

NEW HIGH SCHOOL FOR MEDOWIE

FLOOD EMERGENCY RESPONSE PLAN



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April 2025

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ISSUE AUTHORISATION

PROJECT: New High School for Medowie
Project No: 140220

Rev	Date	Purpose of Issue / Nature of Revision	Prepared by	Reviewed by	Issue Authorise by
A	29/11/24	DRAFT issue for REF	Tim Henderson		
B	30/01/2025	Issue for REF	Tim Henderson	Phillip Lambley	Phillip Lambley
C	5/02/2025	Issue for REF	Tim Henderson	Phillip Lambley	Phillip Lambley
D	21/04/2025	Updated for REF	Tim Henderson		

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Executive Summary

enstruct Group have been engaged by School Infrastructure NSW (SINSW) to provide a Flood Emergency Response Plan (FERP) for the development of the New High School for Medowie at 6 Abundance Street, Medowie, NSW.

The FERP aims to appropriately recommend procedures and actions for on-site personnel to maximise their safety and reduce the risk of death and injury due to flooding and flood water. The FERP aims to raise awareness of the risk of flooding by outlining flood warnings, safe evacuation routes, designated safe assembly areas, and evacuation management plans.

The FERP is based upon the based on the key principles of emergency management as set out in the Support for Emergency Management Planning (NSW Government, 2023).

Furthermore, the FERP discusses 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.

Flood threat levels are to be informed through flood bulletins and weather warnings. This communication is to be further broadcasted to students, parents and the wider school community through social media and other communication channels.

Based on a Floodplain Risk Management Study and Plan (FRMSP) by WMA Water for Port Stephens Council, and a Flood Impact Risk Assessment (FIRA) by enstruct for the proposed activity, site evacuation is to the west only, with safe H1 routes to exit the site, given that the depth and/or velocity permits to do so. Prior to this, it is recommended that the school site is closed down when extreme weather events are forecast. The management strategy can be summarised as:

- Close the site where there is sufficient flood warning or where there is extreme weather conditions forecast by the BOM
- Evacuate the site where there is sufficient warning and the site is occupied
- Failing the above measure, shelter in place until the storm subsides, with all the buildings located above the PMF level.

Based on the FIRA, it is noted that a portions of the site is subject to flooding during a PMF. Finished floor levels have all been located above the predicted PMF levels. As a result, the safest option for site occupants if the site has not already been closed and/or evacuated, is to shelter in place for a short period of time until flood waters recede. Consequently, this flood emergency management plan is recommended to be prepared, reviewed, updated and implemented in perpetuity to provide adequate access to emergency services and procedures where extreme weather is forecast, and in the event of flood events.

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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 internally, or from external sources, 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 emergency response plan and strategy at the New High school for Medowie.

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
FERP	Flood Emergency Response Plan
FFL	Finished Floor Level
PMF	Probable Maximum Flood
SES	State Emergency Service
WIP	Warden Intercommunication Point

1 Introduction

This Flood Emergency Response Plan (FERP) has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as “development permitted without consent” on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

The activity will be carried out at 6 Abundance Street, Medowie (the site). The purpose of this report is to establish a flood emergency preparations and procedures for the site.

1.1 Site Description

The site has a street address of 6 Abundance Road, Medowie. It is 6.51ha in area, and comprises one allotment, legally described as Lot 3 in DP788451.

A large proportion of the site is currently unused and vacant. A small shed structure and caravan are located adjacent to the northern boundary. A cluster of buildings including a single storey dwelling, an outhouse/shed structure and temporary greenhouse are located within the south eastern corner.

The site contains a largely vegetated area to the south west corner. The site is relatively flat with a gradual fall from west to east toward Abundance Road.

The site has a primary frontage to Abundance Road to the east and Ferodale Road to the north. Abundance Road and Ferodale Road are both classified Local Roads. Medowie Road, approximately 1km east of the site, is a classified Regional Road.

The area surrounding the site mostly consists of industrial, rural residential, educational, and agricultural lands. Adjacent to the north western boundary is a Shell petrol station and mechanic garage. Adjacent to the north eastern boundary is a medical health clinic. Across Abundance Road along the eastern boundary are a number of warehouse and light industrial developments. Directly north of the site across Ferodale Road are large lots used for agricultural purposes. Medowie Public School is located on Ferodale Road, to the north west of the site, opposite the Shell petrol station.



