KINGSWOOD PUBLIC SCHOOL

FLOOD EMERGENCY RESPONSE PLAN

Prepared for: Department of Education (DoE)
By: **en**struct group pty ltd
Revision: C
March 2025

KINGSWOOD PUBLIC SCHOOL

FLOOD EMERGENCY RESPONSE PLAN

ISSUE AUTHORISATION

PROJECT: KINGSWOOD PUBLIC SCHOOL

Project No: 220072

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A	20/12/24	For Information	MZV	TAH	PAL
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Executive Summary

enstruct Group have been engaged by Schools Infrastructure NSW (SINSW) to provide a Flood Emergency Response Plan (FERP) for the proposed works at Kingswood Public School (hereafter referred to as KPS) at 46-54 Second Avenue, Kingswood, NSW.

The aim of the FERP is to assess the impact of a 1% Annual Exceedance Probability (AEP) storm event, and a Probable Maximum Flood (PMF) event on the proposed development, as well as the impacts of the proposed development on the surrounding properties in these storm events. This assessment will be undertaken with reference to a Flood Level Enquiry provided by Penrith City Council (PCC) and the PCC College, Orth and Werrington Creeks Catchment Overland Flow Flood Study.

Additionally, the FERP aims to recommend appropriate procedures for all staff and students onsite to follow to maximise their safety and reduce risk of death and injury due to flooding. This report will raise awareness of the risk of flooding and will include flood warnings, safe evacuation routes, designated safe assembly areas, and evacuation management plans. The FERP will also discuss the flooding conditions in the vicinity of the site, proposed methods of detecting flooding, proposed routes for refuge, and details of management of all personnel on site during a flooding event.

It is anticipated that when extreme weather conditions associated with a 1% AEP storm event, or larger, are forecast that the Emergency Planning Committee of KPS will be aware of the prediction with sufficient time to cancel school activities and any planned extracurricular events outside of school hours. If the site were occupied in a 1% AEP or PMF storm event, the safety strategy is to **shelter in place** as a last resort. When there is no need for an immediate evacuation, an evacuation route is available via the main entrance at the north of the Site on Second Avenue.

Contents

I. *Definitions*

For the purpose of this Plan, the definitions below apply:

Assembly area(s)

The designated place or places where people assemble during the course of an evacuation.

Emergency

An event that arises which may adversely affect the occupants or visitors in a facility, and which requires an immediate response.

Emergency plan

The written documentation of the emergency arrangements for a facility, generally made during the planning process. It consists of the preparedness, prevention and response activities and includes the agreed emergency roles, responsibilities, strategies, systems and arrangements.

Emergency Planning Committee (EPC)

Elected persons from the school community who are responsible for the documentation and maintenance of the flood risk management plan and strategy at KPS.

Emergency Control Organiser (ECO)

A person or persons appointed by the emergency planning committee to direct and control the implementation of the facility's emergency response procedures.

Evacuation

The orderly movement of people from a place of danger.

Refuge

An area that is specifically designed to protect people from flood and provides direct access to an exit.

Notes:

1. An area of refuge is intended to facilitate a safe delay in egress from the floor or area, thus constituting a space for people to await assistance for their evacuation.
2. Refuges are normally nominated by the relevant warden.

Warden intercommunication point (WIP)

The location on a floor or evacuation zone that includes a handset provided through which instructions can be received from the intercommunication panel via the emergency intercom system.

II. *Abbreviations*

The following abbreviations are used in this Emergency Plan document:

AHD	Australian Height Datum
AEP	Annual Exceedance Probability
AP	Assembly Point
ARI	Average Recurrence Interval
DDA	Disability Discrimination Act
ECO	Emergency Control Organization
EPC	Emergency Planning Committee
FERP	Flood Emergency Response Plan
FEMP	Flood Emergency Management Plan
FFL	Finished Floor Level
PMF	Probable Maximum Flood
SES	State Emergency Service
WIP	Warden Intercommunication Point

1 Introduction

This FERP is prepared for the proposed development of a new building at KPS. The site is located within the Penrith City Council (PCC) Local Government Area (LGA). This report is based on information obtained from:

- PCC Development Control Plan (DCP) 2014 Part C3.5 Flood Planning,
- Penrith Local Environment Plan (LEP) 2010 Part 5.21 Flood Planning,
- PCC College, Orth and Werrington Creeks Catchment Overland Flow Flood Study 2017 Volume 1 & 2,
- PCC Flood Level Enquiry (17/12/2024) Reference. P-820532-Y7N5,
- CMS Surveyors Site Analysis (21/08/2023) Reference 22695,
- Correspondence from NSW State Emergency Service dated 6 March 2025, and
- Fulton Trotter Architectural Plans (14/01/2025) Project Set 7068KW01.

1.1 Site Location

The KPS development is located at 46-54 Second Avenue, Kingswood. The Site is bound by Second Avenue to the north, residential properties to the west, Western Sydney University Kingswood Campus to the east, and Anglicare housing to the south, refer to **Figure 2**. Site levels generally fall from the east to the west, however, the northern-most portion falls to the north. The highest point of the site is at the south-east corner with an elevation of 59.00m, and the lowest point is at the north-west corner with an elevation of 43.00m. There is a valley running through the southern portion of the site, just south of the bisecting tree line, and a gentle crest north of the tree line. There is an existing stormwater drainage line from the Western Sydney University campus underlying the valley, refer to **Figure 1**.

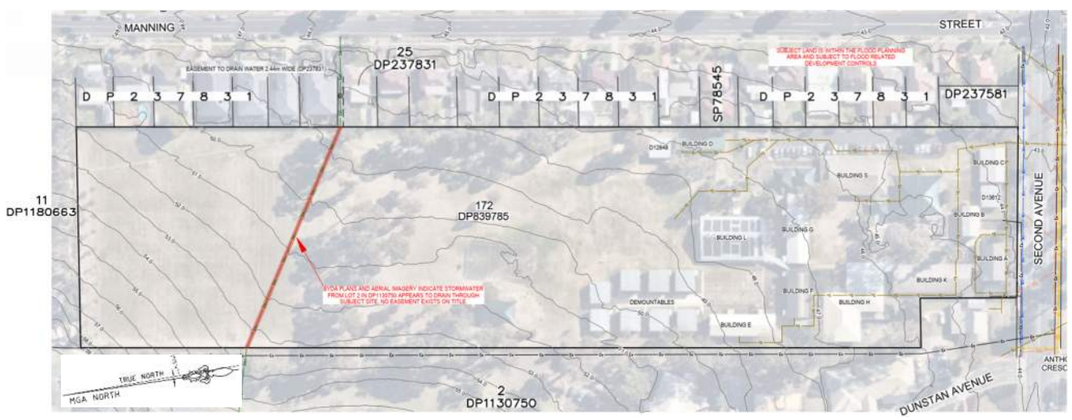


Figure 1: Site Survey (Source: CMS Surveyors, Ref. 22695)

Figure 2: The Site (Source: NearMaps)

2 Flood Risk

The Site lies within the Orth, Werrington and College Creek catchment area, refer to **Figure 3,** identified by PCC in their Flood Study for this catchment. The Site is south of Orth Creek and just west of College Creek. The catchment area encompasses Kingswood and spans a total of 12km^2 including the surrounding suburbs of Werrington, Werrington County, Cambridge Park, Caddens, and parts of Orchard Hills. The flood study was conducted using TUFLOW and is expected to be up to date as of 2017.

