POWELLS CREEK FLOOD STUDY FACT SHEET

In 2021 the City of Canada Bay appointed WMAwater to undertake a flood study for the Powells Creek catchment in response to NSW Government requirements (please refer to Figure 1 on page 6).

This area within the City of Canada Bay was selected due to our knowledge of past flood events and the need to mitigate and manage future flood risks.

This draft study is the first stage of the overall Floodplain Management Plan for the Powells Creek catchment. The study included the scientific investigation of flooding resulting from rainfall events. The objective of the study is to enable Council and property owners to better identify and manage the potential impact of flooding.

The draft study is on public exhibition from 6 May to 16 June 2022.

Project background

Related Studies and Projects

- Powells Creek Flood Study 1998 (Strathfield Council)
- Draft Concord West Precinct Master Plan Flood Study 2015 (Jacobs for City of Canada Bay Council)
- Powells Creek Flood Study 2015 (Sydney Water)
- Powells Creek and Saleyards Creek Flood Study 2016 (WMAwater for Strathfield Council)
- Sydney Water naturalisation project

Why did Council undertake a flood study?

The commissioning of the Draft Flood Study is a requirement of councils under the NSW Government's Floodplain Management Program. The objective of a flood study is to improve understanding of flood behaviour to better inform flood risk management for property owners and publicly managed community assets. The overall Floodplain Management Program's outcome is to increase community safety while mitigating damage to private and public assets.

The initial stage of developing this flood study included seeking information from property owners on past flood events in 2016. This formed part of the consultation undertaken for the Powells Creek and Saleyards Creek Flood Study 2016 commissioned by Strathfield Council.

What is the overall process?

The delivery of this Draft Flood Study is a four-stage process outlined in the NSW Government's Floodplain Development Manual (FDM, 2005). This includes:

#	Timeframe	Detail
1	Draft on Public Exhibition: 6 May – 16 June 2022	**Flood Study** – a comprehensive investigation of flood behaviour that provides the main technical foundation for the development of a robust floodplain risk management plan.
2	2022 - 2025	**Floodplain Risk Management Study (FRMS)** – assess the impacts of floods on the existing and future community and allows the identification of management measures to treat flood risk.
3		**Floodplain Risk Management Plan (FRMP)** – outlines a range of measures for future implementation to manage existing, future and residual flood risk effectively and efficiently.
4		**Plan implementation** – once the management plan is adopted, an implementation strategy (devised in stage 3) is followed to stage components.

Has there been past significant flood events?

Flood events occurred in the Powells Creek catchment in 1961, 1975, 1983, 1986, 1988, 1990, 1991, 1996, 2017 and 2018.

Has the impact of climate change or sea level rise been considered in the flood study?

The potential impact of climate change has been considered and used in the modelling to predict the potential risk of flooding in the study area. The influence of climate change means that predicting future storm events is becoming more uncertain. However, it is generally accepted that storm events will become more frequent and more severe.

What is a Flood Planning Area?

The Flood Planning Area (FPA) defines properties that are subject to flood related development controls. The FPA is a key planning tool for managing and mitigating flood risk in a local government area.

The following methodology has been used to identify individual properties within the preliminary Powells Creek FPA:

- **Mainstream flooding** (Inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam)**:** Any property within the open channel section of Powells Creek that has land below the peak 1% Annual Exceedance Probability (AEP) flood level plus a 0.5m freeboard, with the level extended perpendicular to the flow direction.
- **Overland flooding** (Overland flow flooding is defined as surface runoff, typically excess rainfall or stormwater runoff from homes, driveways and other surfaces)**:** Greater than or equal to 10% of the lot is affected by the 1% AEP peak flood depth of greater than 0.15m.

How can the height of a flood be predicted?

