REPORT

Phase 5 Feasible Alternatives Assessment Report – Flood and Bushfire Hazard

PREPARED FOR
IPSWICH CITY COUNCIL

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Meridian Urban

QUALITY STATEMENT

PROJECT MANAGER	PROJECT TECHNICAL LEAD
Kim Kirstein	Kim Kirstein
PREPARED BY	
Kim Kirstein/ Sam Evans	26/07/2022
CHECKED BY	
Laura Gannon	26/07/2022
REVIEWED BY	
Stephen Dredge	26/07/2022
APPROVED FOR ISSUE BY	
Stephen Dredge	26/07/2022

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The Client agrees that the Consultant shall have no liability in respect of any damage or loss incurred as a result of flood or bushfire.

Ipswich City Council

Phase 5 Feasible Alternatives Assessment Report – Flood and Bushfire Hazard

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1 Introduction

1.1 Purpose

Meridian Urban, in partnership with Water Technology, have been engaged by Ipswich City Council (Council) to deliver and integrate into the proposed new Ipswich planning scheme:

1. flood risk assessment outputs from Council's recently completed **Ipswich Integrated Catchment Plan, 2021 (IICP)**
2. recently completed Ipswich Bushfire Risk Assessment.

The purpose of this report is to:

- **provide an overview of the flood and bushfire projects; and**
- **consider the alternate approaches to the proposed planning scheme changes to determine their feasibility, as required by Section 30(4)(e)of the *Planning Act 2016* (Planning Act).**

1.2 Flood Risk Assessment and Planning Scheme Alignment Project

The Flood Risk Assessment and Planning Scheme Alignment project was commissioned by Council to consider and integrate the outcomes of the IICP into the new Ipswich planning scheme, providing a risk-informed evidence base to consider strategic and land use planning provisions.

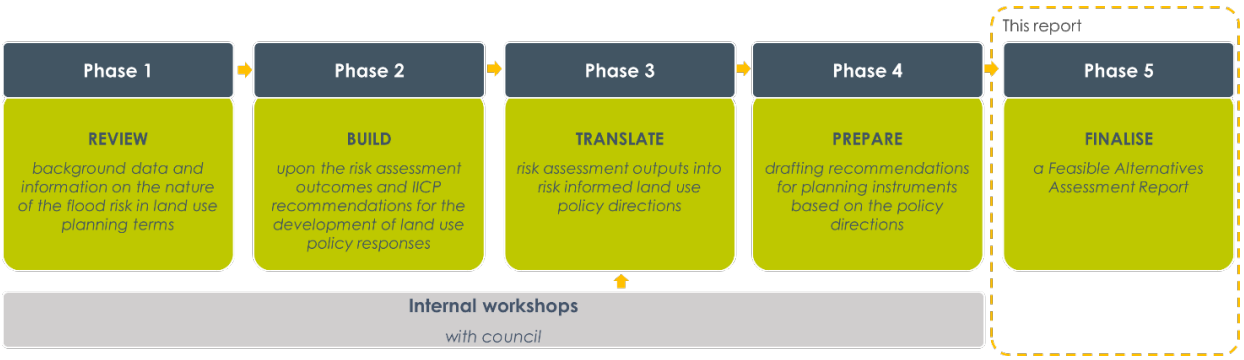
The project was broken down into five phases, as shown below in **Figure 1**, including:

- ***Phases 1 to 3 – Local Policy Response Report***, which set the policy framework for the integration of outcomes arising from the **IICP** into local policy responses for the integration of flood risk considerations into the planning scheme; and
- ***Phase 4 – Land Use Planning Flood Provisions***, which provided the drafting recommendations based on the policy directions established under the Phases 1 to 3 Report.

Council is embarking upon the preparation of a new planning scheme to replace the current Ipswich planning scheme which was prepared under the now repealed *Integrated Planning Act 1997* and came into force and effect in 2004.

The Flood Risk Assessment and Scheme Alignment project provides a critical linkage between the IICP and the new planning scheme. It provides the framework for integrating flood risk considerations into land use planning.

Figure 1 - Overarching project phases



1.3 Ipswich Bushfire Risk Assessment Project

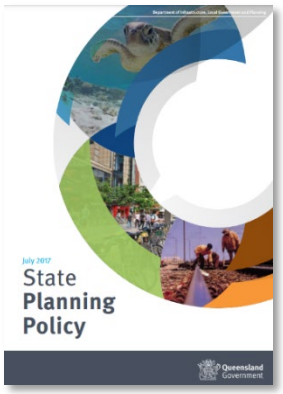
A bushfire risk assessment was commissioned by Council to support the preparation of the proposed Ipswich planning scheme, providing a risk-informed evidence base to consider strategic and land use planning provisions. The intent of the risk assessment was to examine and understand the potential nature of bushfire risk to people, property, infrastructure and the environment across the Ipswich region both at present and into the future.

This risk assessment focusses on the potential likelihood and consequence of bushfire risk across the region insofar as it relates to strategic land use planning, having regard to factors of exposure, vulnerability and tolerability.

The Ipswich Bushfire Risk Assessment project comprised five component reports:



1.4 Why do we need to consider hazard risk in land use planning?



The State Planning Policy, 2017 (SPP) expresses the State's interests in land use planning and development. It includes the State interest – natural hazards, risk and resilience which requires:

risks associated with natural hazards, including the projected impacts of climate change, are avoided or mitigated to protect people and property and enhance the community's resilience to natural hazards.

In particular, the SPP requires that:

Table 1 - Relevant State interest policies

State interest policy (summarised)	Relevance to ICC
1 – Natural hazard areas are identified (i.e., mapped)	✓
2 – A fit-for-purpose risk assessment is undertaken	✓
4 – Development avoids natural hazard areas or mitigates risk to an acceptable or tolerable level	✓
5 – Development incorporates a range of risk reduction and resilience measures	✓
6 – Community infrastructure is located and designed to limit risk and maintain functionality	✓

1.5 Taking a risk-based planning approach

Planning for natural hazards is fundamentally about risk to life and property, but is also about taking steps to limit future impositions on other government functions (like disaster management) and expenditure on recovery and reconstruction, while also supporting communities to strive for sustainable development and community wellbeing even when stresses and shocks might occur.

A risk-based planning framework is highly valuable as a tool to 'translate' the often highly technical outputs from hazard-specific risk assessments into land use policy positions to ensure that future development in the LGA occurs in a way that is tolerable or acceptable.

Reaching that decision regarding risk acceptability and tolerability also requires Council to balance other state interests under the SPP and locally relevant values and context. Therefore, a place-based approach is needed in addressing risk.

Figure 2 sets out the risk-based planning framework which was applied as part of considering the integration of flood and bushfire risk into the new Ipswich planning scheme. It considered a wide range of place-based and contextual elements critical for the proper integration of risk into the land use planning context for the Ipswich LGA.

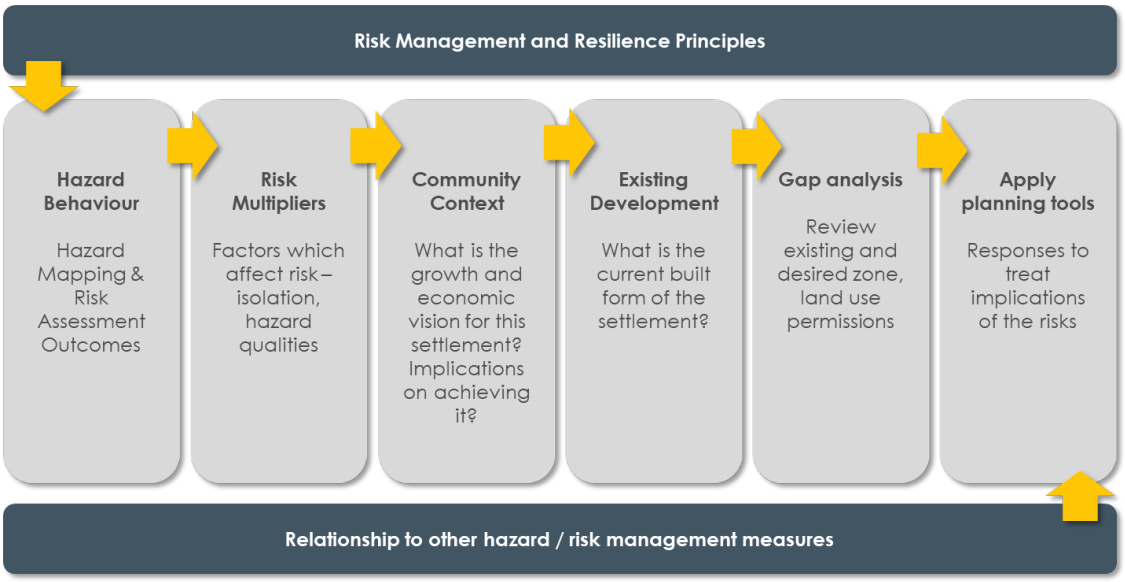


Figure 2 - Risk-based planning framework

1.6 Overarching principles for guiding land use planning responses to hazards and risk on development

Aligning with the approach Council has used to evaluate flood mitigation, and in the interests of alignment and consistency of approach across hazards, the following policy principles have underpinned the land use policy response for flood and bushfire hazard:

Table 2 - Land use planning policy principles for guiding responses to hazards and risk on development

Principles for land use policy response to hazards and risk	ICC mitigation evaluation questions
Prioritise the safety of people	**Does it improve the safety of people** i.e., reduce risk to life?
Ensure economy has resilient places, spaces, and infrastructure so that it can sustain and prosper	**Does it meet social standards** i.e., will it target vulnerable communities or build stronger community resilience? **Does it provide economic benefit** i.e., are flood damages reduced, do benefits outweigh costs? **Does it impact essential infrastructure** i.e., protect water supply or other critical networks?
Maximise ability for future property owners to insure and finance their properties	
Limit / avoid the future obligation on Council and other entities to invest heavily in infrastructure upgrades or large scale mitigation / extensive interface / asset protection land management	**Is it technically feasible** i.e., what are the necessary approvals and are there any residual risks?
Maximise the environmental values of natural areas	**Does it impact the environment** i.e., does it improve water quality or enhance ecosystem health and connectivity?

2 Feasible Alternatives Assessment Report context

Council is in the process of preparing the new Ipswich planning scheme. As s part of this process, natural hazard assessments for flood and bushfire have been undertaken and formed a basis for making changes to include the natural hazards components related to flooding and bushfire in the new Ipswich planning scheme.

The Planning Act includes specific provisions outlined under section 30(4)(e) and 30(5) to permit a local government to make a planning change without it being an ***adverse planning change***:

Section 30(4)(e) However, an adverse planning change does not include a planning change that –

i. to reduce a material risk of serious harm to persons and property on the premises from natural events or processes (bush fires, coastal erosion, flooding or landslides, for example); and

ii. under a provision of the Minister's rules that applies specifically to the making of a planning change to reduce the risk'.

*Section 30(5) For subsection (4)(e), the Minister's rules must require a local government to **prepare a report assessing feasible alternatives for reducing the risk** stated in subsection (4)(e), including imposing development conditions on development approvals.*

Therefore, where Council considers feasible alternatives to making the planning change by preparing a feasible alternatives assessment report (FAAR)

Completing the process of considering feasible alternatives to making the planning change by preparing a feasible alternatives assessment report (FAAR) has two (2) effects:

1. The proposed planning change is no longer defined as an adverse planning change (section 30(4)(e) of the Act).
2. Compensation provisions that would be otherwise available to an affected owner under section 31 of the Act no longer apply relating to the extent of the planning change identified under section 30(4)(e) of the Act.

A FAAR is required to be completed in accordance with the Minister's Guidelines and Rules (MGR).

2.1 Matters to be addressed in the FAAR

Table 3 provides the matters to be addressed in the FAAR as required by the MGR:

Table 3 – Matters to be included in the FAAR

Matters to be included
The FAAR must include:
a) the site description, including real property description and site address, for all premises potentially affected by the proposed planning change
b) the anticipated risk to premises associated with natural events or processes to be undertaken in accordance with AS/NZS ISO 31000:2009 Risk Management, detailing the impact for the whole premises, not just the part of the premises at risk
c) any existing uses on the premises
d) the current intended outcomes of the planning scheme for the premises

e) details of the proposed planning change and the resultant intended outcomes under the planning scheme for the premises
f) a statement about the proposed planning change's consistency with the SPP and State Interest Guidelines with regard to natural hazards, risk and resilience
g) feasible alternatives to the proposed planning change that have been identified and investigated in accordance with the SPP and associated State Interest Guidelines, any relevant Australian Standard, contemporary best practice guidance or other specifications, and the results of those investigations
In investigating the feasibility of alternatives to the proposed planning change, the local government must:
a) consider the impacts of not making the proposed planning change (i.e., do nothing)
b) consider the reduction in the level of risk of serious harm to persons or property on the premises from natural events or processes for each alternative identified, including the alternative of imposing development conditions on development approvals;
c) identify the planning change that would most effectively reduce the risk of serious harm to persons or property on the premises from natural events or processes to an acceptable level
d) consider alternatives that do not involve making a planning change
For each alternative identified, the local government must investigate all options for avoiding or mitigating the risk to persons or property on the premises from natural events or processes

3 Feasible alternatives to managing hazard risk across the Ipswich LGA

3.1 Integrated Catchment Plan (IICP)

The IICP was prepared following the regionally consistent approach established in the SFMP for catchments of the Bremer River, Brisbane River and the local creeks within the bounds of the Ipswich.

The IICP is a non-statutory integrated floodplain management document which assessed and characterised the nature of flood risk across the Ipswich local government area (LGA) and considers a range of options and associated recommendations and actions for how to manage flood risk across the Ipswich LGA, including:

Ipswich integrated Catchment Plan	
1. **Define and reduce the flood risk**	*Understand the risk*
2. **Achieve sustainable flood mitigation through physical intervention**	*Council lead mitigation*
3. **Plan for development outcomes that are risk-informed**	*Minimise flood risk through land use planning*
4. **Promote flood-resilient built form**	*Property specific actions*
5. **Enable our community to anticipate, respond and adapt to floods and flooding**	*Community awareness, preparedness and responsiveness*
6. **Deliver emergency response and recovery decisions that are intelligence based**	*Disaster management*

The IICP was informed by the Ipswich Integrated Catchment Plan – Technical Evidence Report (TER) prepared by Water Technology and Synergy Solutions, which included a flood risk assessment undertaken in accordance with the flood risk assessment methodology established in the Brisbane River Strategic Flood Management Plan (SFMP) and AS/NZS ISO 31000 – Risk Management (Figure 3).

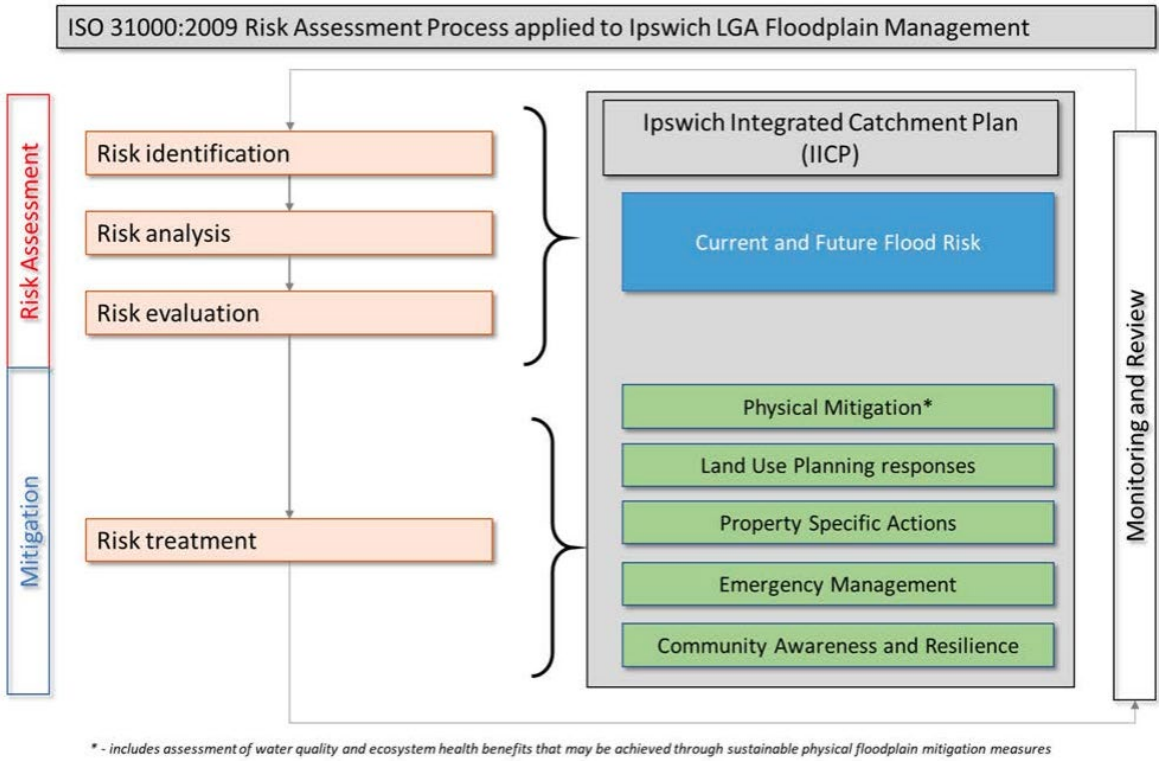


FIGURE 4-1 RISK ASSESSMENT PROCESS APPLIED TO THE IICP

Figure 3 - Risk assessment process applied to the IICP *(source IICP TER, 24 December 2020)*

The following table (refer to **Table 4**) provides the land use planning recommendations from the IICP that were considered and informed the preparation of the proposed planning scheme changes for the new Ipswich planning scheme including the:

- proposed categories of development and assessment;
- proposed updates to the Flood risk and overland flow overlay code;
- proposed Flood risk overlay map;
- LAF narratives; and
- identification of land for a potential rezoning or deliberate density reduction.

