



ATTACHMENTS

UNDER SEPARATE COVER

Ordinary Council Meeting

13 December 2017

6 Review of Existing Flood Planning Provisions

Land use planning and development controls are key mechanisms by which Council can manage some of the flood related risks within flood-affected areas within their Local Government Area (LGA). Barellan is situated within the Narrandera LGA. The extent of the Narrandera LGA is shown on Figure 1-1.

The objective of this section is to:

- Review existing planning and development control framework relevant to the formulation of planning instruments and the assessment of development applications in the Mirrool Creek floodplain at Barellan. Specifically, this will include review of the Narrandera Local Environment Plan (LEP) and Narrandera Development Control Plan (DCP).
- Make specific planning recommendations in regards to flood risk management, including an outline of suggested planning controls with the aim to provide consistency in the approach adopted across the entire LGA.

6.1 Local Environment Plan

A Local Environmental Plan (LEP) is prepared in accordance with Part 3 Division 4 of the Environmental Planning and Assessment (EP&A) Act 1979 and operates as a local planning instrument that establishes the framework for the planning and control of land uses. The LEP defines land use zones and specific development standards and special considerations with regard to the use or development of land.

The Narrandera LEP 2013 (Narrandera Shire Council, 2013) has been prepared in accordance with the NSW State Government's Standard Instrument (Local Environmental Plans) Order 2006, which was created to assist Councils by guiding a common format and content for the plans.

The LEP is set out such that Part 1 to Part 5 are mandatory guidelines to be included for each LGA. Part 6 of the Narrandera LEP is for "Additional local provisions" and contains specific details in regard to flood planning considerations (Clause 6.2).

The key requirements of this study in relation to the LEP provisions include:

- Establishment of Flood Planning Levels – the general flood planning level is the 1% AEP design level plus 0.5 m freeboard, as noted in the LEP. Design flood behaviour for the full range of design events, including the 1% AEP design event, was established in the Flood Study.
- Definition of Flood Planning Area – the Flood Planning Area (FPA) encompasses the land below the Flood Planning Level (FPL). Discussion surrounding an appropriate definition of the FPA for the study area is contained in Section 7.2.2.4.
- Description of Flood Risk/Hazard – in addition to the flood inundation mapping, floodplain classifications of hydraulic category (floodway, flood storage, flood fringe) and flood hazard (low hazard high hazard) were established in the Flood Study. Additional information surrounding these mapping outputs is contained in Section 4.2.

Mapping outputs from the Flood Study that are relevant to this study have been reproduced in Appendix A.

6.1.1 Land Use

The LEP identifies a number of land use zones including existing and future development areas, based on stated objectives for each zoning and provisions made for each zoning.

There are six main land use zones identified within the Barellan floodplain study area. The distribution of these land use zones across the catchment is shown in Figure 6-1 along with the 1% AEP design flood extent for reference.

Table 6-1 Land Use Zones within the Barellan Study Area

Rural Zones
RU1 – Primary Production
RU3 – Forestry
RU5 – Village
Environmental Protection Zones
E2 – Environmental Conservation
E4 – Environmental Living
Residential Zones
R5 – Large Lot Residential

It is evident from Figure 6-1 that the majority of the study area within the 1% AEP flood extent area comprises land use zone RU1 Primary Production. Within the township of Barellan, most of the residential area is classed as RU5 Village. There are also smaller parcels of Environmental Zones E2 and E4 located on the western edge of town and areas of RU3 Forestry located in Moombooldool and Kamarah. Although floodplain inundation during the 1% AEP design flood is quite extensive the hydraulic hazard on the floodplain is relatively low (refer to Section 4.2.2).