The catchment is characterised by a mixture of open spaces and developed land. The urbanised areas of the catchment are typically drained by a Council owned stormwater drainage system that discharges either directly to Werrington Creek, or to Orth or College Creek both of which then fall to Werrington Creek. Werrington Creek generally flows to the north-east before meeting South Creek downstream of Dunheved Road.

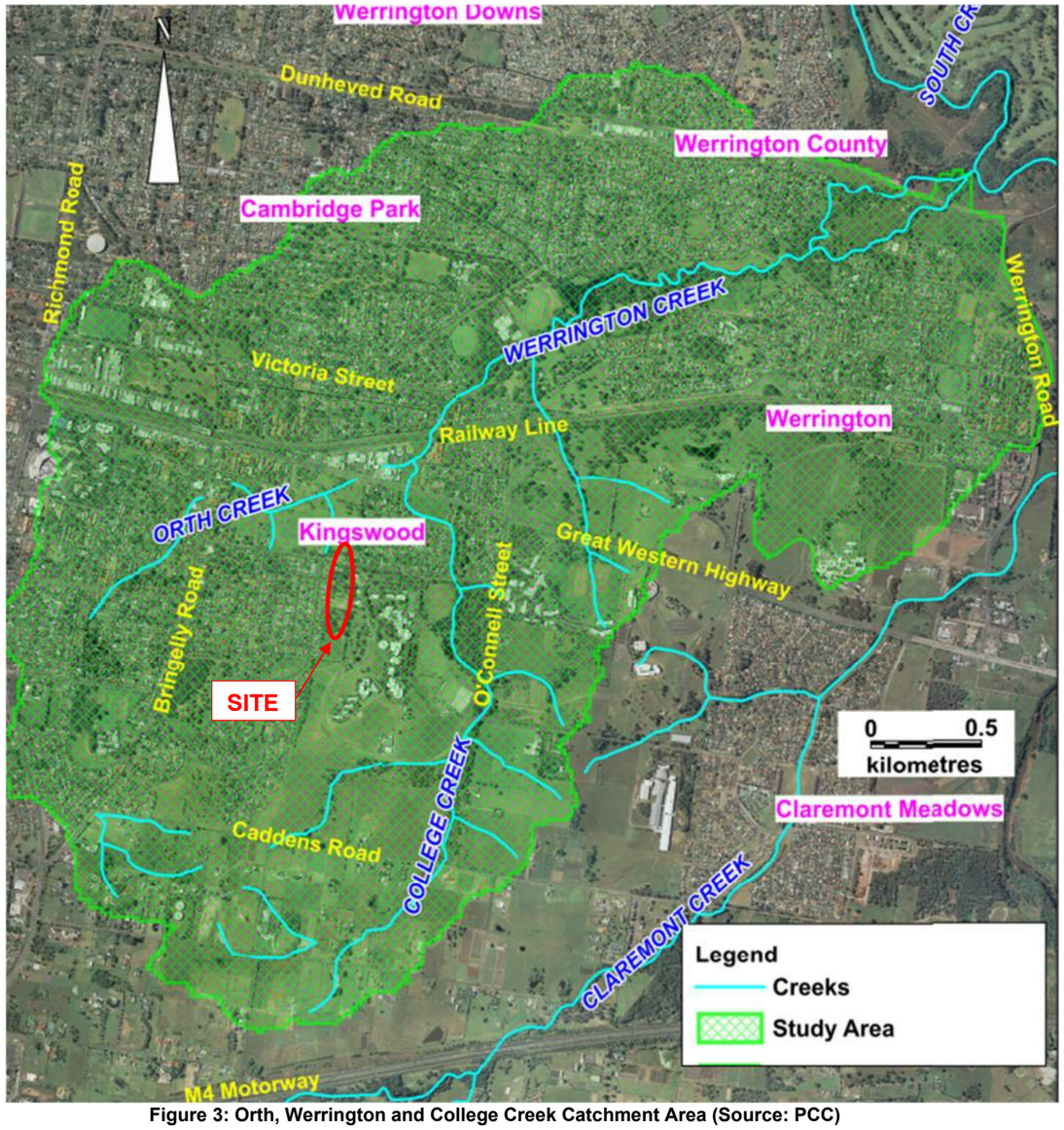


Figure 3: Orth, Werrington and College Creek Catchment Area (Source: PCC)

The Flood Study provides the Flood Planning Area within the catchment. The area highlighted within the Site as a Flood Planning Area, see **Figure 4**, aligns with the 1% AEP flood extent within the Site and hence, as per Section 9.2.2 of the Flood Study, the flood inundation depth is less than 300mm and deemed shallow flow.

Figure 4: Flood Planning Area (Source: PCC)

2.1 Flood Characteristics

A combination of the flood maps provided by PCC in the Flood Study, alongside a site-specific Flood Level Enquiry, has been utilised to identify the flood characteristics at the Site in various storm events.

The flood maps provided as part of the Flood Study indicate there is a sag point at the western end of the valley through the site. This sag point experiences flooding in storm events from the 2-year Average Recurrence Interval (ARI) to the PMF event. The flood depths are minor and remain less than 300mm in all storm events. The localised ponding is further verified through confirmation of no failure, surcharge or ponding at the pits in the adjacent streets in all events up to the 0.2% AEP storm event.

Figure 5 shows the 1% AEP flood extent through the Site highlighted in bright blue, additionally, the proposed new building extent is highlighted in red for reference. At the eastern-most point of the flood extent, the level reaches around RL50.00m and at the boundary it reaches RL48.70m. Analysis of the Flood Study indicates these flood depths are less than 300mm. The flooding in the 1% AEP event is contained to the lowest point of the valley that bisects the site. A small portion of the centre of this flooding is categorised as flood storage with flood fringe surrounding the storage.