Table 4 - What IICP LUP recommendations have been addressed

	Definitions
	Overlay code
	Overlay map
	Local Area Framework narratives
	Rezoning and density reduction consideration

	LUP IICP recommendation	Phases 1 to 3 Report	Phase 4 Report
LUP1	Apply a consistent methodology to the identification of hazard categories for the purposes of the draft new flood hazard overlay		
LUP2	Extend any development controls for residential uses to the HR4 category to include the 1 in 500 year H3 hazard category		
LUP4	Develop and include a city-wide overland flow path assessment to allow risk-based assessment of this type of flood risk	Out of scope	
LUP5	Avoid any intensification of development in areas mapped in HR1c and HR1b	✓	
LUP6	Continue the existing requirements in the current planning scheme that promote built form and resilient building materials as an acceptable mitigation response such as building on stilts, or with wet / dry proofing on ground floor, but may consider revising trigger areas based on lower risk areas such as HR2a, HR3a, HR4 and HR5		
LUP7	Include requirements for easements in greenfield areas up to the Defined Flood Event (DFE)		
LUP8	Include requirements for a Flood Risk and Emergency Plan (FEMP) for non-residential uses in locations where TTI is <6 hours and where DFI is >36 hours		
LUP9	Include requirements for responses such as FEMPs linked to new development in locations subject to flood islands		
LUP10	Include development control measures that may be applied to the development assessment process of vulnerable uses below the Probable Maximum Flood (PMF)		

LUP11	Provide a definition of vulnerable uses in the new Ipswich Planning Scheme		
LUP12	Avoid vulnerable uses and non-intensification of residential uses in locations where TTI is <6 hours and DFI is >36 hours, or locations subject to flood islands. In areas of low hazard built form and resilient building materials should be considered as an acceptable mitigation response	✓	
Consider the following changes in draft planning scheme:			
LUP13	Request a Flood Risk Assessment		
LUP14	Adding a provision for commercial, industrial and other non-residential uses to avoid increasing the concentration of people in areas in HR1c and HR1b		
LUP15	For residential uses removing provision relating to a flood depth of no more than 800mm		
LUP16	Minimum clearance for the construction of basements and undercrofts		
LUP18	Preserve pockets of flood storage in the catchment to avoid future flood risk impacts in areas where HR categories and flood levels may increase as a result of filling or due to development activity	✓	
LUP19	Continue provisions that maintain flood storage capacity and do not create impacts on sites upstream or downstream– this is normally a request to provide hydraulic and hydrology report demonstrating compliance		

3.2 Ipswich Bushfire Risk Assessment

A whole-of-region bushfire risk assessment was undertaken by Meridian Urban to inform Council's strategic land use planning approach to the Ipswich LGA, adopting a risk-informed evidence base upon which to consider potential strategic land use planning options.

The fit-for-purpose risk assessment was prepared pursuant to the current SPP, and the State interest guidance materials which are required to be appropriately integrated into a local planning instrument.

The risk assessment process was based upon that set out by the *National Emergency Risk Assessment Guideline* (NERAG) and in accordance with AS/NZS ISO 31000 – Risk Management, having regard to the critical elements of likelihood, exposure, vulnerability, tolerability and consequence with consideration of existing and potential future risk exposure framed by an analysis of:

- risks to people;

- risks to property;
- risks to infrastructure; and
- potential cascading environmental and economic risks.

The following table (refer to **Table 5**) outlines the extent of recommendations identified by the bushfire risk assessment which have been further considered in the preparation of the proposed bushfire related planning scheme changes:

Table 5 - Summary of risk assessment recommendations to inform policy, strategic and statutory planning approaches

ID	Recommendation
01	Work with the State government as part of ongoing updates and amendment processes supporting the State-wide BPA mapping to inform Council's overlay mapping.
02	Ensure all aspects of the draft planning scheme maximise the linkages between planning and building processes.
03	Work with the State government (Economic Development Queensland) and Springfield City Group with respect to strategic planning for new development in bushfire prone areas, ensuring streamlined and appropriate policy and statutory controls are applied across all relevant instruments.
04	Incorporate bushfire risk considerations as part of the Local Area Framework. Using this framework, localised risk-responsive approaches can be adopted which move away from standardised / uniform hazard provisions.
05	Ensure zoning and other settlement policy decisions are informed by considerations for evacuation, having regard to: • the existing and potential exposure of the road network to bushfire attack; • the ability to provide / retain multiple egress route options; • the capacity of the road network to support emergency evacuation • road network design and construction; and • identifying and mitigating potential route bottlenecks during emergency evacuation.
06	Consider the implementation of statutory controls to regulate reconfiguring thresholds relative to the number of evacuation routes to ensure a grassroots approach to evacuation planning can be contemplated at development assessment stage.
07	Consider the integration of statutory controls which focus on mitigating the risk of urban fire intrusion for new settlement at the urban bushland / grassland interface.
08	Consider the integration of statutory controls which focus on mitigating the risk of bushfire and grassfire to existing and/or future landfill, hazardous facilities and unexploded ordnance sites.
09	Consider a policy of avoidance of vulnerable and sensitive facilities in the bushfire prone area across the region. Where such uses are necessary, contemplate the

	strength of statutory controls which acknowledges these uses rarely require a bushfire building response under AS3959.
10	Explore the opportunity to align the definition of vulnerable uses (defined by the SPP guidance materials) with that which applies to flood, to aid in consistency.
11	Explore opportunities for statutory planning provisions to appropriately address the bushfire resilience of land uses and activities not subject to AS3959 including short term accommodation, tourist activities, fuel stations, sensitive uses, industrial activities, hazardous activities, vulnerable facilities and critical infrastructure where these cannot be avoided in a bushfire prone area.
12	Ensure the new planning scheme appropriately balances the competing planning policy issues of biodiversity and environmental protection with bushfire protection and mitigation.
13	Ensure any future master planning or structure planning processes for emerging community zoned land or growth areas are undertaken in line with bushfire resilient urban design principles which guide outcomes, on balance with ecological values.
14	Ensure strong and calibrated consideration of bushfire hazard and risk across all parts of the draft planning scheme.

4 Section 1.6 Building work regulated under the planning scheme

Local planning instruments must provide the linkage between planning and building provisions.

In particular, declaring the 'designated bushfire prone area' for the purposes of the Building Code of Australia (BCA) by citing the bushfire hazard overlay map as the trigger, and specifically the assessment of Australian Standard (AS) 3959 (2018) for Construction of Buildings in Bushfire Prone Areas (herein referred to as 'AS3959-2018'), as the 'deemed to comply' requirements for the bushfire protection provisions of the BCA.

Further, a planning scheme cannot include mandatory parts in the current parts of the Queensland Development Code, which includes MP3.5. For MP3.5 to be considered, the planning scheme must designate all or part of its LGA a flood hazard area and include a statement that a designation / declaration has been made under the Building Regulation.

These statements are ideally incorporated in the section of the new planning scheme which addresses the instrument's linkages with building provisions based on the Queensland Planning Provisions template. This can then be repeated in a non-statutory note within the overlay code however, the overlay code notation should not be the only reference within the planning scheme given its non-statutory nature.

5 Categories of development and assessment

The levels of assessment indicate the need for or the ease of compliance with regulatory provisions. They also dictate the provisions which are used as assessment benchmarks and the ability for the public to be consulted or appeal. The extent to which the regulatory provisions can be applied without intervention are a primary consideration for assigning assessment levels. Low levels of assessment indicate a low-risk proposal where benchmarks can be applied and complied with relatively simply without the need for individual assessment. Higher levels of assessment indicate the need for alternative solutions and assessment manger review, or the need for public consultation.

The SPP guidance requires the consideration of whether the categories of assessment reflect the level of risk and vulnerability of the uses. In particular, it notes that the impacts of vulnerable uses, reconfiguring a lot which facilitates the increases in population, significant earthworks which involve the redirection of existing overland flow paths and development that involves the storage of significant amounts of hazardous material in a flood hazard area are fully considered.

Tables 6 and 7 below provide an overview of the existing levels of assessment as compared to the proposed levels of assessment for the new Ipswich planning scheme, for land affected by flood or bushfire hazard. In general, the same levels of assessment for particular development identified within the existing Ipswich planning scheme are proposed under the new Ipswich planning scheme, except where indicated.

Separate tables of assessment are proposed for the Flood risk and overlay flow overlay and Bushfire hazard overlay in the new Ipswich planning scheme. This is distinct from the existing Ipswich planning scheme which provides combined tables of assessment categories for the Development constraints overlay.

Table 6 - Comparison of existing and proposed levels of assessment for flood

Existing development categories	Existing levels of assessment	Proposed levels of assessment	Change
Material change of use for a: (a) Dwelling house; or (b) Dual occupancy. *Note – The definition for a dual occupancy is proposed to include a secondary dwelling for the new Ipswich planning scheme.*	Assessable development – code	Accepted development subject to requirements, where located within a very low to low flood risk category Assessable development – code, where located within a medium to extreme flood risk category *Note – A material change of use for a dwelling house or for a class 10 building or structure if the use is for a residential purpose in a residential zone is not assessable development, unless an overlay applies to the premises, as identified in the local categorising*	Some change to align with the risk categories

		instrument and relevant to assessment of the material change of use. *Residential development located within a very low to low flood risk category provides alignment with the policy position of the Planning Regulation commensurate with the level of risk and land use planning pathways determined in the Phases 1 to 3 Report.*	
Material change of use for a: (a) Community residence.	Accepted development subject to requirements *Note – The Planning Regulation provides that a local categorising instrument is prohibited from stating a material change of use for a community residence is assessable development in a prescribed zone.*	Community residence – Accepted development subject to requirements Note – Whist the Planning Regulation provides that a planning scheme cannot state a community residence is assessable *development, it does not prevent requirements being included e.g.,* *RO1 Community Residences are not located in areas of high and very high flood risk as shown on the overlay. With no AO. The fact that they cannot be bumped to Code can be foreshadowed in the preamble rules of Part 5. i.e., the Regulation overrides and no application can be accepted.*	No change proposed
Material change of use for a: (a) Childcare centre; (b) Community care centre; (c) Detention facility; (d) Rooming accommodation; (e) Residential care facility;	Assessable development – code	Assessable development – code assessment	No change proposed

(f) Retirement facility; (g) Short term accommodation uses; (h) Nature-based tourism; (i) Relocatable home parks; (j) Resort complexes; or (k) Tourist parks.			
Material change of use for a: (a) Educational establishment; (b) Emergency services; (c) Hospital; (d) Major electricity infrastructure; (e) Telecommunications facility; or (f) Utility installation.	Assessable development – code	Assessable development – code	No change proposed
Material change of use for a: (a) Medium impact industry; (b) High impact industry; or (c) Special industry.	Assessable development – code	Assessable development – code	No change proposed
Material change of use for a: (a) Carpark.	Assessable development – code	Assessable development – code	No change proposed
Material change of use for a: (a) Plant nursery (wholesale).	Assessable development – code	Assessable development – code	No change proposed
Material change of use for a: (a) Agriculture; (b) Animal husbandry; (c) Forestry; (d) Home based business; (e) Minor utility; (f) Night court; or (g) Park.	Accepted development subject to requirements	Accepted development	No change proposed
Any other material change of use	Assessable development – code	Assessable development – code	No change proposed
Reconfiguring a lot	Assessable development – code	Assessable development – code	No change proposed
Building work not associated with a material change of use where:	Assessable development – code	Building work not associated with a material change of use:	Some change to align with the risk categories

(a) erecting a Class 10 building (outbuilding) within an urban catchment flow path; (b) building underneath an existing dwelling situated below the adopted flood regulation line or within an urban catchment flow path; (c) an auxiliary unit situated below the adopted flood regulation line or within an urban catchment flow path; or (d) any other building work on land subject to the Flood code, except where erecting a Class 10 building (outbuilding) on site which is not within an urban catchment flow path.		Accepted development subject to requirements, where located within a very low to medium flood risk category Otherwise, assessable development – code *Note – A material change of use for a dwelling house or for a class 10 building or structure if the use is for a residential purpose in a residential zone is not assessable development,* ***unless an overlay applies to the premises****, as identified in the local categorising instrument and relevant to assessment of the material change of use.*	
Earthworks (not associated with a material change use), where land affected by the 1 in 20 development line or adopted flood regulation line or the urban catchment flow paths.	Assessable development – code	Operational work not associated with a material change of use: Accepted development subject to requirements, where located within a very low to low flood risk category Otherwise, assessable development – code	Some change to align with the risk categories

Table 7 - Comparison of existing and proposed levels of assessment for bushfire

Development	Existing levels of assessment	Proposed levels of assessment	Change
Material change of use on allotments of 2,000m or more for: (a) Dwelling house; or (a) Dual occupancy. *Note – The definition for a dual occupancy is proposed to include a secondary dwelling for the new Ipswich planning scheme.*	Assessable development – code	Accepted development subject to requirements	Proposed change *Note – This changes brings the levels of assessment into alignment with the Planning Regulations 2017 and introduces ADSR provisions for dwellings on larger sized*

			allotments, adding minor increased mitigation opportunities from a siting, water supply and access perspective
Material change of use for a: (a) Childcare centre; (b) Community care centre; (c) Detention facility; (d) Educational establishment; (e) Hospital; (f) Rooming accommodation; (g) Residential care facility; (h) Retirement facility.	Assessable development – code	Assessable development – code	No proposed change
Material change of use for a: (a) Educational establishment; (b) Emergency services; (c) Hospital; (d) Major electricity infrastructure; (e) Telecommunications facility; or (f) Utility installation.	Assessable development – code	Assessable development – code	No proposed change
Material change of use for a: (a) Medium impact industry; (b) High impact industry; (c) Special industry.	Assessable development – code	Assessable development – code	No proposed change
Material change of use for a: (a) Short term accommodation uses; (b) Nature-based tourism; (c) Relocatable home parks; (d) Resort complexes; (e) Tourist attractions; or (f) Tourist parks.	Assessable development – code	Assessable development – impact	Proposed change *Note - This change aligns with Council's desired policy approach to avoid these uses in bushfire prone areas, or allow a merits-based assessment in*

			exceptional circumstances and where risk is mitigated to a tolerable or acceptable level
Any other material change of use	Exempt: (a) Agriculture; or (b) Animal husbandry; (c) Car park; (d) Forestry; (e) Home based activity; (f) Minor utility; (g) Night court; (h) Park; (i) Plant nursery. Otherwise assessable development – code	Assessable development – code	Some proposed change *Note – The proposed levels of assessment seeks to ensure such uses are not inadvertently made vulnerable to, or increase, the level of hazard*
Clearing not associated with a MCU	Exempt	Exempt *Note – As required for bushfire management in accordance with the Planning Regulation*	No proposed change
Reconfiguring a lot	Assessable development – code	Assessable development – code	No proposed change

6 Draft flood and bushfire overlays

The purpose of an overlay is to address State and local government interests by identifying areas that have:

- *a sensitivity to the effects of development;*
- *a constrain on land or development outcomes;*
- *the presence of valuable features; and/or*
- *opportunities for development.*

Overlays can alter the level of assessment for proposed land uses and will take precedence over zone provisions in the hierarchy of assessment benchmarks in accordance with the draft planning scheme.

At the highest policy level of the current Ipswich planning scheme, the desired environmental outcomes seek to ensure the adverse effects of natural hazards are 'minimised', and that development 'is located away' from potential hazard and is 'designed to mitigate adverse impacts'.

The overall outcomes sought for the current Development constraints overlays are the following:

a. The health and safety of the local government's population, investment in property and the long term viability of significant economic resources are protected.

b. Uses and works are located on land free from significant constraints upon development, or when within such areas, risk to property, health and safety is minimised.

c. Land is appropriately developed to avoid compromising the integrity and operation of defence facilities, motorsport facilities, wastewater treatment plants, the Swanbank Power Station, high pressure pipelines, the Warrill Creek water uptake, high voltage electricity transmission lines, existing mines, key resources areas and associated haul routes.

d. Uses and works are sited, designed and constructed to avoid, minimise or withstand the incidence of a development constraint.

e. The number of people exposed to a development constraint is minimised.

These policy positions must be considered against the policy positions required by the SPP, which are outlined as follows:

1. Natural hazard areas are identified (i.e., mapped).
2. A fit-for-purpose risk assessment is undertaken.
3. Development avoids natural hazard areas or mitigates risk to an acceptable or tolerable level.
4. Development incorporates a range of risk reduction and resilience measures. It:
    a. supports, and does not hinder disaster management capacity and capabilities;

b. directly, indirectly and cumulatively avoids an increase in the exposure or severity of the natural hazard and the potential for damage on the site or to other properties;

c. avoids risks to public safety and the environment from the location of the storage of hazardous materials and the release of these materials as a result of a natural hazard;

d. maintains or enhances the protective function of landforms and vegetation that can mitigate risks associated with the natural hazard.

