Street precinct is intended to form a creekside park adjacent to Sandy Creek. Whilst not preferred given the history of flooding in this location, it is acknowledged that some residents may wish to remain and therefore if a dwelling house existed on the subject land on 10 January 2011, a new dwelling house or rebuilding of a dwelling house will require habitable floor levels which are to be at least 300mm above the defined flood level.

Table of assessment

The following table identifies the levels of assessment for development in the Recreation and open space zone:

Development	Assessment criteria
Exempt development	
Car park	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level.	
Community use if complying with AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code.	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level if located in the Harris Street Precinct	
Market	
Outdoor sport and recreation	
Park	
Temporary Use	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Food and drink outlet	Gatton Planning Scheme: (i) Commercial premises and shops code except A1.1; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code. AO1.1 and AO1.2 of the Recreation and open space zone code.
Compliance assessable development	Assessment Criteria
Operational works (except for the Harris Street Precinct)	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Services and infrastructure code; and (iii) Vehicle access, parking and on-site movement code

Development	Assessment criteria
Compliance assessable development	Assessment criteria
Reconfiguring a Lot except for the Harris Street Precinct	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> i) Section (A) and (C) of the Reconfiguring a lot code, except A2.1, A2.2, A19.4(a), A34.1, A36.1, A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code <p>AO2.1 of the Recreation and open space zone code</p>
Code assessable development	Assessment criteria
Caretaker's accommodation (if not exempt)	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code. <p>AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code</p>
Community use (if not exempt)	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code. <p>AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code</p>
Indoor sport and recreation Major sport, recreation and entertainment facility	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> (i) Landscaping code; (ii) Lighting code; (iii) Earthworks code (iv) Services and Infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site movement code <p>AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code</p>
Impact assessable development	Assessment criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Recreation and open space zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures are similar to the height and setbacks of existing buildings and structures in the area..	<p>AO1.1 Buildings and structures have a maximum height of 8.5m above natural ground level (unless they are light towers associated with park and outdoor sport and recreation)</p> <p>AO1.2 Buildings and structures are setback 6m from all street frontages.</p>
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 Minimum lot size is 4,000m ² .
PO3 Development does not compromise the protection of the Glossy-black cockatoos foraging habitat.	AO3.1 Foraging habitat is protected in accordance with the Environmental Protection area identified on Map 4 - Precinct Plan.

7.0 Residential living zone

Purpose

The purpose of the Residential living zone is to provide for predominantly dwelling houses supported by community uses and small-scale services and facilities that cater for local residents.

Suggested Overall Outcomes

The Residential living zone is represented by two precincts of varying lot sizes.

Residential living 1 precinct

The Residential living 1 precinct provides typical town sized lots, generally with a minimum lot size of 1000m² in area and accommodates mainly dwelling houses, some of which have been relocated from other areas of the town.

While this precinct includes newer parts of Grantham, it is well integrated with the original parts of the town and is located close to the shops and facilities of the local centre, the employment opportunities of the low impact industrial area, the community centre, the school and the Victor Street park.

Lots in this precinct are intended to be sewered and connected to the town water supply, and no further reconfiguring of lots beyond that established in the initial development of the area is intended. Lots smaller than 1000m² may be established within this zone however will be subject to an impact assessable application.

The first land sales in Grantham

In 1886, the first land sales established Grantham Town in the Lockyer Valley. The town was named by the first white settlers after their former home town of Grantham in Lincolnshire, 108 miles (174km) north of London. Sheep grazing was the main industry although more orchards were established and dairying became a major industry by the 1890s.

i



RESIDENTIAL LIVING

Residential living 2 precinct

This Residential living 2 precinct provides for larger lots, generally with a minimum lot size of 2,000m² in area, and accommodates mainly dwelling houses, some of which have been relocated from other areas of the town.

It sits between the Residential living 1 precinct and the Rural residential zone and provides a transition between those precincts. The Victor Street park and the school are nearby.

Lots in this precinct may not be sewered but are connected to the town water supply, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.

Table of assessment

The following table identifies the levels of assessment for development in the Residential living zone:

Development	Assessment criteria
Exempt development	
Community residence	
Dwelling house in accordance with the Residential living zone code	
Operational works for reconfiguring a lot if complying with the probable solutions of the following codes of the Gatton Planning Scheme	
(i)	Earthworks code except A1.2;
(ii)	Services and Infrastructure code except A2.2(a); and
(iii)	Vehicle access, parking and on-site movement code
Park	
Reconfiguring a lot in the residential living 1 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Residential living zone code;
(ii)	lots are owned by Council; and
(iii)	in accordance with the lot layout master plan to be determined by Council
Reconfiguring a lot in the residential living 2 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Residential living zone code;
(ii)	lots are owned by Council; and
(iii)	in accordance with the lot layout master plan to be determined by Council
Sales office	
Temporary use	
Utility installation	
Self assessable development	Assessment Criteria
Home based business	Gatton Planning Scheme:
	(i) Home based business code; or
	(ii) If for bed and breakfast accommodation, the Bed and breakfast accommodation code; and
	(iii) Services and Infrastructure code except A2.2(a).

Development	Assessment criteria
Self assessable development	Assessment criteria
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code
Code assessable development	Assessment criteria
Reconfiguring a Lot (if not exempt) ie. Lots not complying with exempt criteria are code assessable.	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a lot code, except A1.5, A2.1, A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code; (v) Potential Bushfire Risk Area Overlay Code; and (vi) Steep and Unstable Land Overlay Code AO2.1 and AO2.2 of the Residential living zone code
Operational works for reconfiguring a lot (if not exempt)	Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Residential living zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures reinforces the low intensity, semi-rural character of the zone and are similar to the height and setback of existing buildings and structures.	AO1.1 Buildings and structures have a maximum height of 8.5m above natural ground level. AO1.2 Buildings and structures are setback a minimum: (i) 6m from the street frontage and from the rear boundary; (ii) 3m from the side boundary.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 (i) In the residential living 1 precinct minimum lot size is 1,000m ² ; (ii) In the residential living 2 precinct minimum lot size is 2,000m ² ; AO2.2 (i) In the residential living 1 precinct minimum frontage is 20 m; (ii) In the residential living 2 precinct minimum frontage is 30 m.

8.0 Rural residential zone

Purpose

The purpose of the Rural residential zone is to provide for residential development on large lots where the local government infrastructure and services may not be provided and where the intensity of residential development is generally dispersed.

Suggested Overall Outcomes

Rural residential 1 precinct

This precinct contains larger lots generally with a minimum lot size of 3,000m² in area and includes lots which act as a transitional zone between the Community purposes zone (showgrounds precinct) and the smaller residential living lots. It provides for a semi-rural lifestyle, still close to the town's facilities.

Where these lots are close to the showgrounds precinct, houses, structures and recreation areas should be located far enough away so that residents maintain their rural residential amenity. In this regard a 30m buffer is proposed to the showground precinct. Homes should still front Bowtells Road but should be setback back 30m from the front boundary.

A 30m buffer is also required for lots adjacent to the western boundary. This buffer is required for bushfire protection and therefore dwellings are to be located within a nominated building envelope outside of the buffer nominated on Map 4 - Land Use Plan.

Because of the larger lot sizes, this precinct also provides for some low intensity rural use, such as horse keeping. For the lots close to the showgrounds precinct, these uses may have a direct relationship with those facilities.

Lots in this precinct are connected to the town water supply but are not sewered, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.



Rural residential 2 precinct

This precinct contains larger lots generally with a minimum lot size of 10,000m² in area and acts as an interface between the farming areas in either the Rural agriculture precinct of this Development Scheme or the Rural agriculture zone in the Gatton Planning Scheme to the west of the town and the residential precincts to the east. This precinct provides for a semi-rural lifestyle, with residents enjoying the benefits of a rural environment as well as the benefits of being close to the towns facilities.

Buildings on lots which adjoin farming lands are to be located far enough away from these uses to ensure that the lifestyle of residents is not affected. A 30m buffer is also required for lots adjacent to the western boundary. This buffer is required for bushfire protection and therefore dwellings are to be located within a nominated building envelope outside of the buffer nominated on Map 2 - Land Use Plan.

Because of the larger lot sizes, this precinct provides for some low intensity rural uses, such as horse keeping. For the lots close to the showgrounds precinct, these uses may have a direct relationship with those facilities.

Lots in this precinct are unlikely to be seweraged or connected to the town water supply or sewer, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.

Table of assessment

The following table identifies the levels of assessment for development in the Rural residential zone:

Development	Assessment criteria
Exempt development	
Community residence (within any applicable building location envelope) complying with the Rural residential zone code	
Dwelling house (within any applicable building location envelope) complying with the Rural residential zone code	
Operational works for reconfiguring a lot if complying with the probable solutions of the following codes of the Gatton Planning Scheme:	
(i)	Earthworks code except A1.2;
(ii)	Services and Infrastructure code except A2.2(a); and
(iii)	Vehicle access, parking and on-site movement code
Park	
Reconfiguring a lot in the rural residential 1 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Rural residential zone code;
(ii)	lots are owned by Council;
(iii)	in accordance with the lot layout master plan to be determined by Council; and
(iv)	resulting lots contain a building location envelope at least 30 metres from the boundary of the Rural Agriculture or Showgrounds precincts
Reconfiguring a lot in the rural residential 2 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Rural residential zone code;
(ii)	lots are owned by Council;
(iii)	in accordance with the lot layout master plan to be determined by Council; and
(iv)	resulting lots contain a building location envelope at least 30 metres from the boundary of the Rural Agriculture or Showgrounds precincts
Sales office	
Temporary use	
Utility installation	

Self assessable development		Assessment Criteria
Home based business		Gatton Planning Scheme: (i) Home based business code; (ii) If for bed and breakfast accommodation, the Bed and breakfast accommodation code; and (iii) Services and Infrastructure code except A2.2(a)
Operational works not associated with a material change of use		Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code.
Compliance assessable development		Assessment criteria
Caretaker's accommodation		Gatton Planning Scheme: (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code Rural residential zone code
Code assessable development		Assessment criteria
Reconfiguring a Lot (if not exempt)		Gatton Planning Scheme: (i) Section (A) of the Reconfiguring a lot code, except A2.1 , A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code; (v) Potential Bushfire Risk Area Overlay Code; and (vi) Steep and Unstable Land Overlay Code AO1.1 , AO2.1 and AO2.2 of the Rural residential zone code
Wholesale nursery		Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code AO1.1, AO1.2, AO3.1 and AO3.2 of the Rural residential zone code
Operational works for reconfiguring a lot (if not exempt)		Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code
Impact assessable development		Assessment criteria
Any other development not listed in this table.		Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Rural residential zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures minimises impacts on the low intensity, rural residential character of the precinct.	<p>A01.1 Buildings and structures have a maximum height of 8.5m from natural ground level.</p> <p>A01.2 Unless otherwise required under AO3.1 or AO3.2, buildings and structures are minimum setback:</p> <ul style="list-style-type: none"> (i) 10m from the street frontage; (ii) 6m from the rear boundary; (iii) 3m from the side boundaries
PO2 The size of proposed new lots reflect the intent of the particular precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations	<p>A02.1</p> <ul style="list-style-type: none"> (i) In the rural residential 1 precinct minimum lot size is 3,000m². (ii) In the rural residential 2 precinct minimum lot size is 10,000 m². <p>A02.2</p> <ul style="list-style-type: none"> (i) In the residential living 1 precinct minimum frontage is 40m; (ii) In the residential living 2 precinct minimum frontage is 50m.
PO3 Buildings and structures are located so as to minimise conflicts and potential impacts (such as bushfire) on amenity with the nearby showgrounds and rural land.	<p>A03.1 Buildings are setback a minimum of 30 metres from the boundary of the Showgrounds precinct in the Community purposes zone and 30 metres from the Rural Agriculture zone on the western boundary.</p> <p>A03.2 Buildings, structures and outdoor recreation areas are located within a building location envelope located a minimum of 30metres from any boundary with the rural zone.</p>

Land Sales

On 10 May 1910, one of the first important land sales with subdivisions from the Grantham Estate occurred. In the town area 50 business and residential sites went under the hammer, while outside the main town a similar number of blocks of agricultural land were offered. They included one showing outlines of buildings on Grantham Station and another depicting an 80-acre homestead block.



9.0 Rural zone

Purpose

The purpose of the Rural zone is to provide for a wide range of rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping and other primary production activities.

The Rural zone will also provide opportunities for non rural uses that are compatible with agriculture, the environment, and the landscape character of the rural area where they do not compromise the long-term use of the land for rural purposes.

The Rural zone is intended to protect or manage significant natural features, resources and processes, including the capacity for primary production.

Suggested Overall Outcomes

Rural agriculture precinct

This precinct is to achieve the same outcomes as the Rural agriculture zone in the Gatton Planning Scheme. These areas will remain in large lots suitable for farming purposes.

The assessment categories and relevant assessment criteria for the Rural agriculture zone in the Gatton Planning Scheme apply in the precinct.

Rural general precinct

This precinct is to achieve the same outcomes as the Rural general zone in the Gatton Planning Scheme. These areas will remain in large lots suitable for farming purposes.

The assessment categories and relevant assessment criteria for the Rural general zone in the Gatton Planning Scheme apply in the precinct.



Using this Land use plan

This land use plan has been written using the Queensland Planning Provisions v2.0 developed by the Department of Local Government and Planning to facilitate the inclusion of this Development Scheme into Council's new Sustainable Planning Act 2009 planning scheme at the time when that scheme is developed.

The process for determining a level of assessment is:

1. Identify the type of development proposed by referring to the relevant definitions.
2. Identify the Land Use Plan zone and applicable precinct the site is located in by referring to Map 2 - Land Use Plan, Map 3- Land Use Plan Inset and Map 4 - Precinct Plan.
3. Determine the level of assessment by referring to the table of assessment in the relevant zone/ precinct of the Land Use Plan.

The Development Scheme states the category of development for all development in the Reconstruction Area. The categories of development are

(a) Exempt development

If development is exempt in this Development Scheme through reference to a plan or map contained in the Development Scheme, the Minister has discretion to decide if a proposal is consistent with that plan or map if there are minor variations involved.

Some exempt development in this Land Use Plan is subject to certain criteria for exemption. If development does not comply with the identified criteria, the development becomes code assessable unless an alternative level of assessment is specifically identified in the Table of assessment. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, including identified codes of the Gatton Planning Scheme.

(b) Self assessable development

Self assessable development complies with the Land Use Plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable precinct code. If development does not comply with these performance outcomes or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, including identified codes of the Gatton Planning Scheme.

(c) Compliance assessable development

Compliance assessable development complies with the Land Use Plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable zone code. If development does not comply with these performance outcomes or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, identified codes of the Gatton Planning Scheme.

(d) Code assessable development

Code assessable development complies with the Land Use Plan if it complies with:

- the intent or purpose of the zone and/or precinct in which it is located;
- the probable solutions of the identified codes of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable zone code under this development scheme.

If a development meets all the acceptable outcomes / probable solutions of the relevant codes, then the development is taken to comply with the intent or purpose of the zone / precinct, as well as with the performance / specific outcomes of the relevant codes. If a development does not meet all of the acceptable outcomes / probable solutions of the relevant codes the development is Impact assessable.

(e) Impact assessable development

Impact assessable development complies with the Land Use Plan for if it complies with:

- the intent or purpose of the zone and /or precinct in which it is located;
- the probable solutions of the relevant code of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable zone code under this Development Scheme .

If a development meets all the acceptable outcomes / probable solutions of the relevant codes, then the development is taken to comply with the intent or purpose of the precinct, as well as with the performance / specific outcomes of the relevant codes. If a development does not meet all of the acceptable outcomes/ probable solutions of the relevant codes, then it will be assessed on its individual merits.

Definitions

Terms used in this Land Use Plan have the same meaning as set out in the Queensland Planning Provisions (v2.0) or the *Sustainable Planning Act* 2009. However, where:

- (a) a use which is mentioned in a Gatton Planning Scheme code referred to in this Land Use Plan; or
- (b) a term referred to in this Land Use Plan;

is not defined in the Queensland Planning Provisions (v2.0), the Gatton Planning Scheme definition applies.

If they are not defined therein, they have their plain English meaning.

Grantham State School Site

Should the Grantham State School relocate to a different site at any time during the life of this Land Use Plan, the original school site (included in the community purposes zone at the commencement of this Land Use Plan) is to be taken to be included in the residential living zone. The intent, table of assessment and code provisions of the residential living zone will thereafter apply to the original school site instead of the Community precinct provisions.

Defined Flood Level

The defined flood level for this Land Use Plan is as determined by Lockyer Valley Regional Council having regard to the flooding on 10 January 2011. Council may adopt both an interim and final level following further studies.

Relationship to Gatton Planning Scheme

This Land Use Plan refers to or relies upon various provisions of the Gatton Planning Scheme. To the extent there is any inconsistency between this Land Use Plan and those provisions, this Land Use Plan prevails.

For the purpose of this land use plan, any reference in an identified code of the Gatton Planning Scheme to:

- (a) a zone, means a zone or precinct of the land use plan;
- (b) the Urban residential zone, means the Residential living 1 precinct of the land use plan;
- (c) the Park residential Zone, means the Residential living 2 precinct and Rural residential 1 precinct;
- (d) the Rural residential Zone, means the Rural residential 2 precinct;
- (e) the Commercial Zone, means the Local Centre Zone of the land use plan;
- (f) the Industry Zone, means the Low Impact Industry Zone of the land use plan;
- (g) the Open Space and Recreation Zone, means the Recreation and Open Space Zone of the land use plan;
- (h) the Community Facilities Zone, means the Community purposes zone of the land use plan; and
- (i) a Rural general or Rural agriculture zone, means the Rural Agricultural precinct or the Rural general precinct of the land use plan.

Building work

Building work as defined in the *Sustainable Planning Act 2009* is not regulated by this Land Use Plan.

Plumbing and drainage Work

Plumbing and drainage work as defined in the *Sustainable Planning Act 2009* is not regulated by this Land Use Plan.

Gatton Planning Scheme

References in the Development Scheme to the Gatton Planning Scheme refers to the Planning Scheme for the former Gatton Shire commencing on 1 July 2007 and any subsequent amendments.

Road, waterway and reclaimed land

Where a road, waterway or reclaimed land in the Reconstruction Area is not covered by a zone, the following applies:

- (a) if adjoined on both sides by land in the same zone—the road, waterway or reclaimed land is in the same zone as the adjoining land; or
- (b) if adjoined on one side by land in a zone and adjoined on the other side by land in another zone—the road, waterway or reclaimed land is in the same zone as the adjoining land when measured from a point equidistant from the adjoining boundaries; or
- (c) if road, waterway or reclaimed land is adjoined on one side only by land in a zone—the entire waterway or reclaimed land is in the same zone as the adjoining land.



PART 2

INFRASTRUCTURE

PLAN



Infrastructure Plan

Infrastructure requirements to support the delivery of the Development Scheme for Grantham will be determined by Council as part of the staged detailed design of Council owned land and as part of the development assessment process for non-Council owned land.

Infrastructure will include:

- Roads
- Water
- Sewerage
- Stormwater management
- Parks
- Electricity supply
- Telecommunications
- Community facilities

Listed below is the infrastructure currently identified for the Grantham Reconstruction Area.

Infrastructure	Description of works
Roads	New internal roads to service the new residential area
	New access road between Gatton -Helidon Road and the new residential area over the existing railway line
Water supply	Water supply works for development that connects to existing networks
Sewerage	Provision of package sewerage plant to service the new development
Stormwater Management	New works linking with external stormwater management works
Parks	Provision of new parkland
Electricity Supply	Works as required by the relevant provider
Telecommunications	Provision of telecommunications to the new residential area
Community facilities	Facilities as agreed by the relevant provider

Local Infrastructure

Local infrastructure will include all internal works and external connections required to deliver the development including:

- a. Roads (including internal local roads and external access roads required to service the new development)
- b. Water Supply (including internal and external works to connect to existing infrastructure networks)
- c. Sewerage (including works to proposed new sewerage treatment plant)
- d. Stormwater Management (including works to connect the existing stormwater systems)
- e. Parks (including the delivery of a recreational parkland to service the development)

- f. Electricity Supply (including internal and external works to connect to existing infrastructure networks)
- g. Telecommunications (including internal and external works to connect to existing infrastructure networks)
- h. Community facilities (including community facility sites).

Infrastructure Requirements

The land owner will be required to deliver all local infrastructure required to service the new development.

The Department of Transport and Main Roads is constructing the new railway line crossing connecting Gatton -Helidon Road to the new residential area.

Road design should take into consideration emergency access.

A future electrical substation is likely to be required in the vicinity of the wastewater plant. Actual location and timing of this provision is to be determined by the provider.

The specific infrastructure requirements required for the proposed development will be subject to further detailed infrastructure investigations that will occur as the detailed design is completed and as the development continues. The infrastructure requirements and delivery responsibilities may be amended to reflect the outcomes of these investigations.

Indicative infrastructure plans for roads, water supply, sewerage and stormwater management are included for advisory purposes only.



The History of Infrastructure in Grantham

In 1866, the railway line was built through Sandy Creek (the original name for the siding at Grantham). The first platform at Grantham was constructed in 1875. In 1914 the railway line from Grantham to Helidon was duplicated and in 1936 electricity was installed at the railway station.

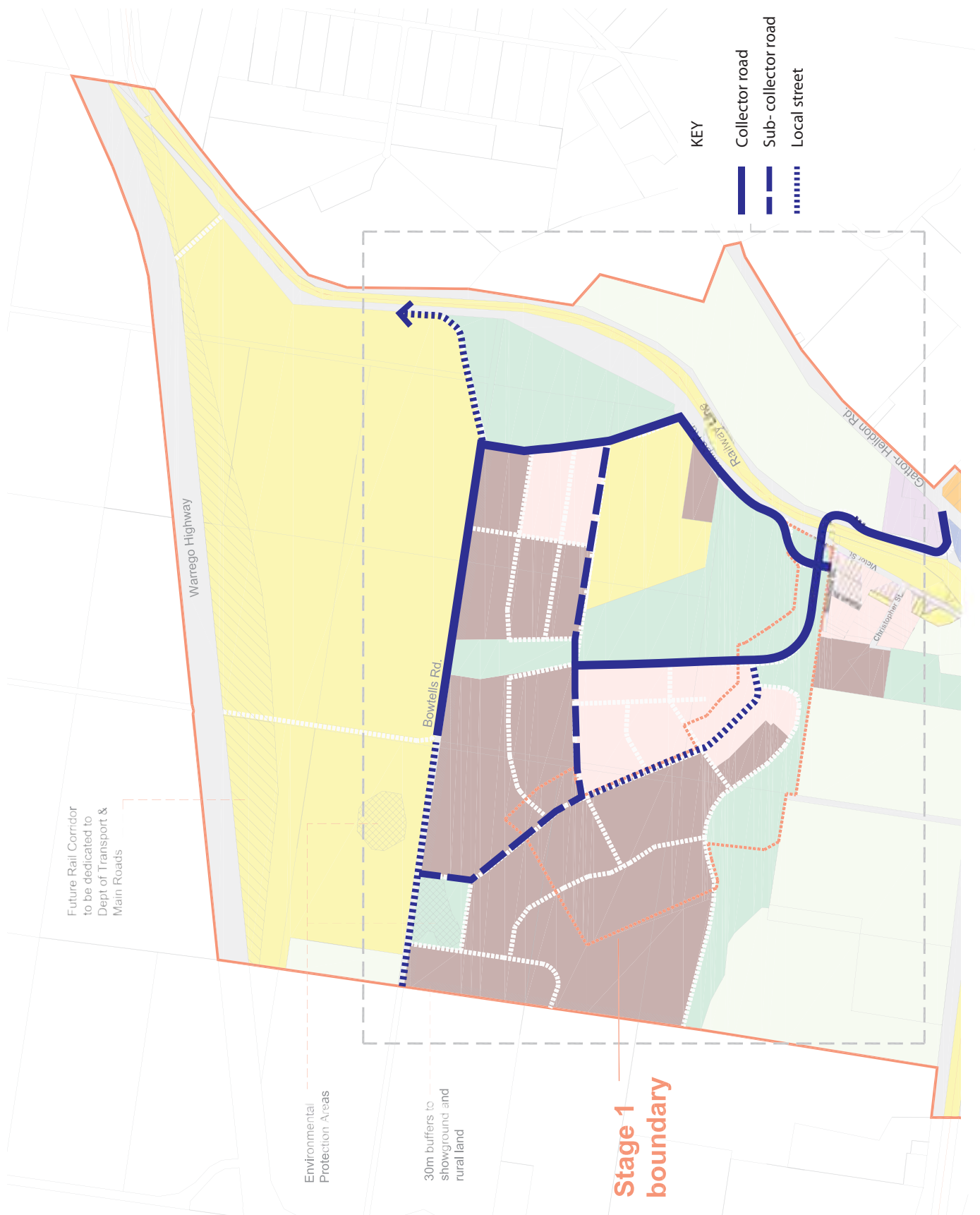
In 1927, a loan was available for water supply for Grantham residents. Bores and windmills with troughs were installed in Gatton, Helidon and Anzac Avenue, Grantham.

The first street lights were switched on in Grantham in August 1936.

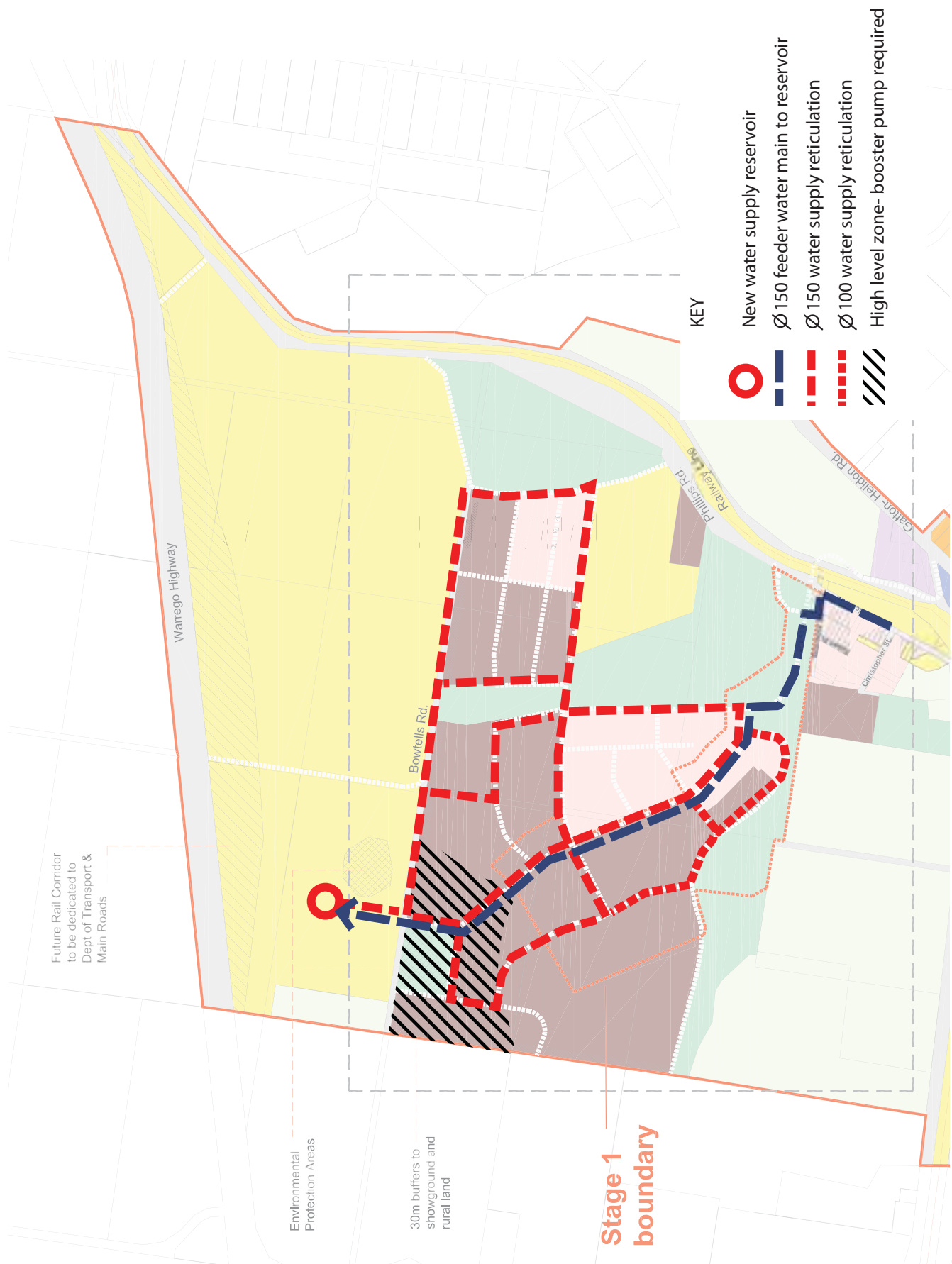
In 1968, the Warrego Highway was rerouted through Grantham and in 1989 the \$10 million Gatton bypass commenced operation and traffic was diverted away from Grantham.

In 1979, the then Gatton Shire Council agreed to borrow \$13,333 to construct the first public toilets alongside the Warrego Highway at Grantham.

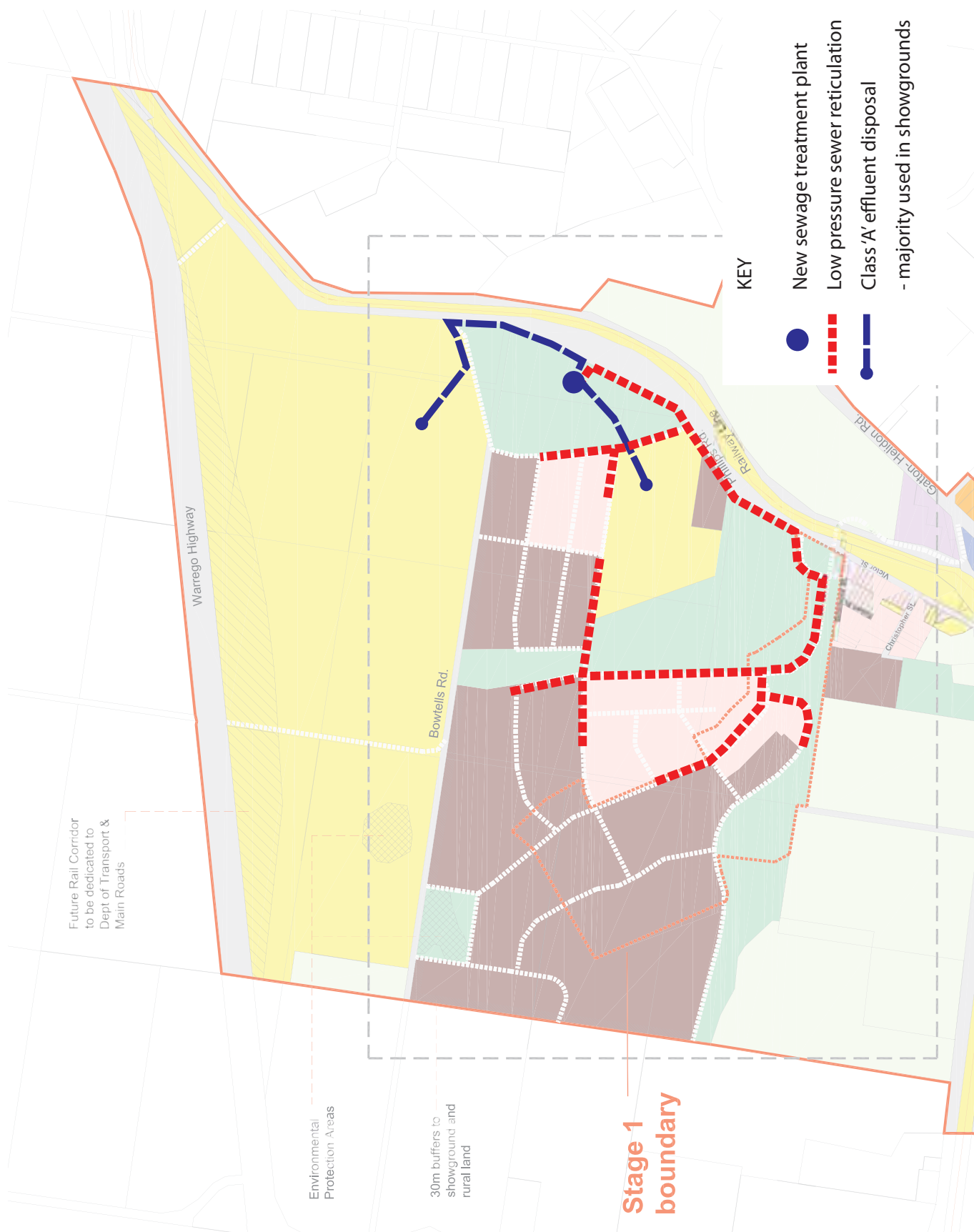
MAP A - ROADS



MAP B - WATER SUPPLY



MAP C - SEWER



MAP D - STORMWATER MANAGEMENT





PART 3

IMPLEMENTATION

STRATEGY



Implementation Strategy

The QldRA Act requires a Development Scheme to include an implementation strategy to achieve the main purposes of the QldRA Act for the Reconstruction Area, to the extent that they are not achieved by the land use plan or infrastructure plan. In this regard, the land use plan and infrastructure plan largely address the main purposes of the QldRA Act to facilitate the effective and efficient rebuilding and recovery of affected communities.

Fulfilling the ultimate vision for the Grantham community is likely to take many years and that is why the immediate priorities are outlined in the two (2) year vision which reflects many of the critical reconstruction needs of the community over the next two (2) years. Whilst contextualised as a 2 year vision, it is likely that the majority of the two (2) year vision with respect to the relocation of displaced residents is likely to occur much sooner with Council having commenced construction on the first stage of the new development in June 2011 in order to ensure that some residents will be in their new homes by Christmas 2011.

Like many things within our society, changes and evolution will occur during the life of this Development Scheme including; technologies, prevailing economic conditions, socio-demographic trends and attitudes and preferences towards housing.

Any changes or evolution as a result of these circumstances can be reflected in a revised master plan for Grantham through any future reviews of Council's Planning Scheme. The Development Scheme has been written using the standardised Queensland Planning Provisions developed by the Department of Local Government and Planning and this will facilitate the transition, review and refinement of the Development Scheme into Council's future planning scheme.

To facilitate Council's Relocation Policy (land swap program) and the costs associated with facilitating this program, it is intended that sufficient additional development over and above that required for the land swap program will be permitted within the Reconstruction Area, on the basis that the costs associated with the land swap program are borne by Council and recouped where possible through additional development yield.

Council released details of its land swap program on 4 May 2011. Specifically, the program involves a voluntary land swap arrangement between Council and residents from Grantham, Murphy's Creek, Postman's Ridge, Hellidon and Withcott who were devastated by the January 2011 flash flooding. The program being facilitated by Council will involve participants receiving a 'like for like' land parcel in the new part of town being developed by Council equivalent in size to their existing property. Council has advised that lots will be awarded under a formalised ballot system where residents will have the opportunity to select preferences for a new lot. Council has nominated that the land swap program will be open in mid 2011 with further nominations open in late 2011 and early 2012.

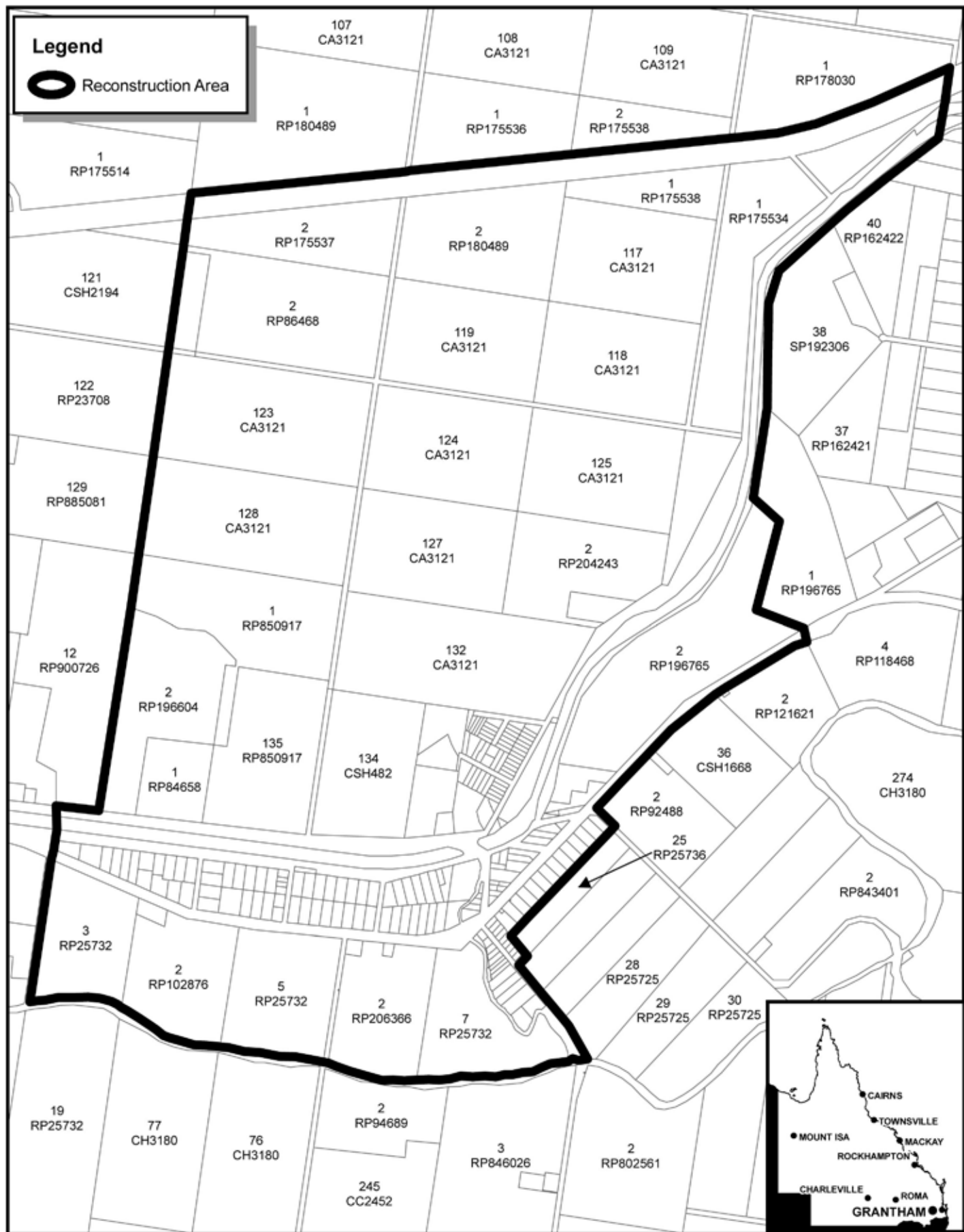
Residents who elect to participate in the land swap program being administered by Council or who elect to rebuild on their current land will be responsible for all housing construction costs including the relocation of housing. It should be noted that some financial assistance may be provided to affected residents who participate in Council's land swap program from the Premier's Disaster Relief Appeal.

This implementation strategy responds to the challenge of delivering a land swap program over an extended period of time by removing regulatory hurdles and providing flexibility in the final development form. Collectively, this Development Scheme will ensure that together the community, Council and the Authority will rebuild a stronger, more resilient Grantham.



