

Local Floodplain Development Plan

Mount Emu Creek

Skipton

1. Application

This local floodplain development plan (LFDP) applies to land within the Corangamite Shire Floodway Overlay (FO) area as applied to the township of Skipton and shown on Corangamite Planning Scheme map numbers 1FO and 2FO.

The Skipton LFDP identifies the flood risk mitigation objectives and performance measures and standards to be met by applicants proposing development on land within the FO at Skipton.

The Skipton LFDP identifies 2 special areas within the FO at Skipton. These are shown as Special Areas 1 and 2 on Figure 2. Special Area 1 delineates a zone of extreme flood hazard during 1 in 100 year ARI floods due to the depth and velocity of floodwater that flows through the area. The most stringent flood related development controls apply within Special Area 1 due to the level of flood hazard associated with the land. The level of hazard posed by large floods within Special Area 2 can also be extreme due to the depth of flooding that can occur. However, flow velocity within special area 2 is lower than that which occurs in Special Area 1. Less stringent development controls apply to this area. Figure 2 provides further information on the depth and velocity characteristics of flooding through these areas.

Development and use of land covered by the FO and within special areas, must comply with the general performance criteria and additional relevant special area performance criteria identified in the LFDP.

Detailed flood characteristics information for the township of Skipton can be found in the Water Technology Skipton Flood Investigations Summary Report 2013 and associated flood maps.

2. Basis of the Planning Control

2.1 Flood History

Much of Skipton sits within a steep sided river valley and has a history of regular flooding. Flooding and heavy rainfall events have been recorded in the town since 1851, with significant floods in 1851, 1870, 1894, 1896, 1903, 1909, 1911, 1933, 1934, 1951, 1960, 1963, 1964, 1984, 1992, 2010 and 2011. The 1909 flood event was thought to be the largest flood to occur in Skipton until the January 2011 flood. Photographic evidence suggests that the 1909 and January 2011 floods may have been similar in magnitude however this cannot be proven due to lack of peak flood level information for the 1909 event.

2.2 Skipton Flood Investigation 2013

The extent of flooding has been determined from flood mapping completed by Water Technology in March 2013. This project made use of historic flood levels documented in past floods, aerial flood photography and surface level information. The FO delineates land that is subject to high hazard flooding based on the depth and velocity of water that is likely to inundate the land during 1 in 100 year Average Recurrence Interval (ARI) ¹ floods.

2.3 Flood Characteristics

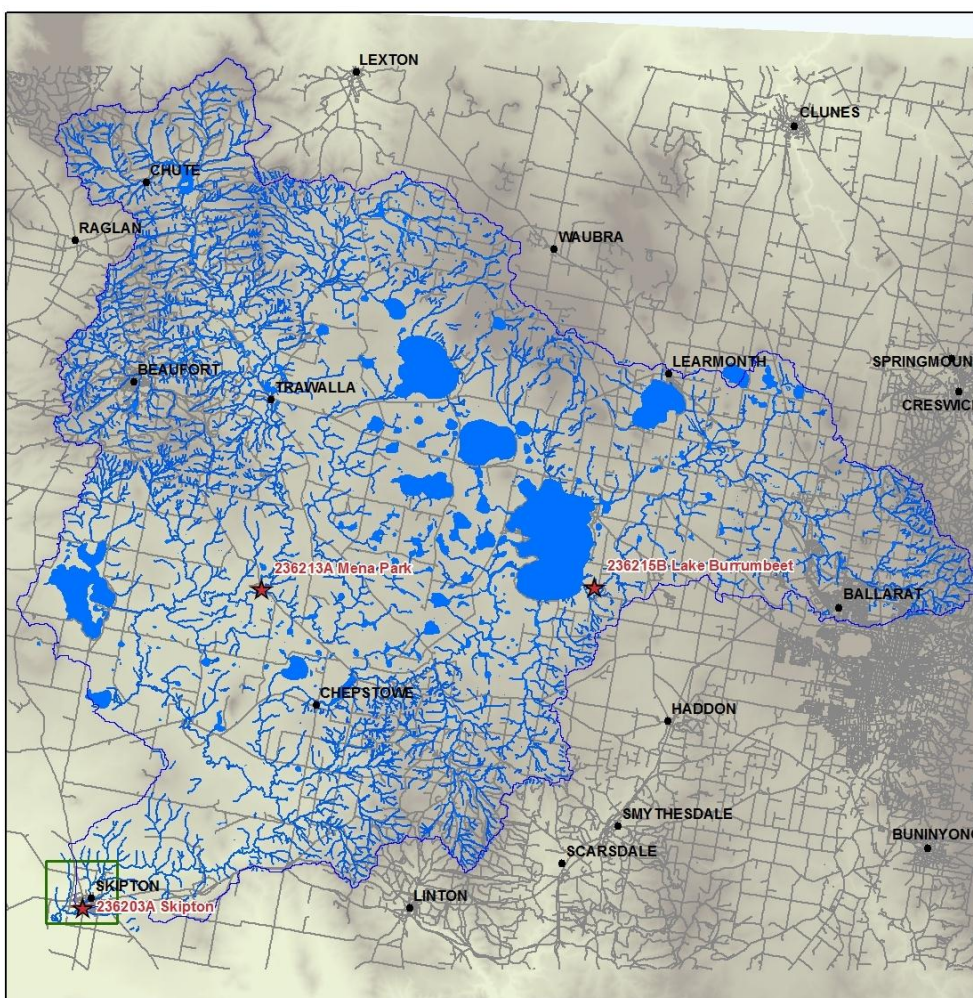
Flooding in Mt Emu Creek at Skipton can be caused by flooding in one or more of the upstream catchments. Tributaries upstream of Skipton that flow into Mount Emu Creek include Broken Creek, Blacks Creek, Ballie Creek (including Burrumbeet Creek), Spring Hill Creek, Reedy Creek, Trawalla Creek and Yams Hole Creek. Numerous small, unnamed tributaries also flow into Mount Emu Creek upstream of Skipton.