6.1.2 Flood Planning

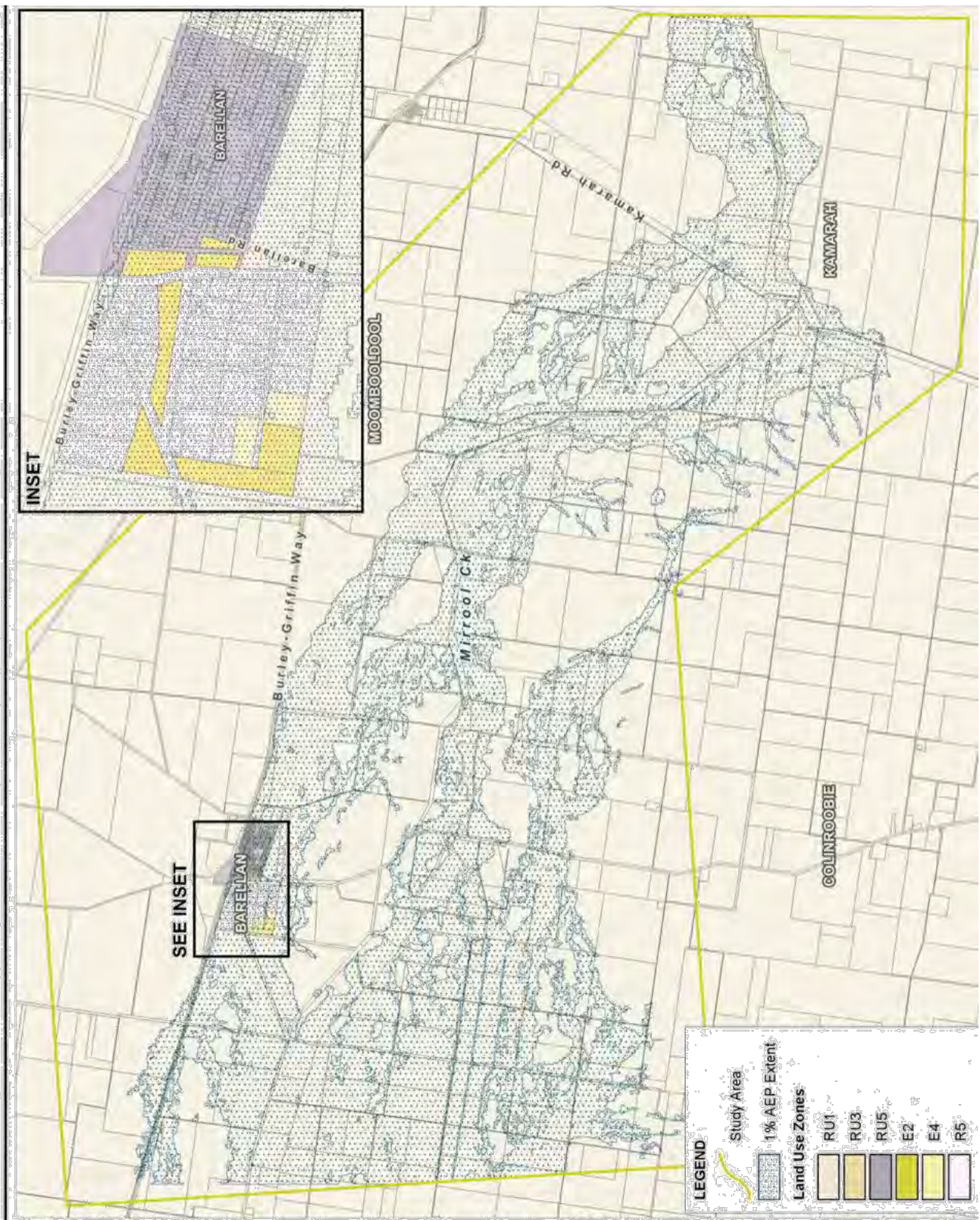
Clause 6.2 of the Narrandera LEP 2013 relates to the use of flood liable land. The LEP provisions incorporate general considerations in regard to development of flood liable land. These provisions require the approval process to consider the impact of proposed development on local flood behaviour and the impact of flooding on the development. The Clause applies to:

- land identified as the FPA,
- other land at or below the FPL.

6.2 Development Control Plan

A Development Control Plan (DCP) is prepared in accordance with Section 72 of the Environmental Planning and Assessment Act 1979 and Clauses 16 to 25 of Part 3 of the Environmental Planning and Assessment Regulation 2000. A DCP effectively complements an LEP by providing more detailed provisions with respect to development in particular areas, and is to be considered by Council in determining development applications.





Title: **Barellan Floodplain Land Use (Narrandera LEP 2013)**

Figure: **6-1**

Rev: **A**

BMT WBM endeavours to ensure that the information provided in this map is correct at the time of publication. BMT WBM does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.



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The Narrandera DCP was adopted on 2 July 2013 and contains within one document various policies and guidelines affecting development proposals within the Narrandera Shire LGA.

6.2.1 Flood Liable Land

Specific controls applicable to flood liable land are contained in the Narrandera DCP 2013 Part E – Planning for Natural Hazards – Chapter 11 Flood liable land. The objectives of the plan are to provide clear guidelines for development of the land so that the provisions of the LEP 2013 are satisfied, while minimising the flood risk to life and property associated with the development of the land.

The two main development controls relating to flood liable land as described in the DCP 2013 are the provision of minimum height floor levels and flood proofing. House raising and filling in the floodplain are briefly discussed but are not endorsed for implementation by Council.