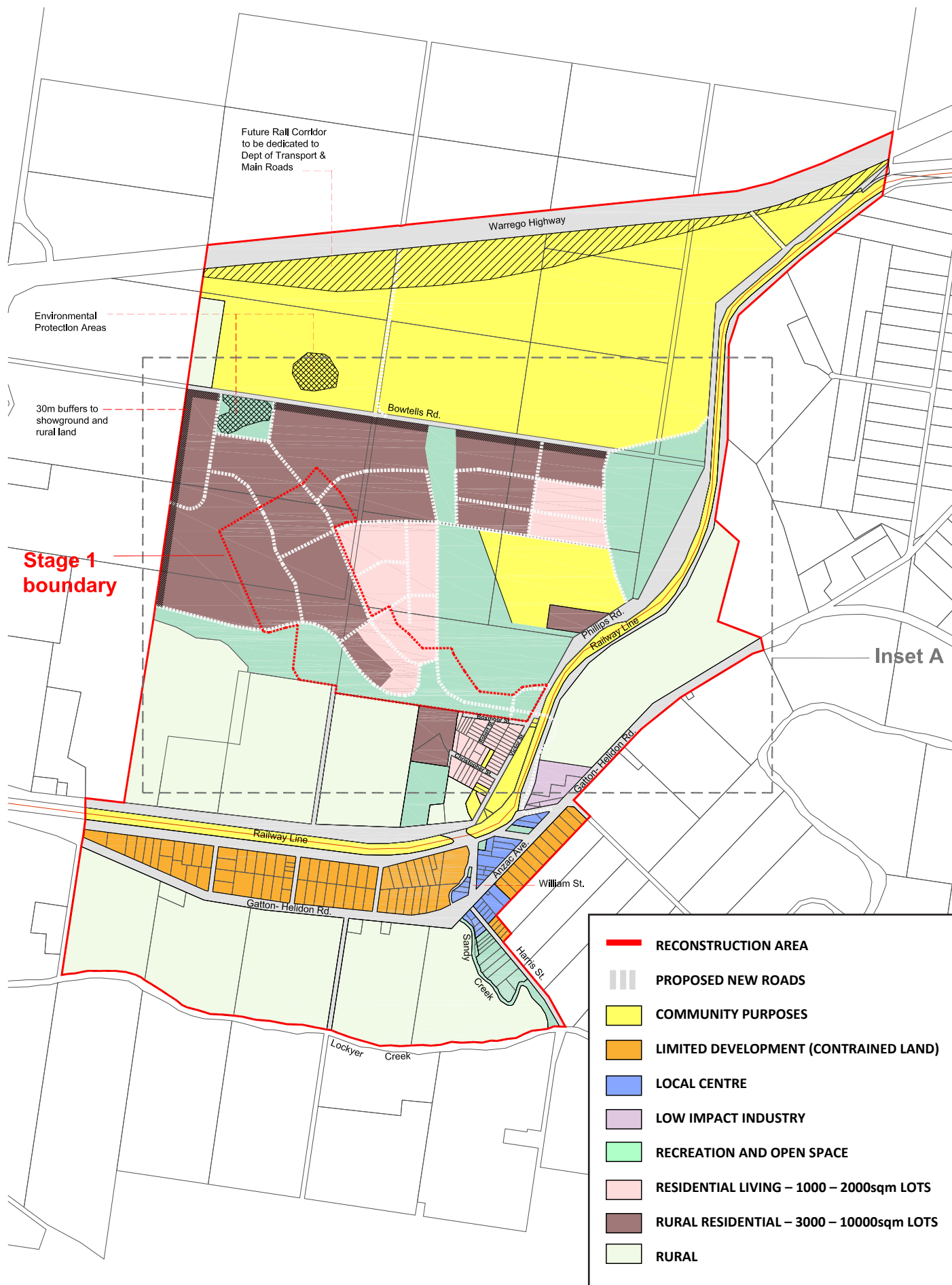
REFERENCE PLANS





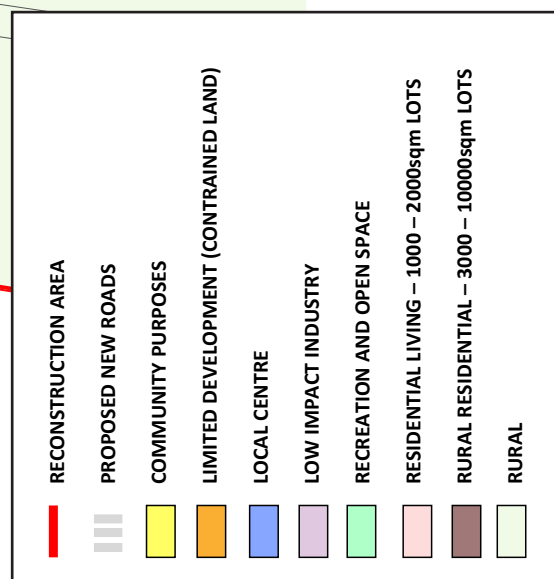
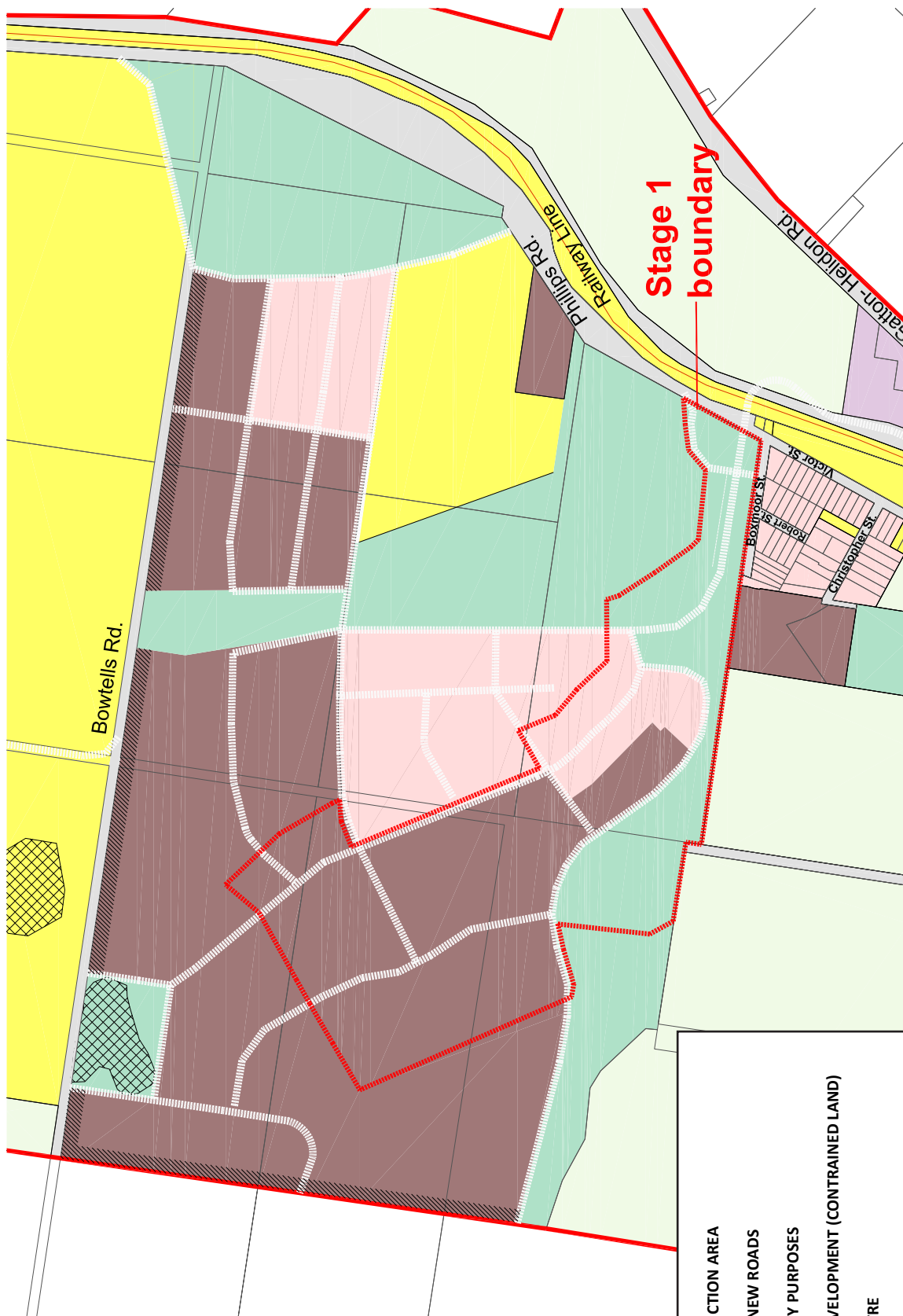
MAP 1 - GRANTHAM RECONSTRUCTION AREA





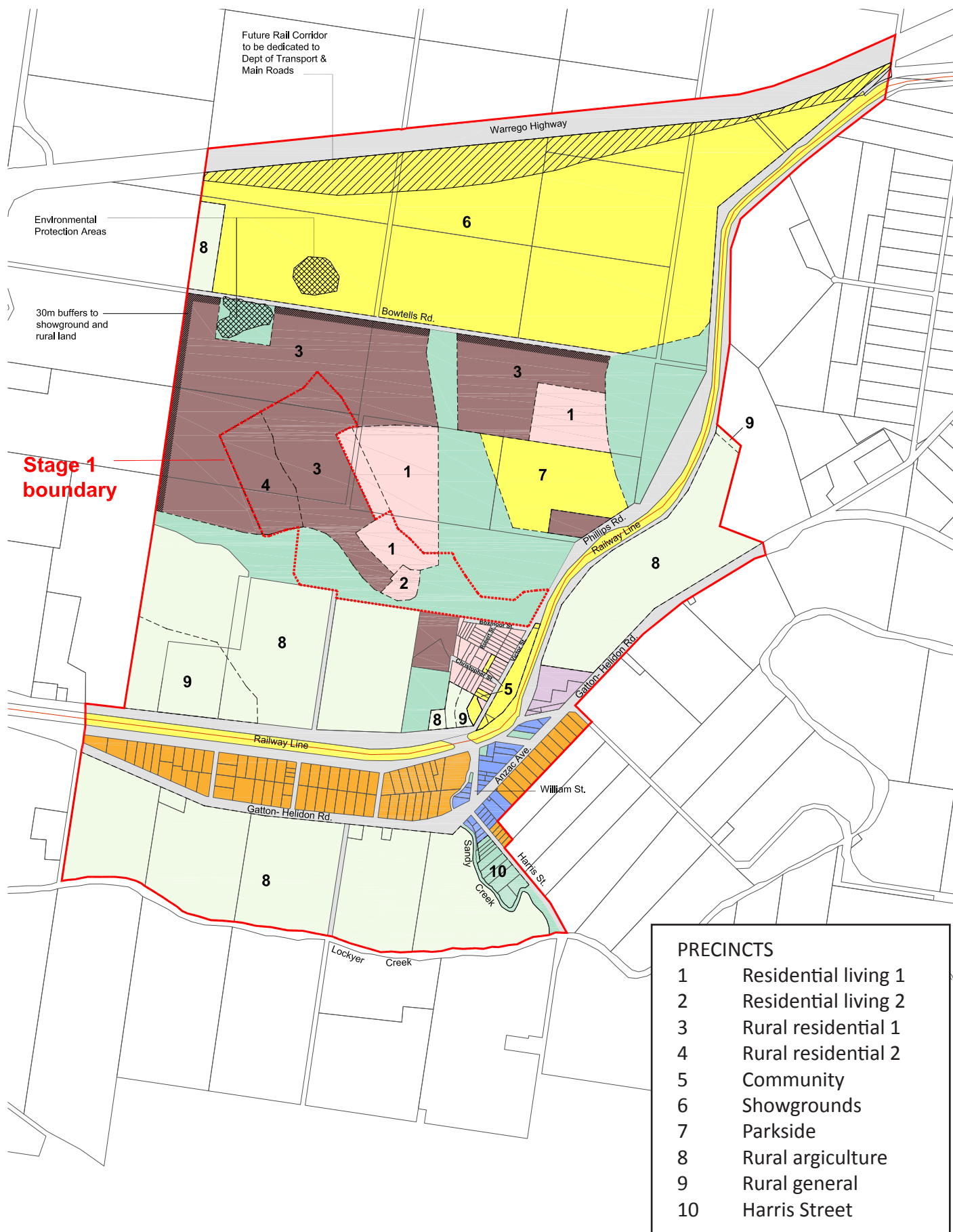
MAP 2 - GRANTHAM RECONSTRUCTION AREA Land Use Plan





MAP 3 GRANTHAM RECONSTRUCTION AREA Land Use Plan - Inset A





MAP 4 - GRANTHAM RECONSTRUCTION AREA Precinct Plan



Notes

Acknowledgements

The Queensland Reconstruction Authority acknowledges the following partners in the creation of this Development Scheme for the Grantham Reconstruction Area.

Members of the Grantham and Lockyer Valley community
Lockyer Valley Regional Council and their consulting team

State Agencies

Department of Local Government and Planning
Department of Environment and Resource Management
Department of Communities
Department of Community Safety
Department of Employment, Economic Development and Innovation
Department of Premier and Cabinet
Department of Transport and Main Roads
Education Queensland
ENERGEX Ltd
Queensland Health
Queensland Rail
Board for Urban Places

The Authority's consultants

PLACE Design Group
Buckley Vann Town Planning Consultants
MWH Consulting Engineers
Clayton Utz
GeoTest
EpiCon Property
The Timelapse Company

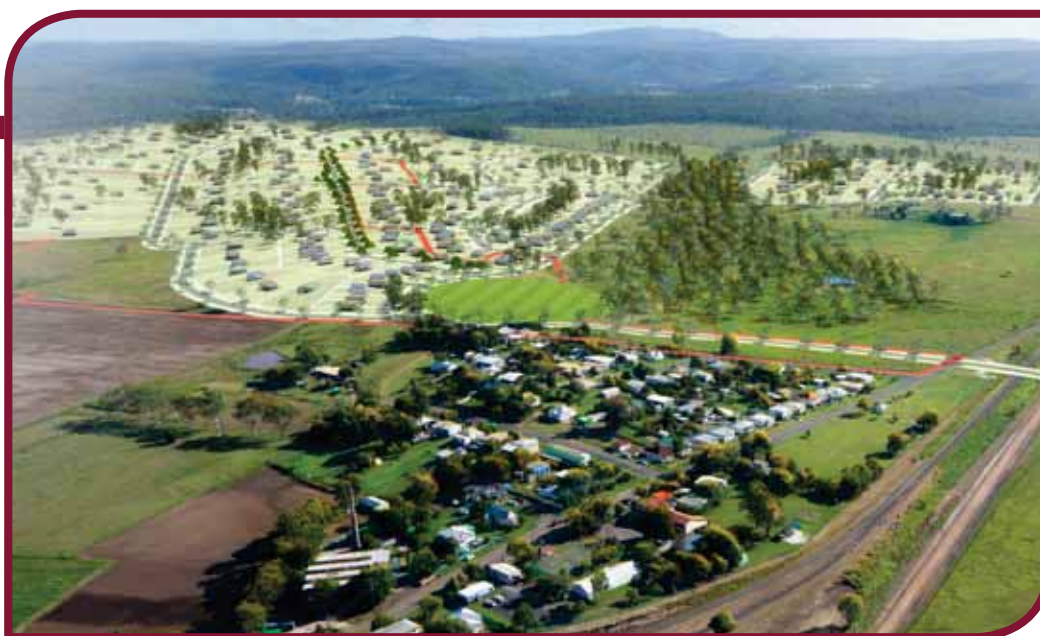
Contributors

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Rebuilding Grantham together



Submitted Scheme

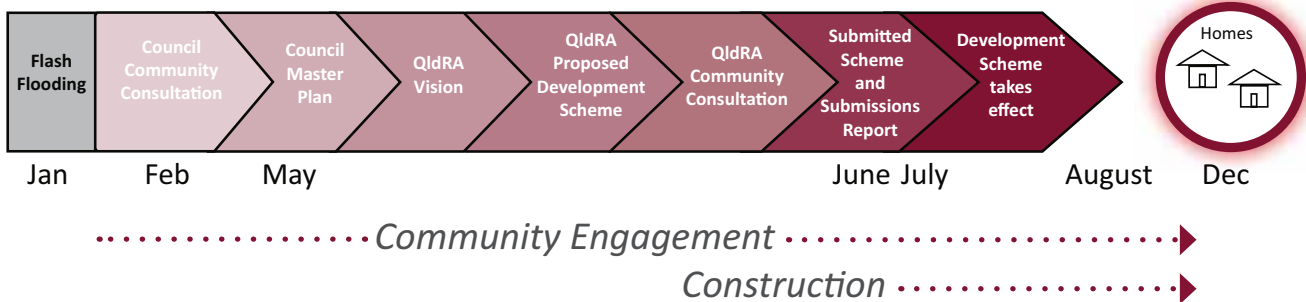
Grantham Reconstruction Area

Context

The Development Scheme for the Grantham Reconstruction Area outlines the blueprint for the reconstruction of Grantham after the devastating events of 10 January 2011. The Queensland Reconstruction Authority (the Authority) together with the Lockyer Valley Regional Council (Council) have worked in consultation to develop a plan which provides for a prosperous future for Grantham and the Lockyer Valley.

The journey in developing this blueprint has been ongoing since February 2011 and has involved extensive community consultation and public notification. The figure below identifies the steps that have been undertaken to support this collaborative approach allowing construction of the new residential area to commence mid 2011.

Grantham Reconstruction Area Timeline



Photos taken from Community Consultation sessions held on 19, 23 and 26 March 2011, Lucky 7 Store Opening, Grantham Sod Turning and the new land.

Table of Contents

Vision	5
Grantham Timeline 1843 - 2011	6
Council Master Plan	8
Locality Context Plan.....	10
Planning Context	12
Development Scheme	13
Part 1 - Land Use Plan	14
Part 2 - Infrastructure Plan	44
Part 3 - Implementation Strategy.....	51
 Reference Plans	
Map 1 - Reconstruction Area	54
Map 2 - Land Use Plan	55
Map 3 - Land Use Plan - Inset A.....	56
Map 4 - Precinct Plan	57

Vision for Reconstruction Area

It has been two years since the dreadful events of January 2011, and our community of Grantham has rebuilt itself in a way which shows great pride, strength and resilience, while staying true to our history and character and respecting those who suffered during those tragic events.

The main street along Anzac Avenue is thriving again, with the new store, hotel and information centre proudly rebuilt stronger and better. Members of our community and visitors alike have embraced the businesses in the main street so they are more prosperous than ever. The main street is a strong heart to our once again strong community.

The former residential area west of Harris Street is now a park much valued by our community as a place to reflect. Some of the flood-affected areas west along the Gattton-Helidon Road have converted back into rural uses, although a few strong highset homes have been built by those who have chosen to stay and rebuild in the area.

As I enter William Street I notice distinctive and colourful shade structures which are home to weekend fruit stalls and are a hive of activity with residents and visitors buying their weekly produce. There are a few cafés located under the camphor laurels in William Street which are very popular as a meeting place for friends to catch up and share a light meal whilst overlooking the natural areas of Sandy Creek. Passing under the railway line, the restored butter factory sits proudly at the entry to this part of the town and is used every day by different members of the community.

Travelling along Victor Street, I can hear children in the primary school running and laughing and watching as a train passes by. Houses opposite the school are much as they have always been.

The big change is on land north of here, off Boxmoor Street, where a major new part of town has been built up nice and high overlooking the cropping lands and flood plain to the south. Just two years on, many of our residents have proudly rebuilt their homes and lives in this part of town. Children can be heard kicking a football and playing on the swings in the new parkland which is central to this new part of town. The road into this new area stitches the community together providing a high level of access for residents and visitors between the main street and the old and new parts of town.

There are many different lot sizes in the new part of town and I know that as I get older, I'll be able to move to a smaller lot and stay close to my family without leaving the town that I know and love.

Major new facilities have started to emerge as well. There are plans to expand the town further north and east, and introduce more community facilities and parks in the new part of town. Whilst not developed yet, the new showgrounds which are planned adjacent to the Warrego Highway will be a great addition to our town when they are built.

There are noticeably more jobs in town now, with some new rural businesses that have been built to the east of the main street supporting the farming and rural activities which are the foundation of our town.

Grantham is an amazing place – we have endured tragedy and emerged stronger and prouder, with a wonderful mix of history and character and strong and vibrant new areas that are helping us achieve a safe and bright new future.

GRANTHAM TIMELINE ~ 1843 - 2011



James 'Cocky' Rogers, brings 300 sheep onto the Grantham Run.

1843

Jagara tribesmen are resisting the intruders who are now occupying their ancestral hunting grounds.

1844

Charles William Pitts now holds the Grantham Run, which has an estimated carrying capacity of 8000 sheep.

1848



The railway line is built through Sandy Creek (the original name for the siding at Grantham).

1866

James Craig becomes licensee of the first watering hole at Grantham - the Sandy Creek Hotel.

1871

The Queensland Government starts resuming land under the Crown Lands Alienation Act of 1868, and the Homestead Areas Act of 1873. The Grantham Run is thrown open for free selection.

1873

Orchards are established in the district by Stationmaster Charlie Wilkinson who was related to Grantham's first blacksmith, Albert Wilkinson. Albert's blacksmith shop was on the creek bank in William Street across from the Post Office.

1880s

Andrew Scott buys part of the original Grantham Run, including the homestead, on the death of A.V. Carpendale. Grantham Station, which now comprises about 250 sq miles, is stocked with cattle.

1884



First land sales establish Grantham Town in the Lockyer Valley. The town is named by the first white settlers after their former home town of Grantham in Lincolnshire, 108 miles (174km) north of London.

1886

Major flooding: The Lower Tent Hill spills its banks and the Lockyer Creek flows into north Gattoon and Grantham flats are covered. The flood waters are five feet (1.52m) above the previous floods of 1863, '64, '87 and '89. Further flooding occurs in 1893.

1890

Albert Scott, the founder of Wanstead at Veradilla, settles on the land near Grantham. Two years later he builds a family home from large slabs and shingles, cut from timber grown on the property.

1895



Grantham Scrub School opens on the corner of Scrub Road and Poole's Road.

1896

The Grantham Dramatic Group and Orchestra start providing regular and popular entertainment.

1920s

The School of Arts acquires land on the former railway reserve opposite the Butter Factory and establishes Grantham's first library.

1917/18



The Baltzer family establishes a bootmaking and saddlery business opposite a bakery in Harris Street.

1918

The Grantham Hotel on Sandy Creek is destroyed by fire. On July 16 Grantham's new State School opens.

1917



New cattle and pig yards are built at the railway station.

1916

The railway line from Grantham to Helidon is duplicated.

1914



Rugby League is now in full swing and the Grantham Rugby League team goes on to win the Lockyer premiership from 1919 to 1922

1913

One of the first important land sales with sub-divisions from the Grantham Estate gets underway on May 10.

1910



The Grantham Butter Factory opens and the Grantham Cattle Dip Company is formed to control ticks.

1907



Grantham State School opens on January 23. There are now 800 dairy farmers in the Lockyer Valley

1905



During the year 4313 tons of agricultural produce are loaded onto railway wagons at Grantham.

1901



G William Henderson becomes the first licensee of the Grantham Hotel on the banks of Sandy Creek.

1900



'Jack' Nagina Singh opens Grantham General Store, selling everything from a pin to an anchor.

1926

A loan is available for a water supply for Grantham residents. Bores and windmills with troughs are installed in Gattoon, Helidon and Anzac Avenue, Grantham.

1927



National Bank of Australasia moves into a new timber triangular building known locally as the 'Wedge of Cheese'.

1928



Residents meet at the School of Arts on April 30 to establish St Gabriel's Anglican Church.

1931

In August, the first street lights in Grantham are switched on.

1936



Electricity is installed at the railway station.

1938



Fire destroys the Coronation Hotel for a second time.

1939

School children practice putting a cork in their mouth and cotton wool in their ears to protect them from bomb blasts. No bombs fall on Grantham and no enemy aircraft are seen.

1940s

John 'Jack' Lund, bullocky and timber getter is in charge of a team of 12 or more bullocks hauling timber from the Sandy Creek district for Hood's Sawmill at Gattoon.

1941



Mortleman's Store opposite the telephone exchange closes.

1940/41

Fire destroys the Coronation Hotel...again.

1941/42



The Grantham Boys Cricket Club formed.

1944

The Armstrong family's fruit and vegetable shop opens on the highway. More and more fruit and vegetable stalls are opening in Grantham during the main fruit and vegetable seasons.

1964



Kevin and Shirley Toohill (a vigoro team coach) begin operating K & S Toohill Transport Pty Ltd.

1962



Dwyers Manufacturing Company opens on the highway. The company also operates Grantham Motors.

1961

Grantham's soccer team the 'Lockyer Stars' continues playing strongly throughout the 1960s and 1970s.

1960s

Floodwaters inundate Grantham. At about this time plant and sand pumping by Readymix concrete starts at the creek.

1959

Hailstorm strikes Grantham smashing windows at the Butter Factory and Grantham State School. Much of the district's fruit crop is wiped out.

1956

Twomacs Garage is built on the Warrego Highway. It's run by Tommy Grice and 'Mac' Crust. A radio program is exchanged between England and Australia. The program is called 'Namesake Towns - Grantham to Grantham'.

1952



Grantham Scrub School closes.

1951



The Water Melon Carnivals begin to celebrate the harvesting of citrus fruit.

1950s

The Grantham Amateur Players stage their first variety show in McGarva's Hall on June 4.

1949

Street signs are requested for Grantham in readiness for the town's first letter delivery service.

1947

Padget's travelling picture show arrives in Grantham with carbon arc projectors and a slide show for audiences in McGarva's Hall - later known as Grantham Hall.

1945

Grantham Post Office is destroyed by fire. Operations are transferred to a former butcher's shop.

1965



The Grantham Hotel moves in April from William Street, after 50 years, to a new site on the Warrego Highway.

1967

The Lockyer Little Theatre operates a small theatre at Grantham.

1968

The Warrego Highway is rerouted through Grantham.

A mini-tornado rips through Grantham in November. Citrus trees are stripped, vegetable crops ruined and buildings damaged.

1971

Land on the corner of William and Railway Streets becomes Bugler Park in recognition of the Bugler family which has been prominent in the Grantham district for 85 years.

1973



More flooding causes substantial damage to businesses and houses.

1974

David Topp opens a hot bread kitchen.

1975



Singh's General Store, which opened in 1926, closes its doors.

1976



The first Orange Festival is held to raise money for charities

1978

Fire, started by children playing with matches, destroys the produce business of W.E. Morgan and Sons.

Public toilets are constructed alongside the Warrego Highway at Grantham.

1979

Flooding: Lockyer Creek peaks at 12 metres and floodwaters build up at Dinner Corner - named for the area where drovers had dinner before bedding down for the night.

1983

An old iron overhead footbridge, no longer in use at the Toowoomba Railway Station is installed across Sandy Creek to link the two ovals.

1985



Grantham is an amazing place which has emerged stronger and prouder, with a wonderful mix of history and character and strong and vibrant new areas that are helping achieve a safe and bright new future.

2013



June 7, the Lockyer Valley Regional Council Mayor and Deputy Premier turn the first sod in stage one of a major new housing development on higher ground.

2011

January 10, flash flooding devastates Grantham, Murphy's Creek, Postman's Ridge, Helidon and Withcott. Deaths and property losses are recorded.

2011



Grantham State School celebrates its centenary.

2005

More flooding affects business life in 1999. The Grantham Water Tower, which has been a landmark for many years, is removed in August.

1999/2000



A major employment boost comes in July with the opening of Morex Meat Australia. The company later changes its name to Valley Beef Company.

1997



The Grantham Meat Mart, moves to a new shopping centre at Withcott, due to declining trade caused by the Grantham bypass.

1996



Grantham Post Office closes.

1994



Falling patronage forces the closure of the Grantham and Forest Hill Railway Stations on July 31.

1992



Computers are introduced to students at Grantham School.

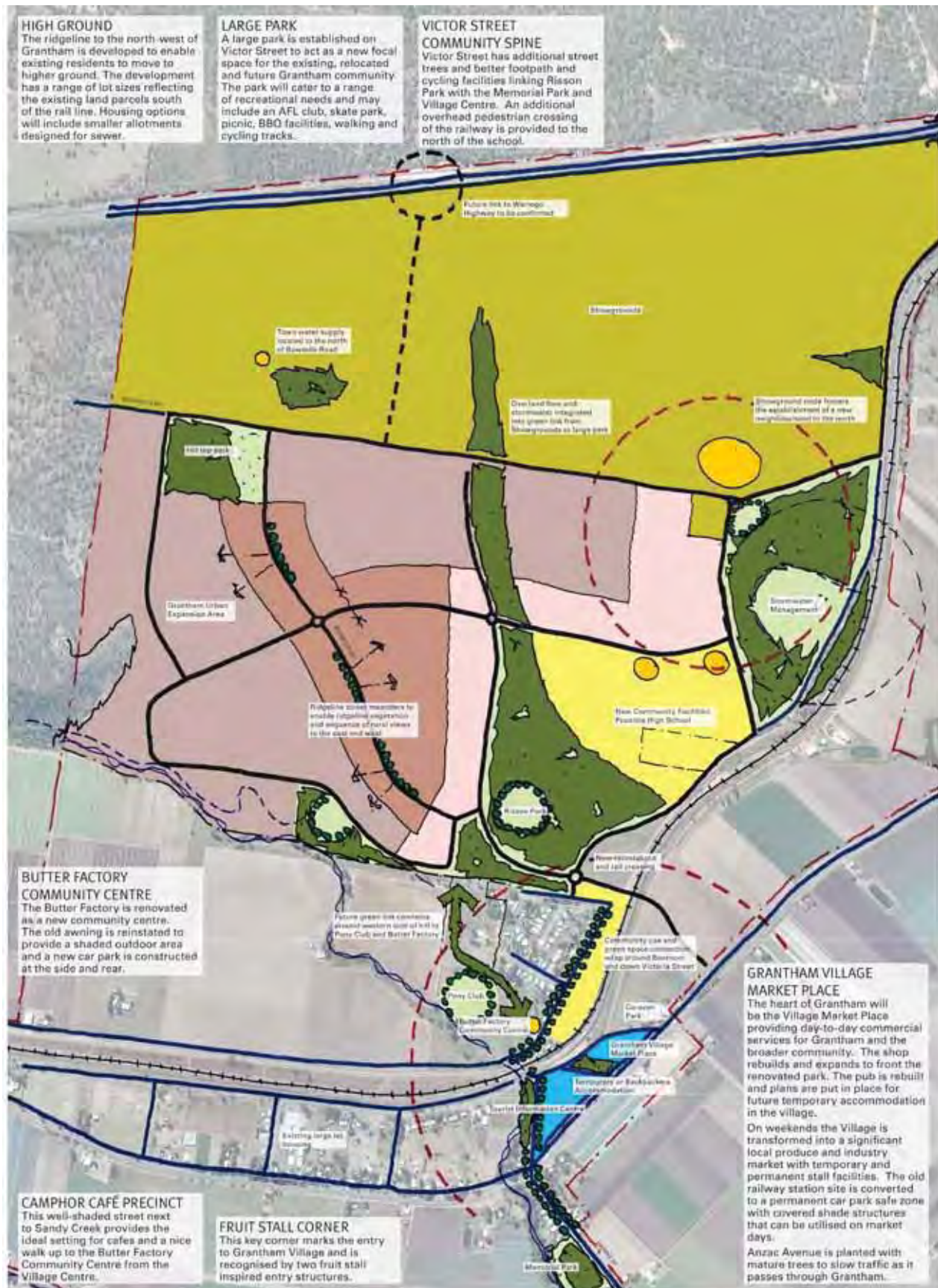
1990s

The \$10 million Gattoon Bypass comes into operation and traffic is diverted away from Grantham. The Grantham Rural Fire Brigade is formed in August.

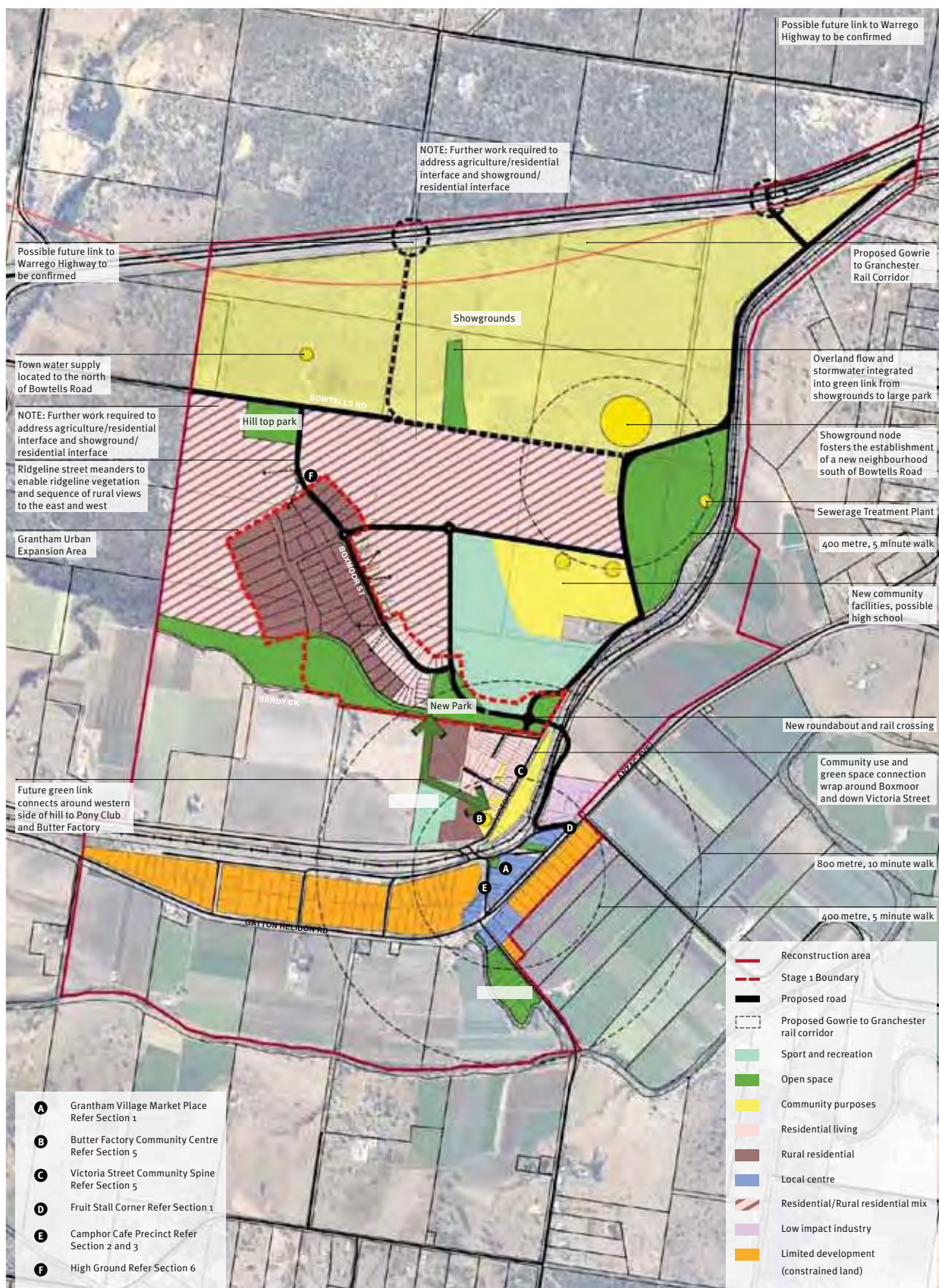
1989

More flooding with major crop losses. The first Tourist Information Centre and café opens in Grantham in the former Singh's store.

1988

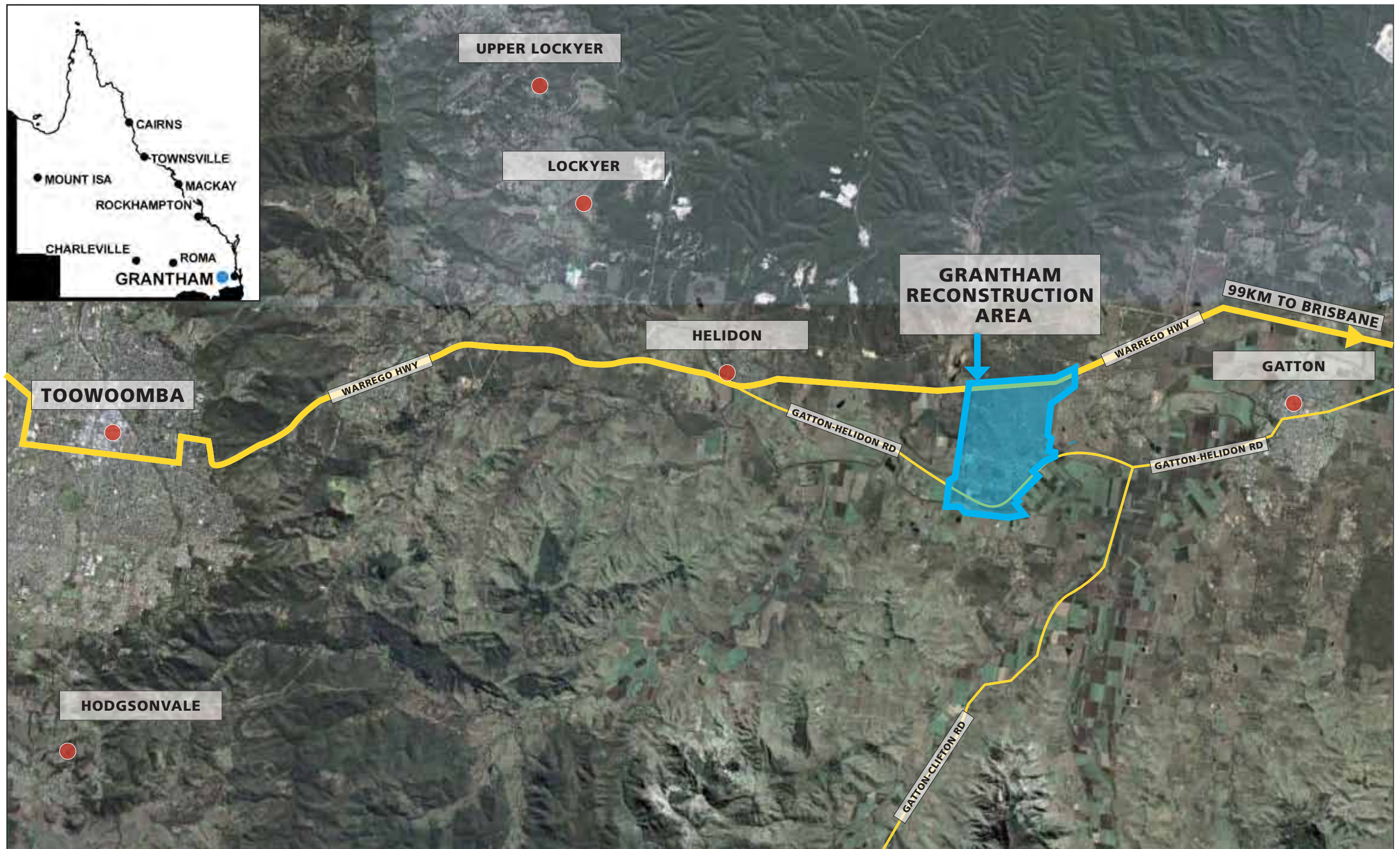


Master Plan as released by Lockyer Valley Regional Council on 4 May 2011



Master Plan as updated by Lockyer Valley Regional Council on 27 June 2011

Grantham Reconstruction Area Locality Context



Planning Context

The Queensland Reconstruction Authority (the Authority) is a statutory authority under the Queensland Reconstruction Authority Act 2011 (the QldRA Act).

The main purpose of the QldRA Act is to provide for appropriate measures to ensure Queensland and its communities effectively and efficiently recover from the impacts of disaster events between December 2010 to April 2011.