The flood study undertaken by WMAwater established a hydrologic/hydraulic modelling system utilising historical records of rainfall, topography, land surface, Elva Street gauge data and water catchment data for the study area. Detailed information is produced when the model is run to reflect different flood scenarios like a 1% AEP flood event. A 1% AEP flood event means a 1 in 100 year flood event that has the probability of occurring on average once every 100 years, i.e. there is a 1% chance of a flood of this size occurring at a particular location in any given year. This does not mean that if a location floods one year that it will not flood for the next 99 years. Nor, if it has not flooded for 99 years that it will necessarily flood the next year. Some parts of Australia have experienced more than one '1 in 100 year' floods within a decade of each other. This information is overlayed onto maps that illustrate the water depths within the study area.

How many properties have been identified that are at risk of flooding?

Of the 1,447 properties within the Powells Creek catchment, only 217 properties were identified as being located in a Flood Planning Area.

What was the criteria applied to identify a flood prone property?

Building floor levels were estimated by:

- The floor levels were estimated based on the ground level at the front door obtained by ALS plus the height of the floor above the ground.
- The height of the floor levels above the ground were estimated by visual inspection based on analysis of available digital imagery.

My property is not in the study area but is near identified flooding areas, do I need to do anything?

The Draft Flood Study does not directly affect you, but may contain useful background information to assist you in assessing and managing your risk. You are encouraged to view the study. It would also be worth visiting the website of the NSW SES (ses.nsw.gov.au) to find some useful information on how to manage flood risk.

What do I need to do if my property has been identified as being affected by potential flooding and how can I minimise the impact of flooding?

You do not need to take any immediate action as the likelihood of flooding in the area has not increased based on the study. However, because the study identifies the potential risk of flooding to your property, you can be better prepared if this does occur. For instance, it may be a good idea to ensure valuable items are not stored under your house or on the floor in the garage. It is better to store these items in a location where they are less likely to be impacted by a flood, should one occur.

NSW SES provides advice on how to manage flood risk.

Information for property owners and occupiers within the Flood Planning Area

What is Council doing to protect our lots from flooding?

Council cannot control a flood event, however we can provide information to residents to better equip them in the case of a flood. We will also be putting in place development controls that will provide guidelines for any future development. The aim of this is to minimise the future risks associated with flooding. For instance, this study will be used to ensure that future development does not make flooding worse in your area. At later stages of the Floodplain Management Process, mitigation measures may be considered by Council. To view the Floodplain Management Process, visit collaborate.canadabay.nsw.gov.au.

What does it mean if my property has been classified as a flood control lot?

In a planning context, properties that have been identified as being within the flood planning area are classified as a flood control lot. This means that the land will be subject to flood-related development conditions to reduce the impact of flood. For example, if your property is identified, you will need to ensure that the floor level of any new building work is above the flood level to minimise the risk of loss to your property.

Properties identified as being subject to flood related planning controls will be identified as a flood control lot on the property's 10.7 Planning Certificate, which is issued when people are buying and selling property.

What is a Planning Certificate?

A Planning Certificate provides landowners, prospective buyers and developers information about the land use zoning and development controls applying to the land, as well as information about potential development constraints.

Will being identified as being a flood control lot affect the value of my property?

There are many houses across Sydney that are listed as being at potential risk of flooding. The value of houses can vary significantly depending upon a range of factors such as site conditions, adjoining developments, market conditions and interest rates. Ultimately, it is the market that determines house prices and Council is not in a position to advise on the value of individual properties.

Will it affect my building insurance premiums?

Insurance premiums are determined by individual insurance companies based on their assessment of risk and probability, and are outside of Council's control. Only your insurance company can comment on this.

My property has never been affected by a flood, so why is it now classified as a flood control lot?

Floods do not occur in a regular pattern. It is not uncommon to experience a long period of no floods, and then a period of several floods. The study has shown that there are limited records of past floods.

Evidence suggests that if you live near a creek, river, stormwater canal or in a low-lying area, you may be at risk from flooding even if

you have not experienced flooding in the past. Even if there is a lack of historical evidence of flooding at your property, it does not necessarily mean it is not at risk from potential flooding.