5. Community infrastructure is located and designed to limit risk and maintain functionality.

In order to satisfy the State interests and appropriately integrate the SPP 2017 into the new Ipswich planning scheme, an overall strengthening of policy with respect to development in flood hazard and bushfire prone areas is required, from that articulated by the current Ipswich planning scheme.

The policy of avoid first, and only where this is not possible, ensure that risk is mitigated to an acceptable or tolerable level is a key differentiating factor from a strategic policy perspective, and how the new Ipswich planning scheme addresses varying risk factors.

Addressing and not adding to the existing burden of emergency services is not a clearly defined consideration of the current Ipswich planning scheme's policy position with respect to flood and bushfire hazard. The calibration of SPP guidance to support the new Ipswich planning scheme directly address this aspect, for development within the tolerable and acceptable risk spectrum. It further takes a stronger policy position with respect to vulnerable uses and hazardous facilities in flood hazard and bushfire prone areas.

6.1 Proposed Flood risk and overland flow overlay

The flood hazard overlay deals with areas of land identified as a flood hazard area, as defined in the SPP. As per the State guidance, it should apply at a minimum, to development that:

- increases the number of people living and working in the natural hazard area;
- involves vulnerable uses where evacuating people may be difficult;
- involves essential community infrastructure that must continue operating during or after an event;
- involves uses where valuable equipment or artefacts must be protected; or
- involves the manufacture or storage of hazardous materials in bulk.

The code has also been separated into four tables, including:

- one for assessment benchmarks for accepted development subject to requirements;
- one for assessable development;
- one for assessment development in Special Flood Resilient Precincts;
- one which sets out the minimum flood immunity standards; and
- one which sets out the hazard evacuation route requirements.

To ensure strengthened policy and greater alignment with the SPP guidance, SFMP LUP guidance, IICP recommendations and Phases 1 to 3 Report planning directions, the code provisions are proposed to be stepped out into key themes including flood risk compatibility, (including finished floor levels), hazard vulnerable uses and essential community infrastructure, resilient design, access and evacuation, storage and conveyance, environmental functions and storage of hazardous materials.

Generally, the policy positions identified within the existing planning provisions of the current Ipswich planning scheme have been carried into the proposed draft Flood risk and overland flow overlay code. Rather, these policy positions have been aligned and updated to reflect the SPP and SFMP guidance, and the outcomes of the flood risk assessment undertaken as part of the IICP TER.

Table 8 provides a summary of the key policy considerations which were considered when preparing the proposed draft Flood risk and overland flow overlay code:

Table 8 - Flood risk overlay code policy considerations

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
Residential uses	**When updating a settlement pattern or changing a land use intent**, does the choice of zone/locally specific provisions avoid allocating land for new urban development in areas of unacceptable flood hazard and discourage expansion and intensification of inappropriate urban settlement in existing areas of flood hazard? • For example: Identify new urban areas for expansion or intensification in new or existing areas with acceptable or tolerable flood risks and safe evacuation routes for flood events greater than the Probable Maximum Flood (PMF). • Limit increases in density relative to the flood risk in existing urban flood hazard areas. • Promote more compatible and resilient land uses in flood hazard areas. In areas of intolerable risk where future uses are highly constrained, including land in the Limited development zone may provide transparency regarding the level of hazard. In addition, local government may seek to alert their community to the Flood Resilient Building Guidance for Queensland Homes non-statutory guidance document that contains considerations for improving the flood resilience of homes.	For expansion (or greenfield) areas, the establishment of new residential and accommodation uses **should not occur in the HR1 or HR2 Potential Hydraulic Risk categories**. The intensification or expansion of existing residential and accommodation uses **should not occur in the HR1 and HR2 Potential Hydraulic Risk categories** or where the relative time to inundation is **less than 12 hours** and development does not support preservation of life on-site. The establishment of new residential and accommodation uses or expansion of existing development in the HR3 or HR4 Potential Hydraulic Risk categories **may be tolerable subject to certain requirements**, including mitigation to an extent where development achieves an acceptable level of risk and is higher than or outside the 1 in 100 AEP + freeboard.	**LUP 2** – Extend any development controls for residential uses to the HR4 category to include the 1 in 500 year H3 hazard category. **LUP5** – Avoid any intensification of development in areas mapped in HR1c and HR1b. **LUP12** – Avoid vulnerable uses and non-intensification of residential uses in locations where TTI is <6 hours and DFI is >36 hours, or locations subject to flood islands. In areas of low hazard built form and resilient building materials should be considered as an acceptable mitigation response **LUP15** – For residential uses removing provision relating to a flood depth of no more than 800mm.	Restrict further intensification of development in extreme and high risk areas through zoning Provide a Finished Floor Level / Flood Planning Level for residential uses Require the use of flood resilient building materials and built form for development in the floodplain Require site specific emergency response mitigations such as a FEMP for development in the medium and high density residential zones and centre zones where increased residential development is planned.	The Flood code includes provisions focused on built form outcomes for residential uses on land situated: • below the 1 in 20 development line • between the 1 in 20 development line and the adopted flood regulation line; and • within urban catchment flood paths. The key flood mitigation provisions on the design and layout of residential developments require: • the floor levels of any habitable rooms of a proposed building are a minimum of 500mm above the adopted flood regulation line; • vehicle parking and other low intensive, non-habitable uses are located at ground level • the areas below habitable rooms are to be left open; • may be used for the parking of vehicles or the storage of large items; may be screened for security purposes using timber battens; • may use timber batten gates such that the gates do not impede flood flows; and • building materials and surface treatments used below the Adopted Flood Regulation Line are resistant to water damage and do not include wall cavities that may be susceptible to the intrusion of water and sediment. In terms of site earthworks, where a floodplain management plan does not exist for the catchment, no filling of land or reduction of flood storage capacity is permitted below the 1 in 20 development line or on land below the adopted flood regulation line.	Residential uses do not occur on the part of land within the high to extreme flood risk area. Include the following existing provisions as accepted development subject to requirements: • the floor levels of any habitable rooms of a proposed building are a minimum of 300mm above the defined floor level; **Dry flood proofing** • the areas below the flood planning level that are not enclosed: o are left open so as not to impede flood flows; o may be used for the parking of vehicles or the storage of large items that are readily able to be moved in the event of a flood; o may be screened for security purposes, using timber battens where such screening does not impede flood flows; and o may use timber batten gates such that the gates do not impede flood flows, avoiding the use of solid fill gates, roll-a-doors or tilt doors; **Wet flood-proofing** • any enclosure of areas below the flood planning level does not consist of habitable rooms; • openings are provided to allow for automatic entry and exit of floodwater up to the defined flood level; • non-structural materials used below the defined flood level are flood resistant; • walls without cavity spaces and flood resistant materials are used to minimise the need for replacement and repair and to

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
					The clearing of native vegetation within the stream banks is avoided.	provide for ease of cleaning in the event of a flood.
Commercial, industrial uses and other non-residential uses	Where land is included in a flood hazard area consider if the choice of zone/locally specific provisions consider the uses envisaged by each zone and whether the risks associated with flood can be mitigated to acceptable or tolerable levels for those uses. The zone and/or locally specific mapping intent may then be adjusted to reflect flood-appropriate land uses / provide guidance on the compatibility of different uses, considering: The flood scenario under which the use will cease to function effectively and the likelihood of such an event. The consequences of and community tolerance to loss of a community service during and immediately after a flood hazard event. Whether the use will place additional burden on government disaster management operations or on recovery capacity. The degree of sensitivity of the use to property loss or damage. For example, intents discourage the following uses from establishing in flood hazard areas. As a minimum, hazardous industries and uses that involve the storage of significant amounts of hazardous material should be located outside areas affected by the DFE. Where for development involving the storage of significant amounts of hazardous material in a flood hazard area should be assessable. This will enable assessment benchmarks to apply so that impacts can be fully considered. Where for development involving the storage of significant amounts of hazardous material in a flood hazard area; consider if the	For expansion (or greenfield) areas, the establishment of new commercial and industrial development **should not occur in the HR1 and HR2 Potential Hydraulic Risk categories.** The intensification or material expansion of existing commercial and industrial uses should not occur in the HR1 and HR2 Potential Hydraulic Risk categories or where Relative Time to Inundation is less than **12 hours**. The establishment of new commercial or industrial uses or expansion of existing development in the HR3 or HR4 Potential Hydraulic Risk categories may be potentially tolerable subject to certain requirements, including mitigation to an extent where development achieves an acceptable level of risk and is located above the 1 in 100 AEP. Ancillary activities associated with commercial and industrial uses which are more resilient to flooding impacts such as carparking, buffer areas etc. may be located in areas with a lower flood immunity than the primary uses. Hazardous uses or the storage of hazardous materials occur in areas outside the floodplain (defined by the extent of the 1 in 100,000 AEP) or occur within facilities that should be designed to ensure hazardous materials are not released to flood waters during any flood event and where relative time to inundation is greater than 24 hours.	**LUP8** – Include requirements for a Flood Risk and Emergency Plan (FEMP) for non-residential uses in locations where TTI is <6 hours and where DFI is >36 hours. **LUP14** – Adding a provision for commercial, industrial and other non-residential uses to avoid increasing the concentration of people in areas in HR1c and HR1b.	Restrict further intensification of development in high risk areas through zoning Any development in a flood hazard area is subject to code assessment Provide a Finished Floor Level / Flood Planning Level for industrial uses Require the use of flood resilient building materials and built form for development in the floodplain No storage of chemicals and hazardous material in the floodplain	Commercial and industrial uses are code assessable. The key flood mitigation provisions on the design and layout of buildings for commercial, industrial and other non-residential developments require: • vehicle parking, or other low intensive, or non-habitable uses at ground level; retail, commercial and work areas above the parking areas, to increase flood immunity; and expensive plant, equipment and stock in the area of the site or building with the greatest flood immunity; • building materials and surface treatments used below the adopted flood regulation line are resistant to water damage and do not include wall cavities that may be susceptible to the intrusion of water and sediment; • electrical switchboards, main data servers and the like are positioned to maximise flood immunity; • 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 avoided unless it can be demonstrated that the overall use is appropriate (e.g., sporting fields) and where there is likely to be adequate warning and vehicular access to a safe evacuation route in the event of a flood. In terms of earthworks, where a floodplain management plan does not exist for the catchment no filling of land or reduction of flood storage capacity is permitted: • below the 1 in 20 development line;	Include a requirement for a finished floor level for commercial, industrial and non-residential uses. For development for an extension to an existing building, or where below the defined floor level, including a requirement for development to: • not create a sudden change in flow distributions, flood level or velocity that could result in increased flood hazard to the surrounding area; • maintains a functional and attractive relationship with the adjacent street frontage; • provides ground level engagement and activation where in centre zones and other urban environments where an active frontage is desired; • avoids the need to rebuild structures and replace materials after a flood event up to and including the flood planning level; and • ensures any portion of a permitted structure below the flood planning level is constructed of flood compatible (flood damage resistant) materials. Include a requirement for the design and layout of buildings to provide for wiring, power outlets and switches, conduits, heating and air conditioning to be above the flood planning level and to have a backup power source.

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
	assessment benchmarks include design measures so that hazardous materials are not exposed to flood waters and/or are appropriately sealed to avoid the release of hazardous materials as a result of a flood hazard event and evacuation plans to safely remove hazardous materials to alternative sites are in place in the event of a flood.				• on land below the adopted flood regulation line; • unless an assessment, undertaken by a suitably qualified consultant, demonstrates that the reforming of the land does not negatively impact on the overall hydrology, hydraulics and flood capacity of the waterway, does not result in the reduction of flood storage capacity on the site and does not significantly impact on the ecological values of the riparian corridor.	
Vulnerable uses and community infrastructure	Where land is included in a flood hazard area consider if the choice of zone/locally specific provisions consider the uses envisaged by each zone and whether the risks associated with flood can be mitigated to acceptable or tolerable levels for those uses. For example, intents discourage the following uses from establishing in flood hazard areas. As a minimum these uses should be located outside areas affected by the DFE: • **Uses catering to vulnerable persons requiring unique evacuation requirements** (such as hospitals, education establishments, childcare centres, aged care accommodation, nursing homes, and high-security correctional centres). • **Community infrastructure** that will perform an important role and be required to function during and immediately after a flood hazard event (also consider other uses that may need to perform a role during or after a flood event, for example showgrounds and sports facilities can perform an active role in flood response and recovery, serving as emergency accommodation and recovery staging points).	Vulnerable uses are: • Intolerable for HR1, HR2, and HR3; • Tolerable (subject to requirements to treat and manage risk to an acceptable level) for HR4; • Acceptable for HR5.	**LUP10** – Include development control measures that may be applied to the development assessment process of vulnerable uses below the Probable Maximum Flood (PMF). **LUP11** – Provide a definition of vulnerable uses in the new Ipswich Planning Scheme. **LUP12** – Avoid vulnerable uses and non-intensification of residential uses in locations where TTI is <6 hours and DFI is >36 hours, or locations subject to flood islands. In areas of low hazard built form and resilient building materials should be considered as an acceptable mitigation response.	No vulnerable uses on land affected by flood.	A specific provision is included for Community infrastructure requiring the use to be able to function effectively during and immediately after flood hazard events. A probable solution is that key elements of community infrastructure are sited and designed to achieve the levels of flood immunity as set out in the SPP and associated guidelines. A specific provision is also included for uses that accommodate or otherwise cater for the aged, infirm or other at risk or mobility impaired people such as hospitals and nursing homes are not located below the adopted flood regulation line or within an urban catchment flow path.	Include a specific requirement for hazard vulnerable uses not to be located in medium to extreme flood risk areas. The following administrative definitions are proposed: • **hazard vulnerable uses**, means: Childcare centre, Community care centre, Detention facility, Educational establishment, Hospital, Rooming accommodation, Residential care facility, Retirement facility, Short term accommodation uses, Nature-based tourism, Relocatable home parks, Resort complexes and Tourist parks. • **community infrastructure** for essential services, means: Educational establishment, Emergency services, Hospital, Major electricity infrastructure, Telecommunications facility, Utility installation. • **hazardous materials** in the context of natural hazards means: Medium and High Impact and Special Industry where involving hazardous materials and chemicals that are present in the quantities identified in the Work Health and Safety Regulation, schedule 15, or that would constitute the use being a hazardous chemical facility.

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
	• **Expansion of the above existing uses** in these areas unless evacuation solutions and resilient design can be achieved – refer assessment benchmarks below. • Community infrastructure that protects **valuable equipment and artefacts** (such as museums, libraries, art galleries, archives) – refer assessment benchmarks for mitigation strategies where this is not possible. • **Rural land uses** such as intensive animal husbandry and intensive agriculture. Consider if the categories of development and categories of assessment reflect the level of risk and vulnerability of the use. For example, if vulnerable uses and community infrastructure uses are identified as assessable within the flood hazard area. **Where for development in a flood hazard area involving vulnerable uses and essential community infrastructure that must continue operating during or after a flood event**, consider if the assessment benchmarks require development to be located above the height of the PMF or other known extreme event to achieve the highest practical level of flood immunity. **Where for development in a flood hazard area involving essential community infrastructure**, consider if the assessment benchmarks contain siting, design and access standards to achieve the required level of functionality during and immediately after a flooding hazard event. **Where for development in a flood hazard area for community infrastructure that protects valuable equipment and artefacts**, consider if the assessment benchmarks require this					Include a specific requirement for community infrastructure to ensure that it remains functional to serve community needs during and after a flood event.