The catchment area of Mt Emu Creek upstream of Skipton totals approximately 1,251km² comprising five major sub-catchments (see Figure 1). These are:

- Upper Mt Emu Creek with its headwaters just south of Lexton;
- Yam Holes Creek which rises to the north and west of and then passes through Beaufort;
- Trawalla Creek with its headwaters a little to the east and north of Chute;
- Spring Hill Creek which joins Mt Emu Creek a little downstream from Mena Park; and
- Burrumbeet Creek which rises to the northeast of Ballarat passes through Invermay and Miners Rest and discharging into Lake Burrumbeet. Lake Burrumbeet outflows to Bailie Creek which joins Mt Emu Creek well downstream from Mena Park.

Lake Burrumbeet (see Figure 1) is the only major flood storage basin in the catchment that can directly affect flood levels at Skipton. It can significantly reduce flows from the eastern tributaries into Mt Emu Creek. For more detailed information refer to the March 2013 Skipton Flood Investigations – Mitigation Options Report.

(1. Average Recurrence Interval (ARI) can also be expressed as Annual Exceedance Probability (AEP). A 1 in 100 year ARI event is equivalent to a 1%AEP event. A 1%AEP event has a 1% chance of occurring in any year.)



★ Stream Flow Gauges	Elevation (m AHD)
□ Mount Emu Creek Catchment	High : 883.769
▭ Hydraulic Model Extent	Low : 231.144
■ Lakes	
— Creeks	



Data sources : VICMAP, GHCMA
Date of supply : December 2011

0 2.5 5 10 Kilometers

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Figure 1. Mt Emu Creek Catchment

As well as flooding from Mt Emu Creek, local catchment inflows at Skipton can also contribute to flooding, particularly in the commercial centre of town. Jubilee Dam (also known as Skipton Dam) sits on a tributary of the Mt Emu Creek within the township. While Skipton Dam is quite small, its close proximity to the township means it can flood parts of the town when it overflows. Overflows from the dam are carried into Mt Emu Creek via the township stormwater system. Flooding occurs when the stormwater system capacity is exceeded by the dam overflow. Flooding from Skipton Dam dominates inundation of the township up to and including 10 year ARI events. Thereafter, flooding in Skipton is dominated by Mt Emu Creek overtopping its banks.

2.4 Flood Impacts

Flood impacts in Skipton can be significant, resulting in major damage to public and private assets, road closures (including the Glenelg Highway), loss of access for residents, property isolation and risk to emergency service personnel.

Significantly, during major flood events the main commercial centre of Skipton is inundated, with floodwater persisting for several days.