The Authority is working with Council, members of the community and state government agencies to facilitate the recovery of Grantham and the Lockyer Valley in an accelerated reconstruction program.

Reconstruction Area

The Grantham Reconstruction Area (Reconstruction Area) was declared by regulation on 8 April 2011. The Reconstruction Area is shown on Map 1.

South East Queensland Regional Plan 2009-2031

The Reconstruction Area is included in the Regional Landscape and Rural Production Area South East Queensland Regional Plan 2009-2031 (SEQRP). Whilst the proposed development involves the creation of additional lots outside the Urban Footprint, under section 78 (2) of the QldRA Act this Development Scheme will suspend the SEQRP Regulatory Provisions.

The Development Scheme provides for the economic, environmental and cultural values of Grantham and provides for a mix of housing types to accommodate the needs of the community, now and into the future.

The SEQRP provides that the future of rural villages outside the Urban Footprint can be considered through the planning scheme review process to help them achieve long term sustainability and self contained employment. This Development Scheme brings forward the review of a long term sustainable Grantham consistent with this intent.

The economy of the region is typically dominated by rural industry and associated activities on rural lands. The expansion of rural industries are supported where they provide for a greater level of self containment of jobs and for the processing and packing of local produce, as well as expanding associated cottage industries and small to medium scale incubator businesses. The expansion of rural and low impact industries in Grantham will support and complement Gatton as the Principal Regional Activity Centre for Lockyer Valley and will provide a greater level of self containment for Grantham and the Lockyer Valley.

The expansion of the Grantham township as outlined in this Development Scheme has been subject to detailed land capability and suitability assessments, riparian corridor protection and an assessment of infrastructure requirements. Each of the matters has been thoroughly considered in the preparation of this Development Scheme.

The provision of approximately 400 additional lots in Grantham will assist Council in achieving the forecast 11,500 additional dwellings required in the Lockyer Valley by 2031 without compromising principle 8.2 of the SEQRP.

Statutory Effect of the Scheme

The Development Scheme for the Grantham Reconstruction Area will continue to apply until the new planning scheme for the Lockyer Valley Regional Council takes effect. If at the time the QldRA Act expires (section 139 of the QldRA Act) and Council's new Sustainable Planning Act 2009 compliant planning scheme is not in effect, powers under section 112 of the QldRA Act may be exercised to ensure that the Development Scheme continues to have effect.

Development Scheme

The Development Scheme for the Grantham Reconstruction Area has been prepared in accordance with section 66 of the QldRA Act and is applicable to all development on land within the boundaries of the Reconstruction Area. The Proposed Development Scheme was subject to public notification carried out for a period of 30 business days. Matters raised within the public consultation period were duly considered as part of the finalisation of this scheme. The Development Scheme is a statutory instrument and has the force of law.

The purpose of the Proposed Development Scheme is to:

- Establish the Vision and Master Plan for the Reconstruction Area;
- Calibrate the regulation of development to achieve the Vision; and
- Identify infrastructure and other strategies and mechanisms to achieve the Vision.

In the making of the Development Scheme the Authority has considered the requirements under 63 (4) of the QldRA Act.

In accordance with section 78 (2) of the QldRA Act, the Development Scheme suspends that part of the current Gatton Planning Scheme which regulates development within the Reconstruction Area, save for the provisions expressly referred to in the Development Scheme .

Elements of the Development Scheme

The Development Scheme consists of:

- A land use plan;
- An infrastructure plan; and
- An implementation strategy.

Vision – The vision seeks to articulate the community aspirations for Grantham and provides the basis for the land use plan, infrastructure plan and implementation strategy.

Land Use Plan – similar to a Local Plan that translates the vision and master plan into a Queensland Planning Provision (QPP) compliant land use plan that calibrates and regulates development through clear statements of intent and tables of assessment that support the achievement of the vision.

Infrastructure Plan – supporting the land use plan with specific details relating to elements of infrastructure including roads, water supply, sewer, stormwater, parks, electricity, telecommunications and community facilities.

Implementation Strategy - supports the implementation of the land use plan and the infrastructure plan recognising the importance of Council's land swap program whilst providing sufficient flexibility to cater for changes and evolution that will occur during the life of the Development Scheme.

Referral Agencies

Under section 64 of the QldRA Act a Development Scheme may provide that an entity that would otherwise be a referral agency for a development application for the reconstruction area, is not a referral agency for the development application. In accordance with section 64 of the QldRA Act, under this Development Scheme the referral triggers under schedule 7, table 2, item 39 (relating to reconfiguring a lot to which division 3 of the state planning regulatory provisions for the South East Queensland Regional Plan applies) and schedule 7, table 3, item 12 (relating to a material change of use to which division 2 of the state planning regulatory provisions for the South East Queensland Regional Plan applies) of the Sustainable Planning Regulation 2009 do not apply to development within the reconstruction area.

All other Referral agency jurisdictions continue to apply for assessable development.



PART 1

LAND USE PLAN



Land Use Plan

The Land Use Plan has the following zones and precincts, which are shown on Map 2 - Land Use Plan. The following zones and precincts have been identified using the Queensland Planning Provisions (QPP) developed by Department of Local Government and Planning.

	Page
1.0 Community purposes zone	16
a. Community precinct	16
b. Showgrounds precinct	17
c. Parkside precinct	17
2.0 Limited development (constrained land) zone	21
3.0 Local centre zone	24
4.0 Low impact Industry zone	27
5.0 Recreation and open space zone	30
a. Harris Street precinct	31
6.0 Residential living zone	33
a. Residential living 1 precinct	33
b. Residential living 2 precinct	34
7.0 Rural residential zone	36
a. Rural residential 1 precinct	36
b. Rural residential 2 precinct	37
8.0 Rural zone	40
a. Rural agriculture precinct	40
b. Rural general precinct	40
Using this Land Use Plan	41

Information captions

Information captions identified by the symbol on the right are provided throughout the Development Scheme for historical context only. They are non-statutory and for information purposes only.



1.0 Community purposes zone

Purpose

The purpose of the Community purposes zone is to provide for community related activities and facilities whether under public or private ownership.

These may include provision of municipal services, public utilities, government installations, hospitals and schools, transport and telecommunication networks and community infrastructure of an artistic, social or cultural nature.

Overall Suggested Outcomes

Community precinct

This precinct provides for a range of community uses, including the Grantham State School, the Butter Factory community centre and utility installations.

These are important areas providing for uses central to the community of Grantham and surrounding areas, and are protected to ensure they can be used appropriately for their intended community purpose.

The Grantham Butter Factory

i

In 1907 the Grantham Butter Factory opened. As production increased extensions were made to the factory and the foundation stone for a brick building is laid in 1926. For years, smoke coming from the tall 92ft (28m) chimney (that was replaced in the 1950s) and the sun shining on the red brick façade of the big factory marks growing prosperity and the principal landmark of Grantham. At its peak the factory had 450 cream suppliers and produced 1000 tons of butter annually. When it closes on June 30, 1971 the factory was down to 130 suppliers and about three tons of butter a week. It operated for 64 years and its closure was part of deregulation and the down-grading of the dairying industry in Queensland. In 2011, the Toowoomba Rotary Club purchased the Butter Factory to refurbished as a new Community Centre for the residents of Grantham.



Showgrounds precinct

The Showgrounds precinct is intended to house a significant showground site for the Lockyer Valley. The precinct will cater for a broad range of events, including large agricultural and industry shows that require a significant area of land.

Functions within the Showgrounds precinct can include:

- Show Arenas
- Spectator Seating
- Large Covered and Enclosed Pavilions
- Toilet Facilities
- Catering and Food
- Short Term Accommodation
- Stables

The Glossy-black cockatoo can be found foraging within the She-Oaks in the south-western edge of the precinct. Their habitat should be protected in the development of the showgrounds precinct.

Low Impact Industry uses ancillary to the principal showgrounds use of the site (ie. Veterinary, rural produce store) will also be premitted within the precinct when developed in accordance with a Master Plan prepared for the precinct.



Parkside Precinct

The Parkside precinct is intended to provide for uses which are complimentary to the recreation and open space zone and residential living zone and may include education facilities, child care, retirement village facilities or similar. It is recognised that a historical cattle dip has been identified as existing within this precinct and that Lot 2 on RP204243 is listed on the Contaminated Land Register as containing a Livestock Dip or Spray Race. Any Master Plan prepared for this precinct will need to address the remediation options and will be subejct to concurrence agency review by the Department of Environment and Resource Management.

Table of assessment

The following table identifies the levels of assessment for development in the Community purposes zone:

Development	Assessment criteria
Exempt development	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level	
Club if in the Community precinct	
Market	
Park	
Temporary Use	
Utility installation	
Compliance assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
If in the Community precinct: Community use Educational establishment	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code, except A2.2(a); and (vi) Vehicle access, parking and on-site movement code AO1.1 and AO1.2 of Part A of the Community purposes zone code
If in the Community and Showgrounds precinct: Operational works not associated with a material change of use	Gatton Planning Scheme: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2; and (iv) Vehicle access, parking and on-site movement code
If in the Community precinct: Operational works for reconfiguring a lot	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code
If in the Community precinct : Reconfiguring a Lot	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a Lot code, except A2.1 , A2.2, A19.4(a), A19.4(b)(iii)II and III , A27.1, A34.1, A36.1, A36.2; (ii) Earthworks code; (iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2; and (iv) Vehicle access, parking and on-site movement code AO2.1 of Part A of the Community purposes zone code.
Code assessable development	Assessment Criteria
Caretaker's accommodation (if not exempt)	Gatton Planning Scheme: (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2); and (iii) Vehicle access, parking and on-site movement code Community purposes use zone code.

Development	Assessment criteria
Code assessable development	Assessment criteria
Development if consistent with the intent of the precinct and in accordance with a master plan prepared for the precinct, or part of the precinct, by the Council or the Government.	Gatton Planning Scheme: (i) Earthworks code; (ii) Landscaping code; (iii) Lighting code; (iv) Services and infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code. AO1.1 of Part B of the Community purposes zone Code.
If in the Parkside precinct: Community Use Education Establishment Residential Care Facility Retirement Village	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code, except A2.2(a); (v) Vehicle access, parking and on-site movement code; and (vi) Accommodation Unit and Dual Occupancy code AO1.1 and AO1.2 of Part A of the Community purposes zone code
If in the Parkside Precinct: Operational works	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code
If in the Community precinct : Reconfiguring a Lot	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a Lot code, except A2.1 , A2.2, A19.4(a), A194(b)(iii)II and III , A27.1, A34.1, A36.1, A36.2; (ii) Earthworks code; (iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2; and (iv) Vehicle access, parking and on-site movement code AO2.1 of Part A of the Community purposes zone code
If in the Community or Parkside precinct: Indoor sports and recreation	Gatton Planning Scheme: (i) Earthworks code; (ii) Landscaping code; (iii) Lighting code; (iv) Services and infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site movement code.
Impact assessable development	Assessment criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Grantham State School

In 1896 the Grantham Scrub School opened on the corner of Scrub Road and Poole's Road. It was said that some 15 children in the district had neither gone to school nor had they since they came to live in the locality. The school continued to operate until 1951 when it closed and most of the children were transferred to Grantham State School.

On 23 January 1905 the Grantham State School opened.

History of Bugler Park

In 1973, land on the corner of William and Railway Streets is given to the then Gatton Shire Council by produce merchant Mick Bugler. It becomes Bugler Park in recognition of a family which has been prominent in the Grantham district for 85 years.

Community purposes zone code

Performance outcomes	Acceptable Outcomes
PART A Community and Parkside Precinct	
PO1 The height and setbacks of buildings and structures are similar to the height and setbacks of existing buildings and structures in the precinct.	<p>A01.1 New buildings and structures have a maximum height of 11m above natural ground level.</p> <p>A01.2 Buildings and structures are setback</p> <ul style="list-style-type: none"> (a) 10m from the street frontage if located opposite a residential living zone or recreation and open space zone; (b) 6m from the street frontage in any other location; (c) 10m from any side or rear boundary with a residential living zone or the recreation and open space zone; (d) 2m from the side and rear boundaries in any other location.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	A02.1 Minimum lot size is 1Ha.
PART B Showgrounds Precinct	
PO1 Development does not compromise the future development of the Showground precinct	A01.1 Development in the showground precinct is in accordance with a Council approved master plan for the precinct.
PO2 Noise and light generated by the showground activities do not impact negatively on residential development.	No acceptable outcome is nominated.
PO3 Buildings and structures have a height and setback in accordance with an approved master plan for the precinct.	No acceptable outcome is nominated.
PO3 Development does not compromise the protection of the Glossy-black cockatoos foraging habitat.	A03.1 Foraging habitat is protected in accordance with the Environmental Protection Area identified on Map 4 - Precinct Plan.



Origins of the Grantham Rural Fire Brigade

The Grantham Rural Fire Brigade formed in August 1989. The Fire Station is in William Street opposite the Post Office. Earlier the district was served by the Grantham Volunteer Fire Brigade which had a four-man double-action pump and water tank mounted on a trailer with solid tyres.

2.0 Limited development (constrained land) zone

Purpose

The purpose of the Limited development (constrained land) zone is to identify land known to be significantly affected by one or more development constraints (such as past or future mining activities, flooding, land contamination, defence requirements, historical subdivisions and buffer areas).

Such constraints pose severe restrictions on the ability of the land to be developed for residential purposes.

Suggested Overall Outcomes

This zone will contain some houses where there are existing development entitlements, but primarily provides a range of low key rural activities which are agricultural in nature and which are compatible with the remaining residential uses.

It caters for uses such as flower farms, plant nurseries, turf farming, garden supplies, equine uses and other activities that are related to rural activities.

No new subdivision of lots is intended in this zone and amalgamation of lots is encouraged so existing lots can be aggregated for the intended agricultural uses.

Whilst not preferred, it is acknowledged that some residents may wish to remain in this area and therefore, if a dwelling house existed on the subject land on 10 January 2011, a new dwelling house or rebuilding of a dwelling house will require habitable floor levels to be at least 300mm above the defined flood level.

History of the Grantham's earliest orchards

In the 1880s orchards were established in the district. When Stationmaster Charlie Wilkinson retired in 1914, he sold his land with 100 fruit trees. He was related to Grantham's first blacksmith, Albert Wilkinson, who was succeeded by his son Les Wilkinson. The blacksmith's shop was on the creek bank in William Street across from the Post Office.



Table of assessment

The following table identifies the levels of assessment for development in the Limited development (constrained land) zone:

Development	Assessment criteria
Exempt development	
Animal husbandry	
Cropping	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level	
Intensive horticulture	
Market	
Park	
Permanent plantations	
Roadside stall	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Agricultural supplies store	Gatton Planning Scheme: (i) Rural service industry code, except A4.1 and A4.2; (ii) Lighting code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle Access, Parking and On-Site, Movement code
Bulk landscape supplies	
Garden Centre	
Wholesale nursery	
	PO1 and PO2 of the Limited development (constrained land) zone code.
Reconfiguring a lot where for boundary realignment	Gatton Planning Scheme Reconfiguring a Lot Code A7.1, A7.2 and A7.3.
Compliance assessable development	Assessment Criteria
Operational works where not involving the physical alteration to a watercourse or floodway including vegetation clearing or where net filling does not exceed 50m ³ .	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code.
Code assessable development	Assessment criteria
Rural industry	Gatton Planning Scheme: (i) Rural service industry code except A4.1 and A4.2 ; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site, movement code. Limited development (constrained land) zone code.
Impact Assessable development	Assessment Criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Limited development (constrained land) zone code

Performance outcomes	Acceptable Outcomes
PO1 Residential development is not preferred and in the limited circumstances where it is constructed it is constructed to provide an acceptable level of flood immunity.	AO1.1 Habitable floor level of residential development is 300mm above the defined flood level.
PO2 The height and setback of buildings and structures are similar to the height and setback of existing buildings and structures in the area.	AO2.1 Buildings and structures have a maximum height of 11.0m above natural ground level. AO2.2 Buildings are setback: (i) 6m from the street frontage; (ii) 10m from the side or rear boundary with a residential use; (iii) 6m from the side or rear boundary with a non residential use.
PO3 Non residential uses provide a 10m setback from any common boundary with a residential use so as to minimise impacts from noise or light on the residential use.	AO3.1 Buildings are setback a minimum of 10m from any boundary with a residential use. AO3.2 A 1.8m high fence is erected along the boundary with a residential use
PO4 Where practical, essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) are located above the defined flood level.	No Acceptable Outcome is provided.

History of Grantham Street Names

Street names are listed here with their origins in parenthesis.

Anzac Avenue (after WWI, probably early 1920s)

Armstrong Road (Armstrong family, orchardists)

Boxmoor Street (Boxmoor Village in Hertfordshire, England)

Christopher Street (Christopher a young boy who died accidentally)

Citrus Street (Connors' orchard and packing shed)

Connors Road (Clarrie Connors, orchardist)

Harris Street (Harris Robinson, farmer)

Lawlers Road (Lawler family, farmers)

McGarva Road (Evan McGarva and McGarva families, orchardists)

Philps Road (Colin Philp, Ringwood, orchardist)

Railway Street (1870s)

Robert Street (Robert McGarva, son of William and Daisy McGarva, who died aged 2 years in 1936)

Victor Street (Victor Clem, bank manager)

William Street (William Henderson, publican)

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4.0 Local centre zone

Purpose

The purpose of the Local centre zone is to provide for a limited range of land uses and activities to service local needs.

It includes local shopping, local employment nodes, commercial, cafes and dining, entertainment and community services and residential development where it can integrate and enhance the fabric of the activity centre, but it is not the predominant use.

Suggested Overall Outcomes

The Local centre zone is the heart of Grantham - a vibrant market place featuring a mix of uses and activities that provide day-to-day services for the town, its broader community and visitors. It is focused on Anzac Avenue, and includes shops, cafes, arts and crafts, an art gallery, a museum and a hotel.

On weekends, the local centre is transformed into a significant local produce and industry market with temporary and permanent stall facilities under covered shade structures. The whole main street of Anzac Avenue has a rural town character and builds on the amenity of the nearby parks. Landmark entry structures mark "Fruit Stall" corner where William Street and Anzac Avenue meet.

William Street provides the ideal setting for cafes and a pleasant walk up to the Butter Factory Community Centre from the Local centre.

New residential development is not preferred in the Local centre zone. However it is acknowledged that some residents may wish to remain and therefore, if a dwelling house existed on the subject land on 10 January 2011, a new dwelling house or rebuilding of a dwelling house will require habitable floor levels are to be at least 300mm above the defined flood level. Where achievable and practical, commercial, business and retail uses are encouraged to rebuild having regard to the defined flood level, noting requirement to maintain equitable access.



History of the Singh Store

In 1926 Singh's Grantham General Store opened. It is understood that the store sold everything from a pin to an anchor and was run by an Indian hawker 'Jack' Nagina Singh. Singh's store, which closed in 1976, enjoyed the longest history of any store in Grantham.



Table of assessment

The following table identifies the levels of assessment for development in the Local centre zone:

Development	Assessment criteria
Exempt development	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level	
Market	
Park	
Roadside Stall	
Sales Office	
Temporary facility for the purposes of a shop, hotel, roadside stall, service station or service industry	
Temporary Use	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Community use	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code, except A2.2(a); and (v) Vehicle access, parking and on-site movement code. AO2.1, AO2.2 and PO4 of the Local centre zone code
Community care centre	
Place of Worship	
Food and drink outlet	Gatton Planning Scheme: (i) Commercial premises and shops code, except A1.1, A2.5,A3.1(a); (ii) Earthworks code except A1.2; (iii) Landscaping code; (iv) Lighting code; (v) Services and Infrastructure code except A2.2(a); and (vi) Vehicle access, parking and on-site movement code. AO2.1, AO2.2 and PO4 of the Local centre zone code
Health care services	
Hotel	
Office	
Service industry	
Shop	
Shopping centre	
Theatre	
Service station	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Service station and car wash code, except A1.1 and A2.5; (iii) Landscaping code; (iv) Lighting code; (v) Services and Infrastructure code except A2.2(a); and (vi) Vehicle access, parking and on-site movement code. AO2.1, AO2.2 and PO4 of the Local centre zone code
Compliance assessable development	Assessment Criteria
Operational works where not involving the physical alteration to a watercourse or floodway or where net filling does not exceed 50m³.	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code.

Development	Assessment criteria
Compliance assessable development	Assessment Criteria
Operational works for Reconfiguring a Lot	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code
Reconfiguring a Lot	Gatton Planning Scheme probable solutions: (i) Section (A) and (C) of the Reconfiguring a lot code, except A1.5, A2.1, A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code AO3.1 and AO3.2 of the Local centre zone code
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Local centre zone code

Performance outcomes	Acceptable Outcomes
PO1 Residential development is not preferred and is only provided where there is an acceptable level of flood immunity.	A01 The habitable floor level of residential development is 300mm above the defined flood level.
PO2 The height and setback of buildings and structures is similar to the height and setback of existing buildings and structures in the area	A02.1 Buildings and structures have a maximum height of 11m. A02.2 Buildings and structures are set back: (a) 0m from the street; (b) 0m from the rear boundary if next to a non residential use and 6m if next to a residential use; and (c) 0m from the side boundary if next to a non residential use and 3m if next to a residential use.
PO3 The size of proposed new lots reflect the intent of the precinct and are sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations	A03.1 Minimum lot size is 400m ² . A03.2 Minimum frontage is 10m.
PO4 Where practical, essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) are located above the defined flood level.	No Acceptable Outcome is provided.

5.0 Low impact industry zone

Purpose

The purpose of the Low impact industry zone is to provide for service and low impact industry uses.

It may include non-industrial and business uses that support the industrial and rural/agricultural activities of Grantham.

Activities considered appropriate in this zone are defined as low impact industry or service industry.

Suggested Overall Outcomes

This zone provides employment opportunities for the Grantham community, taking advantage of its proximity to the facilities offered by the Local centre which support a greater level of self containment of jobs for local residents.

Industry in this area is to be low impact, such as a vehicle workshop and a small engine repair workshop, and is not to affect the successful operation and enjoyment of surrounding uses.

Where achievable and practical, proposed uses are encouraged to build with regard to the defined flood level.

History of the Twomacs Garage

In 1952, Twomacs Garage was built alongside the then Warrego Highway. It was run by Tommy Grice and 'Mac' Crust. The garage and service station ceased trading on January 1, 2000.

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Table of assessment

The following table identifies the levels of assessment for development in the Low impact industry zone:

Development	Assessment criteria
Exempt development	
Car park	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level	
Market	
Park	
Sales office	
Temporary Use	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Low impact industry	Gatton Planning Scheme:
Research and technology facility	(i) Industrial development code except A1.1 , A2.5 A10.1, A11.1, A12.1;
Veterinary services	(ii) Landscaping code;
	(iii) Lighting code;
	(iv) Services and Infrastructure code except A2.2(a); and
	(v) Vehicle access, parking and on-site movement code;
	AO1.1, AO1.2 and PO3 of the Low impact industry zone code
Compliance assessable development	Assessment criteria
Operational works for reconfiguring a lot	Gatton Planning Scheme probable solutions:
	(i) Earthworks code except A1.2;
	(ii) Services and infrastructure code; and
	(iii) Vehicle access, parking and on-site movement code
Reconfiguring a Lot	Gatton Planning Scheme:
	(i) Section (A) and (C) of the Reconfiguring a lot code, except A2.1 , A2.2, A19.4(a), A34.1, A36.1, A36.2;
	(ii) Earthworks code except A1.2;
	(iii) Services and infrastructure code except A2.2(a); and
	(iv) Vehicle access, parking and on-site movement code
	AO2.1 and AO2.2 of the Low impact industry zone code
Operational works where not involving the physical alteration to a watercourse or floodway or where net filling does not exceed 50m³.	Gatton Planning Scheme probable solutions:
	(i) Earthworks code;
	(ii) Landscaping code;
	(iii) Services and Infrastructure code except A2.2(a)
	(iv) Vehicle access, parking and on-site movement code
Code assessable development	Assessment criteria
Service Station	Gatton Planning Scheme:
	(i) Service station and car wash code except A1.1;
	(ii) Landscaping code;
	(iii) Lighting code;
	(iv) Services and Infrastructure code except A2.2(a);
	(v) Vehicle access, parking and on-site movement code
	AO1.1, AO1.2 and PO3 of the Low impact industry zone code

Development	Assessment criteria
Code assessable development	Assessment criteria
Service industry	Gatton Planning Scheme: (i) Commercial premises and shops code; (ii) Landscaping code; (iii) Lighting Code; (iv) Services and Infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site movement code; AO1.1, AO1.2 and PO3 of the Low impact industry zone code
Showroom	
Warehouse	
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Low impact industry zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures are similar to the height and setbacks of existing buildings and structures in the area.	AO1.1 Buildings and structures have a maximum height of 11.0m above ground level. AO1.2 Buildings and structures are setback: (i) 6m from the street frontage; (ii) 0m from the side boundary with non residential uses and 3m from the boundary with residential use.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 Minimum lot size is 1,000m ² . AO2.2 Minimum frontage is 20m.
PO3 Where practical, essential services infrastructure (e.g. on-site electricity, gas, water supply, sewerage and telecommunications) are located above the defined flood level.	No Acceptable Outcome is provided.

The telephone exchange

In 1936, Grantham's manual telephone exchange closed. The first Royal Automatic Telephone Exchange in Queensland was installed in Grantham in a building in the railway yard near the railway bridge. In later years it was relocated to premises in William Street.



6.0 Recreation and open space zone

Purpose

The purpose of the Recreation and open space zone is to provide for a range of sporting, recreation, leisure, cultural and educational activities.

The zone provides for local, district and regional scale parks which serve the recreation needs of residents and visitors and may include areas for conservation.

Areas within the zone such as parks, playing fields and playgrounds are generally accessible to the public; however, access may be limited in certain areas and at certain times.

Where required to meet community needs, development may include built structures, such as shelters, amenity facilities, picnic tables, clubhouses, gymnasiums and tennis courts, and other infrastructure to support the activities, provide safe access and support essential management.

Suggested Overall Outcomes

This zone provides for a range of parks and open space areas, used for a variety of recreation and sporting activities, which support the residents of Grantham and surrounding areas. Some of these activities are organised and formal, like sporting clubs, but others are informal, such as playgrounds, and picnic areas. These areas also provide other facilities that meet community needs, such as shelters, picnic tables and clubhouses.

The zone also includes some areas which contain vegetation and other environmental values that are to be protected including the foraging habitat of the Glossy-black cockatoo within the park adjacent to Bowtells Road in the north-western corner of the site.



Sporting history in Grantham

Grantham has a strong and proud sporting history. Rugby League football was in full swing by 1913 and the Grantham Rugby League team went on to win the Lockyer premiership from 1919 to 1922. In 1944, a meeting of parents decided to form the Grantham Boys Cricket Club. They played their first game at the Grantham Recreation Ground against the Gatton Convent on March 10, 1945, and won by 23 runs. Grantham's soccer team the 'Lockyer Stars' continued playing through the 1960s and 1970s.



A large park established on Victor Street acts as a new focal space for the Grantham community. This park caters for a range of recreational needs, such as a cricket club and AFL club, rugby league and soccer providing a home to re-establish the previously prominent sports of Grantham. This park also caters for a skate park, picnic, BBQ facilities, walking and cycling tracks supporting the local community.

Harris Street Precinct

The land in the Harris Street precinct is intended to form a creekside park adjacent to Sandy Creek. Whilst not preferred given the history of flooding in this location, it is acknowledged that some residents may wish to remain and therefore if a dwelling house existed on the subject land on 10 January 2011, a new dwelling house or rebuilding of a dwelling house will require habitable floor levels which are to be at least 300mm above the defined flood level.

Table of assessment

The following table identifies the levels of assessment for development in the Recreation and open space zone:

Development	Assessment criteria
Exempt development	
Car park	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level.	
Community use if complying with AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code.	
Dwelling house if a dwelling house existed on the subject land on 10 January 2011 and if the habitable floor level is 300mm above the defined flood level if located in the Harris Street Precinct	
Market	
Outdoor sport and recreation	
Park	
Temporary Use	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Food and drink outlet	Gatton Planning Scheme: (i) Commercial premises and shops code except A1.1; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code. AO1.1 and AO1.2 of the Recreation and open space zone code.
Compliance assessable development	Assessment Criteria
Operational works (except for the Harris Street Precinct)	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Services and infrastructure code; and (iii) Vehicle access, parking and on-site movement code

Development	Assessment criteria
Compliance assessable development	Assessment criteria
Reconfiguring a Lot except for the Harris Street Precinct	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> i) Section (A) and (C) of the Reconfiguring a lot code, except A2.1, A2.2, A19.4(a), A34.1, A36.1, A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code <p>AO2.1 of the Recreation and open space zone code</p>
Code assessable development	Assessment criteria
Caretaker's accommodation (if not exempt)	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code. <p>AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code</p>
Community use (if not exempt)	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code. <p>AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code</p>
Indoor sport and recreation Major sport, recreation and entertainment facility	<p>Gatton Planning Scheme:</p> <ul style="list-style-type: none"> (i) Landscaping code; (ii) Lighting code; (iii) Earthworks code (iv) Services and Infrastructure code except A2.2(a); and (v) Vehicle access, parking and on-site movement code <p>AO1.1, AO1.2 and AO3.1 of the Recreation and open space zone code</p>
Impact assessable development	Assessment criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Recreation and open space zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures are similar to the height and setbacks of existing buildings and structures in the area..	<p>AO1.1 Buildings and structures have a maximum height of 8.5m above natural ground level (unless they are light towers associated with park and outdoor sport and recreation)</p> <p>AO1.2 Buildings and structures are setback 6m from all street frontages.</p>
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 Minimum lot size is 4,000m ² .
PO3 Development does not compromise the protection of the Glossy-black cockatoos foraging habitat.	AO3.1 Foraging habitat is protected in accordance with the Environmental Protection area identified on Map 4 - Precinct Plan.

7.0 Residential living zone

Purpose

The purpose of the Residential living zone is to provide for predominantly dwelling houses supported by community uses and small-scale services and facilities that cater for local residents.

Suggested Overall Outcomes

The Residential living zone is represented by two precincts of varying lot sizes.

Residential living 1 precinct

The Residential living 1 precinct provides typical town sized lots, generally with a minimum lot size of 1000m² in area and accommodates mainly dwelling houses, some of which have been relocated from other areas of the town.

While this precinct includes newer parts of Grantham, it is well integrated with the original parts of the town and is located close to the shops and facilities of the local centre, the employment opportunities of the low impact industrial area, the community centre, the school and the Victor Street park.

Lots in this precinct are intended to be sewered and connected to the town water supply, and no further reconfiguring of lots beyond that established in the initial development of the area is intended. Lots smaller than 1000m² may be established within this zone however will be subject to an impact assessable application.

The first land sales in Grantham

In 1886, the first land sales established Grantham Town in the Lockyer Valley. The town was named by the first white settlers after their former home town of Grantham in Lincolnshire, 108 miles (174km) north of London. Sheep grazing was the main industry although more orchards were established and dairying became a major industry by the 1890s.

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Residential living 2 precinct

This Residential living 2 precinct provides for larger lots, generally with a minimum lot size of 2,000m² in area, and accommodates mainly dwelling houses, some of which have been relocated from other areas of the town.

It sits between the Residential living 1 precinct and the Rural residential zone and provides a transition between those precincts. The Victor Street park and the school are nearby.

Lots in this precinct may not be sewered but are connected to the town water supply, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.

Table of assessment

The following table identifies the levels of assessment for development in the Residential living zone:

Development	Assessment criteria
Exempt development	
Community residence	
Dwelling house in accordance with the Residential living zone code	
Operational works for reconfiguring a lot if complying with the probable solutions of the following codes of the Gatton Planning Scheme	
(i)	Earthworks code except A1.2;
(ii)	Services and Infrastructure code except A2.2(a); and
(iii)	Vehicle access, parking and on-site movement code
Park	
Reconfiguring a lot in the residential living 1 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Residential living zone code;
(ii)	lots are owned by Council; and
(iii)	in accordance with the lot layout master plan to be determined by Council
Reconfiguring a lot in the residential living 2 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Residential living zone code;
(ii)	lots are owned by Council; and
(iii)	in accordance with the lot layout master plan to be determined by Council
Sales office	
Temporary use	
Utility installation	
Self assessable development	Assessment Criteria
Home based business	Gatton Planning Scheme:
	(i) Home based business code; or
	(ii) If for bed and breakfast accommodation, the Bed and breakfast accommodation code; and
	(iii) Services and Infrastructure code except A2.2(a).

Development	Assessment criteria
Self assessable development	Assessment criteria
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code
Code assessable development	Assessment criteria
Reconfiguring a Lot (if not exempt) ie. Lots not complying with exempt criteria are code assessable.	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a lot code, except A1.5, A2.1, A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code; (v) Potential Bushfire Risk Area Overlay Code; and (vi) Steep and Unstable Land Overlay Code AO2.1 and AO2.2 of the Residential living zone code
Operational works for reconfiguring a lot (if not exempt)	Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Residential living zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures reinforces the low intensity, semi-rural character of the zone and are similar to the height and setback of existing buildings and structures.	AO1.1 Buildings and structures have a maximum height of 8.5m above natural ground level. AO1.2 Buildings and structures are setback a minimum: (i) 6m from the street frontage and from the rear boundary; (ii) 3m from the side boundary.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 (i) In the residential living 1 precinct minimum lot size is 1,000m ² ; (ii) In the residential living 2 precinct minimum lot size is 2,000m ² ; AO2.2 (i) In the residential living 1 precinct minimum frontage is 20 m; (ii) In the residential living 2 precinct minimum frontage is 30 m.

8.0 Rural residential zone

Purpose

The purpose of the Rural residential zone is to provide for residential development on large lots where the local government infrastructure and services may not be provided and where the intensity of residential development is generally dispersed.

Suggested Overall Outcomes

Rural residential 1 precinct

This precinct contains larger lots generally with a minimum lot size of 3,000m² in area and includes lots which act as a transitional zone between the Community purposes zone (showgrounds precinct) and the smaller residential living lots. It provides for a semi-rural lifestyle, still close to the town's facilities.

Where these lots are close to the showgrounds precinct, houses, structures and recreation areas should be located far enough away so that residents maintain their rural residential amenity. In this regard a 30m buffer is proposed to the showground precinct. Homes should still front Bowtells Road but should be setback back 30m from the front boundary.

A 30m buffer is also required for lots adjacent to the western boundary. This buffer is required for bushfire protection and therefore dwellings are to be located within a nominated building envelope outside of the buffer nominated on Map 4 - Land Use Plan.

Because of the larger lot sizes, this precinct also provides for some low intensity rural use, such as horse keeping. For the lots close to the showgrounds precinct, these uses may have a direct relationship with those facilities.

Lots in this precinct are connected to the town water supply but are not sewered, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.



Rural residential 2 precinct

This precinct contains larger lots generally with a minimum lot size of 10,000m² in area and acts as an interface between the farming areas in either the Rural agriculture precinct of this Development Scheme or the Rural agriculture zone in the Gatton Planning Scheme to the west of the town and the residential precincts to the east. This precinct provides for a semi-rural lifestyle, with residents enjoying the benefits of a rural environment as well as the benefits of being close to the towns facilities.

Buildings on lots which adjoin farming lands are to be located far enough away from these uses to ensure that the lifestyle of residents is not affected. A 30m buffer is also required for lots adjacent to the western boundary. This buffer is required for bushfire protection and therefore dwellings are to be located within a nominated building envelope outside of the buffer nominated on Map 2 - Land Use Plan.

Because of the larger lot sizes, this precinct provides for some low intensity rural uses, such as horse keeping. For the lots close to the showgrounds precinct, these uses may have a direct relationship with those facilities.

Lots in this precinct are unlikely to be seweraged or connected to the town water supply or sewer, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.

Table of assessment

The following table identifies the levels of assessment for development in the Rural residential zone:

Development	Assessment criteria
Exempt development	
Community residence (within any applicable building location envelope) complying with the Rural residential zone code	
Dwelling house (within any applicable building location envelope) complying with the Rural residential zone code	
Operational works for reconfiguring a lot if complying with the probable solutions of the following codes of the Gatton Planning Scheme:	
(i)	Earthworks code except A1.2;
(ii)	Services and Infrastructure code except A2.2(a); and
(iii)	Vehicle access, parking and on-site movement code
Park	
Reconfiguring a lot in the rural residential 1 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Rural residential zone code;
(ii)	lots are owned by Council;
(iii)	in accordance with the lot layout master plan to be determined by Council; and
(iv)	resulting lots contain a building location envelope at least 30 metres from the boundary of the Rural Agriculture or Showgrounds precincts
Reconfiguring a lot in the rural residential 2 precinct, if:	
(i)	lots comply with AO2.1 and AO2.2 of the Rural residential zone code;
(ii)	lots are owned by Council;
(iii)	in accordance with the lot layout master plan to be determined by Council; and
(iv)	resulting lots contain a building location envelope at least 30 metres from the boundary of the Rural Agriculture or Showgrounds precincts
Sales office	
Temporary use	
Utility installation	

Self assessable development		Assessment Criteria
Home based business		Gatton Planning Scheme: (i) Home based business code; (ii) If for bed and breakfast accommodation, the Bed and breakfast accommodation code; and (iii) Services and Infrastructure code except A2.2(a)
Operational works not associated with a material change of use		Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); and (iv) Vehicle access, parking and on-site movement code.
Compliance assessable development		Assessment criteria
Caretaker's accommodation		Gatton Planning Scheme: (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code Rural residential zone code
Code assessable development		Assessment criteria
Reconfiguring a Lot (if not exempt)		Gatton Planning Scheme: (i) Section (A) of the Reconfiguring a lot code, except A2.1 , A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code; (v) Potential Bushfire Risk Area Overlay Code; and (vi) Steep and Unstable Land Overlay Code AO1.1 , AO2.1 and AO2.2 of the Rural residential zone code
Wholesale nursery		Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code AO1.1, AO1.2, AO3.1 and AO3.2 of the Rural residential zone code
Operational works for reconfiguring a lot (if not exempt)		Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); and (iii) Vehicle access, parking and on-site movement code
Impact assessable development		Assessment criteria
Any other development not listed in this table.		Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Rural residential zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures minimises impacts on the low intensity, rural residential character of the precinct.	<p>A01.1 Buildings and structures have a maximum height of 8.5m from natural ground level.</p> <p>A01.2 Unless otherwise required under AO3.1 or AO3.2, buildings and structures are minimum setback:</p> <ul style="list-style-type: none"> (i) 10m from the street frontage; (ii) 6m from the rear boundary; (iii) 3m from the side boundaries
PO2 The size of proposed new lots reflect the intent of the particular precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations	<p>A02.1</p> <ul style="list-style-type: none"> (i) In the rural residential 1 precinct minimum lot size is 3,000m². (ii) In the rural residential 2 precinct minimum lot size is 10,000 m². <p>A02.2</p> <ul style="list-style-type: none"> (i) In the residential living 1 precinct minimum frontage is 40m; (ii) In the residential living 2 precinct minimum frontage is 50m.
PO3 Buildings and structures are located so as to minimise conflicts and potential impacts (such as bushfire) on amenity with the nearby showgrounds and rural land.	<p>A03.1 Buildings are setback a minimum of 30 metres from the boundary of the Showgrounds precinct in the Community purposes zone and 30 metres from the Rural Agriculture zone on the western boundary.</p> <p>A03.2 Buildings, structures and outdoor recreation areas are located within a building location envelope located a minimum of 30metres from any boundary with the rural zone.</p>

Land Sales

On 10 May 1910, one of the first important land sales with subdivisions from the Grantham Estate occurred. In the town area 50 business and residential sites went under the hammer, while outside the main town a similar number of blocks of agricultural land were offered. They included one showing outlines of buildings on Grantham Station and another depicting an 80-acre homestead block.

i

9.0 Rural zone

Purpose

The purpose of the Rural zone is to provide for a wide range of rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping and other primary production activities.