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
	development to be located above the height of the DFE.					
Hazardous or noxious materials	**Where for development involving the storage of significant amounts of hazardous material in a flood hazard area**, consider if the assessment benchmarks include design measures so that hazardous materials are not exposed to flood waters and/or are appropriately sealed to avoid the release of hazardous materials as a result of a flood hazard event and evacuation plans to safely remove hazardous materials to alternative sites are in place in the event of a flood.	Nil	Nil	Nil	Materials or chemicals manufactured or stored on site: are located as far as practicable on the highest part of the site and designed to prevent the intrusion of floodwaters • are readily able to be moved in a flood event; • are not hazardous or noxious or comprise materials that may cause a deleterious effect on the environment if discharged in a flood event; • are contained in order to minimise movement in times of flood.	Include a specific requirement for ensuring the storage and handling of hazardous materials and chemicals in the floodplain avoids or minimises the risk of contamination to the environment and public safety. To provide measurability to this provision – link it to the nature of particular land uses including uses such as Medium impact industry, High impact industry and Special industry, together with referencing the Work Health and Safety regulation which identifies specific hazardous chemicals and their qualities.
Filling / earthworks	Consider if the aspects of development that may impact on, or be impacted by, flood hazard are assessable. For example, significant earthworks and works involving the redirection of the existing overland flow paths. This will enable assessment benchmarks to apply so that impacts can be fully considered. Where land is included in low, medium and/or high risk flood hazard areas consider if the assessment benchmarks contain strategies so development does not affect floodplain behaviour in a way that may increase the number of people at risk to an intolerable level or cause or contribute to increase in the level of risk on surrounding people and property. For example, avoid filling, altering flow-paths or adversely changing flood duration, depth, velocity, hazard or warning time. Also consider if the assessment benchmark require the retention or enhancement of riparian corridors and vegetation that provide a protective function during flood events, maintain the natural function of the floodplain	HR 1 and 2 risk categories are particularly sensitive to filling – resulting in flood impacts elsewhere in the floodplain, and implications for cumulative impact downstream.	**LUP7** – Include requirements for easements in greenfield areas up to the Defined Flood Event (DFE). **LUP18** – Preserve pockets of flood storage in the catchment to avoid future flood risk impacts in areas where HR categories and flood levels may increase as a result of filling or due to development activity. **LUP19** – Continue provisions that maintain flood storage capacity and do not create impacts on sites upstream or downstream– this is normally a request to provide hydraulic and hydrology report demonstrating compliance.	Preserve flood storage. Ensure new development has regard to the possible cumulative impacts of storage loss.	Earthworks not associated with a material change of use is code assessable if land is affected by the 1 in 20 development line or adopted flood regulation line constraints overlay. The Earthworks code on flooding and drainage specifies the following outcomes: • all earthworks are to comply with any applicable development criteria set out in an approved floodplain management plan; • where a floodplain management plan does not exist for the catchment, no earthworks (including filling) is permitted on land below the adopted flood regulation line, unless: o the land is located above the 1 in 20 development line; o an assessment, undertaken by a suitably qualified consultant, demonstrates that the reforming of the land does not negatively impact on the overall hydrology, hydraulics and flood capacity of the waterway, and does not	Include a requirement for managing earthworks in the floodplain to ensure that flood conveyance functions are maintained in high to extreme flood risk areas and that there is no net loss of flood storage on land in a medium flood risk area. Include a specific requirement for development in a greenfield area to protect flood conveyance by providing an easement or reserve over the area of the premises up to the Defined Flood Level (including freeboard).

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
	and potentially reduce the need for built mitigation infrastructure.				result in the reduction of flood storage capacity on the site, and does not significantly impact on the ecological values of the riparian corridor.	
Built form and freeboard	Where land is included in low, medium and/or high risk flood hazard areas consider if the assessment benchmarks set thresholds such as finished floor levels for development, where appropriate. Where for development in a flood hazard area for community infrastructure that protects valuable equipment and artefacts, consider if the assessment benchmarks require this development to be located above the height of the DFE.	The SFMP TER provides an options framework to determine an appropriate freeboard for use in setting defined flood levels / finished floor levels. The most significant factors that contribute to variable flood levels across the floodplain include: (1) the sensitivity or uncertainty of changes in flood behaviour as a result of increased catchment inflows, rainfall and sea level rise. This factor also considers how significantly the depth changes between similar AEP events (e.g., between 1 in 50 and 1 in 100 AEPs), with a greater differential (e.g. >1m) indicating higher flood sensitivity; and (2) the sensitivity of the proposed development to flooding and the impact of property damage. This can be expressed for each land use activity group (e.g., residential, commercial, industrial etc.), or for specific uses (e.g., community use, health care service, relocatable home park etc.). The appropriate freeboard applied depends on the combination of development sensitivity and flood behaviour sensitivity/uncertainty in the floodplain. This aligns with a more risk-based approach in recognising that different areas of the floodplain will have higher or lower levels of uncertainty. **Table 9-1 Freeboard options assessment framework** Flood behaviour sensitivity / uncertainty: Low / High Development sensitivity: Low — Minimal (minimum 300mm) / Moderate (300 – 500mm); High — Moderate (300 – 500mm) / Maximal (at least 500mm)	**LUP 6** – Continue the existing requirements in the current planning scheme that promote built form and resilient building materials as an acceptable mitigation response such as building on stilts, or with wet / dry proofing on ground floor, but may consider revising trigger areas based on lower risk areas such as HR2a, HR3a, HR4 and HR5. **LUP12** – Avoid vulnerable uses and non-intensification of residential uses in locations where TTI is <6 hours and DFI is >36 hours, or locations subject to flood islands. In areas of low hazard built form and resilient building materials should be considered as an acceptable mitigation response **LUP16** – Minimum clearance for the construction of basements and undercrofts.	Provide a Finished Floor Level / Flood Planning Level for residential / commercial and other non residential uses. Require the use of flood resilient building materials and built form for development in the floodplain.	Specific built form requirements are included for residential development (detailed above) and commercial, industrial and other non-residential development (detailed above). Specific provisions are included for basements and undercrofts. Basements below the adopted flood regulation line or within an urban catchment flow path are to be waterproof, with walls and floors impermeable to the passage of water. All basement entry points and services are to be located where practicable above the adopted flood level or incorporate effective barriers (i.e., flood gates) to prevent inundation. A backup power source is to be provided and located above the adopted flood level where the basement relies on a pumping solution to manage floodwater ingress or for dewatering after a flood. Development that includes an undercroft ensures that the building and site design allows floodwaters and flood debris to pass predominantly unimpeded under the structure. The design of the undercroft does not increase flood hazard. The undercroft area is stabilised, resistant to scour, and designed to drain freely.	Carry in the existing design and built form requirements for residential and commercial, industrial and non-residential development, basements and undercroft areas, as amended to ensure they do not offend the BAPs.

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
Site based assessments	**Consider if area of potential flood risk requires assessment benchmarks for site-based investigations**. For development proposed on land where the potential for flooding is unknown, the assessment benchmarks may require: • Information to enable an assessment of whether the subject land is susceptible to flooding. • Upon determination that the subject land is susceptible to flooding, more detailed information to allow an assessment of the flood risk. A planning scheme policy may specify the scope and methodology to be followed in preparing a site-based flood study and risk assessment, in support of a development application for a site in a flood hazard area.	The guidance includes a Flood risk factors decision support tool with a focus on relative time to inundation as a key factor in determining land use suitability for certain uses. The core issues is addressing whether all occupants can be evacuated to a safe location within the available warning time (including along the evacuation route). This will require both consideration at strategic land use planning stage (for allocation of zones) and at site-based development assessment stage.	**LUP9 –** Include requirements for responses such as FEMPs linked to new development in locations subject to flood islands. **LUP13** – Request a Flood Risk Assessment.	Require site specific emergency response mitigations such as a FEMP for development in the medium density residential zone and major centre zone. Require site specific emergency response mitigations such as a FEMP for development subject to high / medium hazard risk and/or priority evacuation areas. For commercial, sport and recreation and other non-residential uses in high risk areas, require site specific emergency response mitigations such as a FEMP. Require site specific emergency response mitigations such as a FEMP for vulnerable uses within the floodplain.		Include a link to the PSP and reference to the preparation of any site-based assessments, including a Flood Emergency Management Plan where required within the Flood risk overlay provisions.
Evacuation / access	Where land is included in low, medium and/or high risk flood hazard areas consider if the assessment benchmarks contain siting, design and transport infrastructure requirements that: • Enable people to safely shelter in place (depending on the nature of the risk). • Enable the safe self-evacuation of occupants and visitors from the hazard area. • Provide for effective disaster response and recovery, such as safe and efficient access and operation for emergency services and the supply of essential goods and services. Also consider if the assessment benchmarks need to require evacuation routes and the provision of LGIP infrastructure as potential mitigation measures.					Include a requirement for development to be designed to ensure personal safety at all times, ensuring that access and egress avoids isolation. Further, ensure the intensification of development in priority evacuation areas and low flood islands is avoided.
Other – Reconfiguring a lot code				Restrict further intensification of development in high risk areas through zoning.	The Reconfiguring a lot code provides the following flood mitigation provisions for minor, moderate and major subdivisions	Include a requirement that the reconfiguration of land to create additional lots or the realignment of boundaries of existing lots

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
					focusing on the lot layout and design outcome for urban residential lots: • for residential lots, other than homestead or township lots, a drainage system is provided so that no part of the driveway is below the adopted flood level; • for homestead or township lots no part of the driveway is below the adopted flood level; • all cottage lots, courtyard lots, traditional lots, hillside lots and dual occupancy lots are located outside the adopted flood regulation line and urban catchment flow paths • for Homestead or township lots, an area which is suitable for a building platform comprising at least 600m² of each lot is to be located outside the adopted flood regulation line and urban catchment flow paths. 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 *Plumbing and Drainage Act 2002* and the Queensland Plumbing and Wastewater Code; • 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. For minor and moderate rural subdivisions: • for rural lots, other than rural living lots, a drainage system is provided so that no part of the driveway is below the adopted flood level; • for rural living lots no part of the driveway is below the adopted flood level; • a flood free dwelling site is located above the adopted flood level to provide protection	ensures that lots have a suitable area of land above the flood planning level to accommodate the intended use.

Themes	SPP guidance	SFMP LUP guidance	IICP recommendations	Phases 1 to 3 report planning directions	Existing Ipswich planning scheme	Proposed recommendations for draft Flood risk overlay code
					of property in accordance with the accepted level of risk; • each proposed lot is to contain an area which is suitable for a building platform comprising at least 2000m² and located outside the adopted flood regulation line and urban catchment flow paths. 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 *Plumbing and Drainage Act 2002* and the Queensland Plumbing and Wastewater Code.	

6.1.1 Proposed Flood risk and overland flow overlay map

The application of the current Development constraints overlays code for flooding and urban catchment flow paths is triggered where land is affected by the development constraints overlay (Map OV5 Flooding and Urban Stormwater Flow Path Area) which was prepared in accordance with SPP 1/03. Map OV5 shows four key areas which are summarised below in **Figure 4**: Adopted Flood Regulation Line, I in 20 development line, urban catchment flow paths, and indicative and subject to further detailed assessment.

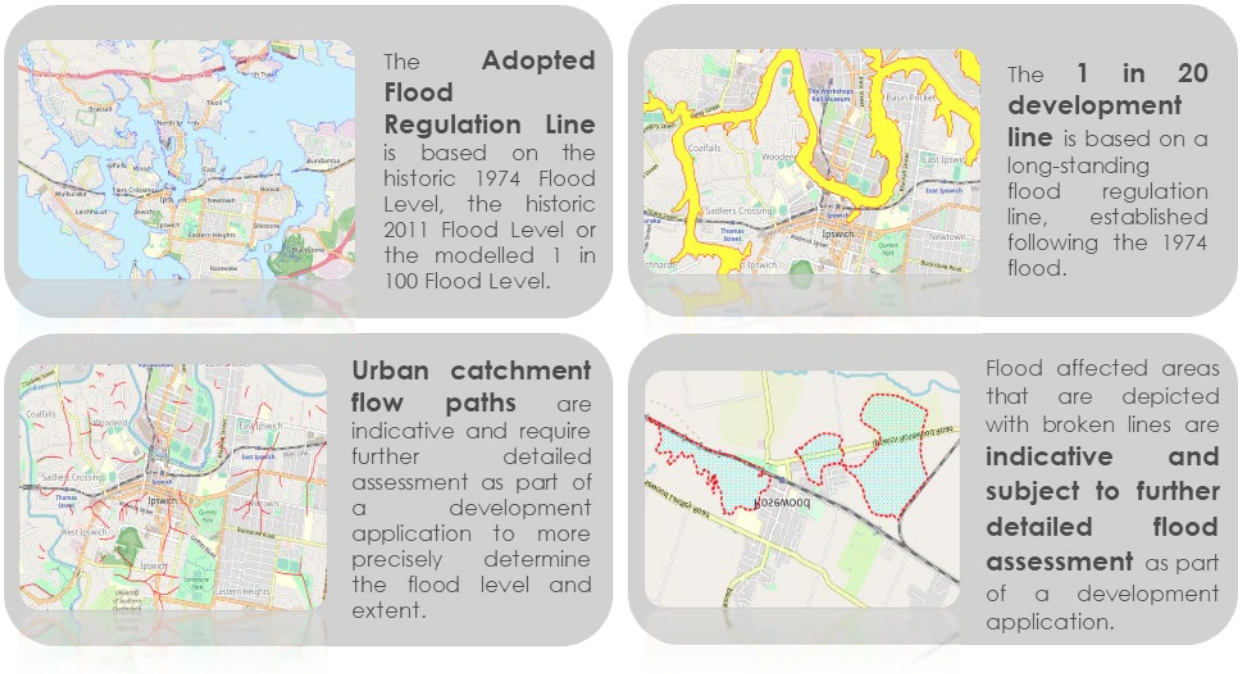


Figure 4 - Key components of the current Flooding overlay map in the Ipswich Planning Scheme

The proposed draft Flood risk and overland flow overlay code provides assessment benchmarks commensurate with the flood risk compatibility and built form and design responses for development.

This includes specific provisions for various land uses including residential accommodation, hazard vulnerable uses and essential community infrastructure, and commercial, industrial and other non-residential uses etc., where specific uses require a specific response given the nature of the land use and its risk tolerability.

A risk-based Flood overlay map (which indicates the degrees of risk i.e., none, acceptable, tolerable or intolerable) provides for the spatial application of the Flood risk and overland flow overlay code. It creates a 'footprint' that will help determine the appropriate land use response in certain areas relative to the risk, spatially identifying the locations relative to the overlay code assessment benchmarks which provide circumstances where:

- development can occur subject to some prescriptive controls such the finished floor level of all habitable floor space being above the DFL and the additional required freeboard;
- development may be able to occur subject to demonstrating that there is adequate warning time for the safe self-evacuation of occupants and visitors to occur via identified evacuation routes; or
- development should not occur.

The IICP categorises the hydraulic risk categories against five (5) risk descriptions based on their risk profile as shown in **Table 10** below. These risk descriptions have informed the development of a risk-based Flood overlay map based on the hydraulic risk categories (as updated):

Table 9 - Description of risk tolerability

Risk description for Flood overlay map	Rationale	Risk profile	Relevant hydraulic risk category
Extreme risk	• Frequent flooding • Conveyance area • Buildings vulnerable to failure and unsafe for vehicles and people	Intolerable	HR1(c) HR1(b)
High risk	• Unlikely and rare flooding • New flow conveyance paths create dangerous conditions • Buildings vulnerable to failure	Tolerable	HR2(c) HR2(b)
Medium risk	• Generally unsafe for vehicles and people • Areas still effected by frequent and likely flood events	Tolerable	HR3(c) HR3(b)
Low risk	• Generally safe infrequent and likely flood events • High hazard associated with unlikely and rare events	Acceptable	HR2(a) HR3(a) HR4
Very low risk	• Balance of floodplain • Area potentially affected by extremely rare flooding that may not require mitigation	Acceptable	HR5

6.2 Proposed Bushfire hazard overlay code

In terms of its formulation, the proposed draft Bushfire hazard overlay code takes its foundations from the State's example planning scheme assessment benchmarks for the bushfire State interest however, it has been adapted to:

- streamline the content;
- locally refine the elements which are calibrated to Council's policy positions; and
- responsive to the risk elements identified by the risk assessment.

Having regard to the existing code which was drafted in accordance with SPP 1/03, many of the same issues continue to be captured by the draft code which follows, restructured to:

- incorporate 'accepted development subject to requirements' (ADSR) provisions for dwelling houses and secondary dwellings on lots over 2,000m2;
- provide a separate assessment benchmarks table for assessable development which includes:
  - material changes of use;
  - reconfiguration of a lot;
- expand the breadth of land uses contemplated by the code to provide assessment benchmarks for venerable uses, community infrastructure for essential services, hazardous uses, as well as tourism activities. This is noting that whilst tourism activities are not generally supported in the bushfire prone area, selected assessment benchmark

pathways are available where acceptable or tolerable use outcomes can be demonstrated;

- reflect the current resilient design (simple roof forms) policy elements of the current scheme code; and
- reflect the State's interest for bushfire in the manner articulated by the example assessment benchmark provisions.

The following table provides a summary comparison of assessment benchmarks of the current Ipswich planning scheme and recommended code provisions, relative to key benchmark themes.

Table 10 - Summary comparison of assessment benchmarks between the current planning scheme and recommended draft code

Theme	Ipswich Planning Scheme 2006	Draft Code Recommendation
ADSR	• Not applicable	• New ADSR provisions for siting and layout for dwelling houses and secondary dwellings on lots greater than 2,000m2
Siting and layout	• Nominal 20m fire protection buffer (10m inner zone and 10m outer zone) • Fencing requirements • Avoidance of higher risk topography	• Standardised fire weather input for the region (FFDI 65) • Asset protection zone requirements to achieve exposure no greater than 29kW/m for MCU and RoL • Landscaping, fencing and retaining benchmarks • Avoidance of higher risk topography • Avoidance of vegetation clearing for the express purposes of achieving hazard separation
Access, evacuation routes and support for emergency services	• Private driveway provisions provided but does not address proximity to the street frontage • Probable solutions for perimeter roads and fire trails, but enables either to be incorporated without clear preference for perimeter road	• Driveway and property access requirements • Perimeter road and road network assessment benchmarks • Safe self-evacuation capacity, processes and arrangements including provisions for minimum egress options relative to number of allotments
Built form and water supply	• Probable solutions provided for roof forms, on-ground slab construction, pole homes • 5,000L static water supply per dwelling • No probable solution water supply provisions for other land uses	• Resilient building design elements, including for roof forms and limited re-entrant corners • Water supply needs for reticulated service areas and where static supply is required
Vulnerable uses and community infrastructure	• Avoidance of uses where people congregate such as schools, community buildings, places of worship, hospitals, retirement facilities, caravan parks, camping grounds, child care centres, correctional facilities and tourist facilities	• Performance outcomes for vulnerable and sensitive uses. No acceptable outcomes are provided • Definitions of use groups is provided, aligned to current Planning Regulation schedules

Additional requirements	• Provision of detailed information to property purchasers (this would now more appropriately be captured by condition).	• New assessment benchmarks for development in High or Very High potential hazard areas
Environmental matters	• Not applicable.	• New assessment benchmarks for environmental matters included rehabilitation and unexploded ordnance areas

6.2.1 Proposed Bushfire hazard overlay map

Bushfire Risk Areas are identified on Map OV1 within the current Planning Scheme which includes two categories, Bushfire Risk Area (areas where there is identified potential risks for bushfire) and Transitional Bushfire Risk Area (expansion areas where the bushfire risk is likely to diminish as development occurs).

