



ATTACHMENTS

UNDER SEPARATE COVER

Ordinary Council Meeting

13 December 2017

1 Introduction

During the March 2012 flood event the community of Barellan was inundated with flood water emanating from the south-east of the town across Mirrool Road, near Moombooldool. Flood water in the town remained elevated for many days. This was the first time that floodwaters had inundated the town of Barellan in living memory. Following from the March 2012 event, BMT WBM was commissioned by Narrandera Shire Council (Council) in 2016 to complete the Barellan Flood Study and the Floodplain Risk Management Study and Plan as detailed investigation into flooding at Barellan had not previously been completed.

The Barellan Flood Study defined the flood behaviour of the catchment, both in terms of local catchment runoff and flood flow contributions breaking out from Mirrool Creek. The study produced information on flood flows, velocities, levels and extents for a range of flood event magnitudes under existing catchment and floodplain conditions.

The outcomes of the Flood Study established the basis for subsequent floodplain risk management activities. The Floodplain Risk Management Study (FRMS) aims to derive an appropriate mix of management measures and strategies to effectively manage flood risk in accordance with the NSW Government Floodplain Development Manual. The findings of the study will be incorporated in a Plan of recommended works and measures and program for implementation.

The objectives of the Barellan Floodplain Risk Management Study and Plan are to:

- Identify and assess measures for the mitigation of existing flood risk;
- Identify and assess planning and development controls to reduce future flood risks; and
- Present a recommended floodplain risk management plan that outlines the best possible measures to reduce flood damages in the Barellan township.

This report documents the Floodplain Risk Management Study and presents a recommended Floodplain Risk Management Plan for Barellan.

1.1 Study Location

Barellan is located in the Riverina region of NSW. The closest city is Griffith, located approximately 50 km to the west. The town of Ardlethan lies some 30 km to the east. The Mirrool Creek floodplain, south of Barellan, is broad and flat, with typical field grades of approximately 0.1%. The location of Barellan relative to the Mirrool Creek catchment, downstream to Barren Box Storage and Wetland, is shown in Figure 1-1.

1.2 The Need for Floodplain Risk Management at Barellan

As evidenced in the March 2012 flood event, there are a substantial number of properties within the community of Barellan at risk of flooding from both local catchment runoff and Mirrool Creek flooding. Appropriate floodplain risk management activities need to be identified in order to reduce the flood risk that the community is exposed to.

Floodplain risk management considers the consequences of flooding on the community and aims to develop appropriate floodplain risk management measures to minimise and mitigate the impact

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of flooding. This incorporates the existing flood risk associated with current development, and future flood risk associated with future development and changes in land use.

Accordingly, Council desires to approach local floodplain risk management in a considered and systematic manner. This study comprises the initial stages of that systematic approach, as outlined in the Floodplain Development Manual (NSW Government, 2005). The approach will allow for more informed planning decisions within the Barellan township and the broader Mirrool Creek catchment.

1.3 The Floodplain Risk Management Process

The State Government's Flood Prone Land Policy is directed towards providing solutions to existing flooding problems in developed areas and ensuring that new development is compatible with the flood hazard and does not create additional flooding problems in other areas. Policy and practice are defined in the Government's Floodplain Development Manual (2005).

