Title	Macquarie Park Floodplain Risk Management Study & Plan
Abstract	In accordance with NSW Government policy, the Council of the City of Ryde is committed to preparing a Floodplain Risk Management Plan for Macquarie Park. This report documents the first stage of the process of preparing the Plan – that is, the preparation of a flood study report. The study area consists of a portion of the Lane Cove River floodplain and those City of Ryde areas which drain in a northeasterly or easterly direction to it. Much of the 1,558ha study area is developed. It is crossed by a number of major roads including Epping Road, Lane Cove Road and the M2 Motorway and the underground Epping to Chatswood railway line. The consultants drew on both previous flood study reports and additional community consultation to review historical records about flood problems that have been experienced in the catchment and this process found that the two most widely reported floods were in November 1984 and February 1990. Computer-based (DRAINS) hydrologic models and (TUFLOW) hydraulic models have been developed. While substantial efforts have been made to compile as best a picture as possible of several relatively recent floods (i.e. November 1984 and February 1990), the resultant rainfall and water level data sets were found to provide only very general information about the floods. As a consequence, while the models generally reproduce the observed flood regimes, formal calibration against those events was not possible. The modelling confirmed that the November 1984 event was worse than the February 1990 event and significant number of properties in natural depressions experienced overland flow inundation. Additionally, some properties located adjacent to open creek channels experienced substantial depths of water. Design flood event modelling followed and this report presents the results of modelling the 20 year average recurrence interval (ARI) flood, the 100 year ARI flood and the Probable Maximum flood (PMF). The detailed DRAINS and TUFLOW models provide a sound platform for the further flood modelling tasks that will be undertaken during preparation of the Floodplain Risk Management Study and Plan. # SOFTWARE The DRAINS software (Reference 7) has principally been used to model the hydrologic regime of the study area. It is a comprehensive hydrologic modelling program for designing and analysing various types of catchments and urban stormwater drainage systems and includes hydraulic modelling capabilities for pipes and overland flowpaths. The software is widely used in Australia and Council itself has used DRAINS for many years. The DRAINS model version is 2009.06. While it follows that DRAINS software is suitable for undertaking both hydraulic and hydrologic assessments of urban catchments – and both capabilities have been used in this study – it is important to note that the pipe hydraulic analysis undertaken within the subsequent hydraulic modelling phase (refer Chapter 4) provides a more comprehensive picture of both pipe and overland flow rates. The widely used and Australian developed TUFLOW software (Reference 6) was chosen as the hydraulic modelling tool for use in the study because of its capability to simulate flood flows along both open watercourses and potentially complicated networks of overland flowpaths such as occurs in the study area. The technical description of the TUFLOW model and its specific application to the study area is provided in Appendix C. The TUFLOW build model is 2008-08-AF- ISP. The following sections of the report describe the establishment and operation of the TUFLOW model to simulate: • the November 1984 and February 1990 events using DRAINS-derived flows. The simulated flood levels and extents for this event were then compared with the historical information; and • the design 5 year, 20 year, 50 year, 100 year ARI and PMF events.

Resource locator

Macquarie Park - Floodplain Risk	Name: Macquarie Park - Floodplain Risk Management Study & Plan - Flood Study Report

Management Study & Plan - Flood Study Report	Protocol: WWW:DOWNLOAD-1.0-http--download Function: download

Unique resource identifier

Code	a635aae5-09b4-4daa-86a9-d1c0aa368485

Presentation form	
Edition	27/06/2017
Dataset language	English

Metadata standard

Name	ISO 19115
Edition	2016
Dataset URI	https://datasets.seed.nsw.gov.au/dataset/a635aae5-09b4-4daa-86a9-d1c0aa368485
Purpose	Land and Resource Management
Status	On going

Spatial representation

Type	vector

Spatial reference system

Code identifying the spatial reference system	4283

Topic category

Keyword set	
keyword value	
Originating controlled vocabulary	
Title	ANZLIC Search Words
Reference date	2008-05-16
Geographic location	
West bounding longitude	151.083432
East bounding longitude	151.159275
North bounding latitude	-33.815207
South bounding latitude	-33.761253
NSW Place Name	Macquarie Park
Vertical extent information	
Minimum value	-100
Maximum value	2228
Coordinate reference system	
Authority code	urn:ogc:def:cs:EPSG::
Code identifying the coordinate reference system	5711
Temporal extent	
Begin position	
End position	N/A
Dataset reference date	
Resource maintenance	
Maintenance and update frequency	As needed
Contact info	
Contact position	Data Broker
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Responsible party role	pointOfContact
Limitations on public access	

Responsible party

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