It is understood the current Planning Scheme bushfire risk mapping was prepared in 1997, prior to the former SPP 1/03 released in 2003. SPP 1/03 provided a methodology for bushfire hazard mapping which was repealed in 2013. The methodology employed to inform the current Map OV1 does not incorporate the level of fire science introduced as part of the new state-wide bushfire prone areas mapping, which represents the State government's accepted position on bushfire hazard mapping. The current overlay mapping includes two categories, which categorised by their proximity to urban expansion rather than their potential hazard. The overlay mapping also does not incorporate a 100 metre buffer around designated bushfire prone lands which is also subject to potential flame contact and radiant heat exposure.

The current overlay mapping is not consistent with the State's position with regard to the standard of hazard mapping that is now required under the SPP. The mapping does not relate to hazard intensity levels, and relationship to urban development to justify an altered level of tolerance is not a pathway approach identified by the current State-wide mapping methodology. Moreover, the hazard overlay mapping is not reflective of potential risk and as such, amended terminology should be considered.

In 2014, the CSIRO in conjunction with QFES, released the 'New Methodology for State-wide Mapping of Bushfire Prone Areas in Queensland'. This methodology underpins the fire science which is incorporated into the current SPP mapping. This mapping is also regularly updated. In 2017, the CSIRO released addendum methodological information, 'Estimating the Potential Bushfire Hazard of Vegetation Patches and Corridors: An enhancement of Queensland's methodology for State-wide mapping of bushfire prone areas'.

The State-wide mapping methodology has been subject to peer review processes and has been found to be highly accurate, yielding an estimated 85 per cent level of accuracy based upon recent innovation in fire science and is considered a substantial advancement in bushfire hazard mapping in Queensland. The mapping methodology is based upon potential fire line intensity using the MacArthur Mk 5 Forest Fire Danger Meter and inputs of total fuel load and effective slope to derive a potential rate of fire spread. A 100m 'buffer' area is also applied under the SPP (replicating the approach under AS3959:2018 – Construction of Buildings in Bushfire Prone Areas), being the zone in which ember attack and radiant heat remain most relevant, adjacent to the actual hazard.

The state-wide BPA mapping for the Ipswich region, as part of South East Queensland, was last updated in 2017 to incorporate refinements to the mapping methodology after its original 2014 release.

Further amendments to the State-wide bushfire prone areas mapping should be anticipated. Should Council adopt the State-wide bushfire prone areas mapping for the purpose of its Overlay mapping, further mapping updates may need to be contemplated as part of the new Ipswich planning scheme over time.

6.3 Feasible alternative options

The two key factors with regard to the FAAR for flood and bushfire hazard includes both:

1. The quantum evolution of flood risk mapping and bushfire prone areas mapping to be adopted as the Overlay Mapping
2. The strengthening of policy for development with respect to flood hazard and bushfire prone areas.

On the basis of the above, the following options are provided in relation to the notification of land owners in the Ipswich LGA with respect to the proposed Flood risk and overland flow hazard overlay and bushfire hazard overlay codes and maps:

1. Notify all landowners within the LGA, on the basis of the substantial change in mapping and policy position.

   OR

2. Notify all landowners:
   a. within the map extents that the mapping and policy position has changed; and/or
   b. for bushfire hazard, within the mapped 2017 bushfire prone area extent that new mapping and policy provisions are proposed to come into effect.

7 Local Area Framework (LAF) narratives

7.1 Planning pathway options for considering land use planning responses relative to the risk

In order to translate the IICP risk assessment and bushfire risk assessment outcomes and recommendations into risk-informed local land use policy positions, five planning pathway options were considered in the context of the:

- flood / bushfire risk of a LAF; and
- intended settlement and growth outcomes for that LAF.

These are accept, avoid, arrest, mitigate or transition away from the risk as shown in **Table 11**.

This provided pathway options which were considered when developing an appropriate land use planning response relative to the risk at the LAF level for the new Ipswich planning scheme.

Tables 12 and 13 provide the land use policy response context for applying the planning pathways for natural places, rural living areas, rural townships, rural towns, established suburban neighbourhoods, new suburban neighbourhoods, urban neighbourhoods, centres, and special use places (i.e., industrial areas). **Tables 12 and 13** were used to inform the policy pathway response at the local area level.

Table 11 - Planning pathway options for guiding land use policy responses to risk

1. ACCEPT / TRANSFER THE RISK Relevant to low-level / acceptable risk situations and recognises that other mitigation measures exist outside planning processes	**2. MITIGATE THE RISK** Enable the achievement of growth intent for the area i.e., areas that must continue socio-economically
• The risk is sufficiently low to negate the need for a strong planning response • The risk level is accepted as is, or can be transferred beyond the planning process with disaster management arrangements	• Mitigate the risk to protect economic primacy of the CBD and rural towns • Consider the use of Flood / Bushfire Resilient Precincts which provide specific built form mitigation responses • Mitigate the risk if it can reduce risk to life and improve the safety of people • Mitigate the risk in low flood risk areas in line with the IICP / moderate bushfire risk areas
3. ARREST / AVOID FUTURE RISK INCREASES Used in existing urban areas *i.e., no-worsening approach, no further intensification, 'holding pattern'*	**4. AVOID THE RISK** Undeveloped areas or areas with limited built form *i.e., greenfield to avoid current and future risk, areas where the floodplain should be preserved*
• Stop risk from increasing by limiting the future intensification of use, particularly where there are safety and evacuation risks • Enable built form mitigation responses over time through development controls • Allow rural uses relative to the bushfire risk in rural areas	• Prioritise the safety of people and avoid the risk where there is a risk to life • Avoid zoning land in extreme bushfire risk areas for urban growth • Consider policies that promote development in places outside the risk areas

- Avoid intensification of development in extreme risk areas

5. TRANSITION AWAY FROM THE RISK

Deliberate density reductions or planned retreat of most at-risk existing urban areas

i.e., explore opportunities outside risk areas for further development

- Active use / intensity reduction over time where the risk is intolerable
- Industrial land is not critical for transition as there is sufficient land
- Downsize key centres where it is aligned with economic viability
- Consider a reduction in the intensity of the land use or a change in the land use to maximise community and economic resilience so that it can sustain and prosper
- Consider warning time / potential fireline intensities, and access and egress
- Maximise the environmental values of natural areas

Table 12 - Guiding hydraulic risk land use planning pathways by place transect

Place transect	Very low risk HR5	Low risk HR4	Low risk HR3(a), HR2(a)	Medium risk HR3(b), HR3(c)	High risk HR2(b), HR2(c)	Extreme risk HR1(b), HR1(c)
Natural places	**ACCEPT / TRANSFER** No zoning change Maximise environmental values No vulnerable uses	**MITIGATE** No zoning change Maximise environmental values No vulnerable uses	**AVOID** No zoning change Maximise environmental values No vulnerable uses	**AVOID** No zoning change Maximise environmental values No vulnerable uses	**AVOID** No zoning change Maximise environmental values No vulnerable uses	**AVOID** No zoning change Maximise environmental values No vulnerable uses
Agricultural and pastoral land	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**AVOID** Maintain as rural land Allow rural uses relative to the flood risk No new dwellings and structures No vulnerable uses	**AVOID** Maintain as rural land Allow rural uses relative to the flood risk No new dwellings and structures No vulnerable uses	**AVOID** Maintain as rural land Allow rural uses relative to the flood risk No new dwellings and structures No vulnerable uses
Rural living areas	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**ARREST** No intensification of rural living No vulnerable uses	**ARREST / TRANSITION** No intensification of rural living Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses	**ARREST / TRANSITION** No intensification of rural living Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses
Rural townships / towns (residential)	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Consider Flood Resilient Precincts to promote economic primacy on commercial land Resilient built form and building materials No vulnerable uses	**ARREST / MITIGATE** Consider Flood Resilient Precincts to promote economic primacy on commercial land Promote uses commensurate with the flood risk i.e., rural industries No intensification of dwellings No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses
Rural townships / towns (centres)	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**MITIGATE / TRANSITION** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)
Established suburban neighbourhoods	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**ARREST** No intensification of development No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in high risk areas where there is a risk to life and/or severe development limitation	**TRANSITION** Change in zoning in extreme risk areas where there is a risk to life and/or severe development limitations
New suburban neighbourhoods	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**AVOID** Avoid medium risk areas altogether through zoning No vulnerable uses	**AVOID** Avoid areas of high risk altogether through zoning No vulnerable uses	**AVOID** Avoid areas of extreme risk altogether through zoning No vulnerable uses
Urban neighbourhoods	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**ARREST** No intensification of development No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in high risk areas where there is a risk to life and/or severe development limitations No vulnerable uses	**TRANSITION** Change in zoning in extreme risk areas where there is a risk to life and/or severe development limitations No vulnerable uses

Centres	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**MITIGATE / TRANSITION** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)
Special use places (industrial areas)	**ACCEPT / TRANSFER** No zoning change Built form controls No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building materials No vulnerable uses	**ARREST** No intensification of development No vulnerable uses	**AVOID / TRANSITION** No intensification of development Change in zoning to ensure that industrial development is not located in high risk areas No vulnerable uses	**AVOID / TRANSITION** No intensification of development Change in zoning to ensure that industrial development is not located in extreme risk areas No vulnerable uses

Table 13 - Guiding bushfire risk land use planning pathways by place transect

Ipswich place transect	Low risk	Moderate risk	High risk	Very high risk	Extreme risk
Natural places	**AVOID** Maximise environmental values	**AVOID** Maximise environmental values No vulnerable uses	**AVOID** Maximise environmental values No vulnerable uses	**AVOID** Maximise environmental values No vulnerable uses	**AVOID** Maximise environmental values No vulnerable uses
Agricultural and pastoral land	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**AVOID** Maintain as rural land Allow rural uses relative to the bushfire risk No vulnerable uses	**AVOID** Maintain as rural land Allow rural uses relative to the bushfire risk No vulnerable uses	**AVOID** Maintain as rural land Allow rural uses relative to the bushfire risk No vulnerable uses
Rural living areas	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**ARREST** No zoning change Consider bushfire resilient precincts Resilient built form and building provisions No vulnerable uses	**ARREST** No intensification of rural living New development not located in very high risk areas No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in extreme risk areas where there is a risk to life and severe development limitations No vulnerable uses
Rural townships	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**ARREST** No zoning change Consider bushfire resilient precincts Resilient built form and building provisions • No vulnerable uses	**ARREST** No intensification of development Consider flood resilient precincts New development not located in very high risk areas	**ARREST / TRANSITION** No intensification of development Change in zoning in extreme risk areas where there is a risk to life and severe development limitations No vulnerable uses
Rural towns	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**ARREST** No zoning change Consider bushfire resilient precincts Resilient built form and building provisions • No vulnerable uses	**ARREST** No intensification of development Consider bushfire resilient precincts New development not located in very high risk areas	**ARREST / TRANSITION** No intensification of development Change in zoning in extreme risk areas where there is a risk to life and severe development limitations No vulnerable uses
Established suburban neighbourhoods	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**ARREST** No intensification of development Consider bushfire resilient precincts New development not located in very high risk areas No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in extreme risk areas where there is a risk to life and severe development limitations No vulnerable uses
New suburban neighbourhoods	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**AVOID / MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**AVOID / MITIGATE** Avoid high risk altogether through zoning Resilient built form and building provisions No vulnerable uses	**AVOID** Avoid areas of extreme risk through zoning No vulnerable uses
Urban neighbourhoods	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**ARREST** No intensification of development New development not located in very high risk areas No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning / transition strategy in extreme risk areas where there is a risk to life and/or severe development limitations No vulnerable uses
Centres	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**MITIGATE / TRANSITION** Consider bushfire resilient precincts Consider change of zoning where aligned with economic viability Resilient built form and building provisions No vulnerable uses	**MITIGATE / TRANSITION** Consider bushfire resilient precincts Consider change of zoning / transition strategy where aligned with economic viability No vulnerable uses
Special use places (industrial areas)	**ACCEPT / TRANSFER** No zoning change Selected built form controls	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**MITIGATE** No zoning change Resilient built form and building provisions No vulnerable uses	**ARREST** No intensification of development New development not located in very high risk areas No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning to ensure that industrial development is not located in extreme risk areas No vulnerable uses

This following tables provide the drafting recommendations proposed for the Local Area Frameworks, commensurate with the proposed risk-informed land use policy response pathway options for each LAF.

Table 14 - Level of land use planning response by Local Area Framework

	Very high
	High
	Moderate
	Low

Local Area Frameworks	Policy pathway	Phases 1 to 3 report planning directions	Planning scheme response				Other mechanisms
			Avoid development in high flood risk	Change to existing zoning required	Local area code provisions required	Overlay	
Area 1 – Goodna Gailes and Camira (part)	Transition	Transition commercial development further up the hill and back zone areas identified for further expansion to the south toward Alice Street subject to high flood hazard risk Back zone low and medium density residential areas subject to extreme / high flood hazard risk No intensification of the existing large lot residential and low density residential zones Investigate emergency voluntary house purchase of residential properties on the northern side of the Ipswich Motorway and also properties that are on the southern side of the Motorway where influenced by Woogaroo Creek		✓	✓	✓	✓
Area 2 – Carole Park	Mitigate	Recognition of the low flood hazard and requirement for a built form response for any remaining lots				✓	
Area 3 – Camira (part)	Arrest (large lot residential) / Mitigate	No further intensification of large lot residential and areas subject to extreme / high flood hazard risk Consider use of split zones for properties adjacent to the creek subject to extreme / high flood risk Consider use of Limited Development Zone or alternative zone for residential properties wholly included on land subject to extreme / high flood hazard risk Encourage new dwellings / extensions, and structures to be located on the parts of a property not affected by extreme flood hazard risk Built form response required for residential areas subject to low flood hazard risk	✓	✓	✓	✓	
Area 4 – Springfield Estate and Augustine Heights (part)	Avoid	Avoid development in the floodplain Include requirements for easements in greenfield areas up to the Defined Flood Event (DFE)	✓		✓		
Area 5 – Bellbird Park, Redbank Plains, Augustine Heights (part)	Mitigate	New expansion areas should avoid land affected by high flood hazard risk Consider a Special Flood Resilient Precinct for land around Six Mile Creek and Mount Juillerat Drive			✓	✓	
Area 6 – Redbank and Collingwood Park	Mitigate	Large areas of low flood hazard inundation extend across the industrial area which requires a built form response Flood inundation to the area on the northern side of the Ipswich Motorway is depth driven and requires a consideration of options around the commercial centre and train station Consider a Special Flood Resilient Precinct for areas that are proximal to the train station Residential development to avoid high flood risk in urban expansion areas and mitigate in areas subject to low flood hazard risk	✓		✓	✓	
Area 7 – Swanbank, New Chum, Redbank Plains (part)	Mitigate	Built form response required for industrial development Development to avoid high flood hazard risk areas	✓		✓	✓	
Area 8 – Riverview	Transition (industry) / Arrest (residential)	Consideration for a transition strategy for industrial areas subject to high flood hazard risk Consider existing allowances or commitments in land subject to Bremer Business Park preliminary approval No further intensification of residential areas subject to high flood hazard risk Built form response required for residential and industrial areas subject to low flood risk Consideration of low intensive, no short term, no vulnerable land uses commensurate with level of flood risk required for Salvation Army owned land	✓	✓	✓	✓	
Area 9 – Bundamba, Blackstone, Ebbw Vale and Dinmore	Transition (large lot residential) / Arrest	Consideration for a transition strategy for large lot residential areas subject to extreme / high flood hazard risk and investigation of emergency voluntary house purchase No further intensification of areas subject to extreme / high flood hazard risk Preserve flood storage No vulnerable uses on land affected by flood hazard	✓	✓	✓	✓	✓
Area 10 – Karalee,	Arrest	Consider an infrastructure mitigation response for the area to improve access and egress during a flood event	✓	✓	✓	✓	✓