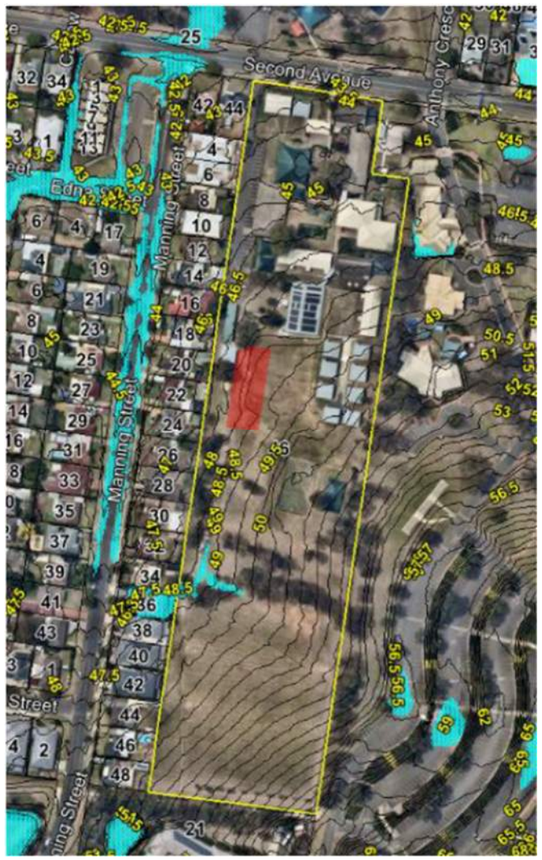


Figure 5: 1% AEP Flood Extent with Proposed Development (Source: PCC)

Figure 6 shows the PMF flood extent through the Site highlighted in blue, additionally, the proposed new building extent is outlined in red for reference. At the eastern-most point of the flood extent through the valley, the level reaches around RL51.00m and at the boundary it reaches RL48.80m. Analysis of the Flood Study indicates these flood depths are less than 300mm. There is a natural crest running through the site between the valley and the school buildings to protect the school from these storm events. There are additional spots of ponding through the Site, particularly south of the Covered Outdoor Learning Area (COLA), adjacent to Building L, and at the eastern boundary adjacent to the demountable buildings. The flooding at the valley is primarily categorised as flood storage with some flood fridge around the edges and floodway through the centre.

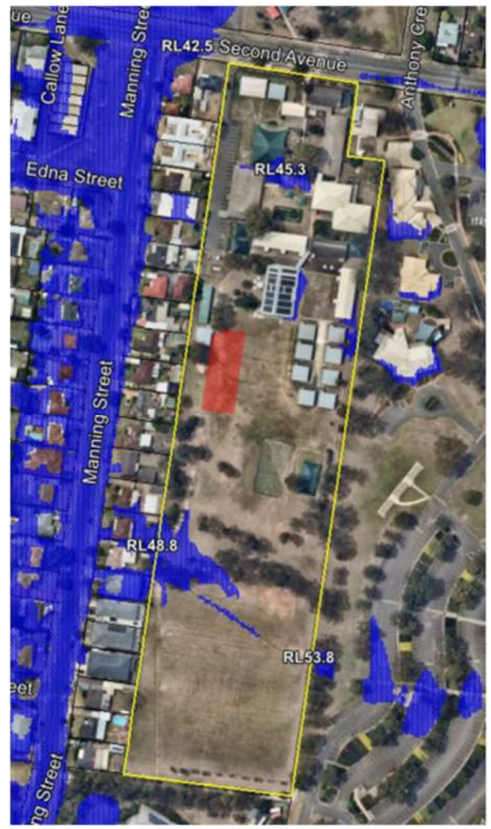


Figure 6: PMF Flood Extent with Proposed Development (Source: PCC)

The Flood Study identifies both the PMF and 1% AEP flooding of the Site as Low-Risk Flood Hazard Category. The hazard category is used to define the potential impact that flooding will have on a development and people, it considers the depth, velocity and rate of rise of floodwaters, the size and duration of flooding, effective warning time and potential for evacuation, and flood awareness. The Low-Risk rating indicates the site can, if necessary, be evacuated by trucks, and able-bodied adults would have little difficulty wading to safety. Additionally, the Site is identified as an “Indirectly Affected Area” as the Emergency Response Precinct Classification in the 1% AEP and PMF flood event.

3 *Flood Planning Requirements*

The flood planning requirements for the development are outlined in the PCC DCP Part 3.5. The policy describes the risks associated with development at or below the Flood Planning Level (FPL). The FPL is the 1% AEP flood level + 500mm. The key risk associated with this kind of development is obstruction of flood movements and partial or full blockage of floodways or flood storage areas which can then redistribute flood flows or impacts. It is clear from the distance between the proposed building and the flood affected areas of the Site, in **Figure 5** and **Figure 6**, the proposed development will create no obstruction of flood movements or blockages of flood storages or floodways.

Specific flood planning requirements outlined in the PCC DCP Part 3.5 that apply to this development are:

- Section 6:

a) Floor levels shall be at least 0.5m above the 1% AEP (100-year ARI) flood or the buildings shall be flood-proofed to a least 0.5m above the 1% AEP (100-year ARI) flood. If floor levels are below the 1% AEP (100-year ARI) flood the matters listed in section 7 i) – vii) shall be addressed.

b) Flood safe access and emergency egress shall be provided to all new developments.

- Section 7:

a) Where the application is for an extension to an existing building on land at or below the flood planning level or for new development that can be classed as infill development, Council may approve of the development with floor levels below the 1% AEP (100 year ARI) flood if it can be demonstrated by the applicant that all practical measures will be taken to prevent or minimise the impact of flooding. In considering such applications and determining the required floor level, Council shall take into account such matters as:

i) The nature of the business to be carried out;

ii) The frequency and depth of flooding;

iii) The potential for personal and property loss;

iv) The utility of the building for its proposed use;

v) Whether the filling of the site or raising of the floor levels would render the development of the property unworkable or uneconomical;

vi) Whether the raising of the floor levels would be out of character with adjacent buildings; and

vii) Any risk of pollution of water from storage or use of chemicals within the building.

- Section 11:

b) Council will generally not support an application for any land use which may attract large numbers of people (including schools, function centres, childcare centres, hostels, etc.) on land below the flood planning level and on land that cannot be safely and effectively evacuated during a 1% AEP (100-year ARI) flood event.