The Rural zone will also provide opportunities for non rural uses that are compatible with agriculture, the environment, and the landscape character of the rural area where they do not compromise the long-term use of the land for rural purposes.

The Rural zone is intended to protect or manage significant natural features, resources and processes, including the capacity for primary production.

Suggested Overall Outcomes

Rural agriculture precinct

This precinct is to achieve the same outcomes as the Rural agriculture zone in the Gatton Planning Scheme. These areas will remain in large lots suitable for farming purposes.

The assessment categories and relevant assessment criteria for the Rural agriculture zone in the Gatton Planning Scheme apply in the precinct.

Rural general precinct

This precinct is to achieve the same outcomes as the Rural general zone in the Gatton Planning Scheme. These areas will remain in large lots suitable for farming purposes.

The assessment categories and relevant assessment criteria for the Rural general zone in the Gatton Planning Scheme apply in the precinct.



Using this Land use plan

This land use plan has been written using the Queensland Planning Provisions v2.0 developed by the Department of Local Government and Planning to facilitate the inclusion of this Development Scheme into Council's new Sustainable Planning Act 2009 planning scheme at the time when that scheme is developed.

The process for determining a level of assessment is:

1. Identify the type of development proposed by referring to the relevant definitions.
2. Identify the Land Use Plan zone and applicable precinct the site is located in by referring to Map 2 - Land Use Plan, Map 3- Land Use Plan Inset and Map 4 - Precinct Plan.
3. Determine the level of assessment by referring to the table of assessment in the relevant zone/ precinct of the Land Use Plan.

The Development Scheme states the category of development for all development in the Reconstruction Area. The categories of development are

(a) Exempt development

If development is exempt in this Development Scheme through reference to a plan or map contained in the Development Scheme, the Minister has discretion to decide if a proposal is consistent with that plan or map if there are minor variations involved.

Some exempt development in this Land Use Plan is subject to certain criteria for exemption. If development does not comply with the identified criteria, the development becomes code assessable unless an alternative level of assessment is specifically identified in the Table of assessment. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, including identified codes of the Gatton Planning Scheme.

(b) Self assessable development

Self assessable development complies with the Land Use Plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable precinct code. If development does not comply with these performance outcomes or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, including identified codes of the Gatton Planning Scheme.

(c) Compliance assessable development

Compliance assessable development complies with the Land Use Plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable zone code. If development does not comply with these performance outcomes or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant zone code and any other code that may be listed in the criteria for exemption for that form of development, identified codes of the Gatton Planning Scheme.

(d) Code assessable development

Code assessable development complies with the Land Use Plan if it complies with:

- the intent or purpose of the zone and/or precinct in which it is located;
- the probable solutions of the identified codes of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable zone code under this development scheme.

If a development meets all the acceptable outcomes / probable solutions of the relevant codes, then the development is taken to comply with the intent or purpose of the zone / precinct, as well as with the performance / specific outcomes of the relevant codes. If a development does not meet all of the acceptable outcomes / probable solutions of the relevant codes the development is Impact assessable.

(e) Impact assessable development

Impact assessable development complies with the Land Use Plan for if it complies with:

- the intent or purpose of the zone and /or precinct in which it is located;
- the probable solutions of the relevant code of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable zone code under this Development Scheme .

If a development meets all the acceptable outcomes / probable solutions of the relevant codes, then the development is taken to comply with the intent or purpose of the precinct, as well as with the performance / specific outcomes of the relevant codes. If a development does not meet all of the acceptable outcomes/ probable solutions of the relevant codes, then it will be assessed on its individual merits.

Definitions

Terms used in this Land Use Plan have the same meaning as set out in the Queensland Planning Provisions (v2.0) or the *Sustainable Planning Act* 2009. However, where:

- (a) a use which is mentioned in a Gatton Planning Scheme code referred to in this Land Use Plan; or
- (b) a term referred to in this Land Use Plan;

is not defined in the Queensland Planning Provisions (v2.0), the Gatton Planning Scheme definition applies.

If they are not defined therein, they have their plain English meaning.

Grantham State School Site

Should the Grantham State School relocate to a different site at any time during the life of this Land Use Plan, the original school site (included in the community purposes zone at the commencement of this Land Use Plan) is to be taken to be included in the residential living zone. The intent, table of assessment and code provisions of the residential living zone will thereafter apply to the original school site instead of the Community precinct provisions.

Defined Flood Level

The defined flood level for this Land Use Plan is as determined by Lockyer Valley Regional Council having regard to the flooding on 10 January 2011. Council may adopt both an interim and final level following further studies.

Relationship to Gatton Planning Scheme

This Land Use Plan refers to or relies upon various provisions of the Gatton Planning Scheme. To the extent there is any inconsistency between this Land Use Plan and those provisions, this Land Use Plan prevails.

For the purpose of this land use plan, any reference in an identified code of the Gatton Planning Scheme to:

- (a) a zone, means a zone or precinct of the land use plan;
- (b) the Urban residential zone, means the Residential living 1 precinct of the land use plan;
- (c) the Park residential Zone, means the Residential living 2 precinct and Rural residential 1 precinct;
- (d) the Rural residential Zone, means the Rural residential 2 precinct;
- (e) the Commercial Zone, means the Local Centre Zone of the land use plan;
- (f) the Industry Zone, means the Low Impact Industry Zone of the land use plan;
- (g) the Open Space and Recreation Zone, means the Recreation and Open Space Zone of the land use plan;
- (h) the Community Facilities Zone, means the Community purposes zone of the land use plan; and
- (i) a Rural general or Rural agriculture zone, means the Rural Agricultural precinct or the Rural general precinct of the land use plan.

Building work

Building work as defined in the *Sustainable Planning Act 2009* is not regulated by this Land Use Plan.

Plumbing and drainage Work

Plumbing and drainage work as defined in the *Sustainable Planning Act 2009* is not regulated by this Land Use Plan.

Gatton Planning Scheme

References in the Development Scheme to the Gatton Planning Scheme refers to the Planning Scheme for the former Gatton Shire commencing on 1 July 2007 and any subsequent amendments.

Road, waterway and reclaimed land

Where a road, waterway or reclaimed land in the Reconstruction Area is not covered by a zone, the following applies:

- (a) if adjoined on both sides by land in the same zone—the road, waterway or reclaimed land is in the same zone as the adjoining land; or
- (b) if adjoined on one side by land in a zone and adjoined on the other side by land in another zone—the road, waterway or reclaimed land is in the same zone as the adjoining land when measured from a point equidistant from the adjoining boundaries; or
- (c) if road, waterway or reclaimed land is adjoined on one side only by land in a zone—the entire waterway or reclaimed land is in the same zone as the adjoining land.



PART 2

INFRASTRUCTURE

PLAN



Infrastructure Plan

Infrastructure requirements to support the delivery of the Development Scheme for Grantham will be determined by Council as part of the staged detailed design of Council owned land and as part of the development assessment process for non-Council owned land.

Infrastructure will include:

- Roads
- Water
- Sewerage
- Stormwater management
- Parks
- Electricity supply
- Telecommunications
- Community facilities

Listed below is the infrastructure currently identified for the Grantham Reconstruction Area.

Infrastructure	Description of works
Roads	New internal roads to service the new residential area
	New access road between Gatton -Helidon Road and the new residential area over the existing railway line
Water supply	Water supply works for development that connects to existing networks
Sewerage	Provision of package sewerage plant to service the new development
Stormwater Management	New works linking with external stormwater management works
Parks	Provision of new parkland
Electricity Supply	Works as required by the relevant provider
Telecommunications	Provision of telecommunications to the new residential area
Community facilities	Facilities as agreed by the relevant provider

Local Infrastructure

Local infrastructure will include all internal works and external connections required to deliver the development including:

- a. Roads (including internal local roads and external access roads required to service the new development)
- b. Water Supply (including internal and external works to connect to existing infrastructure networks)
- c. Sewerage (including works to proposed new sewerage treatment plant)
- d. Stormwater Management (including works to connect the existing stormwater systems)
- e. Parks (including the delivery of a recreational parkland to service the development)

- f. Electricity Supply (including internal and external works to connect to existing infrastructure networks)
- g. Telecommunications (including internal and external works to connect to existing infrastructure networks)
- h. Community facilities (including community facility sites).

Infrastructure Requirements

The land owner will be required to deliver all local infrastructure required to service the new development.

The Department of Transport and Main Roads is constructing the new railway line crossing connecting Gatton -Helidon Road to the new residential area.

Road design should take into consideration emergency access.

A future electrical substation is likely to be required in the vicinity of the wastewater plant. Actual location and timing of this provision is to be determined by the provider.

The specific infrastructure requirements required for the proposed development will be subject to further detailed infrastructure investigations that will occur as the detailed design is completed and as the development continues. The infrastructure requirements and delivery responsibilities may be amended to reflect the outcomes of these investigations.

Indicative infrastructure plans for roads, water supply, sewerage and stormwater management are included for advisory purposes only.



The History of Infrastructure in Grantham

In 1866, the railway line was built through Sandy Creek (the original name for the siding at Grantham). The first platform at Grantham was constructed in 1875. In 1914 the railway line from Grantham to Helidon was duplicated and in 1936 electricity was installed at the railway station.

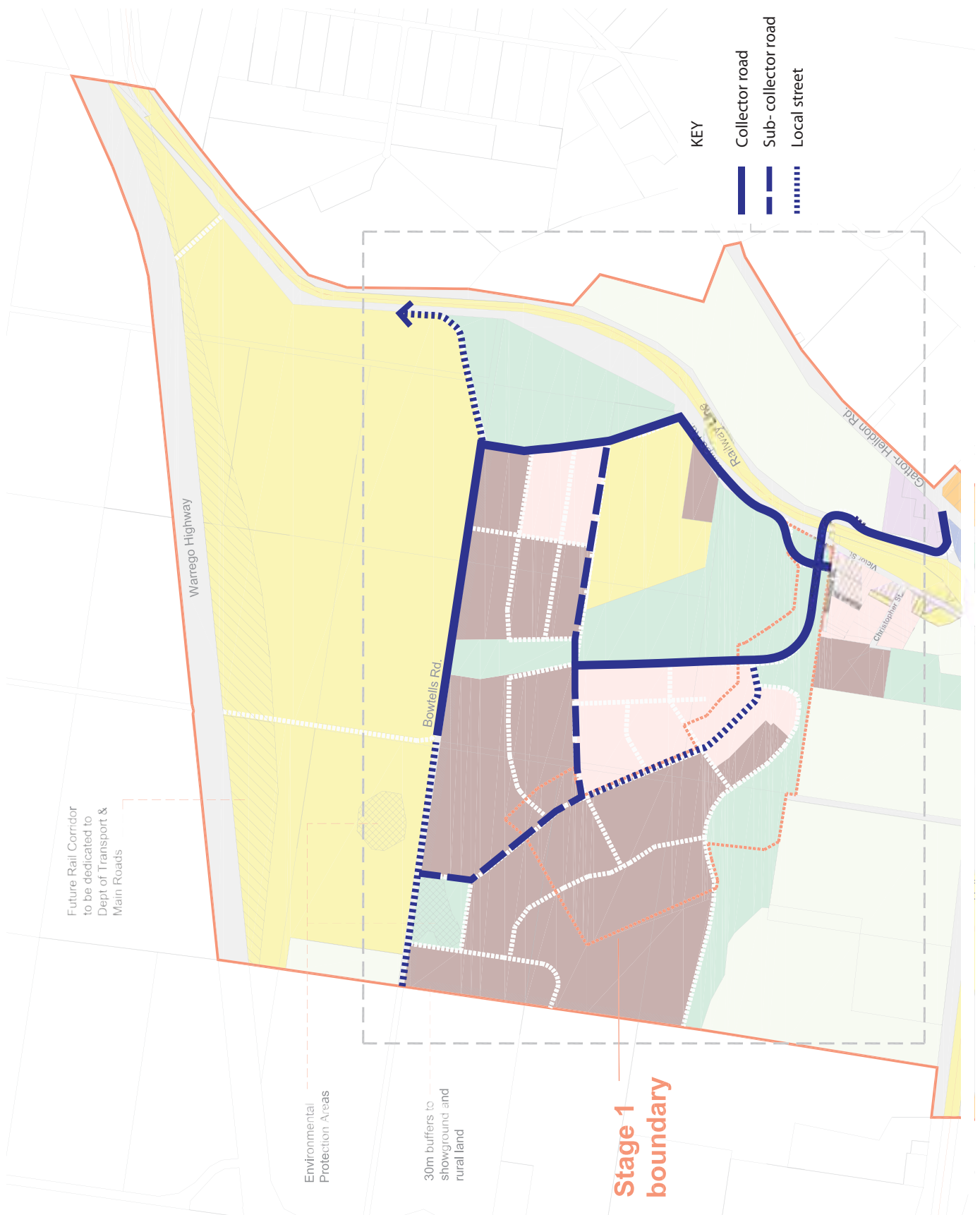
In 1927, a loan was available for water supply for Grantham residents. Bores and windmills with troughs were installed in Gatton, Helidon and Anzac Avenue, Grantham.

The first street lights were switched on in Grantham in August 1936.

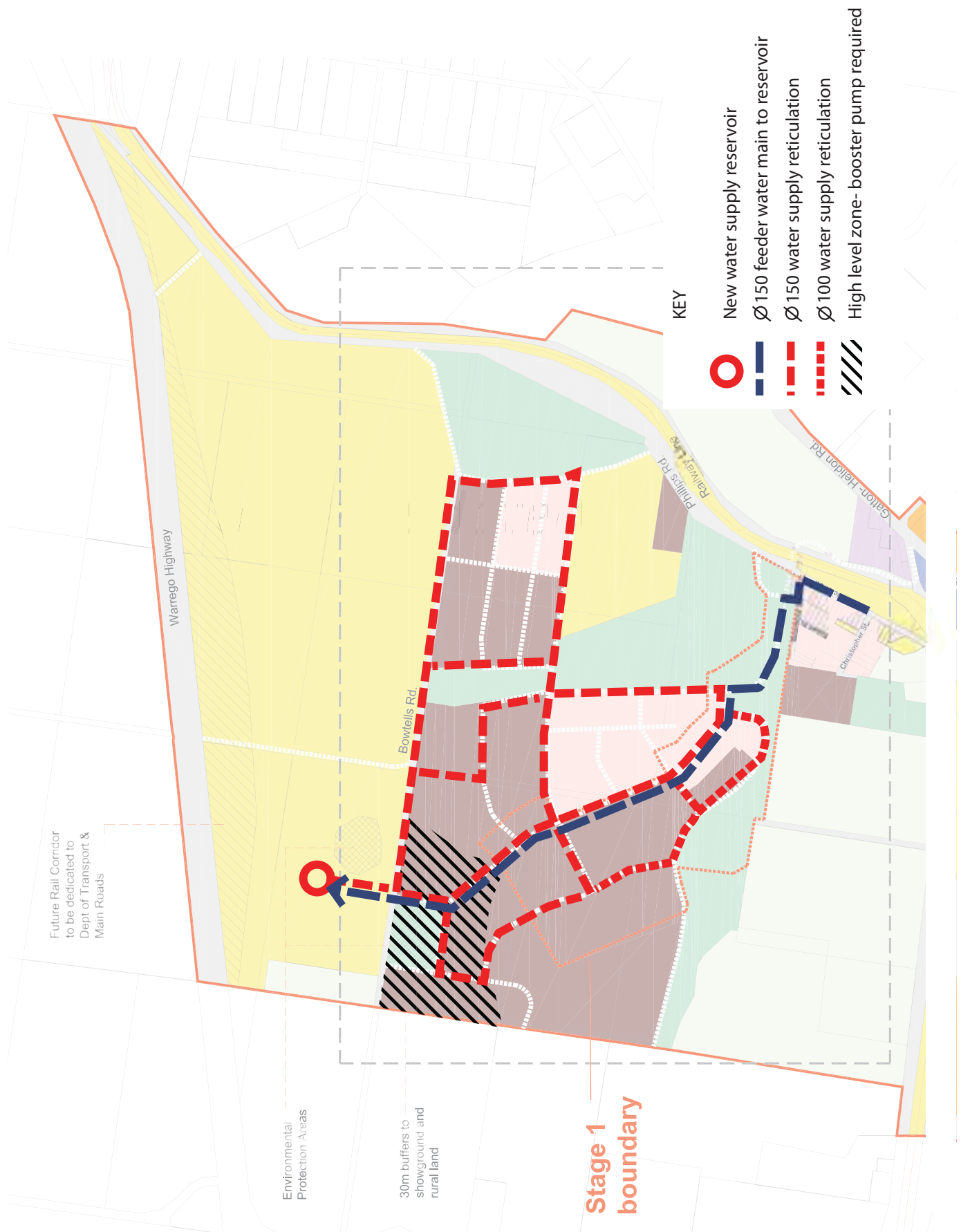
In 1968, the Warrego Highway was rerouted through Grantham and in 1989 the \$10 million Gatton bypass commenced operation and traffic was diverted away from Grantham.

In 1979, the then Gatton Shire Council agreed to borrow \$13,333 to construct the first public toilets alongside the Warrego Highway at Grantham.

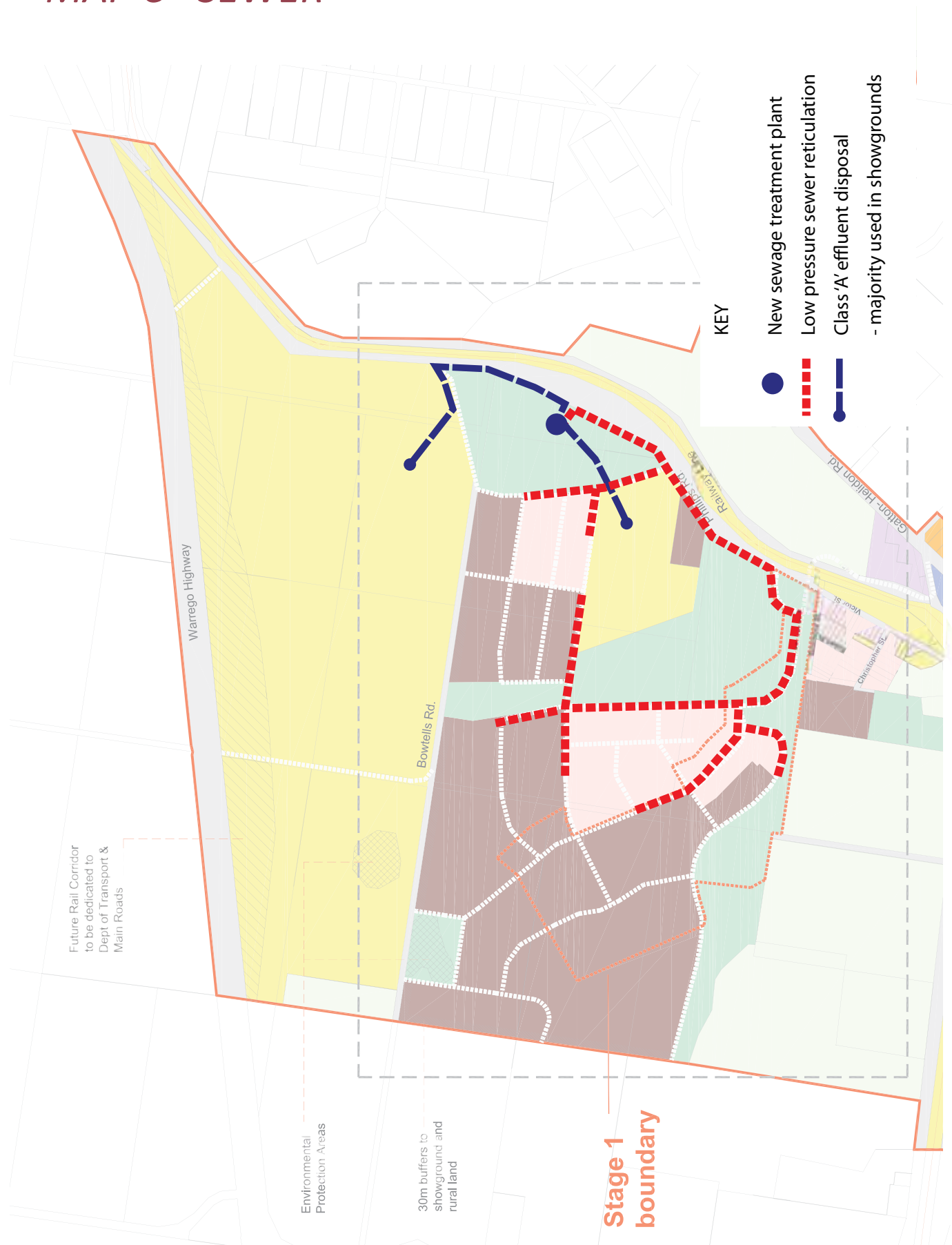
MAP A - ROADS



MAP B - WATER SUPPLY



MAP C - SEWER



MAP D - STORMWATER MANAGEMENT





PART 3

IMPLEMENTATION

STRATEGY



Implementation Strategy

The QldRA Act requires a Development Scheme to include an implementation strategy to achieve the main purposes of the QldRA Act for the Reconstruction Area, to the extent that they are not achieved by the land use plan or infrastructure plan. In this regard, the land use plan and infrastructure plan largely address the main purposes of the QldRA Act to facilitate the effective and efficient rebuilding and recovery of affected communities.

Fulfilling the ultimate vision for the Grantham community is likely to take many years and that is why the immediate priorities are outlined in the two (2) year vision which reflects many of the critical reconstruction needs of the community over the next two (2) years. Whilst contextualised as a 2 year vision, it is likely that the majority of the two (2) year vision with respect to the relocation of displaced residents is likely to occur much sooner with Council having commenced construction on the first stage of the new development in June 2011 in order to ensure that some residents will be in their new homes by Christmas 2011.

Like many things within our society, changes and evolution will occur during the life of this Development Scheme including; technologies, prevailing economic conditions, socio-demographic trends and attitudes and preferences towards housing.

Any changes or evolution as a result of these circumstances can be reflected in a revised master plan for Grantham through any future reviews of Council's Planning Scheme. The Development Scheme has been written using the standardised Queensland Planning Provisions developed by the Department of Local Government and Planning and this will facilitate the transition, review and refinement of the Development Scheme into Council's future planning scheme.

To facilitate Council's Relocation Policy (land swap program) and the costs associated with facilitating this program, it is intended that sufficient additional development over and above that required for the land swap program will be permitted within the Reconstruction Area, on the basis that the costs associated with the land swap program are borne by Council and recouped where possible through additional development yield.

Council released details of its land swap program on 4 May 2011. Specifically, the program involves a voluntary land swap arrangement between Council and residents from Grantham, Murphy's Creek, Postman's Ridge, Hellidon and Withcott who were devastated by the January 2011 flash flooding. The program being facilitated by Council will involve participants receiving a 'like for like' land parcel in the new part of town being developed by Council equivalent in size to their existing property. Council has advised that lots will be awarded under a formalised ballot system where residents will have the opportunity to select preferences for a new lot. Council has nominated that the land swap program will be open in mid 2011 with further nominations open in late 2011 and early 2012.

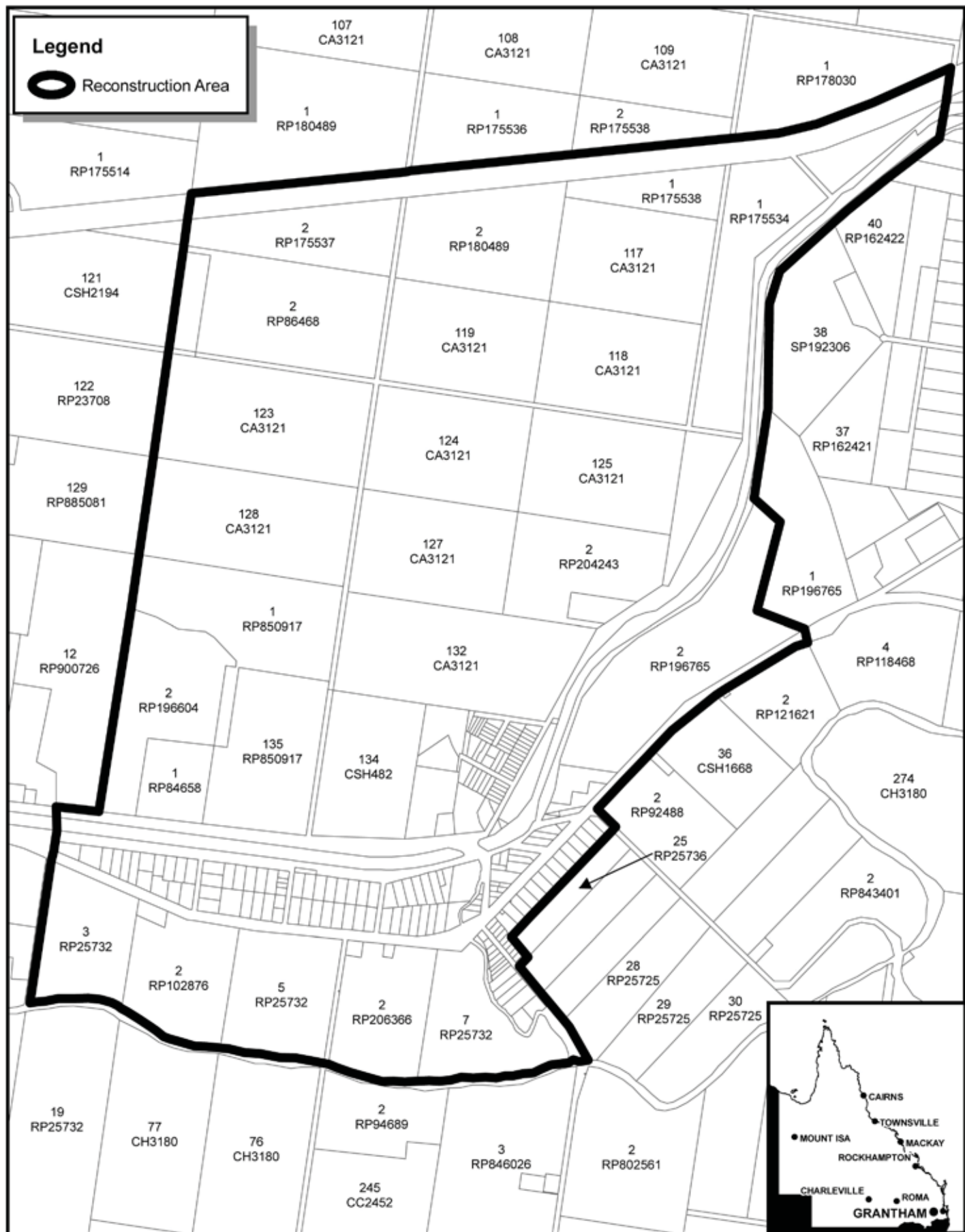
Residents who elect to participate in the land swap program being administered by Council or who elect to rebuild on their current land will be responsible for all housing construction costs including the relocation of housing. It should be noted that some financial assistance may be provided to affected residents who participate in Council's land swap program from the Premier's Disaster Relief Appeal.

This implementation strategy responds to the challenge of delivering a land swap program over an extended period of time by removing regulatory hurdles and providing flexibility in the final development form. Collectively, this Development Scheme will ensure that together the community, Council and the Authority will rebuild a stronger, more resilient Grantham.



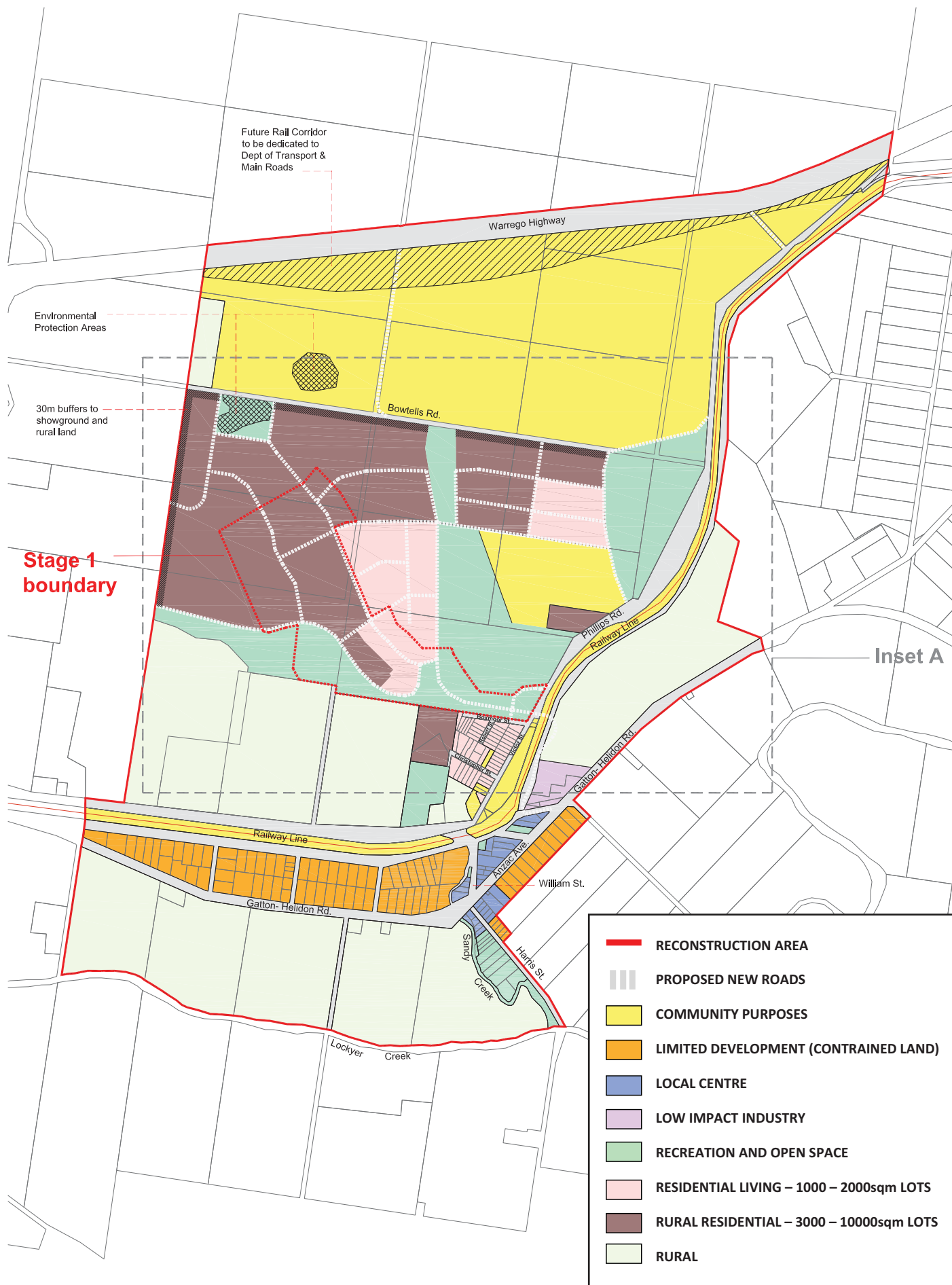
REFERENCE PLANS





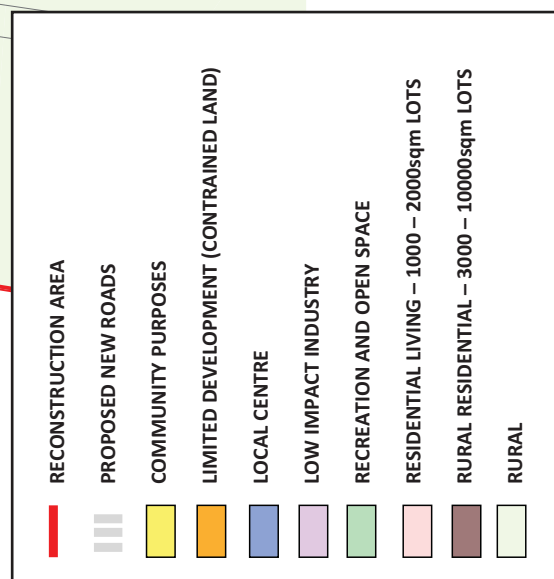
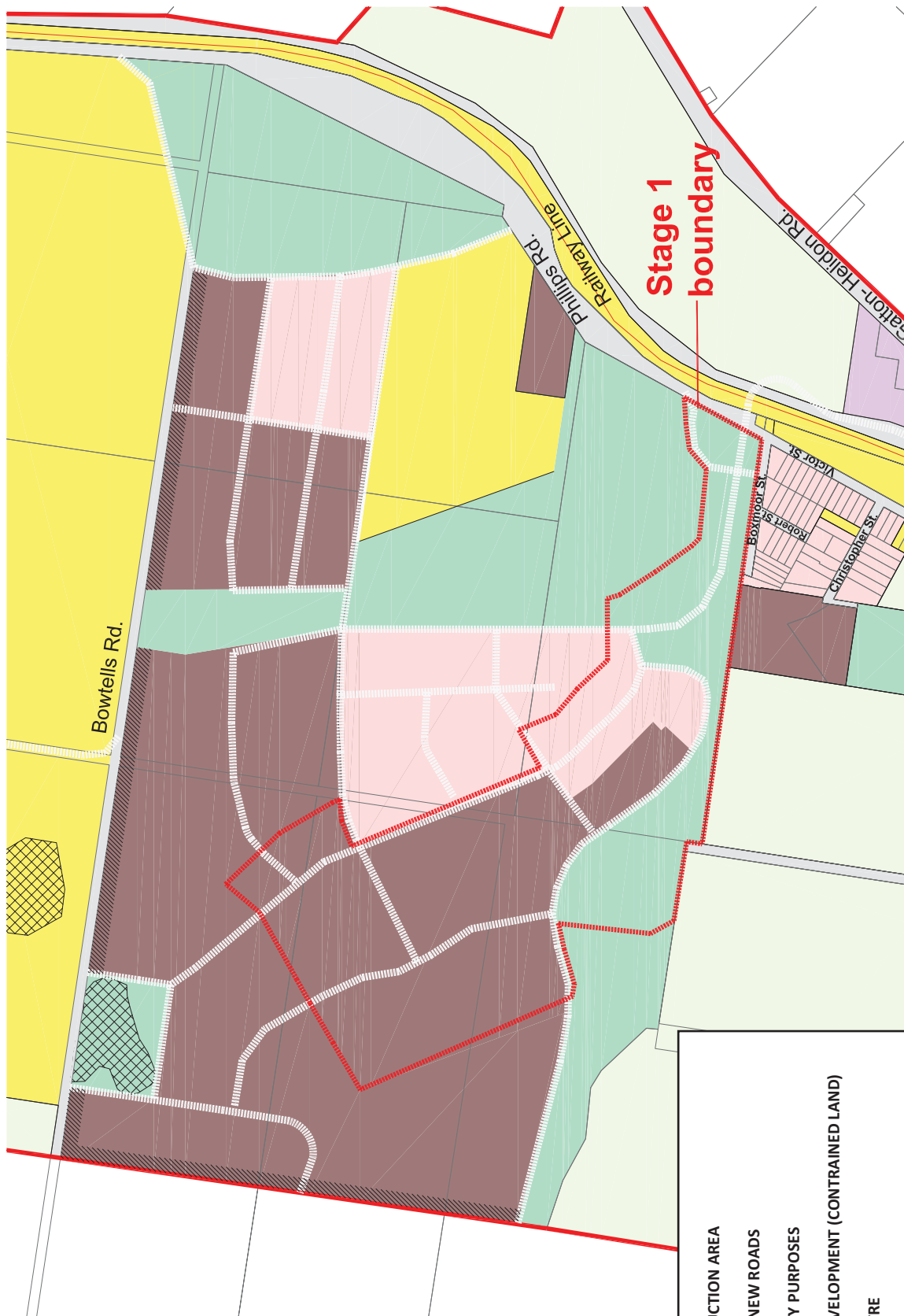
MAP 1 - GRANTHAM RECONSTRUCTION AREA





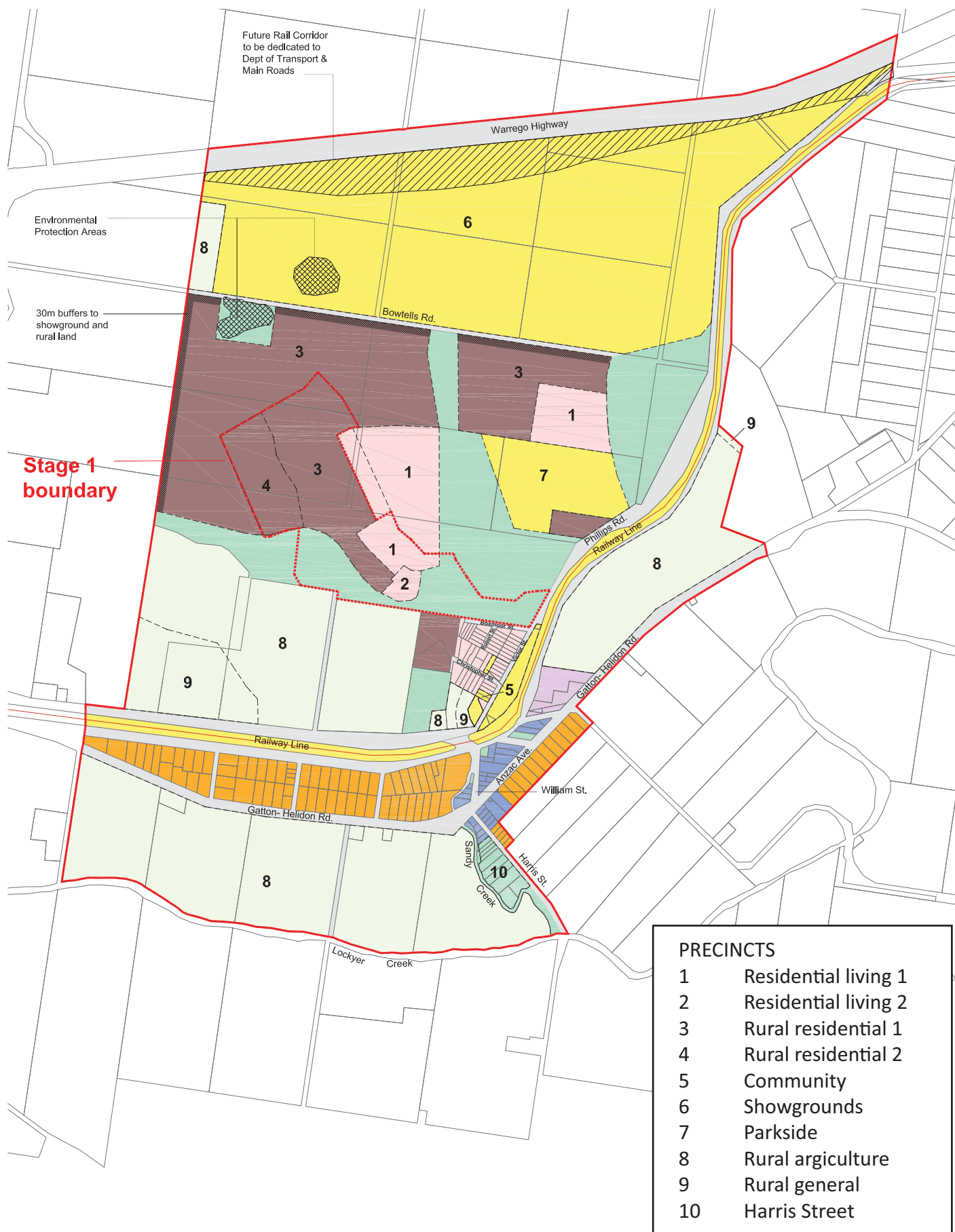
MAP 2 - GRANTHAM RECONSTRUCTION AREA Land Use Plan





MAP 3 GRANTHAM RECONSTRUCTION AREA Land Use Plan - Inset A





MAP 4 - GRANTHAM RECONSTRUCTION AREA Precinct Plan



Notes

Acknowledgements

The Queensland Reconstruction Authority acknowledges the following partners in the creation of this Development Scheme for the Grantham Reconstruction Area.