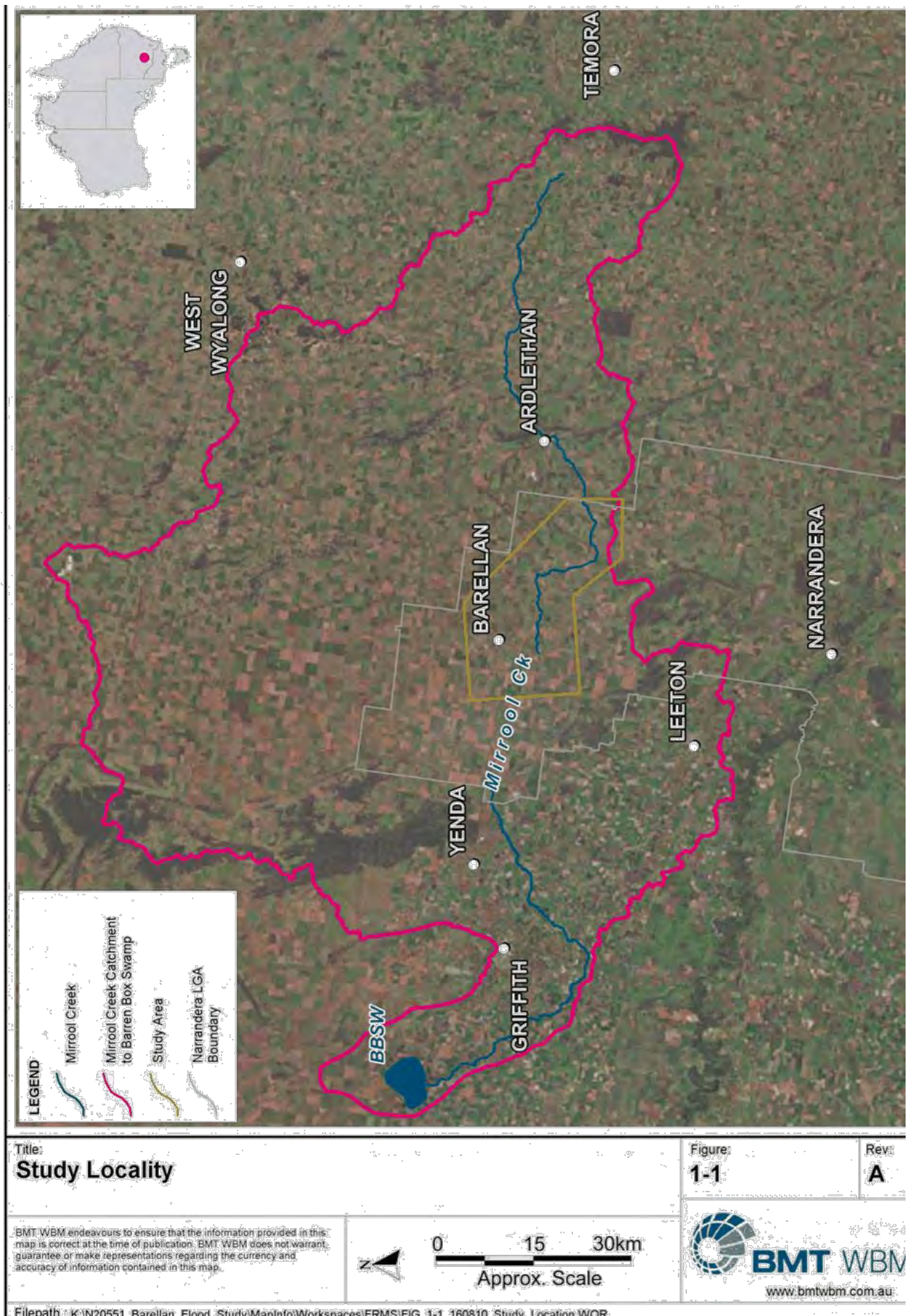
Under the Policy the management of flood liable land remains the responsibility of Local Government. The State Government subsidises flood mitigation works to alleviate existing problems and provides specialist technical advice to assist Councils in the discharge of their floodplain risk management responsibilities.

The Policy provides for technical and financial support by the State Government through the following six sequential stages:

Table 1-1 Stages of Floodplain Risk Management

	Stage	Description
1	Formation of a Committee	Established by Council and includes community group representatives and State agency specialists.
2	Data Collection	Past data such as flood levels, rainfall records, land use, soil types etc.
3	Flood Study	Determines the nature and extent of the flood problem.
4	Floodplain Risk Management Study	Evaluates management options for the floodplain in respect of both existing and proposed developments.
5	Floodplain Risk Management Plan	Involves formal adoption by Council of a plan of risk management for the floodplain.
6	Implementation of the Floodplain Risk Management Plan	Construction of flood mitigation works to protect existing development. Use of environmental plans to ensure new development is compatible with the flood hazard.

The Barellan Floodplain Risk Management Study and Plan (this document) constitutes the fourth and fifth stages of the management process. It has been prepared for Narrandera Shire Council to provide the basis for future management of flooding in the township of Barellan.



1.4 Structure of Report

This report documents the Study's objectives, results and recommendations.

Section 1 introduces the study.

Section 2 provides background information including a catchment description, history of flooding and previous investigations.

Section 3 outlines the community consultation program undertaken.

Section 4 describes the design flooding behaviour in the catchment.

Section 5 provides a summary of the flood damages assessment.

Section 6 provides a review of relevant existing planning measures and controls.

Section 7 provides an overview of potential floodplain risk management measures.

Section 8 presents the recommended measures and an implementation plan.