- Section 13”

a) Council has undertaken a Penrith Overland Flow Flood 'Overview' Study. Consideration must be given to the impact on any overland flow path. Generally, Council will not support development obstructing overland flow paths. Development is required to demonstrate that any overland flow is maintained for the 1% AEP (100-year ARI) overland flow. A merit-based approach will be taken when assessing development applications that affect the overland flow.

The maximum 1% AEP flood level within the Site is RL 50.00m and the proposed building FFL is 48.100m. Clearly, the proposed floor level is below the 1% AEP flood level, however, the proposed development will create no impact on the existing flood conditions, nor will the flooding affect the proposed development. The proposed building resides approximately 100m from the 1% AEP flood extent and almost perpendicular to the direction of flow of the flooding. Moreover, there is a crest in the Site topography between the valley where the flooding occurs and the proposed building. Consequently, there is negligible risk of any impact to the development or the flood waters. A similar situation is true for the PMF flood event.

In the 1% AEP flood event, in the case of emergencies, Second Avenue can be traversed by trucks in the westerly direction and higher ground can be sought to the south. Second Avenue west and east of the Site is blocked by floodways in the PMF event.

In the event of any storm event the school facilities will not be impacted. Hence, the school can return to normal operations without the need for substantial works to repair the facilities.

4 *Flood and Evacuation Warnings*

There are a number of official flood warnings issued by the Bureau of Meteorology, State Emergency Service (SES) and NSW Police which can assist in the preparation of a potential flood and should be monitored by the Emergency Planning Committee of the school. The warning types are:

Severe Weather Warnings (Bureau of Meteorology):

Severe Weather Warnings are provided for potentially hazardous or dangerous weather that is not directly related to severe thunderstorms, tropical cyclones or bushfires. They are issued for sustained winds of gale force; wind gusts of 90km/h or more; very heavy rain that may lead to flash flooding and abnormally high tides.

Severe Thunderstorm Warnings (Bureau of Meteorology):

A Severe Thunderstorm Warning is issued if the severe phenomena are directly caused by the thunderstorm and include wind gusts of 90km/h or more; gale force winds; tornados; blizzards\ heavy rainfall that is conducive to flash flooding; hail with a diameter of at least 2cm; abnormally high tides and unusually large surf waves expected to cause dangerous conditions on the coast.

Flood Watch (Bureau of Meteorology):

A Flood Watch is issued by the Bureau of Meteorology if flood producing rain is expected to happen in the near future and flooding is expected to be above Minor level. A Flood Watch covers a river basin or catchment. The general weather forecasts can also refer to flood producing rain.

Flood Warning (Bureau of Meteorology):

A Flood Warning is issued by the Bureau of Meteorology when flooding is expected to occur or is happening. Flood Warnings provide a predicted flood level and time at which a river will reach that level. Flood Warnings are issued in relation to flood gauges which are situated at a certain point on a river. Flood Warnings may contain observed, peak or predicted river heights.

NSW SES Flood Warnings (SES):

Flood warnings are issued via the NSW SES website, NSW SES social media channels and by listening to local ABC radio stations. These warnings include likely consequences, and what actions are required to protect yourself and your property.

Alongside this, NSW SES has also developed an all-hazards warning platform, Hazard Watch, to provide an additional channel for communities to access important warning information.

Evacuation Warning (SES):

When flooding is likely to cut evacuation routes or inundate property, the NSW SES issues warnings in line with the Australian Warning System (AWS). The AWS is a nationally consistent, three-tiered approach designed to make warnings clearer and lead people to take action ahead of severe weather events. The warning system comprises warning levels, action statements, hazard icons, colours and shapes. Being prepared will allow you to respond quickly if a warning is issued.

It is important to inform occupants on the site of current advice and warnings. This can be done via the PA system. Typically, visitors and any itinerant population may seek advice from the reception. For this reason, it is imperative that reception staff are kept informed of any evolving flood situations.

Other warnings will be:

Monitor the flood situation:

In addition to receiving an official warning, monitoring the situation before flooding begins to impact the site is important. Monitoring the situation can be undertaken by personally witnessing the height and rate at which floodwaters are rising; maintaining contact with other people in the building and local and government radio stations to receive and share updates on the flood situation.

Additionally, the Penrith City Disaster Dashboard (https://penrith.disasterdashboards.com/dashboard/overview) can be monitored as well as the Penrith NSW SES Facebook page and the PCC Facebook page.

The likelihood of flash flooding:

Severe Weather Warnings and Severe Thunderstorm Warnings issued by the Bureau of Meteorology warn of the possibility of flash flooding.

When flash flooding is likely, leaving low-lying businesses (evacuation) well before flash flooding begins is the best action to take, but only if it is safe to do so. If you are trapped by rising floodwater,

seek refuge in the nearest building within the school site. Stay there and call '000' (triple zero) if you need rescue.

All warnings will be issued through the Bureau of Meteorology website, television and local radio stations for weather warnings such as WOW FM 100.7 FM, 702 ABC SYDNEY 702 AM, 2CH 1170 AM, 2DAY FM 104.1 FM, 2GB 873 AM, 2ME 1638 AM, 2SM/GORILLA 1269 AM, 2UE 954 AM, C91.3 FM 91.3 FM, MIX 106.5 106.5 FM, NOVA 96.9 FM, RADIO 2MORO 1620 AM, RADIO 2RDJ 88.1 FM, SBS RADIO 97.7 FM, SYDNEY'S 95.3 95.3 FM, TRIPLE M 104.9 FM and WFSM 101.7 FM.