Community consultation

Community members are encouraged to review the Draft Flood Study and provide their feedback during the public exhibition period from 6 May to 16 June 2022 via:

- Online: collaborate.canadabay.nsw.gov.au
- Email: feedback@powellscreek.com
- Post: Drainage, Marine & Floodplain Engineer
  City of Canada Bay
  Locked Bag 1470
  Drummoyne NSW 2470

If you disagree with the study's findings, you will be required to provide detailed evidence of any purported inaccuracy in the study by providing alternative modelling by experts.

How can I find out more information about flood planning?

Additional general information on flood planning is available from the NSW Department of Planning and Environment.. You can also download a copy of the Floodplain Development Manual 2005, which includes the NSW Flood Prone Land Policy at bit.ly/floodplaindevelopmentmanual

What happens next?

At the end of the public exhibition period, Council will review the feedback received before finalising the study. Once it has been adopted by Council, it will be used to guide the rest of the floodplain management process defined by the NSW Government's Floodplain Development Manual. The results of the study will be used to manage the impact of flooding upon our community. To view the floodplain management process, visit collaborate.canadabay.nsw.gov.au.

Terminology index

What does "flood prone land" mean?

"Flood prone land" is a specific technical term used in the NSW Floodplain Development Manual to refer to all land below the level of the Probable Maximum Flood.

What is a Probable Maximum Flood Level?

The Probable Maximum Flood (PMF) is described as the largest flood that could conceivably occur at a particular location and is modelled based on Probable Maximum Precipitation which is in turn calculated by methods developed by the Bureau of Meteorology.

What is a flood control lot?

A flood control lot is a lot identified as being within the Flood Planning Area on the Flood Planning Area Map. It is generated by adding a freeboard to the modelled 1% AEP flood surface level. A flood control lot is land or property that is subject to flood-related development controls.

What is a 1 in 100 year flood?

This is largely superseded terminology used to indicate a flood that has a 1% chance of occurring in any given year. The preferred term is now 1% AEP. AEP stands for Annual Exceedance Probability. It does not mean that if a flood occurs in one year, it will not flood for the next 99 years.

What are flood-related development controls?

Flood related development controls specify the special conditions for developing or building on a flood control lot. Typically, these controls include conditions that may require the floor level of new building work to be above a certain level.

What is a Flood Planning Level?

A Flood Planning Level (FPL) is the estimated height of a 1% AEP flood event, with freeboard added (see below). It is used as the basis to determine planning controls for flood control lots.

What does "freeboard" mean?

The term "freeboard" is used to describe a safety buffer, to account for unknown factors and uncertainties in the modelling that determines the Flood Planning Level and is typically applied as 0.5m above the 1% AEP Flood Level.

What is ponding?

Ponding generally describes relatively still water that remains for a time after a flood event because it is in a low-lying or trapped area and cannot easily drain away.

What is mainstream flooding?

Mainstream flooding is defined as water that flows over the banks of creeks, river canals and lagoons. In other words, when a creek or river breaks its banks.

What is overland flow?

Overland flow flooding is defined as surface runoff, typically excess rainfall or stormwater runoff from homes, driveways and other surfaces.

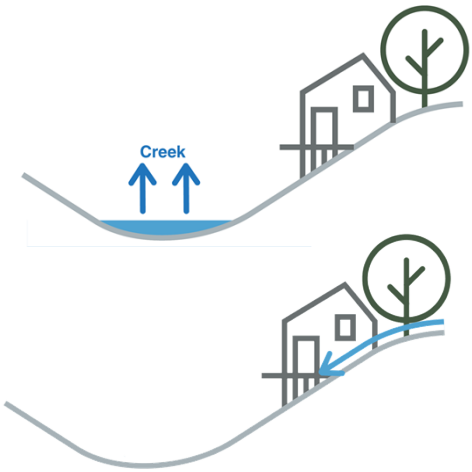

Figure 1 – Powells Creek catchment flood study area