According to the 2013 Skipton Flood Investigations project it can be expected that a total of 49 properties will be flooded during a 1 in 100 year ARI flood, with overfloor flooding of 36 buildings. The flood investigations project estimated that a flood of this magnitude would result in a total flood damage cost of more than \$1.6 million dollars including damage to buildings, infrastructure and indirect costs such as clean up and emergency response.

3. Land Use and Development Objectives

The following objectives seek to guide decision making with respect to future planning and development of the area covered by the LFDP.

- Minimise risk to life, health and wellbeing associated with flooding of the township.
- Ensure that any development on floodplain land:
 - maintains to the maximum possible extent the free passage and temporary storage of floodwaters.
 - uses materials and is designed and constructed so that the likelihood of damage by floodwater is minimised.
 - will not cause any significant rise in flood level or flow velocity to the detriment of other land holders or property.
- Ensure that future flood damage costs are not compounded unduly.
- Ensure existing flood-prone development is maintained in ways that will minimise future impacts and costs associated with flooding.

4. Policy

4.1 Future Planning

Future planning exercises, such as structure planning or planning scheme amendments, should:

- Consider the risks to the township associated with flooding from Mount Emu creek and seek to ensure that use of floodplain land is not intensified.
- Consider any flooding information that supersedes the Skipton Flood Investigations 2013.

4.2 Exercising Discretion

When a Planning Permit is required, it is policy to:

- Encourage construction of new buildings and works on land outside the FO.
- Encourage the retention of natural drainage corridors with indigenous vegetation buffer areas along waterways. This will minimise erosion of stream banks and verges during large floods and maintain the natural drainage function, stream habitat, wildlife corridor and landscape values of the township.
- Consider minor development associated with commercial premises within Special Area 2 shown on Figure 2. - provided building conditions consistent with the LFDP can be met.
- Discourage new buildings and works, including earthworks and indigenous vegetation clearance on all other land within the FO beyond the Special Areas shown on Figure 2.
- Strongly discourage any increase in the total footprint of buildings within the area shown as Special Area 1 shown on Figure 2 that is subject to high/extreme flood depth and velocity.
- Discourage the construction of new residential buildings within Special Area 1 shown on Figure 2.
- Discourage the construction of a second storey for residential purposes on existing buildings within Special Area 1 shown on Figure 2.
- Prohibit subdivision of parcels that could lead to intensification of development on land within the FO.
- Discourage development on currently vacant land within the FO on 12-14 Montgomery Street and 9 Blake Street.
- With the exception of normal residential gardening activities - prohibit landfill in all areas within the FO, other than for approved buildings & works within Special Area 2 shown on Figure 2.
- Discourage extensions exceeding 20 square metres in floor area to any buildings on land that is outside Special Area 2 at levels below the 100 Year Average Recurrence Interval (ARI) Flood.
- Discourage the construction of private levees.
- Minimise stormwater runoff from developed areas.

5. Performance Criteria

5.1 General

The following criteria apply to all land within the FO as shown on Corangamite Planning Scheme Maps 1FO and 2FO.

New Buildings and Works including outbuildings and sheds exceeding 10m² in floor area must:

- Be on the highest available natural ground
- Be constructed to minimise potential for disrupting flood water flow.
- Be aligned with their long axis parallel to the direction of flood flow. This requirement may override other alignment requirements.
- Be constructed on stumps or piers and bearers unless the Glenelg Hopkins CMA has advised otherwise in writing.

- Minimise site coverage with hard surface areas and maximise permeable surfaces to minimise run-off.

Extensions to existing buildings

- Extensions to existing buildings may have a floor level matching that of the existing building provided the total floor area of the extension does not exceed 20 square metres.
- Where practicable, all extensions to existing buildings should be aligned with their long axis parallel to the direction of flood water flow. This requirement may override other alignment requirements.
- Where practicable, extensions should be constructed on stumps and bearers.

Fences

Fences should be designed and constructed to minimise the likely effects of flooding. Fences should not divert or obstruct floodwater unduly. The potential for fences to trap debris should be minimised.

When considering an application for a fence in the FO at Skipton, the responsible authority will give consideration to flood depth and flow velocity and seek to ensure that the proposed fence is consistent with the Glenelg Hopkins CMA Guidelines for Fencing in Flood-prone Areas.

Earthworks

Earthworks should not reduce the capacity of the floodplain to store and convey floodwater.

Earthworks should not divert or impede the flow of floodwater. The applicant may seek a formal advice letter from the Glenelg Hopkins CMA as to the potential for impacts on floodwater flow and attach this letter in support of the application.

