

## Abstract

## Study Area

The study area is largely located within the Sydney suburb of Panania. The study area includes the entire Kelso Creek catchment, from the stormwater pipe network in the upper catchment to Kelso Creek, which flows through Kelso Park and eventually joins the Georges River. The lower catchment is provided some protection against flooding from the Georges River through the Kelso levee. The catchment is wholly within the Bankstown local government area.

## Report Structure

This report is divided into two parts. The first part provides background on the study and further discussion of the available data, modelling approach and results from the flood model that was established to analyse flooding within the catchment. The second part is a technical report that provides additional detail concerning the flood model, model results and flood mapping, which is included as an appendix.

## Outcomes from the Study

Outcomes from this study include:

(i) a database of all drainage assets within the study area; (ii) establishment of a computer model capable of assessing flood behaviour; (iii) information on flood behaviour under existing catchment conditions; and (iv) a model that can be used to assess flood mitigation options and future development proposals.

## Database of Drainage Assets

All data collected for the study has been included within a GIS database. This allows the data to be spatially represented across the study area and allows for easy retrieval of the data as required. Information in the database includes data for some 850 stormwater pits and 810 stormwater drainage pipelines. Photos of culverts and other sketches are also linked to the database.

Other catchment data, including aerial photography, property cadastre, building footprints and the terrain surface (based on ALS survey) is also represented in the database.

## Computer Modelling

A numerical computer model was developed for the catchment to simulate flood behaviour, using the computer program known as TUFLOW. Surface flows are represented in the model through a 2-dimensional grid covering the entire study area. All pipes, drains and creeks are included as 1-dimensional elements within this grid.

Full details of the modelling approach, modelling parameters and other assumptions are included in the Flood Model Report, which is included in Appendix A.

## Existing Flood Behaviour

Design flood behaviour has been computed for a range of floods, ranging from relatively frequent events to more extreme floods, under existing (2007) catchment conditions. The model produces a grid of results over the study area providing data on flood levels, flood depths and flood velocities. Flood level contours have also been prepared showing contours of equal flood heights throughout the study area. This data

is provided digitally and can be overlaid on base mapping such as aerial photos and cadastral plans showing property boundaries.

All flood model results have been provided to Council for incorporation into their GIS computer system. Much of this information is also included as A4 sized plans included in Appendix A.

It is intended to develop a database of properties that are at risk of being affected by flooding as part of the floodplain management study, which is the next phase of the investigations. This will define the problem areas within the catchment and allow an assessment of potential flood mitigation options.

## Resource locator

[Kelso - Stormwater Catchment Flood Study](#)  
Name: Kelso - Stormwater Catchment Flood Study  
Protocol: WWW:DOWNLOAD-1.0-http--download  
Function: download

## Unique resource identifier

Code 0a90fb74-a7ac-4923-b8d9-a9f1e8954598

## Presentation form

Edition 10/08/2021

Dataset language English

## Metadata standard

Name ISO 19115

Edition 2016

Dataset URI <https://datasets.seed.nsw.gov.au/dataset/0a90fb74-a7ac-4923-b8d9-a9f1e8954598>

Purpose Land and Resource Management

Status On going

## Spatial representation

Type vector

## Spatial reference system

Code identifying the spatial reference system 4283

## Topic category

<b>Keyword set</b>	
keyword value	
<b>Originating controlled vocabulary</b>	
Title	ANZLIC Search Words
Reference date	2008-05-16
<b>Geographic location</b>	
West bounding longitude	150.96675
East bounding longitude	151.009909
North bounding latitude	-33.960498
South bounding latitude	-33.937171
NSW Place Name	Panania
<b>Vertical extent information</b>	
Minimum value	-100
Maximum value	2228
<b>Coordinate reference system</b>	
Authority code	urn:ogc:def:cs:EPSG::
Code identifying the coordinate reference system	5711
<b>Temporal extent</b>	
Begin position	
End position	N/A
<b>Dataset reference date</b>	
<b>Resource maintenance</b>	
Maintenance and update frequency	As needed
<b>Contact info</b>	
Contact position	Data Broker
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Responsible party role	pointOfContact
<b>Limitations on public access</b>	

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