Members of the Grantham and Lockyer Valley community
Lockyer Valley Regional Council and their consulting team

State Agencies

Department of Local Government and Planning
Department of Environment and Resource Management
Department of Communities
Department of Community Safety
Department of Employment, Economic Development and Innovation
Department of Premier and Cabinet
Department of Transport and Main Roads
Education Queensland
ENERGEX Ltd
Queensland Health
Queensland Rail
Board for Urban Places

The Authority's consultants

PLACE Design Group
Buckley Vann Town Planning Consultants
MWH Consulting Engineers
Clayton Utz
GeoTest
EpiCon Property
The Timelapse Company

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Rebuilding Grantham together



Proposed Development Scheme
Grantham Reconstruction Area

Submissions Report



Grantham Consultation
19 March 2011

Table of Contents

	Executive Summary	4
1.	Background	5
1.1	<i>Declaration of Grantham Reconstruction Area</i>	5
1.2	<i>Proposed Development Scheme for the Grantham Reconstruction Area.....</i>	5
2.	Consultation Process	7
2.1	<i>Consultation Period</i>	7
2.2	<i>Consultation Approach</i>	7
2.3	<i>Key Consultation Results</i>	8
3.	Submission Review	9
3.1	<i>Providing Submissions</i>	9
3.2	<i>Submissions Review Process</i>	9
	<i>Step 1: Registration of Submission</i>	10
	<i>Step 2: Acknowledgement of submission letter</i>	10
	<i>Step 3: Creation of a submission review matrix</i>	10
	<i>Step 4: Classification of submissions</i>	11
	<i>Step 5: Detailed Assessment of Submissions</i>	11
	<i>Step 6: Key Matters Assessment and Implementation into the Submitted Scheme</i>	11
	<i>Step 7: Finalise and distribute submissions report and Submitted Scheme to submitters</i>	11
3.3	<i>Submissions Report</i>	12
4.	Consultation Response	13
4.1	<i>Submitter Type</i>	13
4.2	<i>Issues Raised</i>	13
5.	Detailed Assessment of Submissions	14
6.	State Agency Comments	21
7.	Conclusion	22
	Attachments.....	24

Executive Summary

On 8 April 2011, Grantham was declared a Reconstruction Area through the Queensland Reconstruction Authority Regulation 2011. The declaration of a Reconstruction Area establishes a regulatory framework that ensures that any proposed rebuilding efforts and any applicable approval processes are fast-tracked, enabling works to commence in a timely and efficient manner.

To support the fast-tracked process, under section 62 of the Queensland Reconstruction Authority Act 2011 (QldRA Act) the Queensland Reconstruction Authority (the Authority) may make a Development Scheme for a Reconstruction Area. On 11 May 2011, the Authority released the Proposed Development Scheme for the Grantham Reconstruction Area (the Proposed Development Scheme). The Proposed Development Scheme provides the regulatory framework to support the delivery of the Master Plan. The Master Plan was prepared by Lockyer Valley Regional Council (the Council) with extensive input from the community facilitated through a number of dedicated consultation workshops and was released formally by the Council on 4 May 2011.

Under section 66 of the QldRA Act, the Authority undertook public notification of the Proposed Development Scheme for the required 30 business day period. Any person was invited to make a submission during the public notification period which commenced on 11 May 2011 and concluded on 23 June 2011.

During this Authority-led consultation period, approximately 300 copies of the Proposed Development Scheme and 500 copies of the Summary Flyer were distributed. The Rebuilding Grantham Authority web page received 920 unique visits. The Rebuilding Grantham and other associates videos were viewed more than 400 times.

In total, six (6) submissions were received during the public notification period. The submissions raised a number of matters including individual land owner matters, the provision for a memorial, general comments about the Proposed Development Scheme (including comments on lot sizes and proposed levels of assessment), specific enquiries about the proposed land zonings and comments on the provision of infrastructure in the Reconstruction Area (including the capacity of sewerage the treatment plant). A detailed assessment of these submissions is provided in this report to assist the Authority in making the Submitted Scheme (Refer to section 70 of the QldRA Act).

As required, in accordance with section 70 of the QldRA Act, this Submissions Report summarises the matters identified in the submissions, and provides justification for the extent that the Proposed Development Scheme is to be amended to reflect the matters raised. This justification is required as part of the preparation of the Submitted Scheme.

In accordance with section 72 of the QldRA Act, submitters, who are also affected owners (defined in the QldRA Act as a person who owns land in, or that adjoins the reconstruction area) within the Reconstruction Area, are provided with 20 business days after receiving notice of the Submitted Scheme, to make representations to the Premier and Minister for Reconstruction (the Minister) about the Submitted Scheme.

The Development Scheme for the Grantham Reconstruction Area does not take effect until such time as it takes effect under a regulation.

1. Background

1.1 Declaration of Grantham Reconstruction Area

Since the devastating events of 10 January 2011, the Authority has worked closely with the Lockyer Valley Regional Council (the Council) to determine the level of support the Council requires to ensure that the Lockyer Valley and Grantham emerges as a stronger, more resilient community.

The Council undertook more than 90 one-on-one consultation sessions with members of the community, and Council advised that the majority of the responses from the consultation sessions outlined the desire by residents to remain within Grantham but to relocate to higher ground.

The Council, on 23 March 2011, resolved “*to request that the Premier and Minister for Reconstruction declare Grantham a reconstruction area in accordance with section 43 of the Queensland Reconstruction Authority Act 2011*”.

On 24 March 2011, the Authority’s Board of Management endorsed a recommendation to the Minister for the proposed declaration of the reconstruction area at Grantham in accordance with section 43 of the QldRA Act.

The Queensland Reconstruction Authority Regulation 2011 which declared the Grantham Reconstruction Area (Reconstruction Area) was endorsed by Cabinet on 4 April 2011, approved by Governor in Council on 7 April 2011 and published in the Government Gazette on 8 April 2011 (Refer to **Attachment 1** – Grantham Reconstruction Area).

On 8 April 2011, the Council purchased a significant parcel of land within the Reconstruction Area (Refer to **Attachment 2** – Council owned land). This land is suitable to facilitate the voluntary relocation of flood-devastated residents within the Lockyer Valley. On 11 May 2011, the Council released the Grantham Relocation Policy (land swap program) outlining the details and criteria for Council’s voluntary land swap program.

1.2 Proposed Development Scheme for the Grantham Reconstruction Area

The Proposed Development Scheme for the Grantham Reconstruction Area was prepared by the Authority in accordance with sections 62 to 65 of the QldRA Act and is applicable to development on land within the boundaries of the Grantham Reconstruction Area. The Proposed Development Scheme draws on the master planning work that was undertaken by Council and the Authority in partnership with the Grantham community. The Master Plan was publicly released by Council on 4 May 2011 (Refer to **Attachment 3** – Lockyer Valley Regional Council Master Plan), although subsequent minor changes have been made to this Master Plan by Council.

The Authority prepared the Proposed Development Scheme with regard to the Council’s Master Plan. The Proposed Development Scheme specifically removes regulatory hurdles for the relocation of affected residents to higher ground.

In accordance with section 63 of the QldRA Act, the content of the Proposed Development Scheme is to include; a land use plan, an infrastructure plan; and an implementation plan. In addition to these three core elements, the Authority has also established a vision for the Reconstruction Area. This vision was based on discussions held between Authority staff and members of the community during the Council master planning process and was derived from Council’s Master Plan.

The purpose of the Proposed Development Scheme was to:

- Establish the Vision and Master Plan for the Reconstruction Area;
- Calibrate the regulation of development to achieve the Vision; and
- Identify infrastructure and other strategies and mechanisms to achieve the Vision.

Specific elements of the Proposed Development Scheme are as follows:

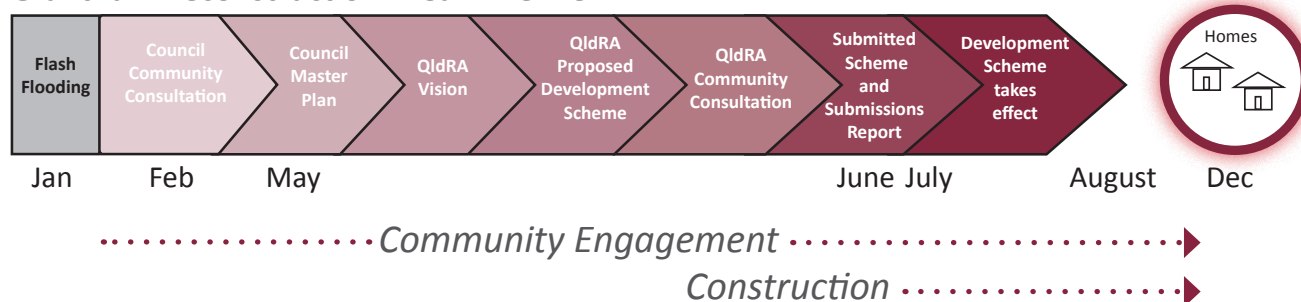
Vision – The vision seeks to articulate the community aspirations for Grantham and provides the basis for the land use plan, infrastructure plan and implementation strategy.

Land Use Plan – similar to a Local Plan that translates the vision and master plan into a Queensland Planning Provision (QPP) compliant land use plan that calibrates and regulates development through clear statements of intent and tables of assessment that support the achievement of the vision.

Infrastructure Plan – supporting the land use plan with specific details relating to elements of infrastructure including roads, water supply, sewer, stormwater, parks, electricity, telecommunications and community facilities.

Implementation Strategy - supports the implementation of the land use plan and the infrastructure plan recognising the importance of Council's land swap program whilst providing sufficient flexibility to cater for changes and evolution that will occur during the life of the Development Scheme.

Grantham Reconstruction Area Timeline



2. Consultation Process

2.1 Consultation Period

Under section 66 of the QldRA Act, the Authority undertook public notification of the Proposed Development Scheme for the required 30 business day period. Any person was invited to make a submission during the public notification period which opened on 11 May 2011 and closed on 23 June 2011.

2.2 Consultation Approach

The objectives of the public notification period, while tailored to suit the varying audiences, were to:

- Inform members of the community about the purpose and objectives of the Proposed Development Scheme;
- Inform the members of the community, the Council and state government agencies about the progress and timeframes;
- Encourage members of the community to participate in the consultation process, specifically by providing written submissions;
- Encourage Government Agencies to provide comment to the Authority.

With these objectives in mind, a consultation strategy for the Proposed Development Scheme was established by the Authority to ensure that any person wanting to make a submission to the Proposed Development Scheme had adequate access and opportunity to access the information. A number of methods of communication were adopted by the Authority including:

Print Media

- Government Gazette notice outlining the Authority's release of the Proposed Development Scheme and the notification period – printed on 11 May 2011;
- Public Notice in the Gatton Star Newspaper outlining the Authority's release of the Proposed Development Scheme, the notification period and the proposed community sessions – advertised on 11 May 2011;
- Hard copies of the Proposed Development Scheme available for collection at the community consultation sessions, at the Gatton Council office, at the Grantham Lucky 7 store and at the Authority's Office; and
- Hard Copies of the Summary Flyer available for collection at the community consultation sessions, at the Gatton Council office, at the Grantham Lucky 7 store and at the Authority's Office.

Web Media

- Electronic viewing of the Proposed Development Scheme on the Authority's website;
- Electronic viewing of the Summary Flyer on the Authority's website; and
- Electronic viewing of the Rebuilding Grantham Together video and other related videos.

Briefing/ Presentations

- Briefing and presentation to Lockyer Valley Regional Council including key Council officers on 10 May 2011;
- Briefing and presentation to Government Agencies on 17 May 2011. Representatives from the following agencies were in attendance:-
 - o Department of Transport and Main Roads;
 - o Department of Local Government and Planning;
 - o Department of Environment and Resource Management;
 - o Department of Community Safety;
 - o Department of Communities;
 - o Department of Employment, Economic Development and Innovation; and
 - o ENERGEX.
- Briefing and presentation to members of the community on 11 May 2011 at 6pm and 14 May 2011 at 10am. Both sessions were held at the Grantham State School. There were 80 members of the community in attendance at the session on 11 May 2011 and 12 members of the community in attendance at the session on 14 May 2011; and
- Participation of Authority officers at the community information day hosted by the Council on 11 June 2011.

2.3 Key Consultation Statistics

During the period 11 May 2011 to 23 June 2011, the following key public consultation statistics were recorded:

- 92 members of the community attended Authority led consultation sessions on 11 and 14 May 2011;
- Approximately 300 copies of the Proposed Development Scheme and 500 copies of the Summary Flyer were distributed to members of the community, agencies and interested persons;
- 980 web page hits (unique page views) were recorded on the Authority – Rebuilding Grantham web page – <http://www.qldreconstruction.org.au/operation-queenslander/rebuilding-grantham>;
- 117 views were recorded of the Ten News “Rebuilding Grantham” video – http://www.youtube.com/watch?v=k_S3hP94NZg&feature=player_embedded;
- 182 views were recorded of the “Grantham Fly Around” video – http://www.youtube.com/watch?v=Ch8GYjGEBto&feature=player_embedded; and
- 130 views were recorded of the “About the Rebuilding Grantham Plan” video – http://www.youtube.com/watch?v=8V1m_T6A8n4&feature=player_embedded.

3. Submission Review

3.1 Providing Submissions

The Authority established a number of mechanisms for the receipt of written submissions. These included:-

- Feedback form provided at the community consultations sessions;
- Feedback form provided in the hard copies of the Proposed Development Scheme and Summary Flyer available for collection at the Gatton Council office, Grantham Lucky 7 Store and the Authority's Office; and
- Feedback form on the Authority's website.

Submissions could also be:-

- Emailed direct to the Authority – info@qldra.org.au;
- Mailed direct to the Authority;
- Placed in submissions boxes provided at the Grantham Lucky 7 Store and at the Gatton Council Office; and
- Handed directly into the Authority at the community consultation sessions or at the Authority's Office.

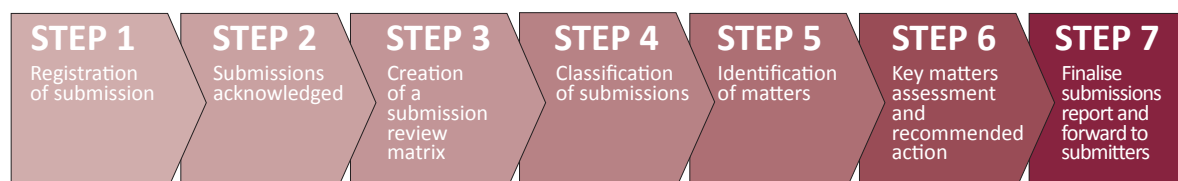
3.2 Submissions Review Process

The submissions review process was established to:

- Ensure all formal submissions were considered in an objective, equitable and fair manner;
- Ensure that the process for assessing submissions and finalising the Development Scheme is transparent and accountable;
- Allow the Minister and the submitters to understand the Authority's consideration of the merits of each submission; and
- Allow the Minister and the submitters to understand to what extent the Proposed Development Scheme is recommended to be amended to reflect the submissions.

The submission review process has been drawn from established Government processes to ensure the effective consideration of submissions. The submission review process is set out in **Figure 1** below.

Figure 1 – Submission review process for the Proposed Development Scheme



STEP 1

Registration of Submission

Submissions were available to be received by one of the following methods:

- Emailed direct to the Authority – info@qldra.org.au;
- Mailed direct to the Authority;
- Placed in submissions boxes provided at the Grantham Lucky 7 Store and at the Gatton Council Office; and
- Handed directly into the Authority at the community consultation sessions or at the Authority's Office.

Following receipt of a submission, the submission was registered into an Authority database and allocated a unique submission number – QRA_GRA_<submission number> (i.e. QRA_GRA_01).

STEP 2

Acknowledgement of submission letter

An acknowledgment letter was sent to any person who lodged a submission with the Authority. This acknowledgment letter outlined the following:

- Acknowledgement of receipt of the submission;
- Individualised submission register number that had been allocated to the submission;
- Confirmation that the submission would be duly considered in the finalisation on the Development Scheme; and
- Advice that the submitter would later receive a copy of the submissions report and the Development Scheme (Submitted Scheme), once finalised.

The letter was prepared by the Authority's Land Use Planning team and approved and signed by the Chief Executive Officer of the Authority.

STEP 3

Creation of a submission review matrix

This step involved the effective organisation of the submissions to allow for the identification of key matters being raised in relation to the Proposed Development Scheme.

The creation of a submissions review matrix enabled the Authority to accurately record and track the submissions received, and to ensure that each matter raised in each submission was adequately considered.

STEP 4

Classification of submissions

This step allowed the Authority's Land Use Planning team to categorise the matters raised in each submission to enable the identification of any common matters with the Proposed Development Scheme.

This step involved highlighting all matters identified in step 3 with particular reference to the relevant sections of the proposed Development Scheme. This also enabled the identification and addressing of common matters.

STEP 5

Detailed Assessment of Submissionse

This step required the detailed assessment of each submission. **Table 1** provides the detailed assessment of the matters raised in each submission.

STEP 6

Key Matters Assessment and Implementation into the Submitted Scheme

As part of the comprehensive identification of matters outlined in step 5, the Authority provided a response to each matter raised in each submission. The response outlines the recommended action in relation to the matter raised in the submission (i.e. Agreed and action recommended or Noted and no further action required) and an explanation of why a change to the Proposed Development Scheme is required or not required. Please see **Table 1** for a detailed assessment of the matters raised in each submission and recommended action.

STEP 7

Finalise and distribute submissions report and Submitted Scheme to submitters

The Authority recommends changes to the Proposed Development Scheme in line with the agreed changes as specified in **Table 1** and detailed in step 6 above.



Community Consultation session - 11 May 2011

3.3 Submissions Report

This Submissions Report has been prepared to summarise and record the assessment of public submissions made on the Proposed Development Scheme.

In accordance with section 71 of the QldRA Act, this report is to be made publicly available via the Authority's website.

Each person who provided a written submission will receive a notice of the Submitted Scheme having being provided to the Minister, and a copy of this Submissions Report and the Submitted Scheme.

In accordance with section 71 of the QldRA Act, those submitters that are also determined to be affected owners for the Reconstruction Area will be notified of their opportunity to make representations to the Minister about the Submitted Scheme for up to 20 business days following receipt of the notice.

Both submitters and submitters who are affected owners for the Reconstruction Area will be provided with a copy of the Development Scheme once it takes effect.

The Development Scheme for the Grantham Reconstruction Area will not take effect until such time as it has been approved under a regulation.



Community Consultation session - 11 May 2011

4. Consultation Response

Six (6) properly made submissions were received during the formal 30 business day public notification period. At the time of completing this Submissions Report, no further submissions have been received outside the formal notification period. Of the six (6) submissions received, all were written and either delivered to the Authority by Post or Email, except for one (1) submission which was collected from the box provided at Council's Gatton office. There were no submissions received in the box provided at the Grantham Lucky 7 Store.

4.1 Submitter type

The majority of the submissions were provided by members of the community, being five (5) out of the six (6) submissions. The sixth submission was received from the Lockyer Valley Regional Council.

Four (4) of the six (6) submissions received are determined to be affected owners as defined in the QldRA Act with particular reference to section 71(c) of the QldRA Act.

4.2 Matters Raised

Of the six (6) submissions that were received, two (2) submissions raised only one (1) matter whilst the remaining four (4) submissions raised multiple matters.

The submitters raised a number of matters relating to the Proposed Development Scheme. Key submission matters included:-

- Individual land owner matters;
- General statements about the Proposed Development Scheme (for example relating to lot sizes and proposed levels of assessment);
- Specific enquiries about the zonings proposed in the Land Use Plan;
- Comments on the proposed provision of infrastructure in the Reconstruction Area (for example capacity of sewerage treatment plant) ;
- General enquiries about the context and implementation of the document;
- Suggested memorial design and placement;
- Amendments to zoning provisions to provide additional services to Grantham;
- The implementation of a "Safe Area" or evacuation zone within the reconstruction area;
- To improve detail of maps and illustrations within the Proposed Development Scheme; and
- Enquiries regarding Council's voluntary land swap program.

A detailed assessment of all submissions is included in section 5 below.

5. Detailed assessment of issues raised

Table 1: Detailed submission assessment

No	Submitter issue	Reference	Authority's response	Decision
1	Considerations to include development for food outlets, offices, shops, etc, in the Low Impact Industry Zone, thus providing day to day services for the town and the broader community.	Part 1 - Land Use Plan	The submitter recognises that new business opportunities and additional services may become available through implementation of the Development Scheme. It is noted that the Low Impact Industry Zone is adjacent to the Local Centre Zone which includes provisions for self assessable development of services including food outlets and shops. It is considered that the Local Centre Zone is the appropriate designation for uses such as food outlets and shops and there is adequate land allocated in the Local Centre Zone for this purpose. There is no overriding need to amend the Low Impact Zone to include provision for these services. It is also noted the Submitted Scheme has been amended to ensure a greater mix of industrial, commercial and business type activities are supported in the Showgrounds Precinct.	Noted. No change required.
2	The placement of a 'Safe Area' or community evacuation zone within the Reconstruction Area.	Part 1 - Land Use Plan	While the concept of a safe area is supported and there are sufficient areas within the Reconstruction Area to meet this need, the Development Scheme is not considered the best mechanism for this purpose. It is recommended that the submitter liaise directly with Council in relation to the inclusion of the Safety Area within Council's evacuation and disaster management policies.	Noted. No change required
3	The relocation of low impact industry services to more appropriate locations, including the relocation of the existing Grantham service station.	Part 1 - Land Use Plan, and Part 2 – Infrastructure Plan	<p>The Development Scheme allows for the provision of low impact industry uses within the Reconstruction Area through the Low Impact Industry Zone, which is located in the south east corner of the Reconstruction Area, between Morgans Road and Gatton-Helidon Road.</p> <p>The three preferences listed by the submitter for the relocation of the existing service station are both within and outside of the Reconstruction Area. The proposed relocation preferences are:</p> <ol style="list-style-type: none"> 1. The first preference is located adjacent to a future Council nominated Warrego Highway exit to Grantham. Options for this preference include both land within the Reconstruction Area (south of the Warrego Highway) and outside of the Reconstruction Area (north of the Warrego Highway). In the case of the proposal for the land located outside of the Reconstruction Area, this is an matter for DTMR and the Council to negotiate and cannot be regulated by the Development Scheme. In the case of the land within the Reconstruction Area, the location of access to the highway is not confirmed and is located on land allocated for future showgrounds and will be subject to future Master Planning by Council. 2. The second preference is for the designation of a Low Impact Industry zone outside the Reconstruction Area to the east. Given that the proposal is outside the Reconstruction Area, it cannot be regulated by this Development Scheme. 3. The third preference is to amend the Land Use Plan to change the Community Purposes Zone (on the southern side of the Railway) to the Low Impact Industry Zone in the area between Morgans Road and Railway Street. This land forms part of the railway corridor and is owned by Queensland Rail and is not considered suitable for Low Impact Industry. <p>The shift of low impact industry services away from the designated zones is likely to have negative economic impacts on the existing and proposed uses in the Local Centre and the Low Impact Industry Zone. Furthermore, allocating low impact industry uses away from the main thoroughfares could also result in increasing traffic on residential streets. It is noted that the existing centre relies heavily on the passing traffic for commercial viability.</p>	Noted. No change required. The relocation of the service station to the areas outside of the Reconstruction Area is a matter for the submitter to discuss with Council in consideration of Council's new Sustainable Planning Act 2009 compliant planning scheme.
4	The erection of a monument/ memorial devoted to those affected by the events of 11 January 2011, including a design proposal for the memorial.	Part 1 - Land Use Plan	<p>The submitter has a significant history and association with the town of Grantham. The Authority acknowledges the importance of recognising the tragic events that occurred and those community members that were greatly affected by the January 2011 floods.</p> <p>While the Authority is not the agency responsible for the erection and establishment of memorials and or monuments, the proposal for the Grantham Memorial has been forwarded to Arts Queensland which is overseeing the implementation of memorials/ monuments in Grantham. It is noted that the memorial would be an appropriate use under the Community Purposes designation within the Land Use Plan.</p>	Noted. No change required. The memorial committee has been requested to liaise directly with the submitter in relation to the proposed memorial.

5	<p>The design of Stage 1 is set by the identified need for replacement lots to swap. This has been established following consultation with affected owners.</p> <p>The planning regulation cannot compel the sale of flood affected land to the Council. There are compulsory purchase powers for this available to local government. The formal requirement to "swap" land is appropriately addressed in concurrent contracts which would include both arrangements to purchase the new lot and arrangements to sell the affected lot. This is a matter for the Council to address outside of the regulatory provisions.</p>	<p>Part 1 - Land Use Plan and Part 3 - Implementation Strategy</p>	<p>The Proposed Development Scheme does not regulate Council's land swap program. It has however been noted as a significant aspect in the Implementation Strategy and is the principal reason for allowing Council to carry out development over and above that required to facilitate the land swap program in order to recoup development costs where possible.</p> <p>It is also acknowledged in the Intent of the Limited development (constrained land) zone as follows "Any land owners in the limited development (constrained land) zone not electing to participate in Council's land swap program will be required to offer Council the opportunity to purchase or swap the land prior to any future property transfer". It is acknowledged that this provision can only take effect by way of regulation in accordance with section 43 (4) and 44 of the QldRA Act. On this basis, it is recommended that the above paragraph be removed and be subject to further discussions between Council and the Authority with the view to introducing a regulation addressing this matter if it is deemed appropriate.</p>	<p>Agreed in part. Recommended to re-move the paragraph "Any land owners in the limited development (constrained land) zone not electing to participate in Council's land swap program will be required to offer Council the opportunity to purchase or swap the land prior to any future property transfer" within the intent of the Limited development (constrained land) zone.</p>
6	<p>Stage 1 makes provision for 81 lots. The demand for lots (number and size) beyond early 2012 is unknown. Flexibility is required to continue to provide for land size equity for ongoing land swap arrangements. In addition, it is likely that the new Showground will create a demand for larger Residential lots for people associated with rural and equestrian activities.</p> <p>There is a high degree of certainty about the mix of lot sizes for Stage 1 because have already indicated their desire to participate in the land swap. This mix cannot be known much ahead of actual demand therefore a flexible arrangement is essential to ensure a suitable and timely outcome.</p>	<p>Part 1 - Land Use Plan</p>	<p>It is acknowledged that the lot layout and configuration beyond stage 1 is currently unknown. The proposed Development Scheme acknowledges this through flexibility applied to both the future layout and levels of assessment. Section 78 of the QldRA Act specifies that if there is a conflict between a Development Scheme and a planning instrument or a plan, policy or code under the Sustainable Planning Act 2009 or another Act, then the Development Scheme prevails.</p> <p>In this regard, it is both necessary and essential that a zoning boundary be determined. In order to recognise the flexibility necessary beyond stage 1, it is proposed to remove minimum lot sizes of 2,000 m2 beyond stage 1. It is also proposed to reduce the minimum lot size for the Rural Residential 1 precinct to 3,000m2 in line with Council's existing Gattop Planning Scheme minimum lot size.</p> <p>The resulting situation beyond stage 1 will mean that the majority of lots will have a minimum lot size of either 1,000 m2 or 3,000 m2. Maintaining these minimum lot sizes is imperative for exempt development. Should lot sizes less than minimums outlined above (for the respective zones) be proposed, they could be considered by Council but would be subject to an impact assessable development application in both the Residential Living and Rural Residential zones.</p>	<p>Agreed in part. Recommended to remove 2,000 m2 minimum lot size in the Residential Living zone (outside of stage 1). Other designations to remain noting that lot sizes less than the minimum of 1,000 m2 or 3,000 m2 (in the respective zones) will require impact assessment in the Residential Living and Rural Residential zones.</p>
7	<p>The Development Scheme provides for approximately 400 lots. The capacity of a sewerage treatment plant has not been addressed and flexibility is essential until short and longer term sewerage capacity is resolved.</p>	<p>Part 1 - Land Use Plan and Part 2 - Infrastructure Plan</p>	<p>The Authority's engineers have advised that the capacity of the sewerage treatment plant proposed or the site is 500 equivalent persons.</p>	<p>Noted. No change required.</p>

No	Submitter issue	Reference	Authority's response	Decision
8	<p>Local Centre Zone</p> <p>Houses on non-flooded site will be exempt development. This is appropriate for the existing houses however the Development Scheme can only function where there is development. The existing development has established rights to remain and continue operation. Also, the regime of assessment for existing houses should allow additions, new garages and sheds and exempt development.</p> <p>New detached houses on vacant sites in the Local Centre Zone are an inconsistent form of development in the Local Centre Zone. The development is impact assessable and there should be a statement in the intent of the zone to confirm that the exempt development status applies to existing houses only.</p> <p>The second paragraph of the intent for this zone refers to "habitable" floor levels. This will not allow enforcement of floor levels in non-habitable uses such as shops and food premises to be regulated. "Habitable" applies to residential activities only.</p>	<p>Part 1 - Land Use Plan</p>	<p>Whilst the Proposed Development Scheme does indicate that dwelling houses are not preferred in the Local Centre Zone where the habitable floor levels are below the defined flood event, chapter 9, part 1 of the Sustainable Planning Act 2009 recognises the protection of existing use rights. The Proposed Development Scheme does not seek to remove these rights.</p> <p>Clarification is recommended in the Table of Assessment that dwelling houses are only permitted to be built as exempt development on land in the Local Centre Zone (and other zones affected by the 10 January 2011 event) if a dwelling house existed on the subject lot at the time of the 10 January 2011 event. Where new dwelling houses are proposed, they will be subject to impact assessment are not preferred in this zone.</p> <p>Elevated floor levels for non habitable uses may not always be practical or successful in the Local Centre zone. Noting this, it is recommended that the following statement be included "Where practical, commercial, business and retail uses are encouraged to rebuild having regard to the defined flood level".</p>	<p>Agreed in part. Recommended to provide clarification to the Table of Assessment for dwelling houses in the Local Centre Zone (and other zones affected by the 10 January 2011 event) that dwelling houses will only be exempt development in these zones where a dwelling house existed on the subject site at the time of the 10 January 2011 event (respecting existing use rights) and that where practical, commercial, business and retail uses are encouraged to rebuild having regard to the defined flood level.</p>
9	<p>No need for more than one zone</p> <p>Stage 1 of the redevelopment is master planned and 81 lots are intended to be swapped for flood affected home sites. The basis for the swap is that participants will receive lots about the same size as the flooded lots that they will transfer to the Council. The layout for subsequent stages cannot be designed until there is an indication of the likely participants in the subsequent stages of the land swap arrangement. These residents may come for Grantham, Murphy's Creek, Postman's Ridge, Helidon and Withcott.</p> <p>A further consideration is the timely availability of sewerage services to the development area. The best way to manage these inherent uncertainties initially is to make provision for the residential area in one zone. As the Council has demand for subsequent stages, these stages can also be the subject of a lot layout master plan, as well as the staged detail design plan for infrastructure. Approval of the plan as a prerequisite for subdivision of the stage is an appropriate way to manage lot layout and design.</p> <p>The two zones and their precincts in the redevelopment plan reflect the mix of lot sizes in Stage 1. There is no way of knowing that this mix is appropriate for subsequent stages and flexibility is required to implement the agreed land swap program.</p>	<p>Part 1 - Land Use Plan</p>	<p>The Proposed Development Scheme was advertised with two zones (Residential Living Zone and Rural Residential Zone) and this was derived from Council's Master Plan.</p> <p>Land required for the Council's land swap program (Relocation Policy) is unlikely to exceed more than 20-25% of the total development yield of the site and the majority of this land is likely to be accommodated in stage 1.</p> <p>The configuration and layout of future stages will be determined by Council or the land owner (if other than Council) having regard to matters including market trends, prevailing economic conditions, socio-demographic trends and attitudes and preferences towards housing.</p> <p>Should uses other than those facilitated in the Development Scheme be proposed at some future point, those uses can be considered by Council as impact assessable development applications or can be considered by Council in the preparation and transition of the Development Scheme into Council's future Sustainable Planning Act 2009 Planning Scheme.</p>	<p>Noted. No change required.</p>
10	<p>Minimum lot sizes</p> <p>At 1,000 m2, the minimum lot size for sewerer residential lots is too large. It is not an economic form of development in major cities and is unlikely to be feasible at Grantham.</p> <p>A 20 m frontage is relatively narrow for a 1,000 m2 lot. It gives a 1:5 frontage to depth ratio. The width of the frontage usually creates the open feel usually associated with larger lots. A 25 m frontage will give a 1:4 ratio (frontage to depth). Urban small lots have a 1:4 ratio. For a larger urban lot, the shape is 1:2.5 ratio.</p> <p>Decreasing the minimum lot size and retaining the 20m frontage will improve the shape of the residential lots.</p> <p>Practically, lots need to be sufficiently wide to allow access to a large shed in the back yard to accommodate vehicles and equipment normally associated with residences in rural service centres.</p>	<p>Part 1 - Land Use Plan</p>	<p>The minimum lot size was determined by Council as part of the preparation of Council's Master Plan and through community consultation processes and workshops. A minimum lot size of 1000 m2 is consistent with the character and amenity of the existing Grantham township and references to major cities are not comparable.</p> <p>In terms of frontage to depth ratio, the existing historic subdivision pattern of the Grantham has this size and dimension. In fact there are a significant number of lots in the Grantham township that have an even greater frontage to depth ratio of 20m x 60-70m.</p>	<p>Noted. No change required.</p>

11	<p>Dual Occupancy</p> <p>Dual Occupancy is an urban form of development and it should be deleted from the Residential Living and Rural Residential zones.</p>	Part 1 - Land Use Plan	Whilst there are some forms of Dual Occupancy (i.e. supported accommodation, granny flats, etc) that would be appropriate, it is agreed that Dual Occupancy development can increase from code assessment to impact assessment.	Agreed.
12	<p>Reconfiguring a lot provisions</p> <p>The level of assessment table identifies Reconfiguration of a Lot (if not exempt) as Code assessable, however it also states 'i.e. Lots not complying with exempt criteria are compliance assessment'. This needs to be clarified.</p> <p>Reconfiguration subsequent to the initial development (i.e. not owned by Council) is not supported and should be Impact Assessable.</p>	Part 1 - Land Use Plan	<p>It is agreed that the level of assessment table reference should be amended as follows "i.e. lots not complying with exempt criteria are code assessable".</p> <p>It is further agreed that reconfigurations undertaken on land initially developed by Council will be subject to impact assessment. Should Council sell balance stages prior to development, any future reconfiguration by a third party would be subject to code assessment provided that the proposal complies with the applicable criteria.</p>	Agreed.
13	<p>Differentiation of lot sizes by precinct adds complication. The requirement to require reconfiguration in accordance with a lot layout master plan will provide sufficient control.</p> <p>Further, the exempt criteria should not differentiate between lots with an area of 1,000 m2 and 2,000 m2 especially because the future mix of lots sizes is not known. The Exempt Development criteria for reconfiguration of a lot should be as follows:</p> <ul style="list-style-type: none"> • Lots have a minimum lot size of 1,000m2; • Are owned by Council; and • In accordance with the lot layout master plan and detailed design plan (for infrastructure) to be determined by Council. <p>A second minimum lot size is required for unsewered lots. This size is consistent with the planning scheme reconfiguration requirements for the Rural Residential zone.</p> <p>These changes need to be incorporated into the Residential Living Code. The Code should also be clear that further subdivision of initial lots created is not envisaged.</p>	Part 1 - Land Use Plan	<p>Agreed in part. As outlined above, it is recommended that the 2000 m2 minimum lot size for the nominated Residential Living zone be removed for areas external to stage 1. This does not preclude larger lots from being developed.</p> <p>The second minimum lot size for unsewered lots refers to the Council's current minimum lot size for land within the Park Residential zone or Village zone and as specified in the Gattton Shire Council Planning Scheme. Specifically, the Reconfiguring a Lot Code (A19.4) prescribes a minimum lot size of 3,000 m2 with a minimum development envelope area of 1,000 m2.</p> <p>The current minimum lot size in the Proposed Development Scheme was derived from Council as part of the preparation of the Council Master Plan. Unsewered lots are required to comply with the Plumbing and Drainage Act 2002 (PD Act) and Planning Scheme Policy 5 – Drainage and Wastewater Management Plans. The Queensland Plumbing and Wastewater code has been designed to provide performance solutions to meet the PD Act.</p> <p>It is agreed that the minimum lot size for lots in the Rural Residential zone (external to stage 1) can be reduced to comply with Council's current standards for land in the Park Residential zone as currently defined in the Gattton Planning Scheme which is 3,000 m2.</p>	Agreed.
14	<p>Minimum size for unsewered lots</p> <p>The dominating development factor for determining the area of unsewered residential lots is the suitability of the soil to absorb waste water on site, in the range of weather conditions that might be experienced. The Gattton Planning Scheme requires all rural residential lots to have a minimum lot size of 3,000 m2. The Park Residential Zone (southern Gattton) has a minimum lot size of 1,000 m2. Soil absorption capacity testing is essential for this specific area to be confident that environmental health standards are not compromised in the future. Testing will determine a locally suitable minimum lot size where sewerage is not available.</p>	Part 1 - Land Use Plan	Agreed. As detailed above in Submission Matter No. 13.	Agreed.
15	<p>Community Purposes Zone</p> <p>The levels of assessment Table requires exempt development to be in accordance with any requirement from DTMR and DERM. This cannot be enforced if there is no requirement for an application for exempt development.</p>	Part 1 - Land Use Plan	<p>It is agreed that the requirements from DERM and DTMR both need to be considered as part of future development proposals for the Community Purposes zone.</p> <p>On this basis, the level of assessment should be increased from Exempt to Code Assessable and reference to "in accordance with any requirements of the Department of Transport and Main Roads and Department of Environment and Resource Management" can be removed as code assessable applications in the zone will trigger referral to both of these agencies as part of the development application process.</p>	Agreed.