Any planning permit application for the construction of a dam for stock or domestic water supply purposes or in ground swimming pool should ensure that excavated material is removed off site and away from land within the FO and there is no increase in the surface level of land surrounding the dam or pool, including embankments.

Water Tanks

Water tanks can obstruct flood water flow and may float away and become battering rams or obstructions to flow downstream (eg. when trapped against bridges or fences).

Water tanks exceeding 4500 litres capacity within the FO should be placed underground or raised on a stump and bearer tank stand to a height of at least 300mm above the 1%AEP flood level.

Where the above is demonstrated to be impracticable then:

- Fill/pads must be restricted as close as practicable to the footprint of on-ground water tanks.
- Multiple on-ground water tanks should not be placed in a continuous line unless the line of tanks is parallel to the direction of flood water flow.
- On-ground water tanks must be secured in place to prevent floatation and transport downstream.

Chemical Storage

The storage of chemicals should be at a height of at least 1.0m above the 100 year ARI.

Subdivision

Subdivision of land shall not create any new lots that are wholly contained within the FO unless the following applies:

- Each lot contains an existing building

5.2 Special Area 1

The following criteria apply to land identified as Special Area 1 in Figure 2 below. This area can be described as land covered by the FO in the MUZ and B1Z between Cleveland and Bridge Streets.