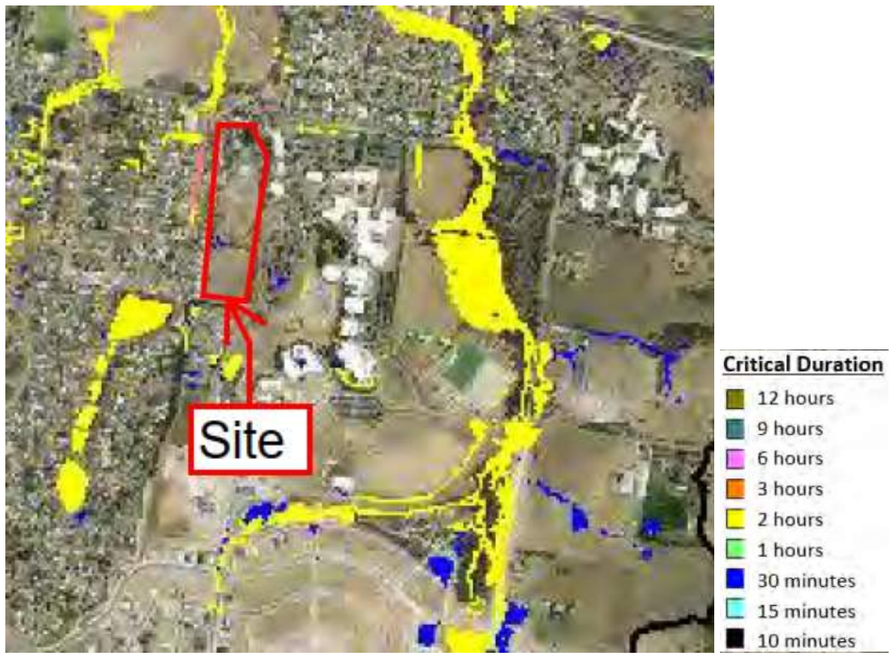
5 Flood Response Preparation

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Response Plan that they prepare the site for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden during emergency events, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

The Emergency Planning Committee is also to organise evacuation drills and flood emergency kits to prepare all staff and students for flood risks.

5.1 Flood Inundation Time

PCC's flood Study calculated the critical storm duration for the site in the 1% AEP to be two hours. This time duration is not considered 'flash flooding' and there would be sufficient warning following the start of the storm event.



5.2 Evacuation Drills

Evacuation drills run through the flood management procedure onsite and are designed to increase flood awareness for all students, staff, and visitors of the campus. These drills are to be undertaken annually to familiarise staff and students of the procedures when responding to a flood event.

5.3 Flood Emergency Kit

Potential items for a flood emergency kit are outlined at *www.floodsafe.com.au* and reproduced below:

- A copy of the building Emergency Management Plan;
- A torch with spare batteries;
- A first aid kit;
- Waterproof bag for valuables;
- A copy of emergency numbers; and
- Battery operated radio with AM and FM frequency access (with spare batteries).

The kit should be kept in each classroom or office area for efficient deployment in the event of an emergency. The contents of the kit and management during a flood event will be the responsibility of the Chief Warden. This storage area should also be used for protecting hazardous materials and valuable goods from flood water.

6 Flood Response Personnel

Summarised below are the personnel involved in the management of the flood response at the site, and corresponding responsibilities. The role of Chief Warden would typically be assigned to the school principal, or nominated by the Emergency Planning Committee

Table 1: Personnel and Responsibilities

Personnel	Responsibility
Emergency Control Organisation	• Coordinate flood evacuation drills
Chief Warden	• Monitor weather daily for upcoming extreme rainfall events; • Decide when evacuation is required; • Liaise and communicate with SES or Emergency Services personnel if they attend site; and • Manage the evacuation process in consultation with SES or Emergency Services.

6.1 People with Disability and Sensory Considerations

Flood evacuation procedures/protocols are to consider the requirements of those with disability and sensory considerations. A disability and sensory conditions register is to be maintained by the public school for these purposes.

7 Emergency Contact

The Chief Warden is to be contactable via the WIP phone at all times to ensure they are ready to assist any students or staff.

- For emergency assistance during flood events, please call the SES on 132 500.
- If you are in a life-threatening situation please call Police, Fire or Ambulance on “000” (triple zero).
- Local Penrith Police Station on (02) 4721 9444.

8 Assembly Point (AP) and Evacuation Routes

If the SES flood warnings are issued with sufficient time prior to the flood emergency overnight, it is recommended that the school driveway and entrance at Second Avenue remains closed to prevent staff, students, deliveries, and visitors from entering the carpark. If the flood warning is issued during school operation hours, the driveway is to be closed to prevent vehicles leaving the site, students are to assemble with a teacher to register that they are present prior to organising to leave the site into suitable care, or to travel home. This warning buffer allows sufficient time for site occupants to leave the site through provided evacuation routes before they are obstructed as the water level rises in large storm events. If occupants delay leaving the site, they may become isolated by the flood water at the northern boundary which may prevent safe exit from the site until the storm event subsides.

Monitor radio and other communications taking particular notice of:

• Manning Street: Flood maps indicate this evacuation route may be impacted by flooding. Evacuation should not be attempted if there is notice of flooding here.

• Second Avenue: This road has a low risk hazard category for the 1% AEP and PMF and can be used as an evacuation route. Evacuation should not be attempted if unless these roads are open.

If there is no warning due to flash flooding, during school hours, then the driveway is to be closed to prevent vehicles leaving the site, students are to assemble with a teacher to register that they are present and are to remain in the classroom (shelter in place) until the storm event subsides. Teachers should inform the Chief Warden all are present and accounted for or otherwise.

For events outside of school hours, where the school premises are used by external parties including local community, election polling centres, recreational activities etc., all parties must be familiar with this FERP and be provided with necessary access to evacuation assembly points and routes.

9 Flood Response Actions

9.1 Close the school site

When a Flood Advice has been issued, prepare to close the school. To minimise risk to the community, staff and students should be advised to stay at home.

- Inform school students, parents, and staff via usual school communications channels (email, sms, school app) that the campus will be closed.
- Update the Kingswood school’s Facebook/Social Media pages and send an email/text message to all parents to outline campus closure and that evacuation has been required
- Close and lock the gates. Provide signage indicating that the school is closed.

9.2 *Evacuation during school hours and after hours*

This section relates to an evacuation procedure to be adopted in the event that immediate evacuation is not required but departure from the site is to be undertaken in preparation for a predicted large storm event. Once a Flood Warning or Flood Bulletin for the PCC LGA has been issued, the following procedure is to occur to manage safe exit of students and adults alike.

- Sound evacuation tone**;**
- Chief Flood Warden to be on hand if staff call or require guidance;
- Chief Flood Warden to make contact with Emergency Services to request assistance;
- Leave signage at site entrance that evacuation has occurred;
- Update the RPS Facebook/Social Media pages and send an email/text message to all parents or users of the site to outline campus closure and that evacuation has been required;
- Instruct parents to follow announcements released on the NSW Government School Updates app (available to download here: https://apps.apple.com/au/app/nsw-school-updates/id1494658146);
- Staff to supervise all students in their care and take a roll of attendance before allowing them to leave the school campus;
- Staff to assist students in their care to organise a suitable relocation to a safe refuge;
- Students to move towards the site entrance on Second Avenue in an orderly fashion under the supervision of a teacher when transport arrives;
- Chief Flood Warden to maintain regular communication with students, staff and visitors, providing updates on the situation;
- Site to be shut down, where possible of all but essential power; and
- Staff to leave the site following student evacuation.