No	Submitter issue	Reference	Authority's response	Decision
16	<p>Defined Flood Level Thorough out the Land Use Plan there are a variety terms and approaches used for flood level regulation. They include, habitable floor level, defined flood event, habitable floor level 300mmm above the defined flood level.</p> <p>The Development Scheme includes a significant factor of safety for development above the 10 January 2011 flood event. The development area is well defined and small. In these circumstances, a floor level expressed as a reduced level is appropriate. This same level can be applied to redevelopment of flooded premises when that is contemplated.</p> <p>When the Council wide flood study is available for incorporation into the planning scheme, the controls for this particular area can be reviewed.</p>	Part 1 - Land Use Plan	<p>Agreed. References through the document should be amended to refer to "defined flood level" which is defined by Council having regard to the flooding on 10 January 2011. References to "habitable floor level" refer to floor levels a minimum of 300mm above the defined flood level.</p> <p>The Council is currently preparing a flood study for Lockyer Valley and will set the defined flood level having regard to the 10 January 2011 flood event.</p>	Agreed.
17	<p>Limited Development Zone The final paragraph in the Limited Development (constrained land) Zone suggests that it is possible for the Development Scheme to compel owners of this flooded land to offer it to the Council first. An intention to sell land is not "development" for the purposes of the Sustainable Planning Act 2009 so this idea is not enforceable through the planning regulation.</p> <p>The application of the Limited Development Zone is awkward. It is trying to stop future residential development where a land swap occurs, and retain the right to rebuild (with floor level criteria) where the owners at 10 January 2011 want to rebuild. Specification of the floor level must be absolute for this exemption to apply. Consideration should also be given to the floor levels for sheds and garages on the exempt development sites. It is assumed that they are also required to be above the flood level.</p> <p>The intention that amalgamated lots obtained by the land swap arrangement are used for agricultural purposes does not sit well with the State Planning Policy that seeks suitable buffers between agricultural uses and residential development.</p>	Part 1 - Land Use Plan	<p>The intent of the Limited development (constrained land) zone specifies that "Any land owners in the limited development (constrained land) zone not electing to participate in Council's land swap program will be required to offer Council the opportunity to purchase or swap the land prior to any future property transfer". It is acknowledged that this provision can only take effect by way of regulation in accordance with section 43 (4) and 44 of the QldRA Act. On this basis, it is recommended that the above paragraph be removed and be subject to further discussions between Council and the Authority with the view to introducing a regulation addressing this matter if it is deemed appropriate.</p> <p>Whilst the Proposed Development Scheme does indicate that dwelling houses are not preferred in the Limited Development (constrained land) zone where the habitable floor levels are below the defined flood event, chapter 9, part 1 of the Sustainable Planning Act 2009 recognises the protection of existing use rights. The Proposed Development Scheme does not seek to remove these rights.</p> <p>Clarification is recommended in the Table of Assessment that dwelling houses are only permitted to be built as exempt development on land in this Zone (and other zones affected by the 10 January 2011 event) if a dwelling house existed on the subject lot at the time of the 10 January 2011 event. Where new dwelling houses are proposed, they will be subject to impact assessment are not preferred in this zone.</p> <p>The aggregation of lots obtained by the land swap does not imply that they will immediately be used for agricultural purposes, but the long term strategy is for these uses to prevail in this zone.</p>	<p>Agreed in part. Recommended to remove the paragraph "Any land owners in the limited development (constrained land) zone not electing to participate in Council's land swap program will be required to offer Council the opportunity to purchase or swap the land prior to any future property transfer" within the intent of the Limited development (constrained land) zone.</p> <p>Recommended to provide clarification to the Table of Assessment for dwelling houses in the Limited Development zone (and other zones affected by the 10 January 2011 event) that dwelling houses will only be exempt development in these zones where a dwelling house existed on the subject site at the time of the 10 January 2011 event (respecting existing use rights).</p>

18	<p>Context</p> <p>The time line is inappropriate as the Development Scheme will not be finalised before the end of June.</p>	Context	It is agreed that the timeline should be updated to reflect the current timeframes.	Agreed.
19	<p>Setback controls</p> <p>These appear in the Zone codes. Are the setbacks measured to the outermost projection or to the external wall?</p> <p>For the Local Centre zone the setbacks are mandatory; however for the Residential Living Zone, the setbacks should be a minimum, with larger setbacks also being an appropriate outcome.</p> <p>Rural Residential Zone AO1.2 – lists the setbacks from boundaries for Rural Residential development. If this zone is retained, the outcomes apply to land and that is appropriate for adjoining or adjacent Residential Living, Local Centre and Community Use zones. Additional setback to the road frontage of 10 metres is more appropriate for other Rural Residential zones and the proposed showground.</p> <p>Alternatively an outcome for setback to a road of 10 metres in the showground precinct is a more appropriate way to manage amenity issues from the use causing them. Particular consideration needs to be given to the small site south of Bowtells Road.</p> <p>Community Purposes Zone A1.2 – The setbacks specified are not consistent with the setbacks of existing development. More consistent setbacks are:</p> <p>(a) Street frontage opposite residential living or recreation and open space zone 0 – 3m;</p> <p>(b) Street frontage from any other location 3m; and</p> <p>(c) Side or rear boundary with residential living or recreation and open space zone 6m.</p> <p>Low Impact Industry AO1.2 - The setback to the road could be 0m as for the Local Centre Zone. This will encourage rear parking and create a consistent streetscape.</p>	<p>Part 2 – Infrastructure Plan</p>	<p>Council's existing Gattton Planning Scheme measures setbacks to the outer most projection of all covered structures including covered and uncovered pergolas but excluding eaves or other sun shading devices projecting out from the walls. The same interpretation is recommended in the Development Scheme.</p> <p>In terms of setbacks within specific zones, the following comments are offered:</p> <ul style="list-style-type: none"> Local Centre zone – Noted; Residential Living zone – Agreed, setbacks should be a minimum 6m setback from the front boundary; Rural Residential – Agreed, setbacks should be a minimum 10m setback from the front boundary; Community Purposes zone – Not agreed noting that the existing butter factory building within the Community Precinct of the Community Purposes zone is located 0m from the Victor Street setback in one location; Low Impact Industry zone – Not agreed as the types of building and built form which would support a 0m setback are not regulated by the Proposed Development Scheme, nor are they proposed to be regulated. 	<p>Agreed in part. Recommended that setbacks be reviewed for Residential Living and Rural Residential zones to reflect "minimum" setbacks.</p>
20	<p>Infrastructure required</p> <p>The table on page 39 lists water supply and sewerage together, implying that there is an existing sewerage service in Grantham. This is incorrect. This same error appears in "Local Infrastructure, b." on the same page.</p> <p>The table on page 40 lists infrastructure items; a description of the size of the infrastructure required; and the likely timing. At this time, a detailed design is available for Stage 1 and this review of the documentation reveals that some changes are required to the road layout. It is impossible to determine the future works with the level of accuracy implied by a list such as the one in this table given the land swap concept that underpins this redevelopment plan. Other than for Stage 1 and even for it, the value of the list in the table is questioned.</p>	Plans	<p>It is not agreed that the Proposed Development Scheme implies that there are existing sewerage services in Grantham, however it is agreed that the water supply and sewerage references be separated.</p> <p>Updated detailed designs for stage 1 are recommended to be incorporated into the Development Scheme with schematic designs for the remaining stages noting the obvious variable nature of these schematic designs post stage 1.</p>	Agreed.
21	<p>Map 2 Land Use Plan</p> <p>The location of the rail line crossing has changed. This will affect the final extent of the Low Impact Industry Zone. Once the alignment of the new road over the railway line is confirmed this can be finalised. Flexibility or a suitable notation is required to accommodate this.</p>	Reference Plans	An updated detailed design for the rail line crossing being constructed by the Department of Transport and Main Roads will be incorporated into the Development Scheme and an amendment to the Low Impact Industry zone is proposed in accordance with Council's revised Master Plan.	Agreed.

No	Submitter issue	Reference	Authority's response	Decision
22	<p>Map 3 Land Use Plan - Insert A. Bowtells Road east does not have any lots fronting that road. This is not what was intended. The village should not turn its back on the showground.</p> <p>The lot mix in the area serviced by Streets "C", "E", "F", "G", "H", "I" and "J" is not consistent with the current Master Plan.</p> <p>The new park located on the northern side of Boxmoor Street is not shown and the road network in the area requires revision and updating as a result of the new park.</p> <p>If the Rural Residential zone is retained, the maximum area in the legend needs to be altered to "10,000 m²".</p>	Part 2 – Infrastructure Plan	It was always intended that lots fronting Bowtells Road East would have frontage to this road. The land use plan and relevant Infrastructure Plans have been updated to reflect Council's latest Master Plan.	Agreed.
23	<p>Map A Roads Two changes in alignment for road "E". If these indicate traffic calming, then they should be indicated appropriately so that they are reflected in a subsequent staged detail design.</p> <p>Bowtells Road is not shown on the north western boundary of the plan. It is required for access to the showground and therefore should be shown.</p>	Part 2 – Infrastructure Plan	It is agreed that Bowtells Road should be shown and the current alignments for all roads updated in accordance with Council's latest Master Plan.	Agreed.
24	Map B – Water supply Omits a reference to a reservoir.	Part 2 – Infrastructure Plan	At the time the Proposed Development Scheme was prepared, a reservoir was not determined to be necessary. It is agreed that the Development Scheme should be amended to include this requirement based on the current engineering designs.	Agreed.
25	Map C Sewer Shows the proposed location of the waste water treatment plant, however this location may change. A reference to a possible site may be more appropriate at this time.	Part 2 – Infrastructure Plan	The Proposed Development Scheme notes that the "proposed package plant". It is preferable to retain the references at this time noting that the proposed package treatment plant may be relocated based on the final engineering design provided there are no consequential land use implications.	Noted. No change required.
26	Map D - Stormwater Management Requires updating to reflect the road layout change in Stage 1 to accommodate the new park. As a consequence of redesign of the road layout, the stormwater layout in this area has changed.	Part 2 – Infrastructure Plan	The land use plan and relevant Infrastructure Plans (stormwater management) should be updated to reflect the current design of Council's latest Master Plan and engineering design drawings.	Agreed.
27	Implementation Strategy The land swap arrangements do not constitute "development" for the purposes of the Sustainable Planning Act 2009 and are unable to be enforced through a planning regulation.	Part 3 - Implementation Strategy	This is correct. At no stage is the Proposed Development Scheme seeking to regulate Council's land swap program (relocation policy).	Noted. No change required.
28	Residential land uses in an area now zoned "Local Centre Zone" and the possibilities for these lots to be used for residential purposes.	Part 1 - Land Use Plan	The "Local Centre zone" allows dwelling houses to be built as exempt development if a dwelling house existed on the subject lot at the time of the 10 January 2011 event subject to habitable floor level being 300mm above the defined flood level. Where new dwelling houses are proposed outside of this requirement, they will be subject to impact assessment are not preferred in this zone. It is noted that the Council is currently undertaking flood modelling to determine the Defined Flood Level for Grantham.	Noted. No change required.
29	A land owner had a commercial structure which had to be demolished after the 10 January 2011 event, which was in a previous "light industry zone". The site is now a part of the Local Centre Zone. Clarification is sought if the commercial structure can be rebuilt in the new Local Centre Zone.	Part 1 - Land Use Plan	There is no light industry zone in the current Gattton Planning Scheme in Grantham. It should be noted however that there may be some uses with existing use rights which will continue to be protected in accordance with Chapter 9, Part 1 of the Sustainable Planning Act 2009. Notwithstanding this, it should be noted that a service industry use is a self-assessable development within the Local Centre Zone provided that the proposed use meets the assessment criteria of the relevant provisions in the Development Scheme.	Noted. No change required.
30	Submitter seeking confirmation of a location that would be suitable for light industrial uses.	Part 1 - Land Use Plan	The subject site is located in the proposed Low Impact Industry Zone which will cater for light industrial uses. This zone is located on the land between Morgans Road and Gattton-Helidon Road.	Noted. No change required.
31	The submitter raised multiple matters and enquiries in relation to the voluntary Land Swap Program being facilitated by Council.	Part 1 - Land Use Plan and Part 3 - Implementation Strategy	The voluntary Land Swap Program is a Council project in accordance with Council's Relocation Policy. The Authority is not involved in administering or organising the Land Swap Program. All enquiries in relation to the Land Swap Program must be directed to Council. The questions raised by the submitter in relation to the Land Swap Program do not relate to the Development Scheme. Therefore no changes to the Development Scheme are required.	Noted. No change required.

6. State Agency Comments

State agencies were given the opportunity to provide comment on the Proposed Development Scheme. State agency comments were not considered as formal submissions to the Proposed Development Scheme. The Authority has incorporated the state agency comments into the Submitted Scheme where appropriate. The state agency comments are summarised below:

Department of Community Safety	<ul style="list-style-type: none">• Defined Flood Level and habitable floor levels• Emergency vehicle access• Bushfire Risk and Landslide
Department of Transport and Main Roads	<ul style="list-style-type: none">• Recognition of the new access to the Reconstruction Area• Protection of future Gowrie-Grandchester railway corridor
Department of Employment, Economic Development and Innovation	<ul style="list-style-type: none">• Encouragement of a range of activities in the Showground Precinct to encourage local economic growth• Depict street and creek names on maps within document
Department of Communities	<ul style="list-style-type: none">• Ensure the Development Scheme allows for future provision of social, affordable and public housing options• Encouraging affordable and efficient building design
Department of Local Government and Planning	<ul style="list-style-type: none">• Compliance with the Queensland Planning Provisions• Suggestions about clarifying the statutory effect of the Development scheme in relation to other instruments, such as the South East Queensland Regional Plan• Board for Urban Places - Housing design advice and capacity building in the Council
Department of Environment and Resource Management	<ul style="list-style-type: none">• Recognition of good quality agricultural land and strategic cropping land within the Reconstruction Area• Confirmation that Development Scheme appears to have adequately acknowledged biodiversity values and applied appropriate land zones.
ENERGEX	<ul style="list-style-type: none">• Confirmation that existing network has the capacity to support the new development in the Reconstruction Area over the next 2 years• Potential provision of additional energy infrastructure in the long term to address increased demand for power (which can be catered for in the Community Purposes Zone)
Queensland Health	<ul style="list-style-type: none">• Promotion of active transport (walking and cycling)• The importance of connectivity between residential, commercial and community zones

7. Conclusion

This Submissions Report has been prepared to provide submitters and the Minister with assurance of the Authority's transparent and accountable process in relation to the assessment of submissions for the Proposed Development Scheme for the Grantham Reconstruction Area.

An extensive consultation strategy was undertaken by the Authority to ensure that the community was able to actively participate in the consultation process, particularly through providing written submissions. The use of a range of consultation methods including print media, web media and community consultation sessions ensured that the community had adequate access and opportunity to access to the relevant information in relation the Proposed Development Scheme.

The adopted consultation approach also ensured that state agencies were able to provide input into the preparation of the Submitted Scheme to the Authority.

In total, the Authority received six (6) formal submissions for the Proposed Development Scheme during the public notification period. The thorough and detailed process for reviewing each submission received, as outlined in this report, has ensured that the Authority considered all submissions in an equitable, objective and fair manner. Furthermore, this report allows the affected owners and the Minister to understand the extent that the Proposed Development Scheme has been amended to reflect the submissions received.

As required by section 70 of the QldRA Act, this Submissions Report summarises the matters identified in the submissions, and provides justification for the extent that the Proposed Development Scheme is to be amended to reflect the matters raised. This justification is required as part of the preparation of the Submitted Scheme.

In accordance with section 72 of the QldRA Act, submitters, who are also affected owners will be provided with 20 business days after receiving notice of the Submitted Scheme, to make representations to the Minister about the Submitted Scheme.

The Development Scheme for the Grantham Reconstruction Area does not take effect until such time as it has been approved under a regulation.

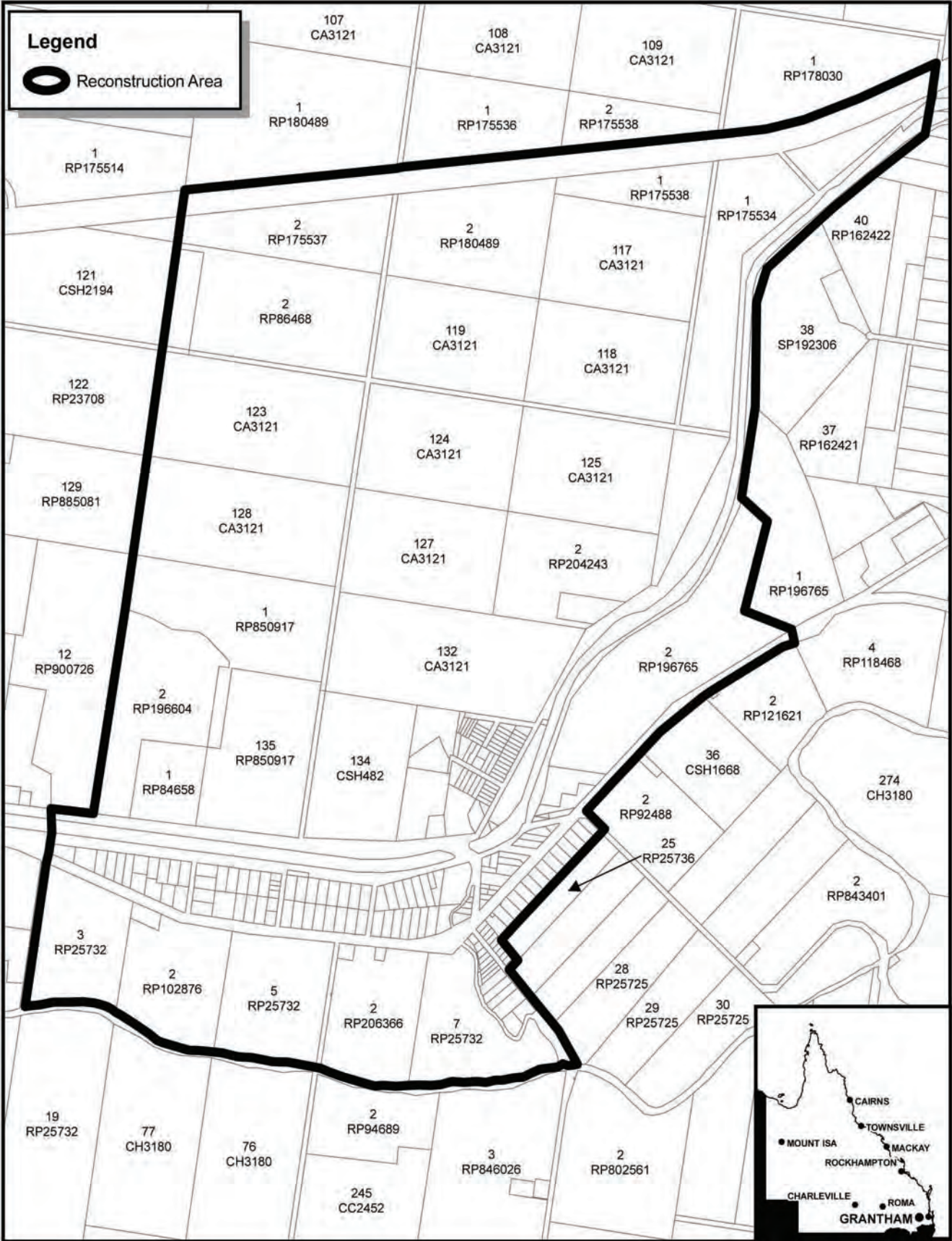
A regulation will not be considered prior to the expiry of the 20 business day period for affected residents. Once in effect, the Development Scheme will be published on the Authority's website and will provide the regulatory framework for the development of the Grantham Reconstruction Area and will ensure that any approval processes are fast-tracked to enable rebuilding to occur in a timely and efficient manner.

For further information in relation to the Submissions Report, please visit the Authority's website at <http://www.qldreconstruction.org.au/operation-queenslander/rebuilding-grantham> or contact the Authority on 1800 110 841 or email to info@qldra.org.au.

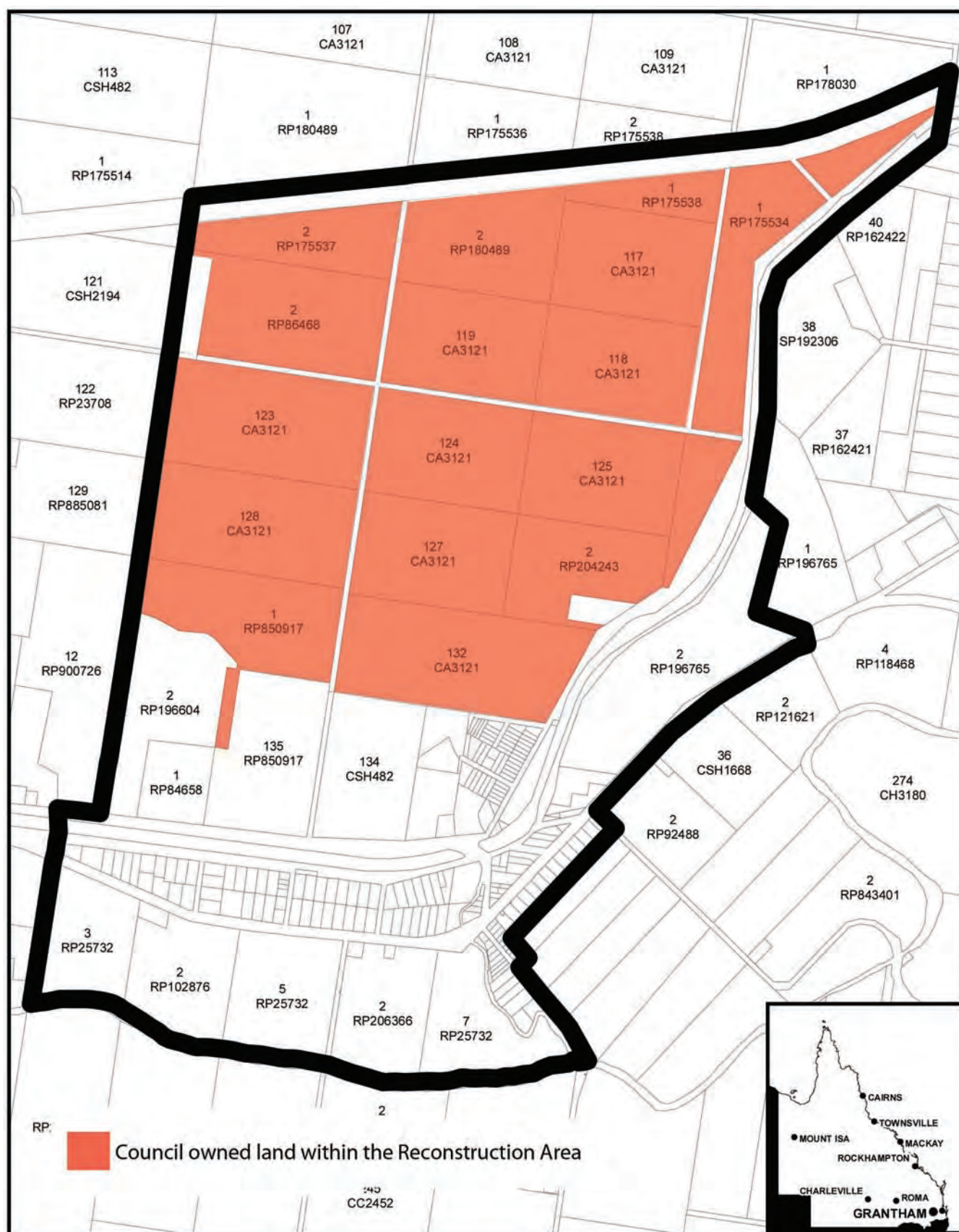


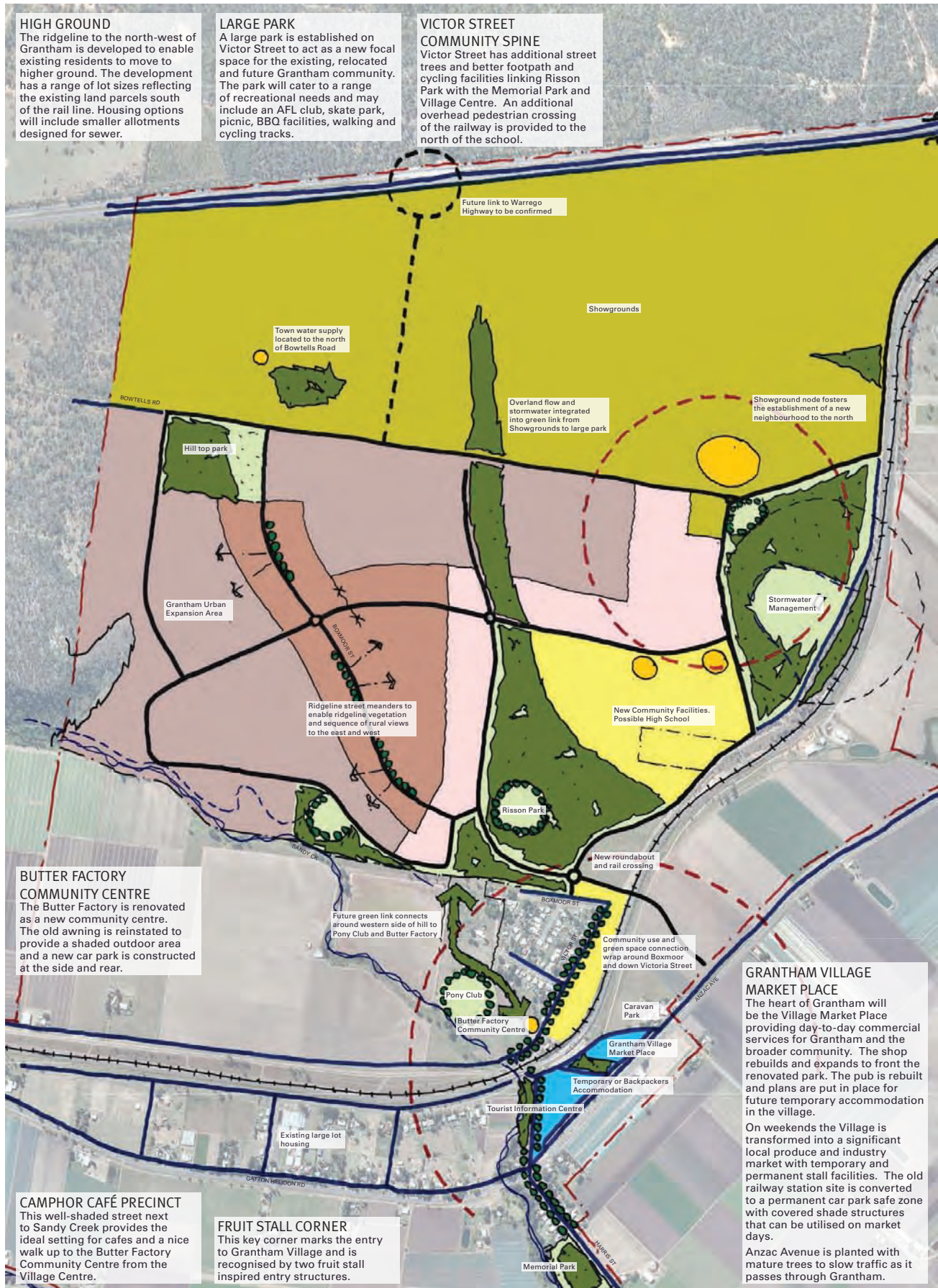
ATTACHMENTS

ATTACHMENT 1



ATTACHMENT 2









Rebuilding Grantham together

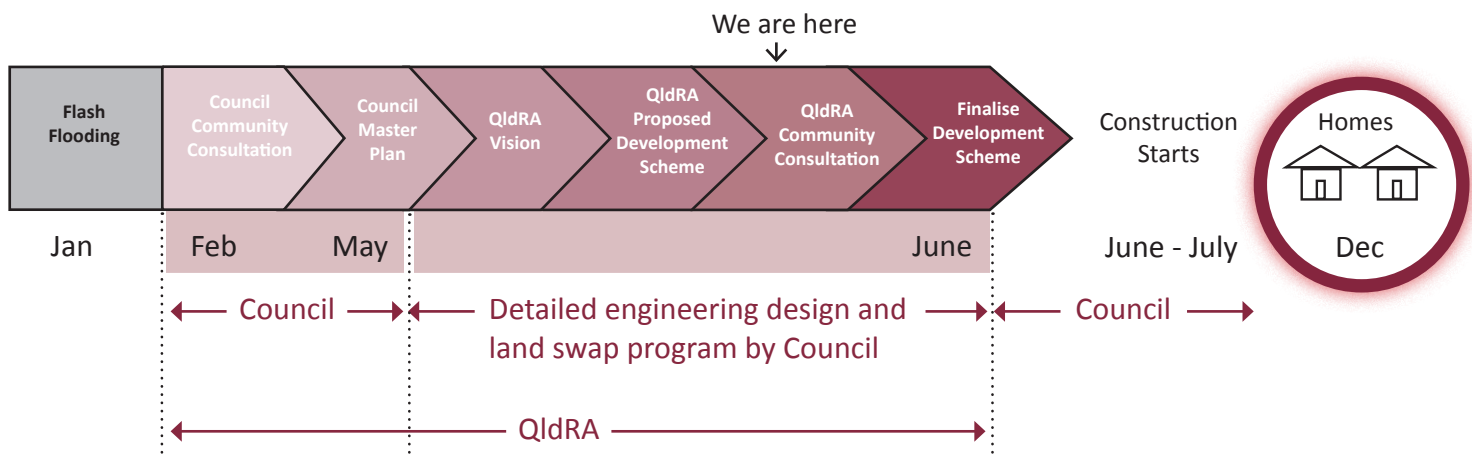


Proposed Development Scheme

Grantham Reconstruction Area

Context

The proposed Development Scheme for the Grantham Reconstruction Area outlines the blueprint for the reconstruction of Grantham after the devastating events of 10 January 2011. The Queensland Reconstruction Authority (QldRA) together with the Lockyer Valley Regional Council (Council) have worked in consultation to develop a plan which provides for a prosperous future for Grantham and the Lockyer Valley. The journey in developing this blueprint has been ongoing since February 2011 and has involved extensive community consultation. The figure below identifies the steps that have been undertaken to support this collaborative approach allowing construction of the new residential area to commence mid 2011.



Photos taken from Community Consultation sessions held on 19, 23 and 26 March 2011.

It has been two years since the dreadful events of January 2011, and our community of Grantham has rebuilt itself in a way which shows great pride, strength and resilience, while staying true to our history and character and respecting those who suffered during those tragic events.

The main street along Anzac Avenue is thriving again, with the new store, hotel and information centre proudly rebuilt stronger and better. Members of our community and visitors alike have embraced the businesses in the main street so they are more prosperous than ever. The main street is a strong heart to our once again strong community.

The former residential area west of Harris Street is now a park much valued by our community as a place to reflect. Some of the flood-affected areas west along the Gatton-Helidon Road have converted back into rural uses, although a few strong highset homes have been built by those who have chosen to stay and rebuild in the area.

As I enter William Street I notice distinctive and colourful shade structures which are home to weekend fruit stalls and are a hive of activity with residents and visitors buying their weekly produce. There are a few cafés located under the camphor laurels in William Street which are very popular as a meeting place for friends to catch up and share a light meal whilst overlooking the natural areas of Sandy Creek. Passing under the railway line, the restored butter factory sits proudly at the entry to this part of the town and is used every day by different members of the community.

Travelling along Victor Street, I can hear children in the primary school running and laughing and watching as a train passes by. Houses opposite the school are much as they have always been, with grass on the footpath now growing back strongly following the installation of sewerage.

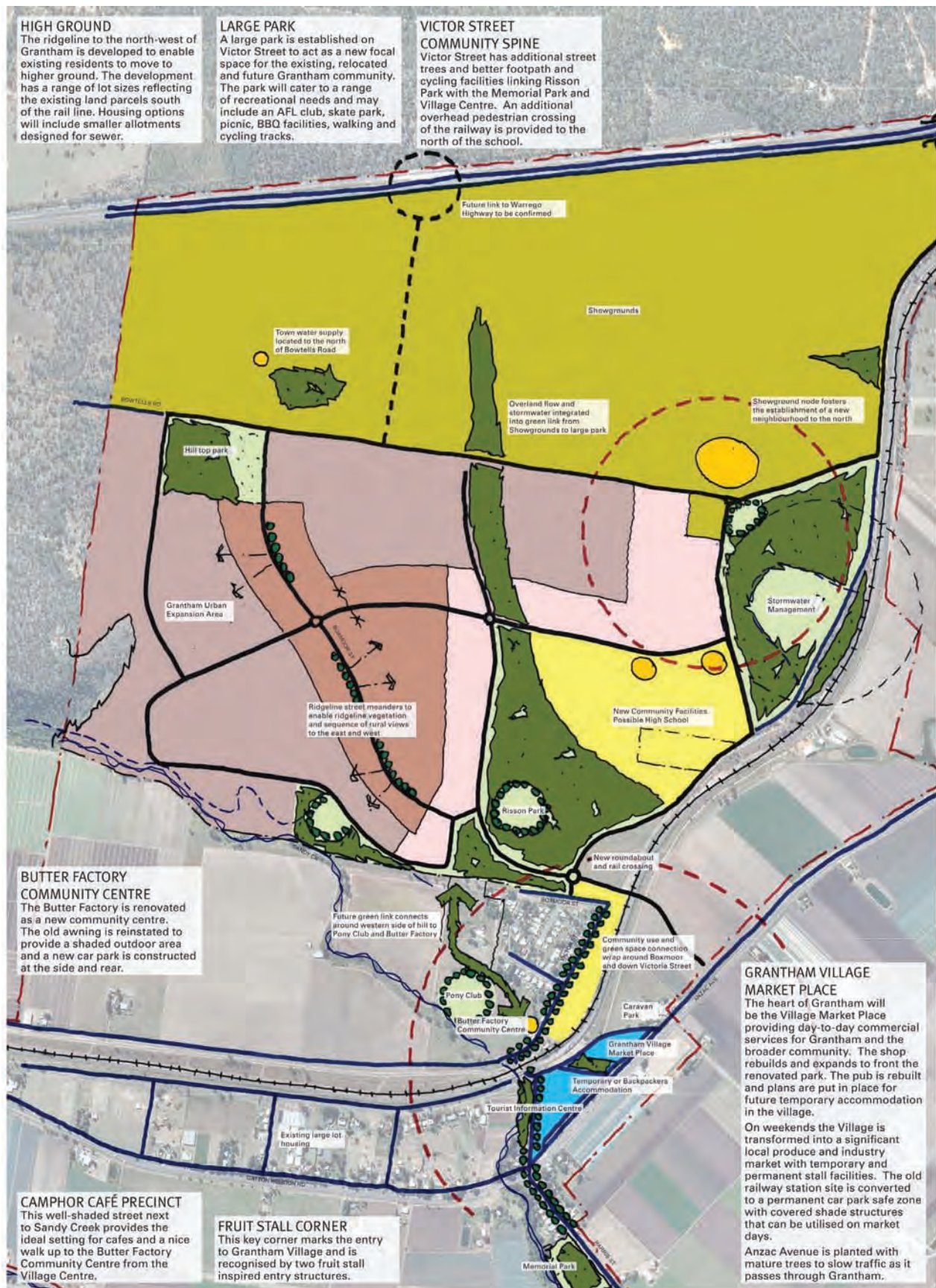
The big change is on land north of here, off Boxmoor Street, where a major new part of town has been built up nice and high overlooking the cropping lands and flood plain to the south. Just two years on, many of our residents have proudly rebuilt their homes and lives in this part of town. Children can be heard kicking a football and playing on the swings in the new parkland which is central to this new part of town. The road into this new area stitches the community together providing a high level of access for residents and visitors between the main street and the old and new parts of town.

There are many different lot sizes in the new part of town and I know that as I get older, I'll be able to move to a smaller lot and stay close to my family without leaving the town that I know and love.

Major new facilities have started to emerge as well. There are plans to expand the town further north and east, and introduce more community facilities and parks in the new part of town. Whilst not developed yet, the new showgrounds which are planned adjacent to the Warrego Highway will be a great addition to our town when they are built.

There are noticeably more jobs in town now, with some new rural businesses that have been built to the east of the main street supporting the farming and rural activities which are the foundation of our town.

Grantham is an amazing place – we have endured tragedy and emerged stronger and prouder, with a wonderful mix of history and character and strong and vibrant new areas that are helping us achieve a safe and bright new future.




Master Plan as released by Lockyer Valley Regional Council on 4 May 2011



Table of Contents

Part 1 - Land Use Plan	page 9
Part 2 - Infrastructure Plan	page 39
Part 3 - Implementation Strategy	page 47

Map 1	Reconstruction Area
Map 2	Land Use Plan
Map 3	Land Use Plan - Inset A
Map 4	Precinct Plan





James 'Cocky' Rogers, brings 300 sheep onto the Grantham Run.

1843



Jagara tribesmen are resisting the intruders who are now occupying their ancestral hunting grounds.

1844



Charles William Pitts now holds the Grantham Run, which has an estimated carrying capacity of 8000 sheep.

1848



The railway line is built through Sandy Creek (the original name for the siding at Grantham).

1866



James Craig becomes licensee of the first watering hole at Grantham – the Sandy Creek Hotel.

1871

The Queensland Government starts resuming land under the Crown Lands Alienation Act of 1868, and the Homestead Areas Act of 1873. The Grantham Run is thrown open for free selection.

1873



The Grantham Dramatic Group and Orchestra provide entertainment.

1920s



The School of Arts acquires land on the former railway reserve opposite the Butter Factory and establishes Grantham's first library.

1917/18



The Baltzer family establishes a bootmaking and saddlery business opposite a bakery in Harris Street.

1918

The Grantham Hotel on Sandy Creek is destroyed by fire.

On July 16 Grantham's new State School opens.

1917



New cattle and pig yards are built at the railway station.

1916

The railway line from Grantham to Helidon is duplicated.

1914

Singh's Grantham General Store opens. The store, reputed to sell everything from a pin to an anchor, is run by an Indian hawker 'Jack' Nagina Singh.

1926

A loan is available for a water supply for Grantham residents. Bores and windmills with troughs are installed in Gatton, Helidon and Anzac Avenue, Grantham.

1927

An agency for the National Bank of Australasia which has been operating in a small shed across the road from the Post Office, moves into a new timber triangular building known locally as the 'Wedge of Cheese'.

1928

Residents meet at the School of Arts on April 30 to establish St Gabriel's Anglican Church.

1931

In August, the first street lights in Grantham are switched on.

1936

Electricity is installed at the railway station.

1938

The Armstrong family's fruit and vegetable shop opens on the highway. More and more fruit and vegetable stalls are opening in Grantham during the main fruit and vegetable seasons.

1964

Kevin and Shirley Toohill (a vigoro team coach) begin operating K & S Toohill Transport Pty Ltd.

1962

Dwyers Manufacturing Company opens on the highway. The company makes irrigation equipment and also operates Grantham Motors.

1961

Grantham's soccer team the 'Lockyer Stars' continues playing strongly throughout the 1960s and 1970s.

1960s

Floodwaters inundate Grantham. At about this time plant and sand pumping by Readymix concrete starts at the creek.

1959

Hailstorm strikes Grantham smashing windows at the Butter Factory and Grantham State School. Much of the district's fruit crop is wiped out.

1956

Grantham Post Office is destroyed by fire. Operations are transferred to a former butcher's shop.

1965?

The Grantham Hotel moves in April from William Street, after 50 years, to a new site on the Warrego Highway.

1967

The Lockyer Little Theatre operates a small theatre at Grantham. The Warrego Highway is rerouted through Grantham.

1968

Grantham Butter Factory closes on June 30. A mini-tornado rips through Grantham in November. Citrus trees are stripped, vegetable crops ruined and buildings damaged.

1971

Land on the corner of William and Railway Streets becomes Bugler Park in recognition of the Bugler family which has been prominent in the Grantham district for 85 years.

1973

More flooding cause substantial damage to businesses and houses. Bags of onions from Dwyer's produce store finish up in the tops of orange trees in Armstrong's orchard.

1974



June 7, the Lockyer Valley Regional Council Mayor, Steve Jones, turns the first sod in stage one of a major new housing development on higher ground.

2011



January 10, flash flooding devastates Grantham, Murphy's Creek, Postman's Ridge, Helidon and Withcott. Deaths and property losses are recorded.

2011

Grantham State School celebrates its centenary.

2005

The Grantham Water Tower, which has been a landmark for many years, is removed in August.

2000

More flooding affects business life.

1999

A major employment boost comes in July with the opening of Morex Meat Australia. The company later changes its name to Valley Beef Company.

1997



Orchards are established in the district by Stationmaster Charlie Wilkinson who was related to Grantham's first blacksmith, Albert Wilkinson. Albert's blacksmith shop was on the creek bank in William Street across from the Post Office.

1880s

Andrew Scott buys part of the original Grantham Run, including the homestead, on the death of A.V. Carpendale. Grantham Station, which now comprises about 250 sq miles, is stocked with cattle.

1884



First land sales establish Grantham Town in the Lockyer Valley. The town is named by the first white settlers after their former home town of Grantham in Lincolnshire, 108 miles (174km) north of London.

1886

Major flooding: The Lower Tent Hill spills its banks and the Lockyer Creek flows into north Gatton and Grantham flats are covered. The flood waters are five feet (1.52m) above the previous floods of 1863, '64, '87 and '89. Further flooding occurs in 1893.