Local Area Frameworks	Policy pathway	Phases 1 to 3 report planning directions	Planning scheme response				Other mechanisms
			Avoid development in high flood risk	Change to existing zoning required	Local area code provisions required	Overlay	
Barella Point, Chuwar		No further intensification of development on land subject to flood hazard risk Consider use of split zones for properties adjacent to the creek No new development in extreme / high flood hazard risk areas adjacent to the Brisbane and Bremer Rivers and investigation of emergency voluntary house purchase No vulnerable uses on land affected by flood hazard					
Area 11 – North Ipswich, Tivoli, North Tivoli and Moores Pocket	Arrest (Moores Pocket) / Mitigate (Flood Resilient Precincts / industrial area)	Expand the buffer areas to include land subject to very high flood hazard risk and built form response for low flood hazard risk areas Ensure existing allowances and commitments are acknowledged for land subject o the Riverlink preliminary approval Use of Flood Resilient Precincts to enable development in North Ipswich (exclude areas subject to extreme flood hazard risk) No further intensification of residential areas in Moores Pocket	✓	✓	✓	✓	
Area 12 – Brassall	Arrest	No further intensification of development in areas subject to flood hazard risk Consider use of Limited Development Zone or alternative zone for residential properties wholly included on land subject to extreme / high flood hazard risk	✓	✓	✓	✓	
Area 13 – Ipswich, West Ipswich, Sadliers Crossing, Coalfalls and Woodend	Mitigate (Flood Resilient Precincts)	Use Special Flood Resilient Precincts in key locations (i.e., Marsden Parade) to enable development whilst requiring additional controls to mitigate flood risk No intensification of development in extreme / high flood hazard risk areas outside Special Flood Resilient Precincts Prioritise areas not subject to extreme / high flood hazard risk for further intensification of development	✓		✓	✓	
Area 14 – Basin Pocket, North Booval, Booval, Silkstone and East Ipswich	Arrest (North Booval) / Mitigate (Flood Resilient Precincts)	No intensification of residential development in North Booval and investigation of emergency voluntary house purchase Consider use of Flood Resilient Precincts (i.e., Grammar school site and proposed Blackhall Street high density precinct / southern side of railway) to enable development and improve resilience			✓	✓	✓
Area 15 – Raceview, Flinders View, Ipswich (part)	Transition (area under overland flow path) / Arrest (industrial area and residential area)	Arrest further intensification of industrial development in extreme / high flood hazard risk areas and promote non-building intensive industrial uses (i.e., rural industries) Arrest further intensification of residential development in flood hazard risk areas Transition land subject to overland flow and frequent flood hazard with a short time to inundation to an open space corridor to improve the areas resilience		✓	✓	✓	
Area 16 – Churchill	Transition / Mitigate	Consider a transition strategy for undeveloped industrial sites and to the north of the golf course where there is undeveloped or existing residential structures along Lobb Street No further intensification of residential areas subject to extreme / high flood hazard risk and investigation of potential for emergency voluntary house purchase Prioritise residential intensification to areas of low flood hazard risk with a built form response	✓	✓	✓	✓	✓
Area 17 – Yamanto, Churchill (part)	Transition / Mitigate	Prioritise further commercial, industrial and residential intensification on unconstrained land and areas affected by low flood hazard risk Consider a transition strategy for the pocket of residential properties located around Midland Street Review and align the buffer and recreation areas with high flood hazard risk areas	✓	✓	✓	✓	
Area 18 – Ripley Valley	Avoid	Avoid development in the floodplain Include requirements for easements in greenfield areas up to the Defined Flood Event (DFE)	✓		✓		
Area 19 – Purga, Goolman and Peak Crossing	Avoid	Maintain as a sustainable rural area Locate housing and structures on unconstrained land or land impacted by low risk flood hazard Locate eco and other tourism uses on unconstrained land Allow rural uses commensurate with the flood hazard risk			✓	✓	
Area 20 – Amberley	Avoid	Avoid development in the floodplain Built form response for development in low flood hazard risk areas No storage of chemicals and hazardous material in the floodplain	✓			✓	
Area 21 – One Mile, Leichardt, Walkaraka (part)	Transition / Arrest	No further intensification of development in extreme / high flood hazard risk areas Consider a transition strategy for development in very high flood hazard risk areas	✓	✓	✓	✓	
Area 22 – Karrabin (part), Blacksoil (part)	Avoid (rural) / Transition (industrial)	No further industrial intensification in extreme / high flood risk areas Maintain as a rural area and locate housing and structures on unconstrained land Allow rural uses commensurate with the flood hazard risk	✓		✓	✓	
Area 23 – Pine Mountain, Muirlea, Blacksoil	Avoid	Maintain as a rural area No further subdivision on lots in the floodplain Locate housing and structures on unconstrained land or land impacted by low risk flood hazard	✓		✓	✓	

Local Area Frameworks	Policy pathway	Phases 1 to 3 report planning directions	Planning scheme response				Other mechanisms
			Avoid development in high flood risk	Change to existing zoning required	Local area code provisions required	Overlay	
(part), Haigslea (part), Ironbark							
Area 24 – Walloon, Thagoona, Haigslea (part) and Mount Marrow	Avoid (rural areas) / Mitigate (urban investigation)	Maintain rural areas and avoid development in the floodplain Ensure a consideration of existing preliminary approvals in the area Consider regional mitigation response for the urban investigation area	✓		✓		
Area 25 – Marburg	Transition (highly constrained land) / Mitigate (commercial)	No intensification of the rural living lots within the floodplain Consider low intensity rural uses and Flood Resilient Precinct to maintain commercial function Consideration of a transition strategy for highly constrained lots (flood / salinity etc.) Maintain rural land as a rural area and locate housing and structures on unconstrained land No vulnerable and new tourism related uses should be located in the floodplain	✓	✓	✓	✓	
Area 26 – Rosewood	Avoid (rural areas) / Mitigate (urban investigation / town centre)	Maintain rural areas and avoid development in the floodplain Consider regional mitigation response for the urban investigation area Consider a Flood Resilient Precinct for the town centre to promote primacy Consider extent of the development footprint on land at the end of William and Edward Streets south of the school	✓		✓	✓	
Area 27 – Ebenezer, Willowbank, Jeebropilly, Mount Forbes, Mutdapilly	Avoid	Avoid development in the floodplain No storage of chemicals and hazardous material in the floodplain	✓		✓	✓	
Area 28 – Tallegalla, Woolshed and The Bluff	Avoid	Maintain as a sustainable rural area Locate housing and structures on unconstrained land or land impacted by low flood hazard risk Locate eco and other tourism uses on unconstrained land Allow rural uses commensurate with the flood hazard risk	✓		✓	✓	
Area 29 – Ashwell, Lanefield, Calvert and Grandchester	Avoid (rural areas) / Mitigate (commercial)	Maintain as a sustainable rural area Consider Flood Resilient Precincts for township centre to promote its primacy Locate housing and structures on unconstrained land or land impacted by low flood hazard risk Locate eco and other tourism uses on unconstrained land Allow rural uses commensurate with the flood risk	✓		✓	✓	
Area 30 – Mount Mort, Lower Mount Walker and Mount Walker West	Avoid	Maintain as a sustainable rural area Locate housing and structures on unconstrained land or land impacted by low risk flood hazard Locate eco and other tourism uses on unconstrained land Allow rural uses commensurate with the flood risk	✓		✓	✓	

Table 15 - Level of land use planning response by Local Area Framework

	Very high
	High
	Moderate
	Low

Local Area Frameworks	Policy pathway	Phase 3 Planning directions	Planning scheme response				Other mechanisms
			Avoid development in high bushfire risk	Change to existing zoning required	Local area provisions required	Overlay	
Area 1 – Goodna Gailes and Camira (part)	Mitigate	No vulnerable uses in the bushfire prone area Expansion of urban development must enhance existing / ensure future evacuation opportunities Any development in a bushfire hazard area is subject to minimum ADSR or code assessment, except for dwelling houses on lots less than 2,000sqm (as per the Planning Regulations)			✓	✓	✓
Area 2 – Carole Park	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill development should be of a type that does not amplify / multiply bushfire risk factors Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk				✓	✓
Area 3 – Camira (part)	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Any development in a bushfire hazard area is subject to minimum code assessment, except for dwelling houses on lots less than 2,000sqm (as per the Planning Regulations)			✓	✓	✓
Area 4 – Springfield Estate and Augustine Heights (part)	Avoid / Mitigate	No vulnerable uses in the bushfire prone area Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes No intensification of incompatible land uses in bushfire prone areas Expansion of urban development must enhance existing / ensure future evacuation opportunities Avoid high risk outcomes through sound bushfire resilient urban design practice	✓		✓	✓	✓
Area 5 – Bellbird Park, Redbank Plains, Augustine Heights (part)	Avoid / Mitigate	Arrest vulnerable uses in the bushfire prone area Avoid urban residential expansion around the quarry site where egress options may be constrained Infill residential development on a risk-responsive basis Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes Expansion of urban development must enhance existing / ensure future evacuation opportunities	✓		✓	✓	✓
Area 6 – Redbank and Collingwood Park	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes Expansion of urban development must enhance existing / ensure future evacuation opportunities Consider the effect of UXO risks associated with bushfire hazard			✓	✓	✓
Area 7 – Swanbank, New Chum, Redbank Plains (part)	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Expansion of urban development must enhance existing / ensure future evacuation opportunities Regard for TLPI 01/2020 provisions Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk	✓		✓	✓	✓
Area 8 – Riverview	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Development must enhance existing / ensure future evacuation opportunities Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk	✓			✓	✓
Area 9 – Bundamba, Blackstone,	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Expansion of urban development must enhance existing / ensure future evacuation opportunities			✓	✓	✓

Local Area Frameworks	Policy pathway	Phase 3 Planning directions	Planning scheme response				Other mechanisms
			Avoid development in high bushfire risk	Change to existing zoning required	Local area provisions required	Overlay	
Ebbw Vale and Dinmore							
Area 10 – Karalee, Barellan Point, Chuwar	Avoid / Mitigate	Arrest vulnerable uses in the bushfire prone area Limit further intensification of existing large allotment residential uses in the west Infill residential development on a risk-responsive basis Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes Expansion of urban development must enhance existing / ensure future evacuation opportunities Deploy proposed Density Overlay in conjunction with bushfire considerations to limit further intensification where relevant	✓		✓	✓	✓
Area 11 – North Ipswich, Tivoli, North Tivoli and Moores Pocket	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Deploy proposed Density Overlay in conjunction with bushfire considerations to limit further intensification where relevant			✓	✓	✓
Area 12 – Brassall	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis				✓	✓
Area 13 – Ipswich, West Ipswich, Sadliers Crossing, Coalfalls and Woodend	Accept / Transfer	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis				✓	✓
Area 14 – Basin Pocket, North Booval, Booval, Silkstone, East Ipswich, Eastern Heights and Newtown	Accept / Transfer	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis				✓	✓
Area 15 – Raceview, Flinders View, Ipswich (part)	Accept / Transfer	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis				✓	✓
Area 16 – Churchill	Accept / Transfer	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis				✓	✓
Area 17 – Yamanto, Churchill (part)	Accept / Transfer	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis				✓	✓
Area 18 – Ripley Valley	Avoid / Mitigate	No vulnerable uses in the bushfire prone area Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes No intensification of incompatible land uses in bushfire prone areas Expansion of urban development must enhance existing / ensure future evacuation opportunities Avoid high risk outcomes through sound bushfire resilient urban design practice	✓		✓	✓	✓
Area 19 – Purga, Goolman and Peak Crossing	Mitigate	Arrest vulnerable uses in the bushfire prone area No intensification of incompatible land uses in bushfire prone areas Expansion of urban development must enhance existing / ensure future evacuation opportunities Infill residential development on a risk-responsive basis Balance of festival and eco-tourism activities against risk			✓	✓	✓
Area 20 – Amberley	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk Consider the effect of UXO risks associated with bushfire hazard			✓	✓	✓

Local Area Frameworks	Policy pathway	Phase 3 Planning directions	Planning scheme response				Other mechanisms
			Avoid development in high bushfire risk	Change to existing zoning required	Local area provisions required	Overlay	
Area 21 – One Mile, Leichhardt, Walkaraka (part)	Mitigate	Arrest vulnerable uses in the bushfire prone area			✓	✓	✓
Area 22 – Karrabin (part), Blacksoil (part)	Arrest / Mitigate	No vulnerable uses in the bushfire prone area Limit intensification of the existing large lot residential zones in the bushfire prone area Development must enhance existing / ensure future evacuation opportunities Deploy proposed Density Overlay in conjunction with bushfire considerations to limit further intensification where relevant Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes	✓		✓	✓	✓
Area 23 – Pine Mountain, Muirlea, Blacksoil (part), Haigslea (part), Ironbark	Avoid / Mitigate	No intensification of development in the bushfire prone area, or areas constrained by limited evacuation options No vulnerable uses in the bushfire prone area Consider change of zone in very high risk areas where there is a risk to life and severe development limitations in combination with environmental values and / or flood risk Development must enhance existing / ensure future evacuation opportunities Management of transferrable development rights receivals areas Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes Balance of eco-tourism activities against risk Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk	✓		✓	✓	✓
Area 24 – Walloon, Thagoona, Haigslea (part) and Mount Marrow	Avoid / Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes Expansion of urban development must enhance existing / ensure future evacuation opportunities	✓		✓	✓	✓
Area 25 – Marburg	Mitigate	Arrest vulnerable uses in the bushfire prone area Infill development on a risk-responsive basis Balance of eco-tourism activities against risk			✓	✓	✓
Area 26 – Rosewood	Avoid / Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis Ensure bushfire hazard and risk informs settlement planning as part of structure planning processes Expansion of urban development must enhance existing / ensure future evacuation opportunities	✓		✓	✓	✓
Area 27 – Ebenezer, Willowbank, Jeebropilly, Mount Forbes, Mutdapilly	Avoid / Mitigate	Arrest vulnerable uses in the bushfire prone area Infill residential development on a risk-responsive basis	✓		✓	✓	✓
Area 28 – Tallegalla, Woolshed and The Bluff	Avoid / Mitigate	No vulnerable uses in bushfire prone areas No intensification of incompatible land uses in bushfire prone areas Development must enhance existing / ensure future evacuation opportunities Infill development on a risk-responsive basis Balance of eco-tourism activities against risk Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk Deploy specific revegetation and rehabilitation controls either via the Biodiversity overlay or the bushfire hazard overlay to strategically consider bushfire impacts at vegetation maturity where offsets receivals are proposed	✓		✓	✓	✓
Area 29 – Ashwell, Lanefield, Calvert and Grandchester	Avoid / Mitigate	No vulnerable uses in bushfire prone areas No intensification of incompatible land uses in bushfire prone areas Development must enhance existing / ensure future evacuation opportunities Infill development on a risk-responsive basis Balance of eco-tourism activities against risk	✓		✓	✓	✓

Local Area Frameworks	Policy pathway	Phase 3 Planning directions	Planning scheme response				Other mechanisms
			Avoid development in high bushfire risk	Change to existing zoning required	Local area provisions required	Overlay	
		Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk Deploy specific revegetation and rehabilitation controls either via the Biodiversity overlay or the bushfire hazard overlay to strategically consider bushfire impacts at vegetation maturity where offsets receivals are proposed					
Area 30 – Mount Mort, Lower Mount Walker and Mount Walker West	Avoid / Mitigate	No vulnerable uses in bushfire prone areas No intensification of incompatible land uses in bushfire prone areas Development must enhance existing / ensure future evacuation opportunities Infill development on a risk-responsive basis Balance of eco-tourism activities against risk Avoid incompatible land uses, including uses where materials and chemical stores and use may present increased risk Deploy specific revegetation and rehabilitation controls either via the Biodiversity overlay or the bushfire hazard overlay to strategically consider bushfire impacts at vegetation maturity where offsets receivals are proposed	✓		✓	✓	✓

8 Rezoning or deliberate density reduction of land affected by flood

8.1 Selection of properties

Planning must consider, in the context of flooding, whether the zone allocated can reflect the land use capacity of that land commensurate with the flood risk. In this way there is no misunderstanding about how the land can be used. The SPP states that (emphasis added):

"Overlays should be compatible with and not operate either individually or cumulatively to prevent or restrict land from being used for the purpose for which it has been zoned".

This section includes an alignment of the residential, commercial and industrial zones commensurate with the level of the flood hazard risk, where it may required.

A consideration of the planning pathway options of accept, avoid, arrest, mitigate or transition (see Section 6 of this report) at the zone level will inform the consideration of land for a potential rezoning or deliberate density reduction. As part of the Phases 1 to 3 report, planning pathways commensurate with the flood hazard risk were identified across the broad land use transect areas of the LGA.

With regards to potential rezoning or deliberate density reduction considerations, the transition and arrest planning pathways are the most pertinent with:

- **Transition** used in instances where the risk is so great that people (including residents and the workforce) need to be moved away from, and there needs to be a deliberate density reduction or planned retreat of, the most at-risk locations in existing urban areas given the potential for loss of life and property damage; or
- **Arrest** used in instances where there should be an active no worsening and no further intensification of development in existing urban locations that could result in a net increase in population and/or the workforce given the location may be impacted by potential flood hazard risk that is generally unsafe for vehicles and people and buildings are vulnerable to failure.

Table 16 below provides a summary of the planning pathway response at the place level where a potential rezoning or a deliberate density reduction should be considered.

Further to a consideration of the planning pathways of transition and arrest, there needs to be a consideration of how the flood risk multipliers influence the flood hazard risk, derived from Table 10 in the Phases 1 to 3 report. Together, **Tables 17-19** provide an overview of the planning pathway and flood risk multipliers considerations to inform the preparation of criteria for spatially identifying properties where a rezone or deliberate density reduction should be considered based on a consistent risk-informed data-driven approach. Further to this, properties are also identified as a result of site specific and contextual outcomes i.e., the land is actually a flood island due to the road access and other linear infrastructure.

