1. INTRODUCTION

1.1 BACKGROUND

The Macquarie Park study area is located in the City of Ryde in Sydney's north-west. The area consists of five small catchments draining to the Lane Cove River, as well as the floodplain of the Lane Cove River itself downstream from Fullers Bridge and upstream from Epping Road.

Flooding of the area has been documented in several events, with the worst experienced in November 1984. This caused the inundation of many properties including the Macquarie Shopping Centre. Other events have been reported in August 1986, December 1989, February 1990 and March 1990.

Bewsher Consulting was commissioned by the City of Ryde to prepare a Floodplain Risk Management Study and Plan (FRMS&P) for the Macquarie Park study area.

The first step of the project was to establish a computer model to simulate flood behaviour throughout the study area. The model was developed by reference to the November 1984 and February 1990 floods and used to determine flood behaviour for a range of design floods under existing conditions. Details of these investigations have been presented in a separate Flood Study report (Bewsher Consulting, April 2010).

The second step of the project is the preparation of this floodplain risk management study, which summarises flood problems in the study area and evaluates alternative options to reduce these flooding problems. The third step, also reported here, is the preparation of a floodplain risk management plan, which is a plan of recommended measures for Council to implement.

Funding for the study was jointly provided by the City of Ryde and the Department of Environment, Climate Change and Water. Subsidised funding may also be available through the Department for measures identified in the floodplain management plan. Funding assistance is usually provided on a 2:1 (State:Council) basis.

The Macquarie Park Floodplain Management Committee oversaw the study. This Committee includes Councillors and staff from the City of Ryde, the Department of Environment, Climate Change and Water (DECCW), the State Emergency Service (SES), the Transport Construction Authority (formerly Transport Infrastructure Development Corporation), AMP Capital (owners of the Macquarie Shopping Centre), Macquarie University and Macquarie Goodman. A number of community representatives were also members of the Committee.

1.2 STUDY AREA

The Macquarie Park study area is located in the City of Ryde in north-west Sydney. The study area includes part of the suburbs of Marsfield, Macquarie Park, Eastwood, Denistone East, Ryde, North Ryde and Chatswood West. It consists of five catchments draining to the Lane Cove River, as well as the floodplain of the Lane Cove River itself downstream from Fullers Bridge next to River Avenue.

A map of the study area is included on **Figure 1.1**.

Study Area Catchment

LGA Boundary

M2 Motorway

Mars Creek

Mars

University Creek

Shrimptons Creek

Industrial

Industrial Creek

MACQUARIE PARK

MARSFIELD

Epping Rd

Porters

Lane Cove River

Porters Creek

Lane Cove

Fullers Bridge

EASTWOOD

Shrimptons

DENISTONE EAST

Lane Cove Rd

NORTH RYDE

DENISTONE

0 400 800
metres

NORTH

Bewsher

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City of Ryde - Macquarie Park Floodplain Risk Management Study and Plan

FIGURE 1.1 - STUDY AREA

1.3 THE GOVERNMENT'S FLOODPLAIN MANAGEMENT PROCESS

The NSW Government's Flood Prone Land Policy and a *Floodplain Development Manual* (NSW Government, 2005) form the basis of floodplain management in NSW. The main responsibility for managing flood prone lands in NSW rests with local government councils. The NSW Government's Floodplain Management Program is administered by the Department of Environment, Climate Change and Water (DECCW) and provides councils with technical and financial assistance to undertake flood and floodplain risk management studies, and for the implementation of works identified in those studies. The Department of Planning is responsible for assisting councils with land use planning matters consistent with the *Floodplain Development Manual* (NSW Government, 2005).

The primary objective of the Flood Prone Land Policy is: to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods wherever possible.

For existing developed areas, the impacts of flooding may be reduced by flood mitigation works and measures, including on-going emergency management measures, the raising of houses where appropriate and by development controls. For areas proposed for development or redevelopment, the potential for flood losses may be contained by the application of ecologically sensitive planning and development controls.

The implementation of the Flood Prone Land Policy generally culminates in the preparation and implementation of a Floodplain Risk Management Plan by Council, which is the ultimate objective of the current study. Community consultation is an important part of the process and this has been undertaken via Council's Floodplain Management Committee and public displays and questionnaires with the local community.

The steps in the floodplain management process are summarised in **Figure 1.2**.

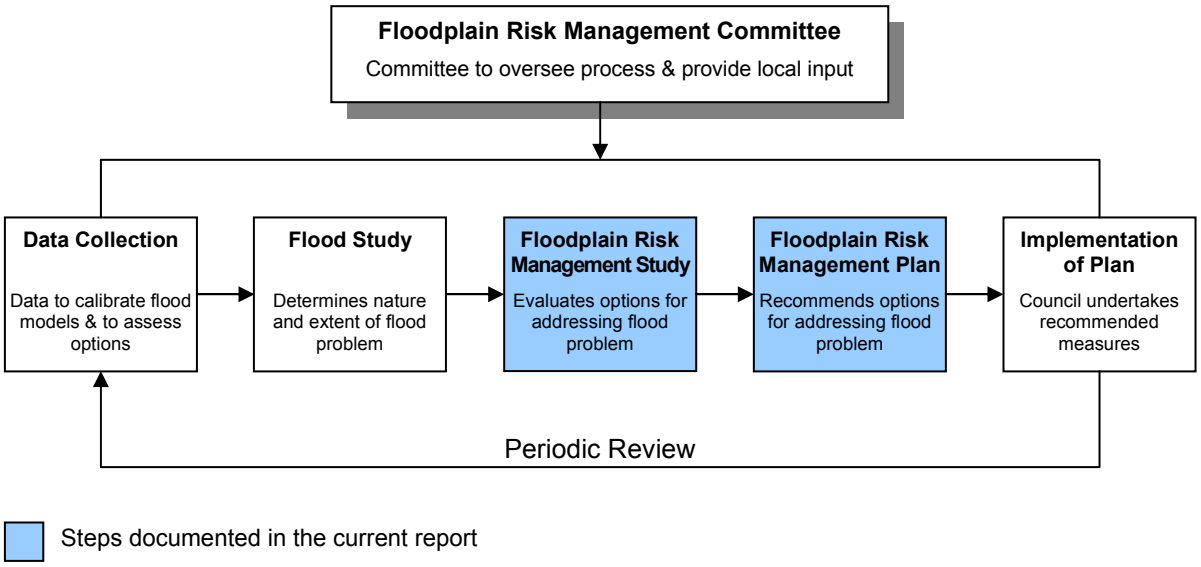

FIGURE 1.2 – THE FLOODPLAIN MANAGEMENT PROCESS

1.4 REPORT STRUCTURE

This report is structured as follows:

Chapter 1 – Introduction to the Study;

Chapter 2 – Background information, including a description of the catchment, history of flooding, a social profile and list of heritage items;

Chapter 3 – A review of consultation activities undertaken during the study;

Chapter 4 – Description of existing flood behaviour, including delineation of the catchment into different flood risk management areas, and description of a climate change flood sensitivity test;

Chapter 5 – An assessment of flood damages and patterns of property inundation;

Chapter 6 – A detailed review of floodplain management options; and

Chapter 7 – The recommended floodplain management plan.