In addition to controls relating to minimum height floor levels and flood proofing, the “Flood Policy Matrix” (SMK, 2009) has been incorporated into the DCP as the “Flood Development Control Matrix.” The matrix lists the controls applicable to different types of development depending on where it is to be located within the flood plain (i.e. floodway, flood storage or flood fringe areas).

These planning controls are discussed below.

Minimum Floor Levels

The plan adopts the following FPLs, as determined by SKM (2009), to determine minimum floor level requirements within the LGA:

- The 1% AEP design flood level plus 500 mm freeboard for residential development (in accordance with the NSW Floodplain Development Manual (OEH, 2005).
- The 5% AEP design flood level for commercial / industrial development.

The DCP currently only includes levels for the township of Narrandera and its surrounds.

Flood Proofing

Flood proofing aims to minimise damage incurred to both the structure and its contents if inundated with water.

The DCP specifically emphasises that flood proofing will not completely eliminate the flood risk but is appropriate to use in conjunction with other flood planning measures such as minimum floor level requirements. It also suggests that flood proofing is only suitable for use at commercial premises. Some flood compatible building materials and other flood proofing methods are suggested.

Flood Development Control Matrix

The purpose of the matrix is to reduce the flood risk associated with development within the floodplain. The categories included in the Flood Development Control Matrix are detailed in Table 6-2. With reference to Table 6-2, different planning considerations (e.g. flood level requirements) are applicable to different development types (e.g. residential buildings), depending on where in the floodplain they are constructed (i.e. flood fringe, flood storage or floodway).

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Although permissible developments are defined on a land-use basis in the LEP (see Section 6.1.1), flood controls detailed in the matrix may prevent development being granted by Council on all or part of a site.

Table 6-2 Narrandera DCP 2013 Flood Development Control Matrix Factors

Matrix Factors	Description or Example:
Floodplain Category	
Floodways	Defined as minimum bank full level for all creeks and waterways, the 5% AEP design flood inundation extent and areas within the 1% AEP design extent that are sensitive to blockage.
Flood storage	The area between the floodway and the 1% AEP design event.
Flood fringe	Remaining area located up to the extent of the Extreme Flood event.
Planning Consideration	
Floor level	Habitable and non-habitable floor level requirements.
Building components	Requirement for flood compatible building structures up to specified level.
Structural soundness	Requirements for structure to withstand forces of floodwater, debris and buoyancy up to specified level.
Flood affectation	Assessment of the flood impact that the development will have on adjoining land.
Evacuation	Requirements for evacuation routes and/or evacuation plans.
Management and design	Specific development design and/or planning to accommodate flooding (e.g. storage space requirements, collapsible fencing, building alignment).
Development Type	
Critical uses and facilities	Hospitals, police, fire and ambulance stations, SES headquarters.
Sensitive uses and facilities	Aged care housing, schools, waste disposal facilities.
Residential	Residential dwellings, flats, caravan parks (long-term sites).
Commercial	Business premises, retail, hotels, religious places.
Industrial	Light industry, livestock/plant keeping.
Recreation and agriculture	Caravan parks (short-term sites), nurseys, agriculture, forestry, mining.
Other development	Not included elsewhere.

6.3 Guidelines for Mirrool Creek Floodplain Development Barellan to Yenda (Water Resources Commission NSW, 1978)

As outlined in Section 2.3.1, the *Guidelines for Mirrool Creek Floodplain Development Barellan to Yenda* provide the most recent floodplain risk management guidelines applicable to the study area. The following points are advised in the document, accompanied by the designated floodway mapping:

- any system of floodways should conform as closely as is reasonably possible to the natural drainage pattern;
- land that can be protected can be maximised providing that no other properties are adversely affected as a result;
- floodways should discharge from holding as closely as practicable to the location of natural floodways;
- where floodways are of minimum width, they should be maintained in a clear condition or sown only to low crops or pastures;
- the exit of floodwater from floodways should be at rates and depths similar to those which would have been experienced under natural conditions;
- care must be taken to ensure that sufficient pondage is retained on the floodplain so that the flood wave is not unduly accelerated to downstream areas and its height is not significantly increased above the naturally occurring height;
- provisions should be made for local drainage from protected areas, but the design of such drainage is the responsibility of individual landholders.

As stated in the document, these are typical guidelines for floodplain risk management and are not specific only to the Mirrool Creek floodplain. In terms of the suitability of these guidelines to agricultural practices in the Barellan floodplain, they are relatively high-level and lack detail as to how the floodplain risk management targets listed above are to be achieved or assessed for compliance. Also, the floodways that exist on the ground do not match exactly with the extents defined within the document.