9.3 *Shelter in Place*

If an Emergency Warning has been issued, it may no longer be safe to evacuate the site. In this instance, any persons remaining on site should shelter in place:

- Sound evacuation tone
- Chief Flood Warden to be on hand if staff call or require guidance
- Chief Flood Warden to make contact with Emergency Services to notify if immediate assistance is required, or all safe and accounted for
- Staff to assist students in their care to organise a suitable relocation to a safe refuge for the PMF event.

10 Revision of Flood Emergency Response Plan

This plan should be reviewed if the PCC requirements or PCC College, Orth and Werrington Creeks Catchment Overland Flow Flood Study are revised, and if the street drainage surrounding the site is upgraded.

The Emergency Planning Committee shall be responsible for ensuring the Flood Risk Management Plan is reviewed annually and updated as required. As part of the review, the Emergency Planning Committee shall contact Council annually to confirm if any new street drainage upgrades are planned or have been constructed.

11 Conclusion

It is important to monitor all flood warning websites such as Bureau of Meteorology and SES for campus occupants to have sufficient time to close the site and/or leave the site in a safe manner through the provided evacuation routes before they are obstructed as the water level rises in large storm events.

It is anticipated that when extreme weather conditions associated with a PMF event are forecast that the Emergency Planning Committee will be aware of the prediction with sufficient time to cancel school and any planned extracurricular events outside of school hours. If the site were occupied in a 1% AEP or PMF storm event, the management strategy is to **shelter in place** as both Second Avenue and Manning Street will be inundated with stormwater, it may be unsafe to allow students and teachers to leave the site. When there is no need for an immediate evacuation, an evacuation route is available via the school main entry at the north of the Site on Second Avenue. This evacuation route can only be used once the authorities have deemed it safe to pass through the stormwater.

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the building for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

This FERP is to be reviewed if the PCC requirements or the PCC College, Orth and Werrington Creeks Catchment Overland Flow Flood Study are revised, and if the street drainage surrounding the site is upgraded.

Further, this FERP is reviewed regularly (on a yearly basis) and updated if the school communication and parent contact methods change.

APPENDIX A: FLOOD LEVEL ENQUIRY

Our reference: P-820532-Y7N5
Contact: Dr Elias Ishak
Telephone: 4732 7579

17 December 2024

Mia Veitch
Level 27, 680 George Street
SYDNEY NSW 2000

Dear Sir/Madam,

Flood Level Enquiry
Lot 172 DP 839785 - No 46-54 Second Avenue Kingswood

Please find enclosed Flood Level information for the above property.

Should you require any further information please do not hesitate to contact me on 4732 7579.

Yours sincerely

Dr Elias Ishak
Senior Engineer – Floodplain Management

Penrith City Council
PO Box 60, Penrith
NSW 2751 Australia
T 4732 7777
F 4732 7958
penrith.city

PENRITH CITY COUNCIL

Flood Information
Lot 172 DP 839785 - No 46-54 Second Avenue Kingswood

Date of Issue: 17 December 2024

The 1% AEP local overland flow flood levels affecting the above property are estimated to vary from RL50.0m AHD to RL48.7m AHD at the south-western boundary.

Property less than 0.5m above the 1% AEP flood level is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. The Penrith Development Control Plan 2014 is available from Council's website penrith.city.

Definitions

AEP – *Annual Exceedance Probability* – the chance of a flood of this size occurring in any one year.

AHD – *Australian Height Datum* – A standard level datum used throughout Australia, approximately equivalent to mean sea level.

Legend

	Extent of 1% AEP local catchment overland flow path. Generally depths less than 150mm is not shown.

Notes:

1. The contours shown above in yellow numbering are at 0.5m intervals and are based on Light Detection and Ranging (LiDAR) Survey undertaken in 2019. The contour levels are approximate and for general information only. Accurate ground levels should be obtained by a Registered Surveyor.
2. The flood level is based on current information available to Council at the date of issue. The flood level may change in the future if new information becomes available. The 1% AEP flood is the flood adopted by Council for planning controls. Rarer and more extreme flood events will have a greater effect on the property.
3. Council's studies are reflected in flood mapping for the City which show properties potentially affected by overland flows in excess of 150mm.
4. This property is shown on Council's flood mapping as potentially so affected.
5. Council imposes flood related development controls where, in its opinion, such controls are justified. Such controls may or may not be imposed with respect to this property in the event of an application for development consent.
6. If a development proposal is submitted with respect to this property, Council will consider the possibility of flood or overland flow in the context of the application. Council may impose a requirement that the applicant for development consent carry out a detailed assessment of the possible overland water flows affecting the property (a flood study) and/or may impose other controls on any development designed to ameliorate flood risk.
7. You are strongly advised if you propose to carry out development upon the property, that you retain the assistance of an experienced flooding engineer and have carried out a detailed investigation.
8. Council accepts no liability for the accuracy of the flood levels (or any other data) contained in this certificate, having regard to the information disclosed in Notes "1" to "4". As such you should carry out and rely upon your own investigations.

Penrith City Council
PO Box 60, Penrith
NSW 2751 Australia
T 4732 7777
F 4732 7958
penrith.city

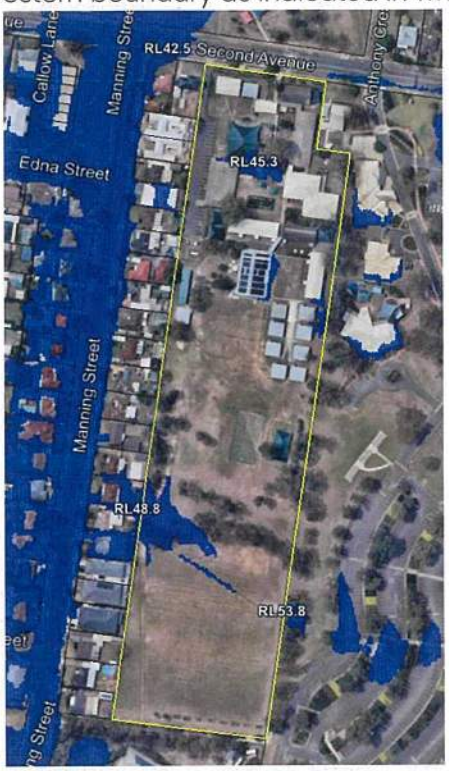
Dr Elias Ishak
Senior Engineer – Floodplain Management

PENRITH CITY COUNCIL

Flood Information
Lot 172 DP 839785 - No 46-54 Second Avenue Kingswood

Date of Issue: 17 December 2024

The PMF local overland flow flood levels affecting the above property are estimated to vary from RL53.8m AHD at the south-eastern boundary to RL42.5m AHD at the north-western boundary as indicated in white colour on map below.