1890



Albert Scott, the founder of Wanstead at Veradilla settles on the land near Grantham. Two years later he builds a family home from large slabs and shingles, cut from timber grown on the property.

1895



Grantham Scrub School opens on the corner of Scrub Road and Poole's Road.

1896



Rugby League is now in full swing and the Grantham Rugby League team goes on to win the Lockyer premiership from 1919 to 1922

1913

One of the first important land sales with sub-divisions from the Grantham Estate gets underway on May 10.

1910



The Grantham Butter Factory opens and the Grantham Cattle Dip Company is formed to control ticks.

1907



Grantham State School opens on January 23. There are now 800 dairy farmers in the Lockyer Valley

1905



During the year 4313 tons of agricultural produce are loaded onto railway wagons at Grantham.

1901



G William Henderson becomes the first licensee of the Grantham Hotel on the banks of Sandy Creek.

1900

Fire destroys the Coronation Hotel for a second time.

WWII declared.

1939

School children practise putting a cork in their mouth and cotton wool in their ears to protect them from bomb blasts. No bombs fall on Grantham and no enemy aircraft are seen.

1940s

John 'Jack' Lund, bullocky and timber getter is in charge of a team of 12 or more bullocks hauling timber from the Sandy Creek district for Hood's Sawmill at Gatton.

1941

Mortleman's Store opposite the telephone exchange closes.

1940/41

Fire destroys the Coronation Hotel...again.

1941/42

The Grantham Boys Cricket Club formed.

The Army occupies part of the Philp's Glencoe orchard and soldiers help with harvesting the oranges.

1944

Twomacs Garage is built on the Warrego Highway. It's run by Tommy Grice and 'Mac' Crust.

A radio program is exchange between England and Australia. The program is called 'Namesake Towns - Grantham to Grantham'.

1952

Grantham Scrub School closes.

1951

The Water Melon Carnivals begin to celebrate the harvesting of citrus fruit.

1950s

The Grantham Amateur Players stage their first variety show in McGarva's Hall on June 4.

1949

Street signs are requested for Grantham in readiness for the town's first letter delivery service.

1947

Padgett's travelling picture show arrives in Grantham with carbon arc projectors and a slide show for audiences in McGarva's Hall - later known as Grantham Hall.

1945

David Topp opens a hot bread kitchen.

1975

Singh's General Store, which opened in 1926, closes its doors.

1976

The first Orange Festival is held to raise money for charities

1978

Fire, started by children playing with matches, destroys the produce business of W.E. Morgan and Sons.

Public toilets are constructed alongside the Warrego Highway at Grantham.

1979

Flooding: Lockyer Creek peaks at 12 metres and floodwaters build up at Dinner Corner - named for the area where drovers had dinner before bedding down for the night.

1983

An old iron overhead footbridge, no longer in use at the Toowoomba Railway Station is installed across Sandy Creek to link the two ovals.

1985

The National Bank of Australasia closes its branch at Grantham.

The Grantham Meat Mart, moves to a new shopping centre at Withcott, due to declining trade caused by the Grantham bypass.

1996

Grantham Post Office closes.

1994

Falling patronage forces the closure of the Grantham and Forest Hill Railway Stations on July 31.

1992

Computers are introduced to students at Grantham School.

1990s

The \$10 million Gatton Bypass comes into operation and traffic is diverted away from Grantham.

The Grantham Rural Fire Brigade is formed in August.

1989

More flooding with major crop losses.

The first Tourist Information Centre and café opens in Grantham in the former Singh's store.

1988

Planning Context

The QldRA is a statutory authority under the Queensland Reconstruction Authority Act 2011 (the Act).

The main purpose of the Act is to provide for appropriate measures to ensure Queensland and its communities effectively and efficiently recover from the impacts of disaster events between December 2010 to April 2011.

The QldRA is working with Council, members of the community and state government agencies to facilitate the recovery of Grantham and the Lockyer Valley in an accelerated reconstruction program.

Reconstruction Area

The Grantham Reconstruction Area (Reconstruction Area) was declared by regulation on 8 April 2011. The Reconstruction Area is shown on Map 1.

South East Queensland Regional Plan 2009-2031

The Reconstruction Area is included in the Regional Landscape and Rural Production Area South East Queensland Regional Plan 2009-2031 (SEQRP). Whilst the proposed development involves the creation of additional lots outside the Urban Footprint, this Grantham Reconstruction Area regulation dated 8 April 2011 replaces the SEQRP Regulatory Provisions.

The Development Scheme provides for the economic, environmental and cultural values of Grantham and provides for a mix of housing types to accommodate the needs of the community.

The SEQRP provides that the future of rural villages outside the Urban Footprint can be considered through the planning scheme review process to help them achieve long term sustainability and self contained employment. This Development Scheme brings forward the review of a long term sustainable Grantham consistent with this intent.

The economy of the region is typically dominated by rural industry and associated activities on rural lands. The expansion of Rural industries are supported where they provide for a greater level of self containment of jobs and for the processing and packing of local produce, as well as expanding associated cottage industries and small to medium scale incubator businesses. The expansion of rural and low impact industries in Grantham will support and complement Gatton as the Principal Regional Activity Centre for Lockyer Valley and will provide a greater level of self containment.

The expansion of the Grantham township as outlined in this Development Scheme has been subject to land capability and suitability assessments, riparian corridor protection and an assessment of infrastructure requirements. Each of the matters has been thoroughly considered in the preparation of this Development Scheme.

The provision of approximately 400 additional lots in Grantham will assist Council in achieving the forecast 11,500 additional dwellings required in the Lockyer Valley by 2031 without compromising principle 8.2 of the SEQRP.

Development Scheme

The Grantham Reconstruction Area proposed Development Scheme (the scheme) has been prepared in accordance with section 66 the Act and is applicable to all development on land within the boundaries of the Reconstruction Area. It is a statutory instrument and has the force of law.

The purpose of the scheme is to:

- establish the strategic vision for the Reconstruction Area;
- regulate development to achieve the vision; and
- identify infrastructure and other strategies and mechanisms to achieve the vision.

From the date of approval under a regulation, the scheme replaces the Gatton Planning Scheme which currently regulates the Reconstruction Area.

Elements of the development scheme

The scheme consists of:

- a land use plan;
- an infrastructure plan; and
- an implementation strategy.

The vision seeks to articulate the community aspirations for Grantham and provides the basis for the land use plan, infrastructure plan and implementation strategy.

The land use plan provides a strategic framework which translates the community vision into a plan which regulates development and states the preferred form of development in the Reconstruction Area.

The infrastructure plan details the infrastructure necessary to support the land use plan.

The implementation strategy describes other strategies and mechanisms which will be used to complement the land use plan and infrastructure plan to achieve the outcomes for Grantham.

Acknowledgements

The scheme draws on the extensive planning work that has been undertaken by Council and the QldRA in partnership with the Grantham community.



GRANTHAM RECONSTRUCTION AREA

PART 1 - LAND USE PLAN

Land use plan

The Land Use Plan has the following zones and precincts, which are shown on Map 2 - Land Use Plan:

1. Community purposes zone
 - a. Community precinct;
 - b. Showgrounds precinct
 - c. Parkside precinct
2. Limited development (constrained land) zone
3. Local centre zone
4. Low impact Industry zone
5. Recreation and open space zone
 - a. Harris Street precinct
6. Residential living zone
 - a. Residential living 1 precinct
 - b. Residential living 2 precinct
7. Rural residential zone
 - a. Rural residential 1 precinct
 - b. Rural residential 2 precinct
8. Rural zone
 - a. Rural agriculture precinct
 - b. Rural general precinct

Community purposes zone

The purpose of the community purposes zone is to provide for community related activities and facilities whether under public or private ownership.

These may include provision of municipal services, public utilities, government installations, hospitals and schools, transport and telecommunication networks and community infrastructure of an artistic, social or cultural nature.

Community precinct

This precinct provides for a range of community uses, including the Grantham State School, the Butter Factory community centre and utility installations.

These are important areas providing for uses central to the community of Grantham and surrounding areas, and are protected to ensure they can be used appropriately for their intended community purpose.



Showgrounds precinct

The showgrounds precinct is intended to house a significant showground site for the Lockyer Valley. The precinct will cater for a broad range of events, including large agricultural and industry shows that require significant area of land.

Functions within the Showgrounds precinct can include:

- Show Arenas
- Spectator Seating
- Large Covered and Enclosed Pavilions
- Toilet Facilities
- Catering and Food
- Short Term Accommodation
- Stables



Parkside Precinct

The parkside precinct is intended to provide for uses which are complimentary to the recreation and open space zone and residential living zone and may include education facilities, child care, retirement village facilities or similar.

Levels of assessment

The following table identifies the levels of assessment for development in the Community Purposes Zone:

Development	Assessment criteria
Exempt development	
Development if:	
(a) Consistent with the intent of the precinct and listed as exempt development in a master plan prepared for the precinct, or part of the precinct, by the Council or the Government;	
(b) in accordance with any requirements of the Department of Transport and Main Roads and Department of Environment and Resource Management.	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level	
Club if in the Community precinct	
Market	
Park	
Temporary Use	
Utility installation	
Compliance assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
If in the Community or Parkside precinct:	Gatton Planning Scheme:
Community use	(i) Earthworks code except A1.2;
Educational establishment	(ii) Landscaping code;
	(iii) Lighting code;
	(iv) Services and Infrastructure code, except A2.2(a);
	(vi) Vehicle access, parking and on-site movement code.
	AO1.1 and AO1.2 of part A of the Community purposes zone code
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions:
	(i) Earthworks code;
	(ii) Landscaping code;
	(iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2;
	(iv) Vehicle access, parking and on-site movement code.
If in the Community or Parkside precinct:	Gatton Planning Scheme probable solutions:
Operational works for reconfiguring a lot	(i) Earthworks code except A1.2;
	(ii) Landscaping code;
	(iii) Services and Infrastructure code except A2.2(a);
	(iv) Vehicle access, parking and on-site movement code.
If in the Community or Parkside precinct:	Gatton Planning Scheme:
Reconfiguring a Lot	(i) Section (A) and (C) of the Reconfiguring a lot code, except A2.1, A2.2, A19.4(a), A194(b)(iii)III and III, A27.1, A34.1, A36.1, A36.2;
	(ii) Earthworks code;
	(iii) Services and Infrastructure code except A2.2(a), A2.2(c)(iii) and (iv) and A4.2?;;
	(iv) Vehicle access, parking and on-site movement code
	AO2 of part A of the Community purposes zone code.

Development	Assessment criteria
Code assessable development	Assessment criteria
If in the Community or Parkside precinct: Indoor sports and recreation	Gatton Planning Scheme: (i) Earthworks code; (ii) Landscaping code; (iii) Lighting code; (iv) Services and infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code.
Impact assessable development	Assessment criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Community purposes zone code

Performance outcomes	Acceptable Outcomes
PART A Community and Parkside Precinct	
PO1 The height and setbacks of buildings and structures are similar to the height and setbacks of existing buildings and structures in the precinct.	<p>A01.1 New buildings and structures have a maximum height of 11m above natural ground level.</p> <p>A01.2 Buildings and structures are setback</p> <ul style="list-style-type: none"> (a) 10m from the street frontage if located opposite a residential living zone or recreation and open space zone; (b) 6m from the street frontage in any other location; (c) 10m from any side or rear boundary with a residential living zone or the recreation and open space zone; (d) 2m from the side and rear boundaries in any other location.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	A02.1 Minimum lot size is 1Ha.
PART B Showgrounds Precinct	
PO1 Development does not compromise the future development of the Showground precinct	<p>A01.1 Development in the showground precinct is in accordance with a Council approved master plan for the precinct.</p> <p>A01.2 The Council approved master plan for the precinct is to be consistent with the requirements of the Department of Transport and Main Roads and the Department of Environment and Resource Management.</p>
PO2 Noise and light generated by the showground activities do not impact negatively on residential development.	No acceptable outcome is nominated.
PO3 Buildings and structures have a height and setback in accordance with an approved master plan for the precinct.	No acceptable outcome is nominated.

Limited development (constrained land) zone

The purpose of the limited development (constrained land) zone is to identify land known to be significantly affected by one or more development constraints (such as flooding).

Such constraints pose severe restrictions on the ability of the land to be developed for residential purposes.

This zone will contain some houses where there are existing development entitlements, but primarily provides a range of low key rural activities which are agricultural in nature and which are compatible with the remaining residential uses.

It caters for uses such as flower farms, plant nurseries, turf farming, garden supplies, equine uses and other activities that are related to rural activities.

No new subdivision of lots is intended in this zone and amalgamation of lots is encouraged so they can be aggregated for the intended agricultural industry uses.

Whilst not preferred, those lots which are intended to remain for residential purposes should have dwelling houses built a minimum 300mm above the defined flood event.

Any land owners in the limited development (constrained land) zone not electing to participate in Council's land swap program will be required to offer Council the opportunity to purchase or swap the land prior to any future property transfer.



Levels of assessment

The following table identifies the levels of assessment for development in the Limited Development (constrained land) zone:

Development	Assessment criteria
Exempt development	
Animal husbandry	
Cropping	
Dwelling house if a dwelling house existed on the subject land immediately prior to 10 January 2011 and if the habitable floor level is 300mm above the defined flood level	
Intensive horticulture	
Market	
Park	
Permanent plantations	
Roadside stalls	
Utility installation	
Self assessable development	
Advertising device	Gatton Planning Scheme Advertising code
Agricultural supplies store	Gatton Planning Scheme: (i) Rural service industry code, except A4.1 and A4.2; (ii) Lighting code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle Access, Parking and On-Site, Movement code
Bulk landscape supplies	
Garden Centre	
Wholesale nursery	
	PO1 and PO2 of the Limited development (constrained land) zone code.
Compliance assessable development	
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code.
Code assessable development	
Rural industry	Gatton Planning Scheme: (i) Rural service industry code except A4.1 and A4.2 ; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site, movement code. AO2.1, AO2.2, AO3.1 and AO3.2 of the Limited development (constrained land) zone code.
Impact Assessable development	
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Limited development (constrained land) zone code

Performance outcomes	Acceptable Outcomes
PO1 Residential development is not preferred and in the limited circumstances where it is constructed it is constructed to provide an acceptable level of flood immunity.	AO1.1 Habitable floor level of residential development is 300mm above the defined flood level.
PO2 The height and setback of buildings and structures are similar to the height and setback of existing buildings and structures in the area.	AO2.1 Buildings and structures have a maximum height of 11.0m above natural ground level. AO2.2 Buildings are setback: (i) 6m from the street frontage (ii) 10m from the side or rear boundary with a residential use; (iii) 6m from the side or rear boundary with a non residential use.
PO3 Non residential uses provide a 10m setback from any common boundary with a residential use so as to minimise impacts from noise or light on the residential use.	AO3.1 Buildings are setback a minimum of 10m from any boundary with a residential use. AO3.2 A 1.8m high fence is erected along the boundary with a residential use

Local centre zone

The purpose of the local centre zone is to provide for a limited range of retail and commercial uses and activities to service local needs.

It includes local shopping, local employment nodes, commercial, cafes and dining, entertainment and community services. Residential development is not preferred in the Local Centre zone where habitable floor levels are below the defined flood event.

The local centre zone is the heart of Grantham - a vibrant market place featuring a mix of uses and activities that provide day-to-day services for the town, its broader community and visitors. It is focused on Anzac Avenue, and includes shops, cafes, arts and crafts, an art gallery, a museum and a hotel.

On weekends, the Local centre is transformed into a significant local produce and industry market with temporary and permanent stall facilities under covered shade structures.

The whole main street of Anzac Avenue has a rural town character and builds on the amenity of the nearby parks.

Landmark entry structures mark “Fruit Stall” corner where William Street and Anzac Avenue meet.

William Street provides the ideal setting for cafes and a pleasant walk up to the Butter Factory Community Centre from the Local centre.



Levels of assessment

The following table identifies the levels of assessment for development in the local centre zone:

Development	Assessment criteria
Exempt development	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level.	
Dwelling house if the habitable floor level is 300mm above the defined flood level.	
Market	
Park	
Sales Office	
Temporary facility for the purposes of a shop, hotel, roadside stall, service station or service industry.	
Temporary Use	
Utility installation	
Self assessable development	
Advertising device	Gatton Planning Scheme Advertising code
Community use	Gatton Planning Scheme: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code, except A2.2(a); (v) Vehicle access, parking and on-site movement code.
Community care centre	
Place of Worship	
	AO2.1 and AO2.2 of the Local centre zone code
Food and drink outlet	Gatton Planning Scheme: (i) Commercial premises and shop code, except A1.1, A2.5, A3.1(a); (ii) Earthworks code except A1.2; (iii) Landscaping code; (iv) Lighting code; (v) Services and Infrastructure code except A2.2(a); (vi) Vehicle access, parking and on-site movement code.
Health care services	
Hotel	
Office	
Service industry	
Shop	
Shopping centre	
Theatre	
	AO2.1 and AO2.2 of the Local centre zone code.
Service station	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Service station and car wash code, except A1.1 and A2.5; (iii) Landscaping code; (iv) Lighting code; (v) Services and Infrastructure code except A2.2(a); (vi) Vehicle access, parking and on-site movement code.
	AO2.1 and AO2.2 of the Local centre zone code.
Compliance assessable development	
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code.

Development	Assessment criteria
Compliance assessable development	Assessment Criteria
Operational works for Reconfiguring a Lot	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code.
Reconfiguring a Lot	Gatton Planning Scheme probable solutions: (i) Section (A) and (C) of the Reconfiguring a lot code, except A1.5, A2.1, A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code. AO3.1 and AO3.2 of the Local centre zone code.
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Local centre zone code

Performance outcomes	Acceptable Outcomes
PO1 Residential development is not preferred and is only provided where there is an acceptable level of flood immunity.	A01 The habitable floor level of residential development is 300mm above the defined flood level.
PO2 The height and setback of buildings and structures are similar to the height and setback of existing buildings and structures in the area	A02.1 Buildings and structures have a maximum height of 11m. A02.2 Buildings and structures are set back: (a) 0m from the street; (b) 0m from the rear boundary if next to a non residential use and 6m if next to a residential use; and (c) 0m from the side boundary if next to a non residential use and 3m if next to a residential use.
PO3 The size of proposed new lots reflect the intent of the precinct and are sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations	A03.1 Minimum lot size is 400m ² . A03.2 Minimum frontage is 10m.

Low impact industry zone

The purpose of the low impact industry zone is to provide for service and low impact industry uses which support a greater level of self containment of jobs for local residents.

It may include non-industrial and business uses that support the industrial and rural/agricultural activities of Grantham.

Activities considered appropriate in this zone are defined as low impact industry or service industry.

This zone provides employment opportunities for the Grantham community, taking advantage of its proximity to the facilities offered by the Local centre.

Industry in this area is to be low impact, such as a vehicle workshop and a small engine repair workshop, and is not to affect the successful operation and enjoyment of surrounding uses.



Levels of assessment

The following table identifies the levels of assessment for development in the low impact industry zone:

Development	Assessment criteria
Exempt development	
Car park	
Market	
Park	
Sales office	
Temporary Use	
Utility installation	
Veterinary services	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Low impact industry	Gatton Planning Scheme: (i) Industrial development code except A1.1 , A2.5 A10.1 ,A11.1,A12.1 (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code; AO1.1 and AO1.2 of the Low impact industry zone code
Research and technology facility	
Code assessable development	Assessment criteria
Service Station	Gatton Planning Scheme: (i) Service station and car wash code except A1.1; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code. AO1.1 and AO1.2 of the Low impact industry zone code
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a) (iv) Vehicle access, parking and on-site movement code.
Service industry	Gatton Planning Scheme: (i) Commercial premises and shops code; (ii) Landscaping code; (iii) Lighting Code; (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-Site movement code; AO1.1 and AO1.2 of Low impact industry zone code
Showroom	
Warehouse	

Development	Assessment criteria
Compliance assessable development	Assessment criteria
Operational works for reconfiguring a lot	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Services and infrastructure code; and (iii) Vehicle access, parking and on-site movement code
Reconfiguring a Lot	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a lot code, except A2.1 , A2.2, A19.4(a), A34.1, A36.1, A36.2; (ii) Earthworks code except A1.2; (iii) Services and infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code AO2.1 and AO2.2 of the Low impact industry zone code
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Low impact industry zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures are similar to the height and setbacks of existing buildings and structures in the area.	AO1.1 Buildings and structures have a maximum height of 11.0m above ground level.
	AO1.2 Buildings and structures are setback: (i) 6m from the street frontage; (ii) 0m from the side boundary with non residential uses and 3m from the boundary with residential use.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 Minimum lot size is 1,000m ² .
	AO2.2 Minimum frontage is 20m.

Recreation and open space zone

The purpose of the Recreation and Open Space zone is to provide for a range of sporting, recreation, leisure, cultural and educational activities.

The zone provides for local, district and regional scale parks which serve the recreation needs of residents and visitors and may include areas for conservation.

Areas within the zone such as parks, playing fields and playgrounds, are generally accessible to the public; however, access may be limited in certain areas and at certain times.

Where required to meet community needs, development may include built structures, such as shelters, amenity facilities, picnic tables, clubhouses, gymnasiums and tennis courts, and other infrastructure to support the activities, provide safe access and support essential management.

This zone provides for a range of parks and open space areas, used for a variety of recreation and sporting activities, which support the residents of Grantham and surrounding areas. Some of these activities are organised and formal, like sporting clubs, but others are informal, such as playgrounds, and picnic areas. These areas also provide other facilities that meet community needs, such as shelters, picnic tables and clubhouses.

The zone also includes some areas which contain vegetation and other environmental values that are to be protected.

A large park established on Victor Street acts as a new focal space for the Grantham community. The park caters for a range of recreational needs, such as a cricket club, AFL club, skate park, picnic, BBQ facilities, walking and cycling tracks.



Harris Street Precinct

This area will be aggregated from those residents wishing to relocate and participate in the Council land swap program. The land is intended to form a creekside park adjacent to Sandy Creek. For those residents wishing to remain, any dwellings rebuilt in this area will require habitable floor levels to be at least 300mm above the defined flood event.

Levels of assessment

The following table identifies the levels of assessment for development in the Recreation and open space precinct:

Development	Assessment criteria
Exempt development	
Car park	
Caretaker's accommodation if the habitable floor level is 300mm above the defined flood level.	
Community use if complying with AO1.1 and AO1.2 of the Recreation and open space zone code	
Dwelling House if located in the Harris Street precinct and if habitable floor level is 300mm above the defined flood event	
Market	
Outdoor sport and recreation	
Park	
Temporary Use	
Utility installation	
Self assessable development	Assessment Criteria
Advertising device	Gatton Planning Scheme Advertising code
Food and drink outlet	Gatton Planning Scheme: (i) Commercial premises and shops code except A1.1; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code. AO1.1 and AO1.2 of the Recreation and open space zone code
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code.
Compliance assessable development	Assessment criteria
Operational works for reconfiguring a lot	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Services and infrastructure code; and (iii) Vehicle access, parking and on-site movement code
Reconfiguring a Lot	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a lot code, except A2.1, A2.2, A19.4(a), A34.1, A36.1, A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code AO2.1 of the Recreation and open space zone code.

Development	Assessment criteria
Code assessable development	Assessment criteria
Caretaker's accommodation (if not exempt)	Gatton Planning Scheme: (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a), (iii) Vehicle access, parking and on-site movement code. AO1.1 and AO1.2 of the Recreation and open space zone code.
Community use (if not exempt)	Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code. AO1.1 and AO1.2 of the Recreation and open space zone code.
Dwelling House (if not exempt)	Gatton Planning Scheme: (i) Dwelling house code OR Small lot house code if on a lot less than 600m ² in area; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code. AO1.1 , AO1.2 and AO2.2 of the Recreation and open space zone code.
Indoor sport and recreation Major sport, recreation and entertainment facility	Gatton Planning Scheme: (i) Landscaping code; (ii) Lighting code; (iii) Earthworks code (iv) Services and Infrastructure code except A2.2(a), (v) Vehicle access, parking and on-site movement code; AO1.1 and AO1.2 of the Recreation and open space zone code.
Impact assessable development	Assessment criteria
Any other development not listed in this table.	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Recreation and open space zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures are similar to the height and setbacks of existing buildings and structures in the area..	AO1.1 Buildings and structures have a maximum height of 8.5m above natural ground level. AO1.2 Buildings and structures are setback: (i) 6m from all street frontages.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 Minimum lot size is 4,000m ² .

Residential living zone

The purpose of the residential living zone is to provide for predominantly dwelling houses supported by community uses and small-scale services and facilities that cater for local residents.

The residential living zone is represented by two precincts of varying lot sizes.

Residential living 1 precinct

The Residential living 1 precinct provides typical town sized lots, generally with a minimum lot size of 1000m² in area and accommodates mainly dwelling houses, some of which have been relocated from other areas of the town.

While this precinct includes newer parts of Grantham, it is well integrated with the original parts of the town and is located close to the shops and facilities of the local centre, the employment opportunities of the low impact industrial area, the community centre, the school and the Victor Street park.

Lots in this precinct are intended to be sewered and connected to the town water supply, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.



Residential living 2 precinct

This Residential living 2 precinct provides for larger lots, generally with a minimum lot size of 2,000m² in area, and accommodates mainly dwelling houses, some of which have been relocated from other areas of the town.

It sits between the Residential living 1 precinct and the Rural residential zone and provides a transition between those precincts. The Victor Street park and the school are nearby.

Lots in this precinct may not be sewerred but are connected to the town water supply, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.

Levels of assessment

The following table identifies the levels of assessment for development in the Residential Living zone:

Development	Assessment criteria
Exempt development	
Community residence	
Dwelling house	
Operational works for reconfiguring a lot if complying with the probable solutions of the following codes of the Gatton Planning Scheme :	
(i) Earthworks code except A1.2;	
(ii) Services and Infrastructure code except A2.2(a); and	
(iii) Vehicle access, parking and on-site movement code.	
Park	
Reconfiguring a lot in the residential living 1 precinct, if:	
(i) lots have a minimum lot size of 1,000m ² ;	
(ii) are owned by Council; and	
(iii) in accordance with the lot layout master plan to be determined by Council.	
Reconfiguring a lot in the residential living 2 precinct, if:	
(i) lots have a minimum lot size of 2,000m ² ; and	
(ii) are owned by Council; and	
(iii) in accordance with the lot layout master plan to be determined by Council.	
Sales office	
Temporary use	
Utility installation	
Self assessable development	
Assessment Criteria	
Home based business	Gatton Planning Scheme: (i) Home based business code ; or (ii) If for bed and breakfast accommodation, the Bed and breakfast accommodation code; and (iii) Services and Infrastructure code except A2.2(a).

Development	Assessment criteria
Operational works not associated with a material change of use	Gatton Planning Scheme probable solutions: (i) Earthworks code; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code.
Code assessable development	Assessment Criteria
Dual Occupancy	Gatton Planning Scheme: (i) Accommodation unit and dual occupancy code ; (ii) Landscaping code (iii) Lighting code (iv) Services and Infrastructure code except A2.2(a); (v) Vehicle access, parking and on-site movement code AO1.1 and AO1.2 of the Residential living zone code.
Reconfiguring a Lot (if not exempt) <i>ie Lots not complying with exempt criteria are compliance assessable</i>	Gatton Planning Scheme: (i) Section (A) and (C) of the Reconfiguring a lot code, except A1.5, A2.1 , A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code. AO2.1 and AO2.2 of the Residential living zone code.
Operational works for reconfiguring a lot (if not exempt)	Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code.
Impact assessable development	Assessment criteria
Any other development not listed in this table	Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Residential living zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures reinforces the low intensity, semi-rural character of the zone and are similar to the height and setback of existing buildings and structures.	AO1.1 Buildings and structures have a maximum height of 8.5m above natural ground level. AO1.2 Buildings and structures are setback: (i) 6m from the street frontage and from the rear boundary; (ii) 3m from the side boundary.
PO2 The size of proposed new lots reflect the intent of the precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations.	AO2.1 (i) In the residential living 1 precinct minimum lot size is 1,000m ² ; (ii) In the residential living 2 precinct minimum lot size is 2,000m ² ; AO2.2 (i) In the residential living 1 precinct minimum frontage is 20 m; (ii) In the residential living 2 precinct minimum frontage is 30 m.

Rural residential zone

The purpose of the rural residential zone is to provide for residential development on unsewered large rural residential lots where the intensity of residential development is generally dispersed.

Rural residential 1 precinct

This precinct contains larger lots generally with a minimum lot size of 4,000m² in area and includes lots which act as a transitional zone between the Community purposes zone (showgrounds precinct) and the smaller residential living lots. It provides for a semi-rural lifestyle, still close to the town's facilities.

Where these lots are close to the showgrounds precinct, houses, structures and recreation areas should be located far enough away so that residents maintain their rural amenity.

Because of the larger lot sizes, this precinct also provides for some low intensity rural use, such as horse keeping. For the lots close to the showgrounds precinct, these uses may have a direct relationship with those facilities.

Lots in this precinct are connected to the town water supply but are not sewered, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.



Rural residential 2 precinct

This precinct contains larger lots generally with a minimum lot size of 10,000m² in area and acts as an interface between the farming areas in either the Rural agriculture precinct of this development scheme or the Rural agriculture zone in the Gatton Planning Scheme to the west of the town and the residential precincts to the east. This precinct provides for a semi-rural lifestyle, with residents enjoying the benefits of a rural environment as well as the benefits of being close to the towns facilities.

Buildings on lots which adjoin farming lands or which are immediately south of the showgrounds precinct are to be located far enough away from these uses to ensure that the lifestyle of residents is not affected.

Because of the larger lot sizes, this precinct provides for some low intensity rural uses, such as horse keeping. For the lots close to the showgrounds precinct, these uses may have a direct relationship with those facilities.

Lots in this precinct unlikely to be sewerred or connected to the town water supply or sewer, and no further reconfiguring of lots beyond that established in the initial development of the area is intended.

Levels of assessment

The following table identifies the levels of assessment for development in the Rural residential zone:

Development	Assessment criteria
Exempt development	
Community residence (within any applicable building location envelope)	
Dwelling house (within any applicable building location envelope)	
Operational works for reconfiguring a lot if complying with the probable solutions of the following codes of the Gatton Planning Scheme:	
(i)	Earthworks code except A1.2;
(ii)	Services and Infrastructure code except A2.2(a); and
(iii)	Vehicle access, parking and on-site movement code.
Park	
Reconfiguring a lot in the rural residential 1 precinct, if:	
(i)	lots have a minimum lot size of 4,000m ² ; and
(ii)	are owned by Council; and
(iii)	in accordance with the lot layout master plan to be determined by Council; and
(iv)	where lots are within 30 metres of the boundary of the showgrounds precinct, they contain a building location envelope which positions buildings to be at least 30 metres from that boundary.
Reconfiguring a lot in the rural residential 2 precinct, if:	
(i)	lots have a minimum lot size of 10,000m ² ; and
(ii)	are owned by Council; and
(iii)	in accordance with the lot layout master plan to be determined by Council; and
(iv)	where lots are within 30 metres of the boundary of the Rural Agriculture or Showgrounds precincts, they contain a building location envelope which positions buildings to be at least 30 metres from that boundary.
Sales office	
Temporary use	
Utility installation	

Self assessable development		Assessment Criteria
Home based business		Gatton Planning Scheme: (i) Home based business code ; OR (ii) If for bed and breakfast accommodation, the Bed and breakfast accommodation code; AND (iii) Services and Infrastructure code except A2.2(a).
Operational works not associated with a material change of use		Gatton Planning Scheme probable solutions: (i) Earthworks code except A1.2; (ii) Landscaping code; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code.
Compliance assessable development		Assessment criteria
Caretaker's accommodation		Gatton Planning Scheme: (i) Caretaker's residential code; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code. AO1.1 , AO2.1 and AO2.2 of the rural residential precinct code
Dwelling house (if not exempt)		Gatton Planning Scheme: (i) Dwelling house code; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code. AO1.1 , AO2.1 and AO2.2 of the rural residential precinct code.
Code assessable development		Assessment criteria
Dual occupancy		Gatton Planning Scheme: (i) Accommodation unit and dual occupancy code; (ii) Landscaping code; (iii) Lighting code; (iv) Services and Infrastructure code except A2.2(a), (v) Vehicle access, parking and on-site movement code. AO1.1, AO1.2, AO3.1 and AO3.2 of the rural residential zone code.
Reconfiguring a Lot (if not exempt)		Gatton Planning Scheme: (i) Section (A) of the Reconfiguring a lot code, except A2.1 , A2.2, A19.4(a), A34.1, A36.1 and A36.2; (ii) Earthworks code except A1.2; (iii) Services and Infrastructure code except A2.2(a); (iv) Vehicle access, parking and on-site movement code. AO1.1 , AO2.1 and AO2.2 of the rural residential precinct code.
Wholesale nursery		Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code. AO1.1, AO1.2, AO3.1 and AO3.2 of the rural residential zone code.
Operational works for reconfiguring a lot (if not exempt)		Gatton Planning Scheme: (i) Earthworks code; (ii) Services and Infrastructure code except A2.2(a); (iii) Vehicle access, parking and on-site movement code.
Impact assessable development		Assessment criteria
Any other development not listed in this table.		Regard will be given to the Grantham Land Use Plan as a whole as well as to the Gatton Planning Scheme where appropriate.

Rural residential zone code

Performance outcomes	Acceptable Outcomes
PO1 The height and setback of buildings and structures minimises impacts on the low intensity, rural residential character of the precinct.	<p>A01.1 Buildings and structures have a maximum height of 8.5m from natural ground level.</p> <p>A01.2 Unless otherwise required under AO3.1 or AO3.2, buildings and structures are setback:</p> <ul style="list-style-type: none"> (i) 6m from the street frontage; (ii) 6m from the rear boundary; (iii) 3m from the side boundaries
PO2 The size of proposed new lots reflect the intent of the particular precinct and is sufficient to ensure uses subsequently established on those lots can accommodate buildings, vehicle access, car parking, open space, waste disposal facilities and landscaping, in accordance with community expectations	<p>A02.1</p> <ul style="list-style-type: none"> (i) In the rural residential 1 precinct minimum lot size is 4,000m² and the maximum lot size is 10,000m²; (ii) In the rural residential 2 precinct minimum lot size is 10,000 m². <p>A02.2 Minimum frontage is 50m.</p>
PO3 Buildings and structures are located so as to minimise conflicts and potential impacts on amenity with the nearby showgrounds and rural land.	<p>A03.1 Buildings are setback a minimum of 30metres from the boundary of the Showgrounds precinct in the Community purposes zone.</p> <p>A03.2 Buildings, structures and outdoor recreation areas are located within a building location envelope located a minimum of 30metres from any boundary with the rural zone.</p>

Rural zone

The purpose of the rural zone is to provide for a wide range of rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping and other primary production activities.

The rural zone will also provide opportunities for non rural uses that are compatible with agriculture, the environment, and the landscape character of the rural area where they do not compromise the long-term use of the land for rural purposes and primary production.

Rural agriculture precinct

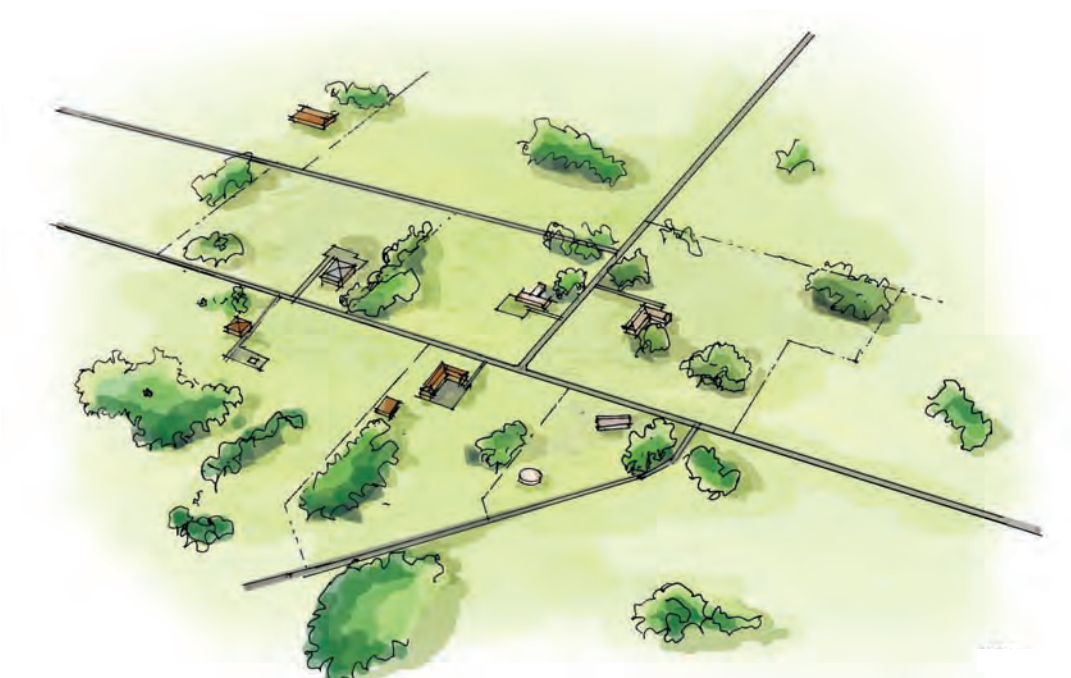
This precinct is to achieve the same outcomes as the Rural Agriculture zone in the Gatton Planning Scheme. These areas will remain in large lots suitable for farming purposes.

The assessment categories and relevant assessment criteria for the Rural Agriculture zone in the Gatton Planning Scheme apply in the precinct.

Rural general precinct

This precinct is to achieve the same outcomes as the Rural General zone in the Gatton Planning Scheme. These areas will remain in large lots suitable for farming purposes.

The assessment categories and relevant assessment criteria for the Rural General zone in the Gatton Planning Scheme apply in the precinct.



Using this Land use plan

This Land Use Plan will continue to apply until the new planning scheme for the Lockyer Valley Regional Council area is adopted in to force. This land use plan has been written using the Queensland Planning Provisions developed by the Department of Local Government and Planning to facilitate the inclusion of this development scheme into Council's new *Sustainable Planning Act 2009* planning scheme.

Decision rules for levels of assessment

The Tables of assessment in this Land Use Plan provide levels of assessment based on the provisions of the *Sustainable Planning Act 2009*. To determine the level of assessment for a development:

1. Identify the type of development proposed by referring to the relevant definitions.
2. Identify the Land Use Plan precinct the site is located in by referring to Map 4 - Precinct Plan.
3. Determine the level of assessment by referring to the table of assessment in the relevant zone/ precinct of the Land Use Plan.

The following applies to each of these levels of assessment:

Exempt

If development is exempt in this development scheme through reference to a plan or map contained in the development scheme, the Reconstitution Minister has discretion to decide if a proposal is consistent with that plan or map if there are minor variations involved.

Some exempt development in this Land Use Plan is subject to certain criteria for exemption. If development does not comply with the identified criteria, the development becomes code assessable unless an alternative level of assessment is specifically identified in the assessment table. Where such development is code assessable, the applicable codes will be the relevant precinct code and any other code that may be listed in the criteria for exemption for that form of development.

Self assessment

Self assessable development complies with the Land Use Plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable precinct code. If development does not comply with these probable solutions or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant precinct code and any other code that may be listed in the criteria for exemption for that form of development.

Compliance assessment

Compliance assessable development complies with the Land Use Plan if it complies with the probable solutions of the identified codes of the Gatton Planning Scheme or the relevant acceptable outcomes of the applicable precinct code. If development does not comply with these probable solutions or acceptable outcomes, the development is code assessable. Where such development is code assessable, the applicable codes will be the relevant precinct code and any other code that may be listed in the criteria for exemption for that form of development.