As a result of the spatial analysis and the identification of properties based on site specific contextual outcomes, a database of properties were identified for consideration for a zoning change or deliberate density reduction. This spatial database comprises the site description (including real property description and site address) for all premises potentially affected by the proposed planning change, any existing uses on the premises, and the current proposed outcome of the planning scheme for the premises.

Table 16 - Rezoning and density reduction considerations by planning pathway

Area	Zone	Medium risk HR3(b), HR3(c)	High risk HR2(b), HR2(c)	Extreme risk HR1(b), HR1(c)
Established suburban and urban neighbourhoods	Character housing low density Character housing mixed density Large lot residential Residential low density Residential medium density CBD residential high density Sub-urban Ripley Valley Future urban Urban investigation areas	**ARREST** No intensification of development No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in high risk areas where there is a risk to life and/or severe development limitation	**TRANSITION** Change in zoning in extreme risk areas where there is a risk to life and/or severe development limitations
Rural living areas	Rural C (rural living)	**ARREST / MITIGATE** Consider Flood Resilient Precincts to promote economic primacy on commercial land Promote uses commensurate with the flood risk i.e., rural industries No intensification of dwellings No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses
Rural townships / towns (residential)	Township character housing Township residential	**ARREST / MITIGATE** Consider Flood Resilient Precincts to promote economic primacy on commercial land Promote uses commensurate with the flood risk i.e., rural industries No intensification of dwellings No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses	**ARREST / TRANSITION** No intensification of development Change in zoning in areas where there is a risk to life and/or severe development limitations No new dwellings and structures No vulnerable uses

Rural townships / towns (centres)	Township business Township character mixed use	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**MITIGATE / TRANSITION** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)
Centres	Character mixed use Local retail and commercial Major centres CBD north secondary business CBD medical services CBD primary commercial CBD primary retail CBD top of town Town centre	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**ARREST / MITIGATE** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)	**MITIGATE / TRANSITION** Consider Flood Resilient Precincts aligned with centres hierarchy to enable resilient development Consider a transition strategy where aligned with economic viability (i.e., move location of centre to higher ground)
Special use places (industrial areas)	Business incubator Local business and industry Local business and industry investigation Service trade and showgrounds Regional business and industry (low impact) Regional business and industry (low impact sub area) Regional business and industry (medium impact) Regional business and industry (Medium impact sub area) Regional business and industry investigation Business park	**ARREST** No intensification of development No vulnerable uses	**AVOID / TRANSITION** No intensification of development Change in zoning to ensure that industrial development is not located in high risk areas No vulnerable uses	**AVOID / TRANSITION** No intensification of development Change in zoning to ensure that industrial development is not located in extreme risk areas No vulnerable uses

Table 17 - Residential zoning alignment

TRANSITION – major intervention required i.e., consider zone change

ARREST – consider no further intensification of residential development

MITIGATE and **ACCEPT / TRANSFER** – no zone policy change

HR category	Level of risk	Zoning application	Policy pathway	LAF consideration
HR1(c)	Intolerable	Back zone	TRANSITION	**Major intervention required** Consider a change in zone i.e., Limited development, Environmental management
HR1(b)	Intolerable	Back zone	TRANSITION	**Major intervention required** Consider a change in zone i.e., Limited development, Environmental management
HR2(c) HR2(b)	Tolerable	No intensification of residential development	ARREST	**No existing density increase** (no further intensification of existing development) OR **Active density reduction** (removal of development capacity i.e., no secondary dwellings / dual occupancies or change in zone from medium density residential to low density residential) AND Avoid expansion and location of vulnerable uses
HR3(c) HR3(b)	Tolerable	No policy change – limit vulnerable uses	MITIGATE	**Limit** location of vulnerable uses, expansion of existing uses subject to resilience considerations Implement some resilience through the overlay i.e., setting a defined flood level + freeboard for residential development located within the floodplain
HR2(a) HR3(a) HR4	Acceptable	No policy change – limit vulnerable uses	MITIGATE	**Limit** location of vulnerable uses, expansion of existing uses subject to resilience considerations Implement some resilience through the overlay i.e., setting a defined flood level + freeboard for residential development located within the floodplain
HR5	Acceptable	No policy change – limit vulnerable uses	ACCEPT / TRANSFER	**Limit** location of vulnerable uses, expansion of existing uses subject to resilience considerations Implement some resilience through the overlay i.e., setting a defined flood level + freeboard for residential development located within the floodplain

Flood risk multiplier	HR1(c)	HR1(b)	HR2(c)	HR2(b)	HR3(c)	HR3(b)	HR2(a)	HR3(a)	HR4	HR5
TTI <=6 hrs	TRANSITION	TRANSITION	TRANSITION	TRANSITION	ARREST	ARREST	ACCEPT / TRANSFER	ACCEPT / TRANSFER	ACCEPT / TRANSFER	ACCEPT / TRANSFER
DRI >72 hrs	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION
Low and high flood islands	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST
Priority evacuation areas	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST

Table 18 - Commercial zoning alignment

MITIGATE / TRANSITION – consider zone change or a Flood Resilient Precinct

MITIGATE / ARREST – consider no further intensification of commercial development or a Flood Resilient Precinct

MITIGATE and **ACCEPT / TRANSFER** – no zone policy change

HR category	Level of risk	Zoning application	Policy pathway	LAF consideration
HR1(c)	**Intolerable**	Back zone	**MITIGATE / TRANSITION**	Consider Flood Resilience Precincts aligned with centres hierarchy to enable resilient development i.e., CBD primary commercial, rural township centres
HR1(b)	**Intolerable**	Back zone	**MITIGATE / TRANSITION**	Consider Flood Resilience Precincts aligned with centres hierarchy to enable resilient development i.e., CBD primary commercial, rural township centres
HR2(c) **HR2(b)**	**Tolerable**	No intensification of development	**MITIGATE / ARREST**	Consider Flood Resilience Precincts aligned with centres hierarchy to enable resilient development i.e., CBD primary commercial, rural township centres
HR3(c) **HR3(b)**	**Tolerable**	No policy change – limit vulnerable uses	**MITIGATE**	Expansion of existing uses subject to resilience considerations, implement some resilience through the overlay i.e., setting a defined flood level + freeboard for commercial development located within the floodplain Avoid expansion and location of vulnerable uses
HR2(a) **HR3(a)** **HR4**	**Acceptable**	No policy change – limit vulnerable uses	**MITIGATE**	Expansion of existing uses subject to resilience considerations, implement some resilience through the overlay i.e., setting a defined flood level + freeboard for commercial development located within the floodplain Avoid expansion and location of vulnerable uses
HR5	**Acceptable**	No policy change – limit vulnerable uses	**ACCEPT / TRANSFER**	Implement some resilience through the overlay i.e., setting a defined flood level + freeboard for commercial development located within the floodplain Avoid expansion and location of vulnerable uses

Flood risk multiplier	HR1(c)	HR1(b)	HR2(c)	HR2(b)	HR3(c)	HR3(b)	HR2(a)	HR3(a)	HR4	HR5
TTI <=6 hrs	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**	**ARREST**	**ARREST**	**ACCEPT / TRANSFER**	**ACCEPT / TRANSFER**	**ACCEPT / TRANSFER**	**ACCEPT / TRANSFER**
DRI >72 hrs	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**	**TRANSITION**
Flood island	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**
Priority evacuation area	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**	**ARREST**

Table 19 - Industrial zoning alignment

AVOID / TRANSITION – major intervention required i.e., consider zone change

ARREST – consider no further intensification of industrial development

MITIGATE and **ACCEPT / TRANSFER** – no zone policy change

HR category	Level of risk	Zoning application	Policy pathway	LAF consideration
HR1(c)	**Intolerable**	Back zone	**AVOID / TRANSITION**	Consider a change in zone i.e., Limited development or Environmental management, industrial investigation
HR1(b)	**Intolerable**	Back zone	**AVOID / TRANSITION**	Consider a change in zone i.e., Limited development or Environmental management
HR2(c) **HR2(b)**	**Tolerable**	No intensification of development	**ARREST**	Consider no further intensification of industrial development
HR3(c) **HR3(b)**	**Tolerable**	No intensification of development	**MITIGATE**	Expansion of existing uses subject to resilience considerations, implement some resilience through the overlay i.e., setting a defined flood level + freeboard for industrial development located within the floodplain
HR2(a) **HR3(a)** **HR4**	**Acceptable**	No policy change	**MITIGATE**	Expansion of existing uses subject to resilience considerations, implement some resilience through the overlay i.e., setting a defined flood level + freeboard for industrial development located within the floodplain
HR5	**Acceptable**	No policy change	**ACCEPT / TRANSFER**	Implement some resilience through the overlay i.e., setting a defined flood level + freeboard for industrial development located within the floodplain

Flood risk multiplier	HR1(c)	HR1(b)	HR2(c)	HR2(b)	HR3(c)	HR3(b)	HR2(a)	HR3(a)	HR4	HR5
TTI <=6 hrs	TRANSITION	TRANSITION	TRANSITION	TRANSITION	ARREST	ARREST	ACCEPT / TRANSFER	ACCEPT / TRANSFER	ACCEPT / TRANSFER	ACCEPT / TRANSFER
DRI >72 hrs	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION	TRANSITION
Flood island	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST
Priority evacuation area	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST	ARREST

8.2 Proposed criteria for zoning and density changes to residential land

8.2.1 Selection of residential land

For the purposes of considering zoning and density changes within residential areas, land within the following zones was selected to form the base area for spatial analysis:

- Character housing low density;
- Character housing mixed density;
- Large lot residential;
- Residential low density;
- Residential medium density;
- CBD residential high density;
- Sub-urban Ripley Valley;
- Future urban;
- Urban investigation areas;
- Township character housing;
- Township residential;
- Limited development; and
- Special opportunity.

8.2.2 Proposed criteria for rezoning residential land

To determine sites where rezoning should be considered, regard was given to the residential zoning alignment tables provided in the previous section. The criteria for identifying areas for consideration for rezoning of residential land is provided in the table below.

Table 20 - Residential rezoning criteria

Flood risk category and risk multiplier	Criteria and data selection
Hydraulic flood risk	HR1(c) or HR1(b)
Duration of inundation	DUR > 72 hrs
Time to inundation	TTI <= 6 hrs where within HR2(c) or HR2(b)

The above instances were clipped to the residential zones and overlapped to properties to determine the extent each parcel is affected by the residential rezoning criteria. In order to identify which properties should be candidates for residential rezoning, the following rules were applied to residential parcels based on the overlap analysis.

Table 21 - Residential rezoning rules

Flood risk category and risk multiplier	Criteria and data selection
Residential rezoning considered over whole property	Where:

	• Greater than 0.05% of the property area is affected by the residential rezoning criteria; and • There is less than 300m² available land not affected by the residential rezoning criteria.
Residential rezoning considered over part of property to create a split zone	Where: • The property is in / or adjacent to a waterway; and • There is greater than or equal to 300m² available land not affected by residential rezoning criteria.

8.2.3 Proposed criteria for density changes to residential land

To determine sites where density changes should be considered, regard was given to the residential zoning alignment tables provided in the previous section. The criteria for identifying areas for consideration for density changes is provided in the table below.

Table 22 - Residential density changes criteria

Flood risk category and risk multiplier	Criteria and data selection
Time to inundation	TTI <= 6 hrs where within HR3(c) or HR3(b)
Flood islands	Where within a Low or high flood island
Priority evacuation areas	Where within a priority evacuation area

The above instances were clipped to the residential zones and overlapped to properties to determine the extent each parcel is affected by the residential density changes criteria. In order to identify which properties should be candidates for residential density changes, the following rules were applied to residential parcels based on the overlap analysis.

Table 23 - Residential density changes rules

Flood risk category and risk multiplier	Criteria and data selection
Residential density change considered	Where 50% or more of the property is affected by the residential density changes criteria.

8.3 Proposed criteria for zoning and density changes to commercial land

8.3.1 Selection of commercial land

For the purposes of considering zoning and density changes within commercial areas, land within the following zones was selected to form the base area for spatial analysis:

- Character mixed use;
- Local retail and commercial;
- Major centres; and
- Town centre.

8.3.2 Proposed criteria for rezoning commercial land

To determine sites where rezoning should be considered, regard was given to the commercial zoning alignment tables provided in the previous section. The criteria for identifying areas for consideration for rezoning of commercial land is provided in the table below.

Table 24 - Commercial rezoning criteria

Flood risk category and risk multiplier	Criteria and data selection
Hydraulic flood risk	HR1(c) or HR1(b)
Duration of inundation	DUR > 72 hrs
Time to inundation	TTI <= 6 hrs where within HR2(c) or HR2(b)

The above instances were clipped to the commercial zones and overlapped to properties to determine the extent each parcel is affected by the commercial rezoning criteria. In order to identify which properties should be candidates for commercial rezoning, the following rules were applied to commercial parcels based on the overlap analysis.

Table 25 - Commercial rezoning rules

Flood risk category and risk multiplier	Criteria and data selection
Commercial rezoning considered over whole property	Where greater than 0.05% of the property area is affected by the commercial rezoning criteria.

8.3.3 Proposed criteria for density changes to commercial land

To determine sites where density changes should be considered, regard was given to the commercial zoning alignment tables provided in the previous section. The criteria for identifying areas for consideration for density changes is provided in the table below.

Table 26 - Commercial density changes criteria

Flood risk category and risk multiplier	Criteria and data selection
Time to inundation	TTI <= 6 hrs where within HR3(c) or HR3(b)
Flood islands	Where within a Low or high flood island
Priority evacuation areas	Where within a priority evacuation area

The above instances were clipped to the commercial zones and overlapped to properties to determine the extent each parcel is affected by the commercial density changes criteria. In order to identify which properties should be candidates for commercial density changes, the following rules were applied to commercial parcels based on the overlap analysis.

Table 27 - Commercial density changes rules

Flood risk category and risk multiplier	Criteria and data selection
Commercial density change considered	Where greater than 0.05% of the property area is affected by the commercial rezoning criteria.

8.4 Proposed criteria for zoning and density changes to industrial land

8.4.1 Selection of industrial land

For the purposes of considering zoning and density changes within industrial areas, land within the following zones was selected to form the base area for spatial analysis:

- Business incubator;
- Local business and industry;
- Local business and industry investigation;
- Service trade and showgrounds;
- Regional business and industry (low impact);
- Regional business and industry (low impact sub area);
- Regional business and industry (medium impact);
- Regional business and industry (medium impact sub area);
- Regional business and industry investigation;
- Business park;
- Showgrounds, sport, recreation, service trades and trotting; and
- Bundamba Racecourse Stables Area.

8.4.2 Proposed criteria for rezoning industrial land

To determine sites where rezoning should be considered, regard was given to the industrial zoning alignment tables provided in the previous section. The criteria for identifying areas for consideration for rezoning of industrial land is provided in the table below.

Table 28 - Industrial rezoning criteria

Flood risk category and risk multiplier	Criteria and data selection
Hydraulic flood risk	HR1(c) or HR1(b)
Duration of inundation	DUR > 72 hrs
Time to inundation	TTI <= 6 hrs where within HR2(c) or HR2(b)

The above instances were clipped to the industrial zones and overlapped to properties to determine the extent each parcel is affected by the industrial rezoning criteria. In order to identify which properties should be candidates for industrial rezoning, the following rules were applied to industrial parcels based on the overlap analysis.

Table 29 - Industrial rezoning rules

Flood risk category and risk multiplier	Criteria and data selection
Industrial rezoning considered over whole property	Where greater than 0.05% of the property area is affected by the industrial rezoning criteria.

8.4.3 Proposed criteria for density changes to industrial land

To determine sites where density changes should be considered, regard was given to the industrial zoning alignment tables provided in the previous section. The criteria for identifying areas for consideration for density changes is provided in the table below.

Table 30 - Industrial density changes criteria

Flood risk category and risk multiplier	Criteria and data selection
Time to inundation	TTI <= 6 hrs where within HR3(c) or HR3(b)
Flood islands	Where within a Low or high flood island
Priority evacuation areas	Where within a priority evacuation area

The above instances were clipped to the industrial zones and overlapped to properties to determine the extent each parcel is affected by the industrial density changes criteria. In order to identify which properties should be candidates for industrial density changes, the following rules were applied to industrial parcels based on the overlap analysis.

Table 31 - Industrial density changes rules

Flood risk category and risk multiplier	Criteria and data selection
Industrial density change considered	Where greater than 0.05% of the property area is affected by the industrial rezoning criteria.

8.5 Summary of proposed zoning and density changes

The following tables provide a summary of the proposed zoning and density changes identified by the consistent risk-informed data-driven approach.

Appendix A provides the detailed statistics by LAF and by zone.