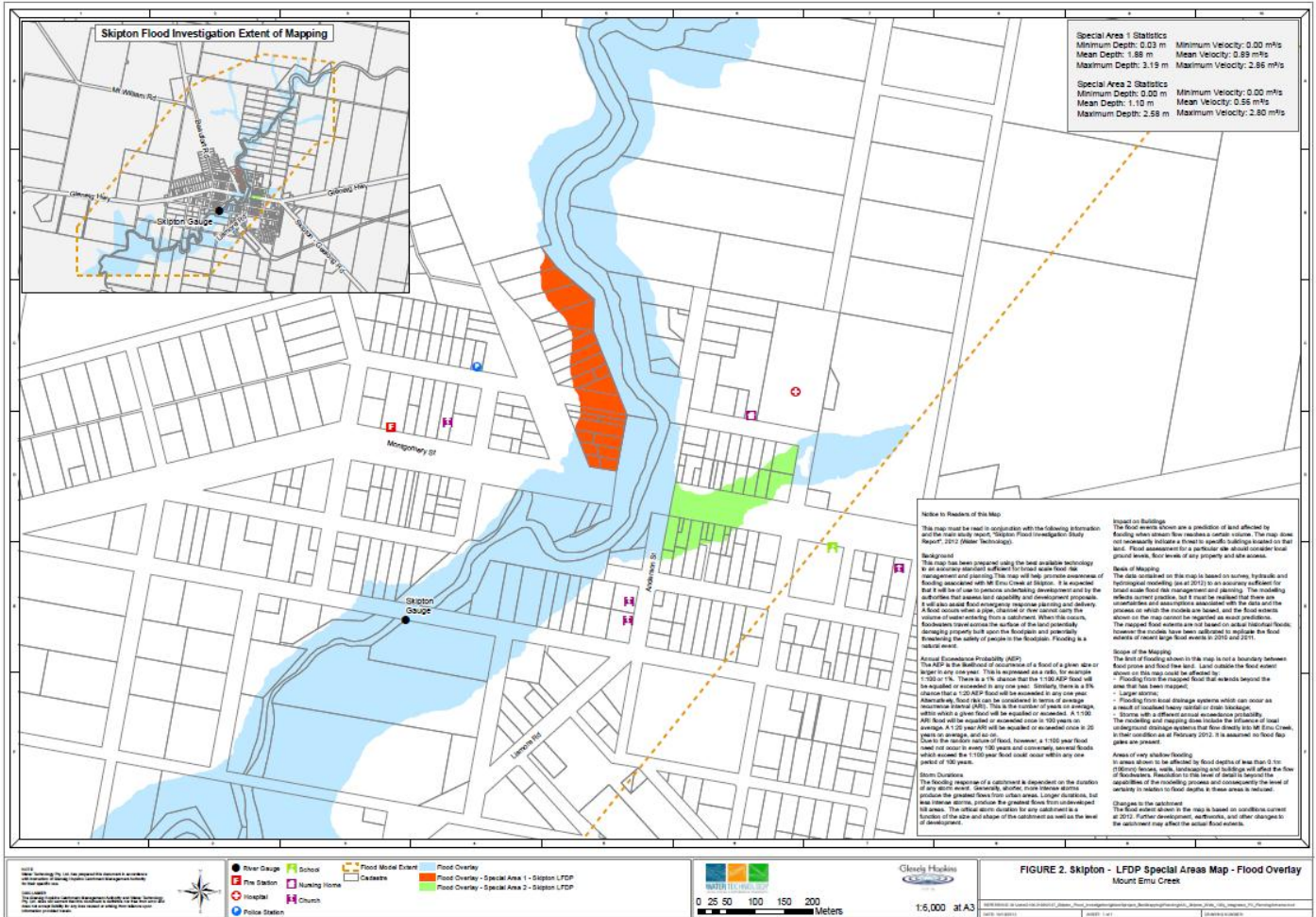


Figure 2. Special Area Map

New Buildings and Works including outbuildings and sheds.

Buildings and works must comply with the following requirements in addition to those included under section 5.1 (Performance Criteria - General Application) above.

- New buildings must be fitted with roller doors in the up-stream and downstream ends which can be opened to allow free passage of flood water through the building.
- All electrical circuit breakers must be fixed above the 1% AEP flood level.
- Any items of plant & equipment such as refrigerators, pumps, office equipment etc must be either quickly demountable to allow it to be moved to high ground or must be mounted or elevated above the 1% AEP flood level.

Extensions to existing buildings

A single extension to an existing building within Special Area 1 may be considered where the floor level of the proposed extensions matches that of the existing building provided the total floor area of the extension does not exceed 20 square metres. Multiple extensions to existing buildings within Special Area 1 are prohibited.

Fences

Fencing should comply with the design criteria contained in Glenelg Hopkins CMA Guidelines for Fencing in Flood Prone Areas (Type A fences).

5.3 Special Area 2

The following criteria apply to land identified as Special Area 2 in Figure 2 above, which can be generally described as land covered by the FO in the B1Z on the eastern side of the highway bridge and fronting Montgomery Street.

Extensions to existing buildings

May be constructed on a concrete slab with a floor level matching that of the existing building provided the total floor area of the extension does not exceed 20 square metres.

Extensions with a total floor area of up to 40 square metres may be considered where the floor level matches that of the existing building provided the extension is constructed on post and bearer footings and flood proofing measures are employed as per the 'Extensions to existing buildings' clause under 5.1 above.

Fences

Fencing should comply with the design criteria contained in Glenelg Hopkins CMA Guidelines for Fencing in Flood Prone Areas (Type A to Type E fences).

6. Application Requirements

6.1 General Information Requirements

All Planning permit applications for development within the Floodway Overlay must be accompanied by the following information, as considered appropriate by the responsible authority.

A site description, which may use a site plan (drawn to scale), photographs or any other relevant technique, that accurately describes:

- The boundaries, dimensions, shape, size, orientation, slope and elevation of the site.
- The use of surrounding properties and buildings.
- Location, layout and dimensions of existing and proposed buildings, works or subdivision boundaries.
- Adjoining roads, internal driveways, and access tracks.
- Elevations of all proposed buildings, drawn to scale.
- Floor levels of all existing and proposed buildings to Australian Height Datum

- Relevant existing and proposed ground levels of the site to Australian Height Datum and the difference in levels between the site and surrounding properties.
- Construction details of all buildings, fences, works and driveways.
- Details of the measures to be used to reduce the susceptibility of the development to flood damage;
- Whether the proposed development could be located on flood-free land or land with a lesser flood hazard.
- In the case of fences, evidence that demonstrates that the fence does not significantly obstruct flood flows.

7. References

Water Technology Skipton Flood Investigations Summary Report 2013

Building Code of Australia – Australian Building Codes Board - Construction of Buildings in Flood Hazard Areas – Information Handbook and Standard.

Glenelg Hopkins CMA Guidelines for Fencing in Flood-prone Areas.

Glenelg Hopkins CMA Guidelines for Floodplain Cut and Fill

Floodplain Management in Australia – Best Practice Principles and Guidelines, Standing Committee on Agriculture and Resource Management (SCARM), CSIRO 2000.

Victoria Planning Provisions – Practice Note – Applying for a Planning Permit under the flood provisions.

Victoria Planning Provisions – Practice Note – Applying the Flood Provisions in Planning Schemes.