Code assessment

Code assessable development complies with the Land Use Plan if it complies with:

- the intent or purpose of the precinct in which it is located;
- the specific outcomes of the identified codes of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable precinct code.

If a development meets all the probable solutions or performance outcomes of the identified codes, then the development complies with the intent or purpose of the precinct, as well as with the specific outcomes of the identified codes.

Impact assessment

Impact assessable development complies with the Land Use Plan for if it complies with:

- the intent or purpose of the precinct in which it is located;
- the specific outcomes of the relevant code of the Gatton Planning Scheme; and
- the relevant acceptable outcomes of the applicable precinct code.

If a development meets all the probable outcomes or performance outcomes of the identified codes, then the development complies with the intent or purpose of the precinct, as well as with the specific outcomes of the identified codes.

Definitions

For the purposes of this Land Use Plan, the term “temporary facility” is defined as a structure or building erected for a period of not more than 1 year from the date of the commencement of the Gatton Shire Planning Scheme Temporary Local Planning Instrument 02/11 - Grantham Business.

Otherwise, terms used in this Land Use Plan have the same meaning as set out in the Queensland Planning Provisions (v3) or the *Sustainable Planning Act* 2009. However, where:

- (a) a use which is mentioned in a Gatton Planning Scheme code referred to in this Land Use Plan; or
- (b) a term referred to in this Land Use Plan;

is not defined in the Queensland Planning Provisions (v3), the Gatton Planning Scheme definition applies.

If they are not defined there in , they have their plain English meaning.

Grantham State School Site

Should the Grantham State School relocate to a different site at any time during the life of this Land Use Plan, the original school site (included in the community purposes zone at the commencement of this Land Use Plan) is to be taken to be included in the residential living zone. The intent, table of assessment and code provisions of the residential living zone will thereafter apply to the original school site instead of the Community precinct provisions.

Defined Flood Level

The defined flood level for this Land Use Plan is as determined by Lockyer Valley Regional Council having regard to the flooding on 10 January 2011.

Relationship to Gatton Planning Scheme

This Land Use Plan refers to or relies upon various provisions of the Gatton Planning Scheme. To the extent there is any inconsistency between this Land Use Plan and those provisions, this Land Use Plan prevails.

For the purpose of this land use plan, any reference in an identified code of the Gatton Planning Scheme to:

- (a) a zone, means a zone or precinct of the land use plan;
- (b) the Urban Residential Zone, means the Residential Living 1 precinct of the land use plan;
- (c) the Park Residential Zone, means the Residential Living 2 precinct;
- (d) the Rural Residential Zone, means the Rural Residential 1 precinct and the Rural residential 2 precinct;
- (e) the Commercial Zone, means the Local Centre Zone of the land use plan;
- (f) the Industry Zone, means the Low Impact Industry Zone of the land use plan;
- (g) the Open Space and Recreation Zone, means the Recreation and Open Space Zone of the land use plan;
- (h) the Community Facilities Zone, means the Community purposes zone of the land use plan; and
- (i) a Rural general or Rural agriculture zone, means the Agricultural industry precinct, the Rural General precinct and the Rural zone of the land use plan.

Building work

Building work as defined in the *Sustainable Planning Act 2009* is not regulated by this Land Use Plan.

Gatton Planning Scheme

References in the development scheme to the Gatton Planning Scheme refers to the Planning Scheme for the former Gatton Shire commencing on 1 July 2007 and any subsequent amendments.

Roads, watercourses and reclaimed land

(1) If a road, watercourse or reclaimed land in the Reconstruction Area is not shown as being covered by a zone on the land use plan, the following applies—

- (a) if the road, watercourse or reclaimed land is adjoined on both sides by land in the same zone—the road, watercourse or reclaimed land has the same zoning as the adjoining land;
- (b) if the road, watercourse or reclaimed land is adjoined on one side by land in a zone and adjoined on the other side by land in another zone—the road, watercourse or reclaimed land has the same zoning as the adjoining land and the centreline of the road or watercourse is the boundary between the two zones;
- (c) if the road, watercourse or reclaimed land is adjoined on one side only by land in a zone—the entire road, watercourse or reclaimed land has the same zoning as the adjoining zoned land.

(2) To remove any doubt, it is declared that subsection (1) also applies to a closed road if the road is closed after the commencement of the development scheme.

Road Closures

Any proposed road closures will be carried out in accordance with section 106 of the *Reconstruction Authority Act 2011*.

Referral Agencies

Referral agency jurisdiction continues to apply for assessable development other than instances where nominated within the tables of assessment.

GRANTHAM RECONSTRUCTION AREA

PART 2 - INFRASTRUCTURE PLAN

Approach

Infrastructure requirements to support the delivery of the Development Scheme for Grantham will be determined by Council as part of the staged detailed design of Council owned land and as part of the development assessment process for non-Council owned land.

Infrastructure will include:

- Roads
- Water supply and sewerage
- Stormwater management
- Parks
- Electricity supply
- Telecommunications
- Community facilities

Listed below is the infrastructure currently identified for the Grantham Reconstruction Area.

Infrastructure	Description of works
Roads	New internal roads to service the new residential area
	New access road between Gatton -Helidon Road and the new residential area over the existing railway line
Water supply and sewerage	Water and sewerage works for development that connects to existing networks
	Provision of package sewerage plant to service the new development
Stormwater Management	New works linking with external stormwater management works
Parks	Provision of new parkland
Electricity Supply	Works as required by the relevant provider
Telecommunications	Provision of telecommunications to the new residential area
Community facilities	Facilities as agreed by the relevant provider

Local Infrastructure

Local infrastructure will include all internal works and external connections required to deliver the development including:

- a. Roads (including internal local roads and external access roads required to service the new development)
- b. Water Supply and Sewerage (including internal and external works to connect to existing infrastructure networks)
- c. Stormwater Management (including works to connect the existing stormwater systems)
- d. Parks (including the delivery of a recreational parkland to service the development)

- e. Electricity Supply (including internal and external works to connect to existing infrastructure networks)
- f. Telecommunications (including internal and external works to connect to existing infrastructure networks)
- g. Community facilities (including community facility sites).

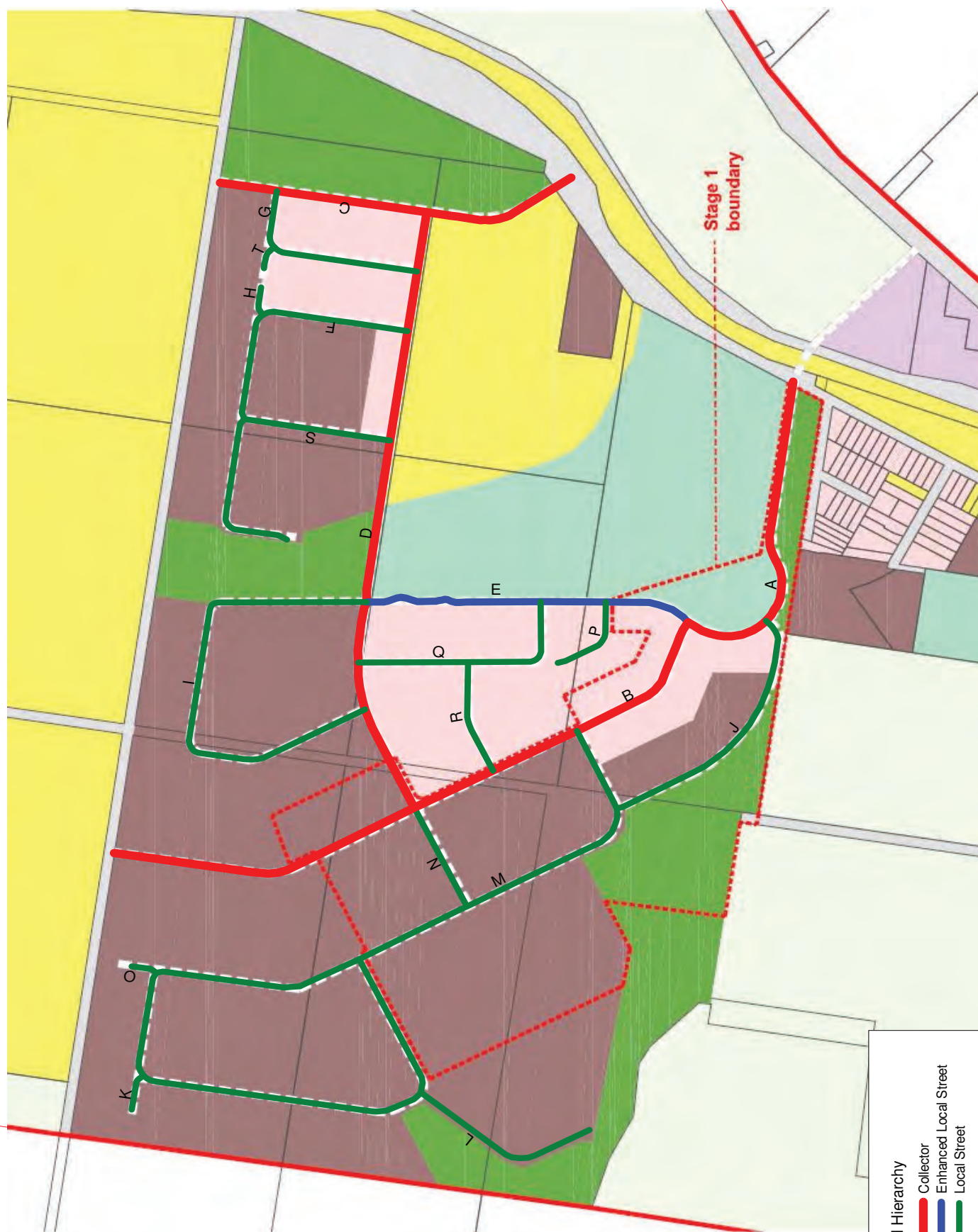
The land owner will be required to deliver all local infrastructure required to service the new development.

Listed below is the infrastructure currently associated with Grantham Reconstruction Area. These infrastructure requirements reflect the current development proposed. However, further detailed infrastructure investigations will occur as the detailed design is completed and as the development continues. The infrastructure requirements and delivery responsibilities may be amended to reflect the outcomes of these investigations.

Infrastructure	Description of works	When required
ROADS - to be delivered generally in accordance with Map A		
Road A	660 metres of collector road	Stage 1
Road B	1,270 metres of collector road	Stage 1 and Futures Stages
Road C	700 metres of collector road	Futures Stages
Road D	1,220 meters of collector road	Futures Stages
Road E	630 metres enhanced local street	Futures Stages
Road F	830 metres of local street	Futures Stages
Road G	390 metres of local street	Futures Stages
Road H	60 metres of local street	Futures Stages
Road I	940 metres of local street	Futures Stages
Road J	530 metres of local street	Stage 1 and Futures Stages
Road K	70 metres of local street	Futures Stages
Road L	380 metres of local street	Futures Stages
Road M	2,220 metres of local street	Stage 1 and Futures Stages
Road N	220 metres of local street	Stage 1 and Futures Stages
Road O	50 metres of local street	Futures Stages
Road P	180 metres of local street	Futures Stages
Road Q	460 metres of local street	Futures Stages
Road R	230 metres of local street	Futures Stages
Road S	280 metres of local street	Futures Stages
Road T	50 metres of local street	Futures Stages
WATER SUPPLY - to be delivered generally in accordance with Map B		
P01	337m DN200 water supply main	Stage 1
P02	452m DN200 water supply main	Stage 1
P03	333m DN150 water supply main	Stage 1
P04	113m DN150 water supply main	Stage 1
P05	325m DN150 water supply main	Stage 1
P06	424m DN50 water supply main	Stage 1
P07	168m DN50 water supply main	Stage 1
P08	366m DN50 water supply main	Stage 1
P09	221m DN50 water supply main	Stage 1
P10	221m DN50 water supply main	Stage 1
P11	223m DN50 water supply main	Stage 1

P12	269m DN50 water supply main	Stage 1
P13	354m DN150 water supply main	Future Stages
P14	216m DN150 water supply main	Future Stages
P15	479m DN150 water supply main	Future Stages
P16	119m DN150 water supply main	Future Stages
P17	134m DN150 water supply main	Future Stages
P18	214m DN150 water supply main	Future Stages
P19	438m DN150 water supply main	Future Stages
P20	567m DN50 water supply main	Future Stages
P21	342m DN50 water supply main	Future Stages
P22	397m DN50 water supply main	Future Stages
P23	542m DN50 water supply main	Future Stages
P24	571m DN50 water supply main	Future Stages
P25	291m DN50 water supply main	Future Stages
P26	885m DN50 water supply main	Future Stages
P27	549m DN150 water supply main	Future Stages
P28	118m DN150 water supply main	Future Stages
P29	119m DN150 water supply main	Future Stages
P30	288m DN150 water supply main	Future Stages
P31	274m DN150 water supply main	Future Stages
P32	285m DN150 water supply main	Future Stages
P33	244m DN150 water supply main	Future Stages
P34	288m DN50 water supply main	Future Stages
P35	441m DN50 water supply main	Future Stages
P36	250m DN50 water supply main	Future Stages
Pump Station 1	Fire flow booster pump - may be mitigated by control of Old College Road pumps by pressure sensor in Grantham	Stage 1
Pump Station 2	Trickle feed high level zone booster	Future Stages
SEWER - to be delivered generally in accordance with Map C		
Low Pressure Sewer	3,490 metres low pressure sewer	Stage 1
Low Pressure Sewer	1,395 metres low pressure sewer	Future Stages
STORMWATER MANAGEMENT - to be delivered generally in accordance with Map D		
Stormwater Pipe	1,665 metres of pipe	Stage 1
Stormwater Pipe	4,375 metres of pipe	Future Stages
Stormwater Swale	3,765 metres	Stage 1
Stormwater Swale	8,730 metres	Future Stages
Stormwater Culvert	185 metres	Stage 1
Stormwater Culvert	265 metres	Future Stages
Stormwater Pit	33 nos.	Stage 1
Stormwater Pit	84 nos.	Future Stages
PARKS - to be delivered generally in accordance with the Land Use Plan		
ELECTRICITY SUPPLY - to be delivered in accordance with provider requirements.		
TELECOMMUNICATIONS - to be delivered in accordance with provider requirements.		
COMMUNITY FACILITIES - to be delivered in accordance with Council requirements.		

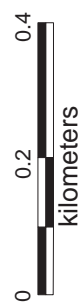
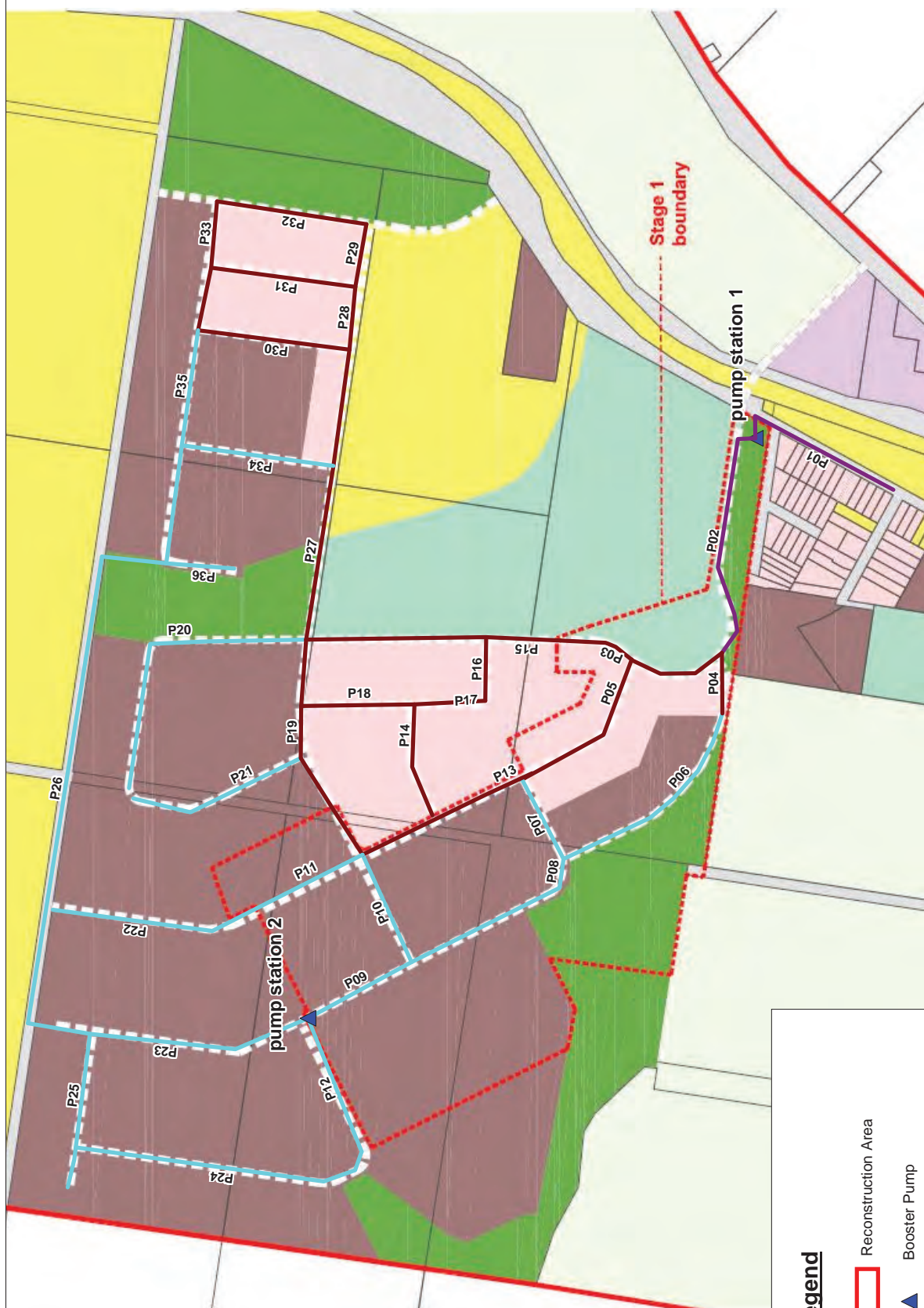
MAP A - ROADS



Road Hierarchy

- Collector
- Enhanced Local Street
- Local Street

MAP B - WATER SUPPLY



Legend

- Reconstruction Area
- ▲ Booster Pump
- Proposed DN150 water main
- Proposed DN50 water main (Trickle feed)
- Proposed DN200 water main

MAP C - SEWER

LPSS_sewer by Stage

- future
- Stage 1

Land Use Legend:

- Reconstruction Area
- Low Impact Industry
- Community Purpose
- Residential Living
- Sports and Recreation
- Open Space
- Rural Residential
- Rural
- Local Centre
- Limited Development

Scale: 0 to 0.4 kilometers

North Arrow: N

Stage 1 boundary

Proposed Package Plant

Stage	Sum(Length_m)
Stage 1	3,486.1
future	1,390.12

Other Labels: To be determined, Collect

Stage	Sum(Length_m)
Stage 1	3,486.1
future	1,390.12

LPSS_sewer by Stage

future

Stage 1

11

Reconstruction Area

Low Impact Industry

Community Purpose

Residential Living

Sports and Recreation

Open Space

Rural Residential

Rural

Rural
Local Control

Local Centre
Limited Development

MAP D - STORMWATER MANAGEMENT

N



Stage 1
boundary

Legend

Pits by Stage
Future (red square)
Stage 1 (yellow square)

Culverts by Stage
Future (green oval)
Stage 1 (yellow oval)

Swale by Stage
Future (purple line with arrows)
Stage 1 (blue line with arrows)

Pipes by Stage
Future (red line)
Stage 1 (yellow line)

GRANTHAM RECONSTRUCTION AREA

PART 3 - IMPLEMENTATION STRATEGY

Implementation Strategy

The *Queensland Reconstruction Authority Act 2011* (the Act) requires a development scheme to include an implementation strategy to achieve the main purposes of the Act for the Reconstruction Area, to the extent that they are not achieved by the land use plan or infrastructure plan. In this regard, the land use plan and infrastructure plan largely address the main purposes of the Act to facilitate the effective and efficient rebuilding and recovery of affected communities.

Fulfilling the ultimate vision for the Grantham community is likely to take many years and that is why the immediate priorities are outlined in the 2 year vision which reflects many of the critical reconstruction needs of the community over the next 2 years. Whilst contextualised as a 2 year vision, it is likely that the majority of the 2 year vision with respect to the relocation of displaced residents is likely to occur much sooner with Council to commence construction on the first stage of the new development by mid 2011 with some residents in their homes by Christmas 2011.

Like many things within our society, changes and evolution will occur during the life of this Development Scheme including; technologies, prevailing economic conditions, socio-demographic trends and attitudes and preferences towards housing.

Any changes or evolution as a result of these circumstances can be reflected in a revised master plan for Grantham through any future reviews of Council's Planning Scheme. The Development Scheme has been written using the standardised Queensland Planning Provisions developed by the Department of Local Government and Planning and this will facilitate the transition, review and refinement of the Development Scheme into Council's future planning scheme.

To facilitate Council's land swap program and the costs associated with facilitating this program, it is intended that sufficient additional development over and above that required for the land swap program will be permitted within the Reconstruction Area, on the basis that the costs associated with the land swap program are borne by Council and recouped where possible through additional development yield.

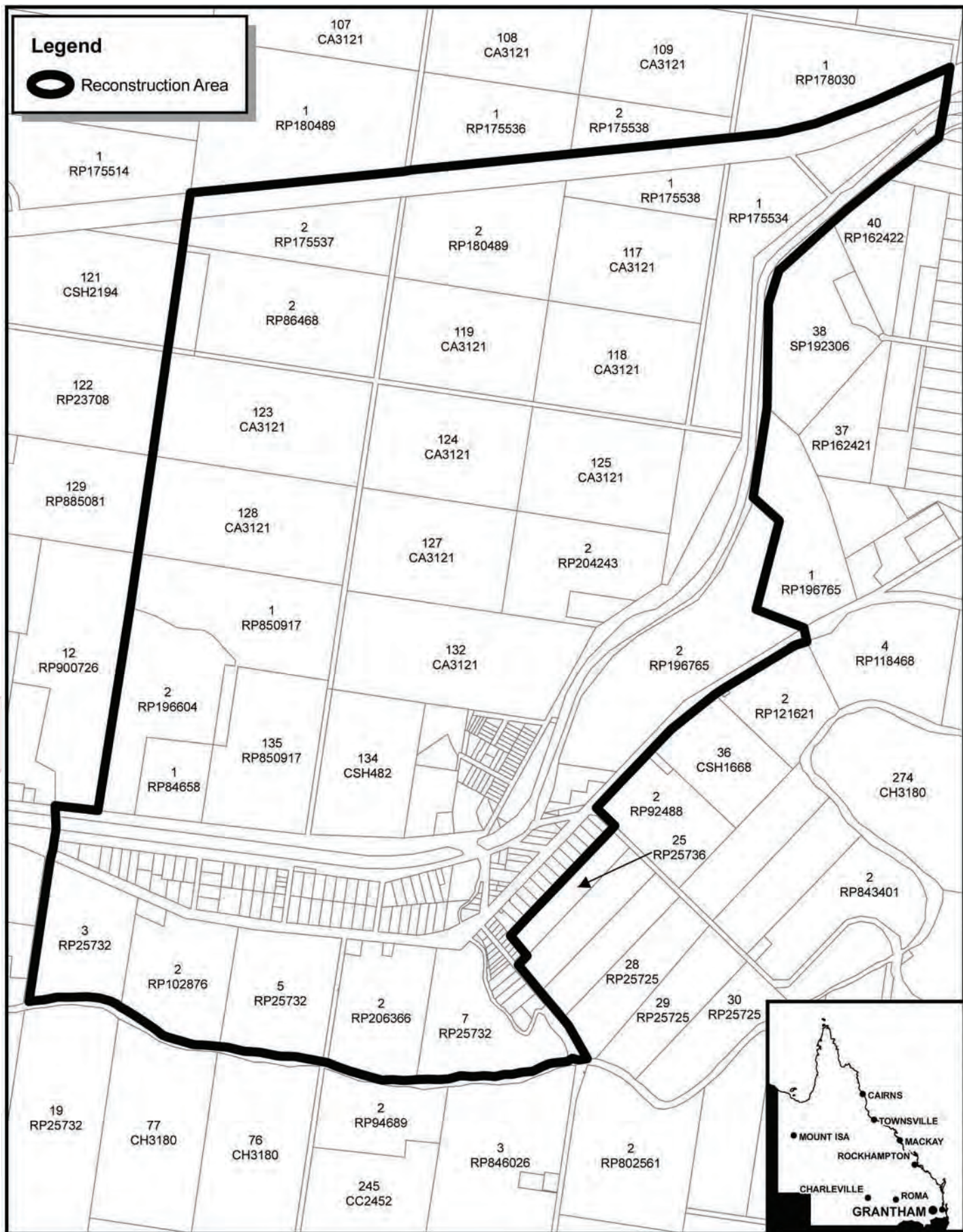
Council released details of its land swap program on 4 May 2011. Specifically, the program involves a voluntary land swap arrangement between Council and residents from Grantham, Murphy's Creek, Postman's Ridge, Hellidon and Withcott who were devastated by the January 2011 flash flooding. The program being facilitated by Council will involve participants receiving a 'like for like' land parcel in the new part of town being developed by Council equivalent in size to their existing property. Council has advised that lots will be awarded under a formalised ballot system where residents will have the opportunity to select their first, second and third preferences for a new lot. Council has nominated that the land swap program will be open in May 2011 with further nominations open in late 2011 and early 2012.

Residents who elect to participate in the land swap program being administered by Council or who elect to rebuild on their current land will be responsible for all housing construction costs including the relocation of housing.

This implementation strategy responds to the challenge of delivering a self funding Reconstruction Area and land swap program over an extended period of time by removing regulatory hurdles and providing flexibility in the final development form.

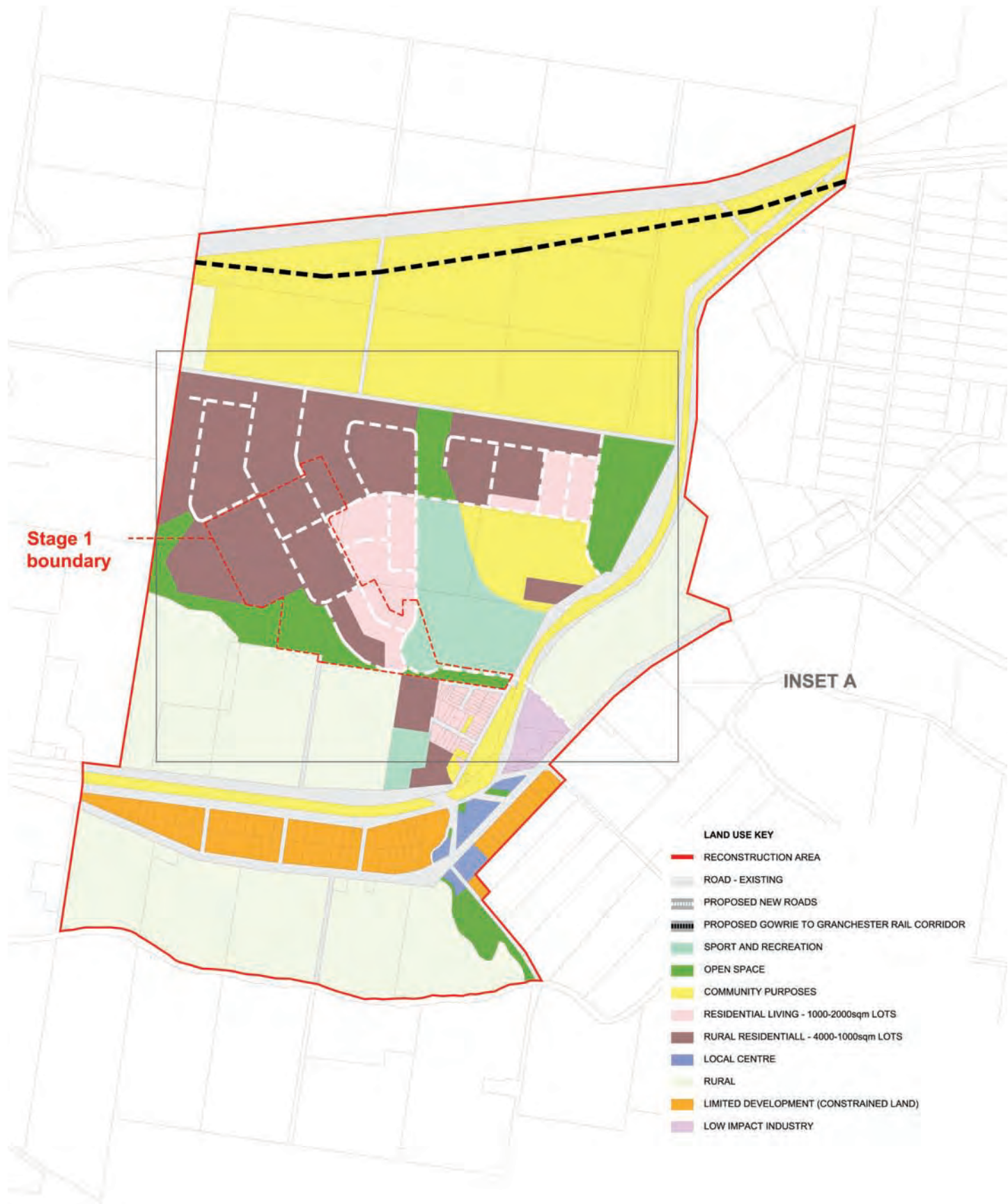


REFERENCE PLANS



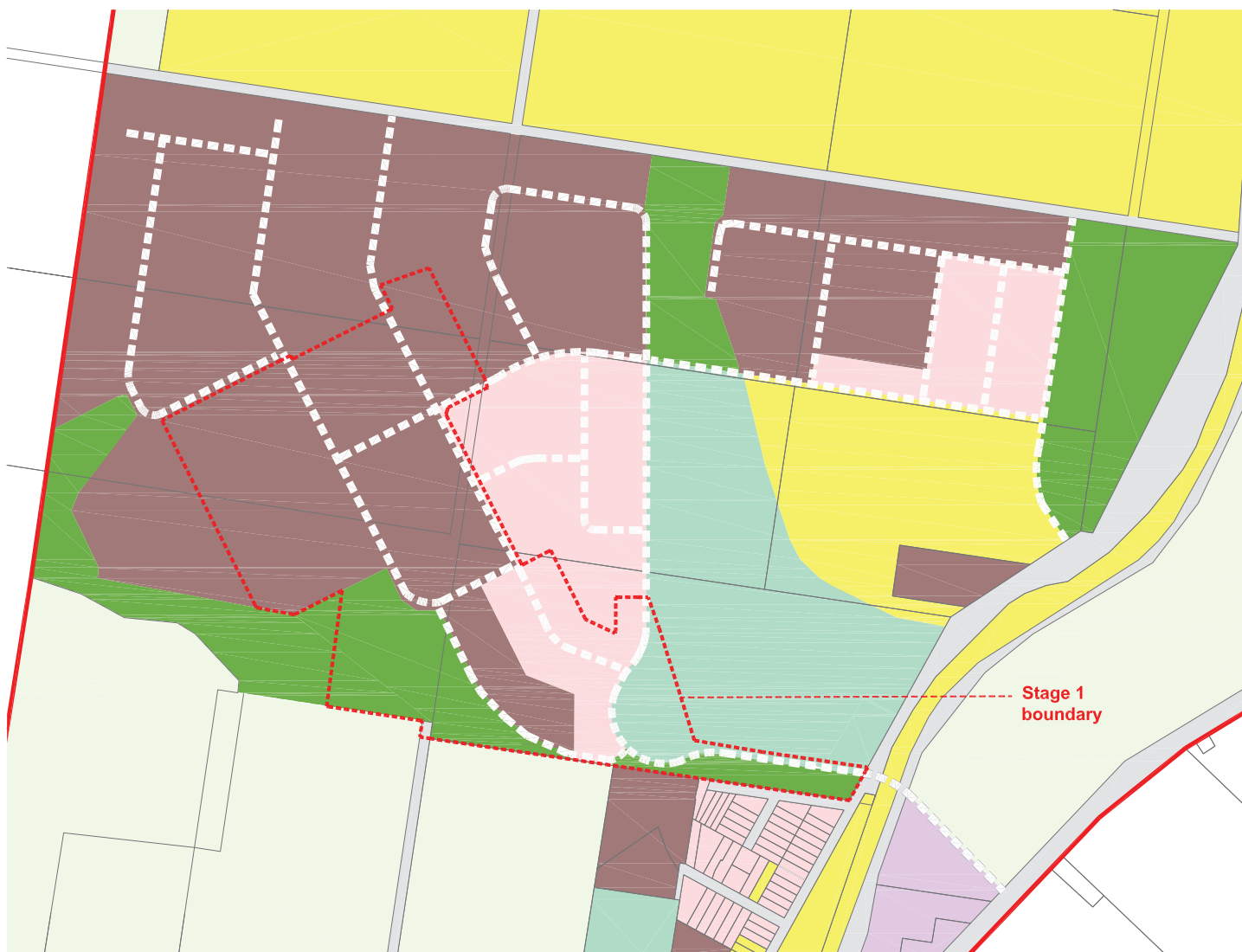
MAP 1 GRANTHAM RECONSTRUCTION AREA





MAP 2 - GRANTHAM RECONSTRUCTION AREA Land Use Plan





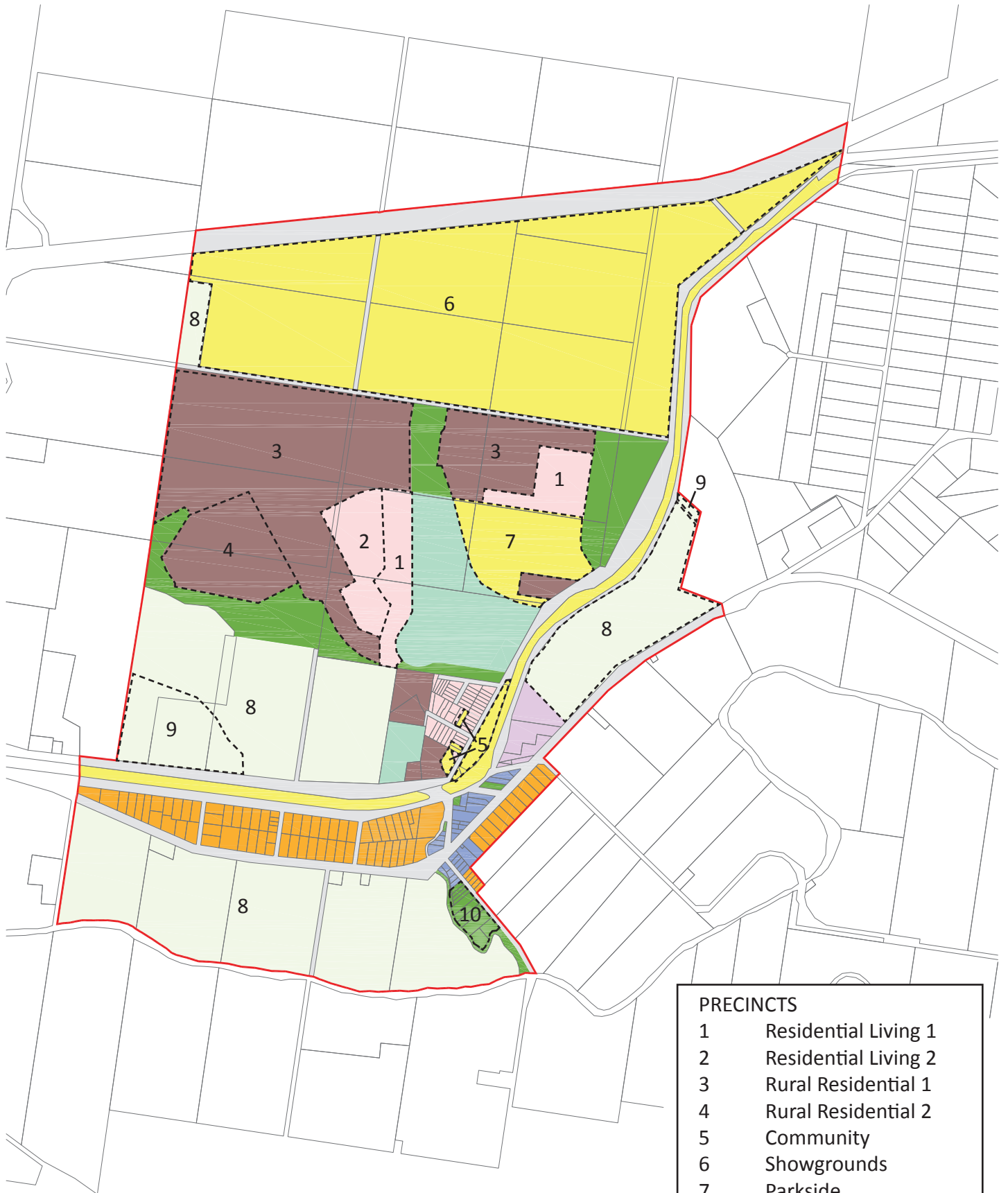
LAND USE KEY

- RECONSTRUCTION AREA
- ROAD - EXISTING
- PROPOSED NEW ROADS
- PROPOSED GOWRIE TO GRANCHESTER RAIL CORRIDOR
- SPORT AND RECREATION
- OPEN SPACE
- COMMUNITY PURPOSES
- RESIDENTIAL LIVING - 1000-2000sqm LOTS
- RURAL RESIDENTIAL - 4000-1000sqm LOTS
- LOCAL CENTRE
- RURAL
- LIMITED DEVELOPMENT (CONSTRAINED LAND)
- LOW IMPACT INDUSTRY



MAP 3 GRANTHAM RECONSTRUCTION AREA Land Use Plan - Inset A





PRECINCTS

- | | |
|----|----------------------|
| 1 | Residential Living 1 |
| 2 | Residential Living 2 |
| 3 | Rural Residential 1 |
| 4 | Rural Residential 2 |
| 5 | Community |
| 6 | Showgrounds |
| 7 | Parkside |
| 8 | Rural Argiculture |
| 9 | Rural General |
| 10 | Harris Street |

Local Authority: Lockyer Valley Regional Council
 Locality: Grantham
 Date: 11 May 2011

Plan is subject to finalisation.



MAP 4 - GRANTHAM RECONSTRUCTION AREA Precinct Plan



Notes



Attachment BJN-03

Queensland Reconstruction Authority Act 2011

Queensland Reconstruction Authority Regulation 2011

This regulation is available [here](#).

**ORDINARY COUNCIL
MEETING MINUTES
11 MAY 2011**

11.0 CONFIDENTIAL ITEMS

ITEM NO: 11.1
FILE NO: 7.5/6/16
DATE: 04 May 2011
TOPIC: GRANTHAM RELOCATION POLICY
AUTHOR: Jamie Simmonds
AUTHOR'S TITLE: Advisor to the Mayor

THAT Council move into Closed Session for discussion in accordance with Section 72 (1) (g), any action to be taken by the local government under the Planning Act, including deciding applications made to it under that Act;

The Project Director Strengthening Grantham presented an update on the Strengthening Grantham Project including finalisation of the master plan and relocation policy.

RESOLUTION:

THAT Council approve:

- the Grantham Master Plan; and
- The Grantham Relocation Policy, subject to minor amendments;

And further;

That a Schedule of Contributions required to purchase larger blocks than that allocated under the Grantham Relocation Policy be developed based on the development costs associated with each block size (1,000m², 2,000m², 4,000m² and 10,000m²)

Moved By: Cr McDonald

Seconded By:

Cr Holstein

Resolution Number: 2090

CARRIED

6/0