

Title

Wamberal Lagoon Flood Study

Abstract

Wamberal Lagoon is a small coastal lagoon within the Gosford City and Wyong Council Local Government areas (Figure 1). The lagoon has a surface area of approximately 0.5 square kilometres, and discharges to the Pacific Ocean at Wamberal Beach. The total catchment area to the Pacific Ocean is approximately 6.6 square kilometres and thus the area of the lagoon represents 8% of the total catchment.

A number of properties surrounding the lagoon are very low lying, and flooding in the past has caused damage and disruption. There has not been significant loss of property on any occasion in recent years. In an attempt to reduce the flood problems, Council mechanically opens the entrance when the lagoon approaches a critical level. This task of opening the lagoon to the ocean during floods can be both difficult and at times dangerous. The ocean and channel entrance conditions appropriate to design flood conditions were therefore major considerations in the study.

In the last 30 years the catchment has changed from a predominantly rural community to a more urbanised community. The lagoon and part of the adjoining foreshore have been dedicated as the Wamberal Lagoon Nature Reserve and there has been an increase in population and a heightened awareness of environmental issues. These changes have affected the lagoon and there is the potential for further changes. There is a need therefore to define the existing flood problem and carefully manage future development within the catchment and upon the floodplain.

As the first stage in the development of an overall Floodplain Management Plan for Wamberal Lagoon, Gosford City Council engaged Webb, McKeown & Associates to prepare a Flood Study.

The primary objectives of this Flood Study are to:

- determine the flood behaviour of Wamberal Lagoon and its tributaries under existing conditions,
- set up a numerical model of the catchment to determine flood flows velocities and levels for design events,
- formulate the model such that the effects on flood behaviour of catchment development and flood mitigation options can be investigated.

The Flood Study does not consider local flooding which may result from inadequate urban drainage provisions. These issues are being examined in other separate studies undertaken by Council.

This report details the results and findings of the Flood Study. The key elements are:

- a summary of available data,
- reasons for the choice of hydrologic and hydraulic models,
- calibration of these models,
- establishment of design flood behaviour,
- sensitivity analyses of the adopted parameters.

A number of previous studies have been undertaken in the local area. A compilation of all relevant previous reports is contained in Reference 1 and several of these are discussed in detail in Section 2.3. All levels in this Report are to Australian Height Datum (AHD). AHD is the common national plane approximating mean sea level.

Resource locator

[Wamberal Lagoon - Flood Study](#)

Name: Wamberal Lagoon - Flood Study

Protocol: WWW:DOWNLOAD-1.0-http--download

Function: download

Unique resource identifier

Code

cc8be13e-fb82-4a35-bd6b-2ff7a5a6c930

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/cc8be13e-fb82-4a35-bd6b-2ff7a5a6c930>

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	151.442135
East bounding longitude	151.480721
North bounding latitude	-33.429668
South bounding latitude	-33.398007
NSW Place Name	Wamberal Lagoon
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
Organisation name	Central Coast Council
Telephone number	1300 463 954
Email address	ask@centralcoast.nsw.gov.au
Web address	https://www.centralcoast.nsw.gov.au/
Responsible party role	pointOfContact
Limitations on public access	

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Metadata date 2024-03-25T09:56:51.627732

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