Definitions

AEP – *Annual Exceedance Probability* – the chance of a flood of this size occurring in any one year.

AHD – *Australian Height Datum* – A standard level datum used throughout Australia, approximately equivalent to mean sea level.

Legend

	Extent of PMF local catchment overland flow path. Generally depths less than 150mm is not shown.

Notes:

9. The contours shown above in yellow numbering are at 0.5m intervals and are based on Light Detection and Ranging (LiDAR) Survey undertaken in 2019. The contour levels are approximate and for general information only. Accurate ground levels should be obtained by a Registered Surveyor.
10. The flood level is based on current information available to Council at the date of issue. The flood level may change in the future if new information becomes available. The 1% AEP flood is the flood adopted by Council for planning controls. Rarer and more extreme flood events will have a greater effect on the property.
11. Council's studies are reflected in flood mapping for the City which show properties potentially affected by overland flows in excess of 150mm.
12. This property is shown on Council's flood mapping as potentially so affected.
13. Council imposes flood related development controls where, in its opinion, such controls are justified. Such controls may or may not be imposed with respect to this property in the event of an application for development consent.
14. If a development proposal is submitted with respect to this property, Council will consider the possibility of flood or overland flow in the context of the application. Council may impose a requirement that the applicant for development consent carry out a detailed assessment of the possible overland water flows affecting the property (a flood study) and/or may impose other controls on any development designed to ameliorate flood risk.
15. You are strongly advised if you propose to carry out development upon the property, that you retain the assistance of an experienced flooding engineer and have carried out a detailed investigation.
16. Council accepts no liability for the accuracy of the flood levels (or any other data) contained in this certificate, having regard to the information disclosed in Notes "1" to "4". As such you should carry out and rely upon your own investigations.

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APPENDIX B: SITE SURVEY

A1

CONTOUR INFORMATION DERIVED FROM LIDAR DATA CAPTURED BETWEEN 16-18/07/2019. OBTAINED FROM NSW SPATIAL SERVICES

AERIAL IMAGERY DATED 21/06/2023 OBTAINED FROM NEARMAP

ALL BYDA SERVICES SHOWN ARE APPROXIMATE POSITION ONLY

NOTES:

- THE BOUNDARIES SHOWN HEREON HAVE BEEN DERIVED FROM DIMENSIONS SHOWN ON DEPOSITED PLANS AND MUST TO BE CONFIRMED BY SURVEY.
- IF CONSTRUCTION IS INTENDED TO BE UNDERTAKEN ON OR ADJACENT TO PROPERTY BOUNDARIES THE BOUNDARIES OF THE LAND MUST BE MARKED OR THE BUILDING SETOUT.
- THIS SURVEY IS FOR DESIGN PURPOSES OF THE SUBJECT LAND ONLY. THIS PLAN MUST NOT BE USED FOR ANY OTHER MATTER, PURPOSE OR CONSTRUCTION SETOUT.
- THIS PLAN HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF DEPARTMENT OF EDUCATION SCHOOL INFRASTRUCTURE NSW.
- RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES IS DIAGRAMMATIC ONLY. WHERE OFFSETS ARE CRITICAL THEY SHOULD BE CONFIRMED BY FURTHER SURVEY.
- EXCEPT WHERE SHOWN BY DIMENSION LOCATION OF DETAIL WITH RESPECT TO BOUNDARIES IS INDICATIVE ONLY.
- VISIBLE AND UNDERGROUND SERVICES HAVE NOT BEEN LOCATED. BEFORE YOU DIG AUSTRALIA (www.byda.com.au) SHOULD BE USED AND A FULL UTILITY INVESTIGATION, INCLUDING A UTILITY LOCATION SURVEY, SHOULD BE UNDERTAKEN BEFORE CARRYING OUT ANY CONSTRUCTION ACTIVITY IN OR NEAR THE SURVEYED AREA.
- THE INFORMATION IS ONLY TO BE USED AT A SCALE ACCURACY OF 1:700 AS NOTED
- DO NOT SCALE OFF THIS PLAN / FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED READINGS.
-

LEGEND 2: (SEE NOTES 2)

PLOTTED FROM BEFORE YOU DIG AUSTRALIA (BYDA) PLANS

- Cx = COMMUNICATIONS LINES (UNDERGROUND) PLOTTED FROM SERVICE DIAGRAMS, APPROXIMATE POSITION ONLY.
- EOx = ELECTRICITY LINES (OVERHEAD), APPROXIMATE POSITION ONLY
- Gx = GAS LINE (UNDERGROUND) PLOTTED FROM SERVICE DIAGRAMS, APPROXIMATE POSITION ONLY.
- Sx = SEWER LINE (UNDERGROUND) PLOTTED FROM SERVICE DIAGRAMS, APPROXIMATE POSITION ONLY.
- Wx = WATER MAIN (UNDERGROUND) PLOTTED FROM SERVICE DIAGRAMS, APPROXIMATE POSITION ONLY.

NOTES 2

- THE PURPOSE OF THIS PLAN IS FOR DESIGN ONLY. CURRENT PLANS ISSUED BY SERVICE PROVIDERS THROUGH "BEFORE YOU DIG AUSTRALIA" ARE STILL REQUIRED. CONTRACTORS AND SUBCONTRACTORS WILL NEED TO EXERCISE THEIR OWN "DUTY OF CARE" AND SHOULD MAKE THEIR OWN BEFORE YOU DIG AUSTRALIA ENQUIRY BEFORE EXCAVATION/CONSTRUCTION. YOU MUST ENSURE "BEFORE YOU DIG AUSTRALIA" ARE CURRENT AS THEY HAVE VARYING EXPIRATION DATES, AND MAY REQUIRE RE-ISSUE OTHERWISE THE INFORMATION ON THIS PLAN MAY NO LONGER BE CURRENT.
- WARNING: THE DIAGRAMS OF THE SERVICE PROVIDER MAY NOT DEPICT ALL ASSETS WITHIN THEIR NETWORK AND SERVICE PROVIDERS MAY SHARE CONDUITS AND/OR TRENCHES. SINGLE MARKED LINES MAY REPRESENT MULTIPLE CONDUITS, PIPES END/OR CABLES AT THIS LOCATION. WE RECOMMEND NON DESTRUCTIVE DIGGING/POTHOLING TO EXPOSE SERVICES FOR ACCURATE IDENTIFICATION AND DEPTH.