8.5.1 Summary of proposed zoning and density changes to residential land

Table 32 - Summary of proposed residential zoning and density changes by Local Area Framework

Local Area Framework	Total Parcels	Rezone	Rezone (Split)	Density Change
LGA Wide	**73468**	**1511**	**1697**	**9049**
Ashfield, Lanefield, Calvert, Grandchester	70	0	12	2
Bellbird Park, Redbank Plains, Augustine Heights	13469	59	203	621
Booval, East Ipswich, North Booval	7588	314	45	1289
Brassall	4839	126	131	1178
Bundamba, Blackstone, Ebbw Vale, Dinmore	4160	127	130	486
Camira (part)	2608	19	151	433
Churchill	495	87	29	0

Local Area Framework	Total Parcels	Rezone	Rezone (Split)	Density Change
Ebenezer, Willowbank, Jeebropilly, Mount Forbes	346	0	0	0
Goodna, Gailes, Camira (part)	4597	301	65	528
Ipswich Central	2380	48	75	799
Karalee, Barellan Point, Chuwar	3569	124	262	377
Marburg	233	4	29	1
North Ipswich	2733	64	111	118
One Mile, Leichhardt, Wulkuraka	3180	52	5	1309
Pine Mountain, Muirlea, Blacksoil (part)	410	0	0	0
Raceview, Flinders View	6149	37	42	416
Redbank, Collingwood Park	4530	32	15	291
Ripley Valley	6087	72	179	349
Riverview	1128	22	28	27
Rosewood	1323	4	46	429
Springfield Estate	52	0	0	0
Swanbank, New Chum	1	0	1	0
Walloon, Thagoona , Haigslea (part)	1279	6	82	362
Yamanto	2242	13	56	34

Table 33 - Summary of proposed residential zoning and density changes by zone

Local Area Framework	Total Parcels	Rezone	Rezone (Split)	Density Change
LGA Wide	**73468**	**1511**	**1697**	**9049**
CBD Residential High Density	306	1	0	30
Character Housing Low Density	4321	81	59	707
Character Housing Mixed Density	2014	3	0	348
Future Urban	6998	76	260	398

Local Area Framework	Total Parcels	Rezone	Rezone (Split)	Density Change
Large Lot Residential	4588	134	497	544
Limited Development (Constrained)	127	47	24	3
Residential Low Density	49693	734	734	6053
Residential Medium Density	3755	308	15	770
Special Opportunity	726	123	58	69
Sub-Urban (T3) - Ripley Valley	494	0	0	0
Township Residential	303	4	41	3
Urban Investigation	143	0	9	124

8.5.2 Summary of proposed zoning and density changes to commercial land

Table 34 - Summary of proposed commercial zoning and density changes by Local Area Framework

Local Area Framework	Total Parcels	Rezone	Density Change
LGA Wide	**1241**	**173**	**324**
Bellbird Park, Redbank Plains, Augustine Heights	54	0	0
Booval, East Ipswich, North Booval	337	42	102
Brassall	20	10	19
Bundamba, Blackstone, Ebbw Vale, Dinmore	21	7	15
Camira (part)	5	0	0
Ebenezer, Willowbank, Jeebropilly, Mount Forbes	1	0	0
Goodna, Gailes, Camira (part)	196	48	28
Ipswich Central	244	37	57
Karalee, Barellan Point, Chuwar	1	0	0
North Ipswich	117	8	0
One Mile, Leichhardt, Wulkuraka	8	0	1
Pine Mountain, Muirlea, Blacksoil (part)	10	0	0
Raceview, Flinders View	43	1	1

Local Area Framework	Total Parcels	Rezone	Density Change
Redbank, Collingwood Park	18	1	1
Ripley Valley	2	2	2
Riverview	1	0	0
Rosewood	102	17	98
Walloon, Thagoona , Haigslea (part)	6	0	0
Yamanto	55	0	0

Table 35 - Summary of proposed commercial zoning and density changes by zone

Local Area Framework	Total Parcels	Rezone	Density Change
LGA Wide	**1241**	**173**	**324**
Character Mixed Use	532	57	115
Local Retail and Commercial	199	17	41
Major Centre	408	82	70
Town Centre	102	17	98

8.5.3 Summary of proposed zoning and density changes to industrial land

Table 36 - Summary of proposed industrial zoning and density changes by Local Area Framework

Local Area Framework	Total Parcels	Rezone	Density Change
LGA Wide	**1939**	**513**	**402**
Bellbird Park, Redbank Plains, Augustine Heights	23	0	0
Booval, East Ipswich, North Booval	85	14	35
Bundamba, Blackstone, Ebbw Vale, Dinmore	336	125	96
Carole Park	220	30	99
Churchill	32	18	8
Ebenezer, Willowbank, Jeebropilly, Mount Forbes	222	64	18
Goodna, Gailes, Camira (part)	20	11	4

Local Area Framework	Total Parcels	Rezone	Density Change
Ipswich Central	120	66	0
Karalee, Barellan Point, Chuwar	25	2	1
Karrabin, Blacksoil (part)	9	8	0
Marburg	12	8	10
North Ipswich	12	2	7
One Mile, Leichhardt, Wulkuraka	52	6	30
Pine Mountain, Muirlea, Blacksoil (part)	4	0	0
Raceview, Flinders View	138	59	20
Redbank, Collingwood Park	91	21	27
Ripley Valley	86	28	21
Riverview	98	7	4
Rosewood	5	4	4
Swanbank, New Chum	118	29	18
Walloon, Thagoona , Haigslea (part)	14	7	0
Yamanto	217	4	0

Table 37 - Summary of proposed industrial zoning and density changes by zone

Local Area Framework	Total Parcels	Rezone	Density Change
LGA Wide	**1939**	**513**	**402**
Bundamba Racecourse Stables Area	120	34	68
Business Incubator	58	15	4
Business Park	4	4	4
Local Business and Industry	852	255	118
Local Business and Industry Investigation	31	9	2
Regional Business and Industry (Low Impact)	294	31	96
Regional Business and Industry (Low Impact Sub Area)	1	1	1

Local Area Framework	Total Parcels	Rezone	Density Change
Regional Business and Industry (Medium Impact)	257	63	67
Regional Business and Industry (Medium Impact Sub Area)	26	8	5
Regional Business and Industry Investigation	279	81	23
Service Trade and Showgrounds	5	4	4
Showgrounds, Sport, Recreation, Service Trades and trotting	12	8	10

8.6 Feasible alternative options

For flood risk, the IICP has assessed the risk across the region and provided a wide range of risk treatment options for implementation in line with best practice flood risk management. These include a range of mitigation measures that have been considered as part of the planning response for flood.

For bushfire, the bushfire risk assessment provides a range of recommendations for considering how planning integrates with the broader multi-agency risk management and treatment approach in accordance with the requirements of the SPP.

On the basis of the above with regards to the rezoning and deliberate density reduction of land, the following options are provided for Council's consideration:

1. Do nothing.

OR

2. Back / split zone to limited development / environmental management or other zone.

OR

3. Manage through overlay provisions.

Planning for natural hazards is fundamentally about risk to life and property, but it is also about taking steps to limit future impositions on other government functions (like disaster management) and expenditure on recovery and reconstruction, while also supporting communities to strive for sustainable development and community wellbeing even when stresses and shocks might occur. This requires a multi-faceted view of the dimensions of risk, to ensure that future development occurs in a way that is tolerable or acceptable.

Through the new Ipswich planning scheme, and therefore compliance with the SPP, Council is determining those risk levels for all parties involved in future development undertaken in accordance with the planning scheme. Reaching that decision regarding risk acceptability and tolerability requires Council to balance other State interests under the SPP and locally relevant values and contexts.

It represents an informed assessment of land use appropriateness relative to risk, informed by the SPP, SPP guidance, SFMP planning guidance and risk evaluation categorisation from the IICP TER to enable the integration of risk into future planning and decision-making.

With regards to the SFMP land use response guidance, it provides a summary of indicative land use compatibility in terms of risk tolerance, as per the below, that should inform the land use policy approach adopted by Council.

Table 38 - Summary of indicative land use suitability against Potential Hydraulic Risk categories

Land use activity group	Potential Hydraulic Risk category				
	HR1	HR2	HR3	HR4	HR5
Community infrastructure and critical services	Intolerable	Intolerable	Intolerable	Tolerable*	Acceptable
Vulnerable uses	Intolerable	Intolerable	Intolerable	Tolerable*	Acceptable
Filling	Intolerable	Intolerable	Tolerable*	Tolerable*	Acceptable
Residential and accommodation	Intolerable	Intolerable	Tolerable*	Tolerable*	Acceptable
Commercial and industrial	Intolerable	Intolerable	Tolerable*	Acceptable	Acceptable
Non-urban and recreation uses	Tolerable*	Tolerable*	Tolerable*	Acceptable	Acceptable

* Subject to requirements to treat and manage risk to an acceptable level (informed by local floodplain management plans and risk assessment process).

The planning pathway policy positions developed as part of the Flood Risk Assessment and Planning Scheme Alignment project are intended to be reflected in the intended zoning in terms of determining flood risk compatibility for various land uses. The overall policy responses have been considered within the context of the:

- intended settlement and growth outcomes at the LAP level;
- level of flood risk and tolerability to risk;
- vulnerability of users at risk, including their ability to evacuate during a flood event; and
- risks associated with the loss of essential services during a flood.

Given the local context, nature of the flood risk that HR1(b), HR1(c), duration of inundation, time to inundation, priority evacuation areas and flood islands pose, which is generally unsafe for people, vehicles and buildings are highly likely subject to failure, properties located within these risk areas are recommended to be considered for a back zone or split zone.

9 Matters to be addressed by the FAAR

The following table provides the matters required to be addressed by the FAAR and how these have been satisfied:

Table 39 - Consideration of matters to be addressed by the FAAR

Matters to be included	Flood Response	Reference	Bushfire Response	Reference	Addressed
The FAAR must:					
a) be made in good faith under the circumstances	The FAAR has been made in good faith under the circumstances	See this Phase 5 report	The FAAR has been made in good faith under the circumstances	See this Phase 5 report	✓
b) be carried out by persons appropriately qualified in relation to the relevant natural events or processes	The flood risk assessment and the IICP have been prepared by persons with Registered Professional Engineers of Queensland (RPEQ) certification and appropriate experience in flood risk management	See Ipswich Integrated Catchment Plan, 2021 and supporting Ipswich Integrated Catchment Plan – Technical Evidence Report, 24 December 2020	The FAAR bushfire elements have been prepared by persons with tertiary qualifications in bushfire protection, land use planning and more than a decade of experience in risk based land use planning. Persons are BPAD Level 3 Accredited with the FPAA.	See Part A – Ipswich Bushfire Contextual Analysis See Part B – Ipswich Bushfire Risk Assessment Report, June 2022 See Part C – Bushfire Policy Options Report, June 2022 See Part D – Bushfire Planning Instrument Report, June 22	✓
c) use the best available information at the time the assessment commenced	All flood data used in the flood risk assessment, plan making, and FAAR process is the best local data available. The majority of data has been derived from the flood study for the Brisbane River Strategic Floodplain Management Plan, and supplemented with other ICC flood models in other locations outside that study area	See Ipswich Integrated Catchment Plan – Technical Evidence Report, 24 December 2020	The FAAR is based on information drawn from the most current information and data sources available at the time the report was prepared including SPP 2017, guidance material and the Bushfire Resilient Communities technical reference guide.	See Part A – Ipswich Bushfire Contextual Analysis See Part B – Ipswich Bushfire Risk Assessment Report, June 2022	✓
The FAAR must include:					
a) the site description, including real property description and site address, for all premises potentially affected by the proposed planning change	As a result of the spatial analysis in response to extreme flood risk across the LGA, a database of properties was identified for consideration for a zoning change or deliberate density reduction. This spatial database comprises the site description (including real property description and site address) for all premises potentially affected by the proposed planning change, any existing uses on the premises, and the current proposed outcome of the planning scheme for the premises.	See Section 7 of this report	No proposed site level zoning changes.	See Section 6 of this report and Part D – Bushfire Planning Instrument Report, June 2022	✓
b) the anticipated risk to premises associated with natural events or processes to be undertaken in accordance with AS/NZS ISO 31000:2009 Risk Management, detailing the impact for the whole premises, not just the part of the premises at risk	The IICP was prepared following the regionally consistent approach established in the Brisbane River Strategic Floodplain Management Plan for catchments of the Bremer River, Brisbane River and the local creeks within the bounds of the Ipswich. The IICP is a non-statutory integrated floodplain management document	See Ipswich Integrated Catchment Plan – Technical Evidence Report, 24 December 2020 See Flood Risk Assessment and Planning Scheme Alignment – Phases 1 to 3 Local Policy Response Report and the supporting Technical Evidence Report	A fit-for-purpose risk assessment was prepared pursuant to the current SPP, and the State interest guidance materials which are required to be appropriately integrated into a local planning instrument. The risk assessment process was based upon that set out by the National Emergency Risk Assessment Guideline	See Part B – Ipswich Bushfire Risk Assessment Report, June 2022	✓

	which assessed and characterised the nature of flood risk across the Ipswich local government area (LGA). It provides recommendations for how to manage the risk. The IICP was informed by the Ipswich Integrated Catchment Plan – Technical Evidence Report (TER) prepared by Water Technology and Synergy Solutions, which includes a flood risk assessment undertaken in accordance with ISO 13000:2009 Risk Management. To support the integration of the IICP land use planning recommendations, Water Technology prepared a Technical Evidence Report focused on the flood risk narrative at the local area level.		(NERAG) and in accordance with AS/NZS ISO 31000 – Risk Management, having regard to the critical elements of likelihood, exposure, vulnerability, tolerability and consequence with consideration of existing and potential future risk exposure framed by an analysis of: • risks to people; • risks to property; • risks to infrastructure; and • potential cascading environmental and economic risks.		
c) any existing uses on the premises	As a result of the spatial analysis in response to extreme flood risk across the LGA, a database of properties was identified for consideration for a zoning change or deliberate density reduction. This spatial database comprises the site description (including real property description and site address) for all premises potentially affected by the proposed planning change, any existing uses on the premises, and the current proposed outcome of the planning scheme for the premises.	See Section 7 of this report	No proposed site level zoning changes.	See Section 6 of this report and Part D – Bushfire Planning Instrument Report, June 2022	✓
d) the current intended outcomes of the planning scheme for the premises					✓
e) details of the proposed planning change and the resultant intended outcomes under the planning scheme for the premises	Phase 4 of the Flood Risk Assessment and Planning Scheme Alignment project provides the details of the proposed planning changes and intended outcomes and requirements / alignment with the SPP and State interest guidelines	See Sections 4, 5, 6 and 7 of this report See Phase 4 Land Use Planning Flood Provisions Report, June 2022	Part D of the Ipswich Bushfire Risk Assessment project provides the details of the proposed planning changes and intended outcomes and requirements / alignment with the SPP and State interest guidelines	See Sections 4, 5 and 6 of this report See Part D – Ipswich Bushfire Risk Planning Instrument Response Report, June 2022	✓
f) a statement about the proposed planning change's consistency with the SPP and State Interest Guidelines with regard to natural hazards, risk and resilience					✓

g) feasible alternatives to the proposed planning change that have been identified and investigated in accordance with the SPP and associated State Interest Guidelines, any relevant Australian Standard, contemporary best practice guidance or other specifications, and the results of those investigations	The IICP is a non-statutory integrated floodplain management document which assessed and characterised the nature of flood risk across the Ipswich local government area (LGA) and considers a range of options and associated recommendations and actions for how to manage flood risk across the Ipswich LGA. The IICP was informed by the Ipswich Integrated Catchment Plan – Technical Evidence Report (TER). In order to translate the IICP risk assessment outcomes and recommendations into risk-informed local land use policy positions, five planning pathway options were considered in the context of the: • flood risk of a LAF; and • intended settlement and growth outcomes for that LAF. These were accept, avoid, arrest, mitigate or transition away from the risk.	See Ipswich Integrated Catchment Plan, 2021 and supporting Ipswich Integrated Catchment Plan – Technical Evidence Report, 24 December 2020 See Flood Risk Assessment and Planning Scheme Alignment – Phases 1 to 3 Local Policy Response Report, June 2022 and the supporting Technical Evidence Report	The Ipswich Bushfire Risk Assessment outlined a number of land use recommendations to address bushfire risk across the Ipswich LGA. The extent of recommendations identified by the bushfire risk assessment have been further considered and evaluated in the preparation of the proposed bushfire related planning scheme changes. In order to translate the bushfire risk assessment outcomes and recommendations into risk-informed local land use policy positions, five planning pathway options were considered in the context of the: • bushfire risk of a LAF; and • intended settlement and growth outcomes for that LAF.	See Part B – Ipswich Bushfire Risk Assessment Report, June 2022 See Part C – Ipswich Bushfire Policy Development Report, June 2022	✓
In investigating the feasibility of alternatives to the proposed planning change, the local government must:					
a) consider the impacts of not making the proposed planning change (i.e., do nothing)					✓
b) consider the reduction in the level of risk of serious harm to persons or property on the premises from natural events or processes for each alternative identified, including the alternative of imposing development conditions on development approvals					✓
c) identify the planning change that would most effectively reduce the risk of serious harm to persons or property on the premises from natural events or processes to an acceptable level					✓
d) consider alternatives that do not involve making a planning change					✓
For each alternative identified, the local government must investigate all options for avoiding or mitigating the risk to persons or property on the premises from natural events or processes.					✓

APPENDICES



Meridian Urban

Appendix A - Detailed statistics of the spatial analysis of residential, commercial and industrial zones

Meridian
Urban