CAUTION: UTILITIES PLOTTED ON THE PLAN THAT TERMINATE IN THE SPECIFIED AREA MAY GO TO FEATURES THAT HAVE NOT BEEN SHOWN ON THE BYDA DIAGRAMS. THE RISK REMAINS WITH THE CLIENT AND/OR SUB CONTRACTOR AND THEIR RESPONSIBILITY TO EXERCISE CAUTION AT ALL TIMES.

SUBSURFACE UTILITY INFORMATION

SUBSURFACE UTILITY INFORMATION (SUI) AS5488 CLASSIFICATION
QUALITY LABELLING UTILITY INFORMATION BY A CLASSIFICATION CODE ALLOWS THE USER OF THIS INFORMATION TO UNDERSTAND CLEARLY HOW THE INFORMATION WAS COLLECTED AND THEN PLACE AN APPROPRIATE AMOUNT OF RELIANCE ON IT. PROJECT RISKS RELATED TO UNDERGROUND UTILITIES CAN THEN BE PROPERLY MANAGED.

QUALITY D:
INFORMATION IS THE MOST BASIC LEVEL OF UTILITY LOCATIONS USING ONLY INFORMATION BASED ON EXISTING BEFORE YOU DIG AUSTRALIA PLANS OR OTHER RECORDS AND BY MEASURING BOUNDARY OFFSETS ETC. THIS METHOD OF UTILITY LOCATION SHOULD ALWAYS BE TREATED AS AN INDICATION OF THE PRESENCE OF A SERVICE ONLY AND SHOULD NOT BE USED FOR DESIGN. TOLERANCE DOES NOT APPLY TO AN INDICATIVE LOCATION THAT IS ATTRIBUTED TO QUALITY LEVEL D.

1	FIRST ISSUE	21/08/2023

GDA2020

BEFORE YOU DIG www.byda.com.au Zero Damage - Zero Harm

0 7 14 21 28 35
SCALE 1:700

HORIZONTAL DATUM:
CO-ORDINATE SYSTEM: MGA GDA2020 GROUND
MARKS ADOPTED: N/A - TO BE CONFIRMED BY SURVEY

VERTICAL DATUM:
DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
MARKS ADOPTED: N/A - TO BE CONFIRMED BY SURVEY

CLIENT:

DEPARTMENT OF EDUCATION
SCHOOL INFRASTRUCTURE NSW

LGA: PENRITH

SITE ANALYSIS OF LOT 172 IN DP839785 No.45-54 SECOND AVENUE KINGSWOOD, NSW, 2747

CMS SURVEYORS PTY LTD
ACN 096 240 201
PO Box 463 Dee Why, NSW, 2099
2/99A South Creek Road, Dee Why, NSW, 2099
☎ (02) 9971 4802
✉ info@cmssurveyors.com.au
www.cmssurveyors.com.au

SURVEYED	DRAWN	CHECKED	APPROVED
N/A	NS	NS/RM	MDL
SURVEY INSTRUCTION	SCALE	DATE OF SURVEY	
22695	1:700@A1	N/A	
DRAWING NAME	22695 Site Analysis 1 KINGSWOOD (2312)	SHEET	ISSUE
CAD FILE	22695 Site Analysis 1 KINGSWOOD (2312)	2 OF 2	1

APPENDIX C: Correspondence from NSW State Emergency Service

Our Ref: ID 2918
Your Ref: 22173A.5TW_NOT_SES

6 March 2025

Tom West
DFP Planning Pty Ltd
PO Box 230
North Ryde NSW 1670

Via email

email: twest@dfpplanning.com.au
CC: helen.slater@ses.nsw.gov.au

Dear Tom,

Notification under section 3.10 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 in relation to the proposed upgrades at Kingswood Public School.

Thank you for the notification under section 3.10 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* in relation to the proposed upgrade of Kingswood Public School. It is understood that the proposed works comprise a new single storey classroom building to replace existing portable (demountable) classrooms (which are to be removed) and ancillary works.

The NSW State Emergency Service (NSW SES) is the agency responsible for dealing with floods, storms and tsunami in NSW. This role includes planning for, responding to and coordinating the initial recovery from floods. As such, the NSW SES has an interest in the public safety aspects of the development of flood prone land, particularly the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW.

We have reviewed the proposed upgrade and the flood risk information available to the NSW SES (e.g. College, Orth and Werrington Creeks Catchment FRMSP 2021, Penrith Overland Flow Flood "Overview Study" 2006, Penrith Local Flood Plan, etc) and note the site becomes isolated due to flooding on adjacent roads in a 1% Annual Exceedance Probability (AEP) local flood, with some flood inundation on the site south of the proposed new building in a 1% AEP event. An additional flow path forms in the northern part of the school site during a Probable Maximum Flood (PMF) event.

Based on this review, we provide the following advice:

- **Consider** the impact of flood behaviour on the infrastructure and people using the site, and the impact of flooding on the adjacent roads up to and including the PMF level and considerations of climate change. This is particularly important as the site is considered of sensitive use.
- **Pursue**, if relevant, site design and stormwater management that minimises any risk to the community. Any improvements that can be made to reduce flood risk will benefit the current and future community.
- **Ensure** workers and people using the facility during and after the upgrades are aware of the flood risk, for example through site inductions and by using signage.
- **Review** and **update** the school's Emergency Management and Evacuation Plan specific to a flood emergency event and align with the above considerations / advice provided herein.

To provide additional support in doing the above, we direct you to the online resources which are available to the community on the www.ses.nsw.gov.au website which include helpful pages such as:

- Know Your Risk | NSW State Emergency Service
- Local Plans and Guides (enter your town or postcode) - which includes locally endorsed NSW SES Flood Emergency Sub Plans and Local Flood Insights
- Business Continuity Plan - online tool which steps you through the process of developing your own Business Emergency Plan.

In addition, if the construction phase of the upgrades causes disruption to the operation of local roads, this may impact the ability for emergency vehicles to use these routes. The NSW SES requests that notification be provided where there are likely to be significant delays in the operation of the roads affected by the upgrades.

Please feel free to contact Claire Flashman via email at rra@ses.nsw.gov.au should you wish to discuss any of the matters raised in this correspondence. The NSW SES would also be interested in receiving future correspondence regarding the outcome of this referral via this email address.

Yours sincerely,

Kate Dawes
A/ Coordinator Emergency Risk Assessment
NSW State Emergency Service