Figure 1 Site aerial photo (Nearmap)

1.2 Key Principles of Emergency Management (EM)

It is NSW SES's primary strategy to evacuate out of a floodplain to remove the community from the hazard to an area of safety with available resources. When this cannot be achieved, a set of principles have been developed to assist in EM. These principles are aimed at assisting councils when setting strategic directions for communities through recommendations under the Flood Risk Management (FRM) with technical assistance from NSW SES and strategically considering redevelopment in existing evacuation constrained areas. The key principles of EM are noted below alongside how they are used in the FERP:

- **Principal 1 - Any proposed EM strategy should be compatible with any existing community EM Strategy**

The FERP should be read in conjunction with the Port Stephens Council (PSC) requirements including the Port Stephens Local Emergency Management Plan (2022) which is attached as an appendix to this FERP, Medowie Drainage and Flood Study (2012), alongside the comprehensive Floodplain Risk Management Plan (2016).

This is to ensure that plans, maps and the FERP strategy proposed for the school is compatible with the evacuation strategies identified in existing PSC floodplain management plans or by NSW SES.

- ***Principle 2 - Decisions should be informed by understanding the full range of flood EM risks to the community***

This FERP is based on the flood study stated in enstruct's Flood Impact and Risk Assessment (FIRA) dated November 2024, and the Medowie Floodplain Risk Management Study and Plan (FRMSP) dated April 2016.

- ***Principle 3 - Development of the floodplain does not impact on the ability of the existing community to safely and effectively respond to a flood***

This FERP is based on enstruct's FIRA dated November 2024 where this development demonstrates a low existing flood risk and only minor local impacts on flooding.

- ***Principle 4 - Decisions on redevelopment within the floodplain are supported by an EM strategy that does not increase risk to life from flooding***

Section 7 of the FERP demonstrates that in the event of flooding there are alternative access points where the students and staff can evacuate the site to where there are adequate services to sustain the school community.

- ***Principle 5 - Risks faced by the itinerant population need to be managed***

As the school has a variety of people visiting the school daily, the FERP is written with these types of people in mind so that in the event of flooding, they can move to an assembly point and evacuate if needed in an orderly fashion.

- ***Principle 6 - Recognise the need for effective flood warning and associated limitations***

The steps and procedures set out in this FERP provides an effective flood warning strategy so as to give the school community the opportunity to respond to a flood threat in an appropriate and timely manner.

- ***Principle 7 - Ongoing community awareness of flooding is critical to assist effective emergency response***

Section 9 explains that the FERP should be reviewed regularly and updated as required. The FERP has been prepared in conjunction with the SES, so that any changes to the local flood strategy is included in the FERP.

2 Project Description

The proposed activity involves the construction of school facilities on the site for the purpose of the New High School for Medowie. The site contains a densely vegetated area to the southwest corner which is identified as land with high biodiversity values corresponding to the areas of remnant native vegetation (PCT 3995 – Hunter Coast Paperbark-Swamp Mahogany Forest). The existing dwelling house and other structures on the site will be demolished as part of the works. No other works are proposed within this area.

The proposed new school will accommodate 640 students in 29 permanent teaching spaces including 3 support teaching spaces across 3-storeys of buildings on the site. The proposed activity be delivered across 1 stage, and will consist of the following:

29 permanent teaching spaces including 3 support teaching spaces, to accommodate 640 students, and school hall to accommodate 1,000 students. Approximately 10,500 sqm of GFA is proposed.

- Main vehicular ingress and egress to Ferodale Road to the north, with a new pedestrian and vehicle crossing proposed.
- Main pedestrian access to Abundance Road.
- Kiss and ride, and bus drop and pick up areas to Abundance Road (6 x parallel spaces).
- New pedestrian wombat crossing to Abundance Road
- Approximately 55 x car parking spaces and 3 x accessible car parking spaces.
- Approximately 70 x bicycle parking spaces.
- Block A (Admin) consisting of administration and learning spaces.
- Block B (Foodtech/Workshop) consisting of food technology rooms and workshops.
- Block C (Hall) consisting of school hall to accommodate 1,000 students.
- Central quad, 1 playing field, and 1 sports courtyard.

The proposed activity will include the following spaces; general learning spaces, General support learning spaces, administrative services, staff areas, gym and canteen, library areas for science, wood and metal, food and textiles, health PE, performing arts, additional learning spaces, student amenities, storage, movement (stairs and covered walkways).

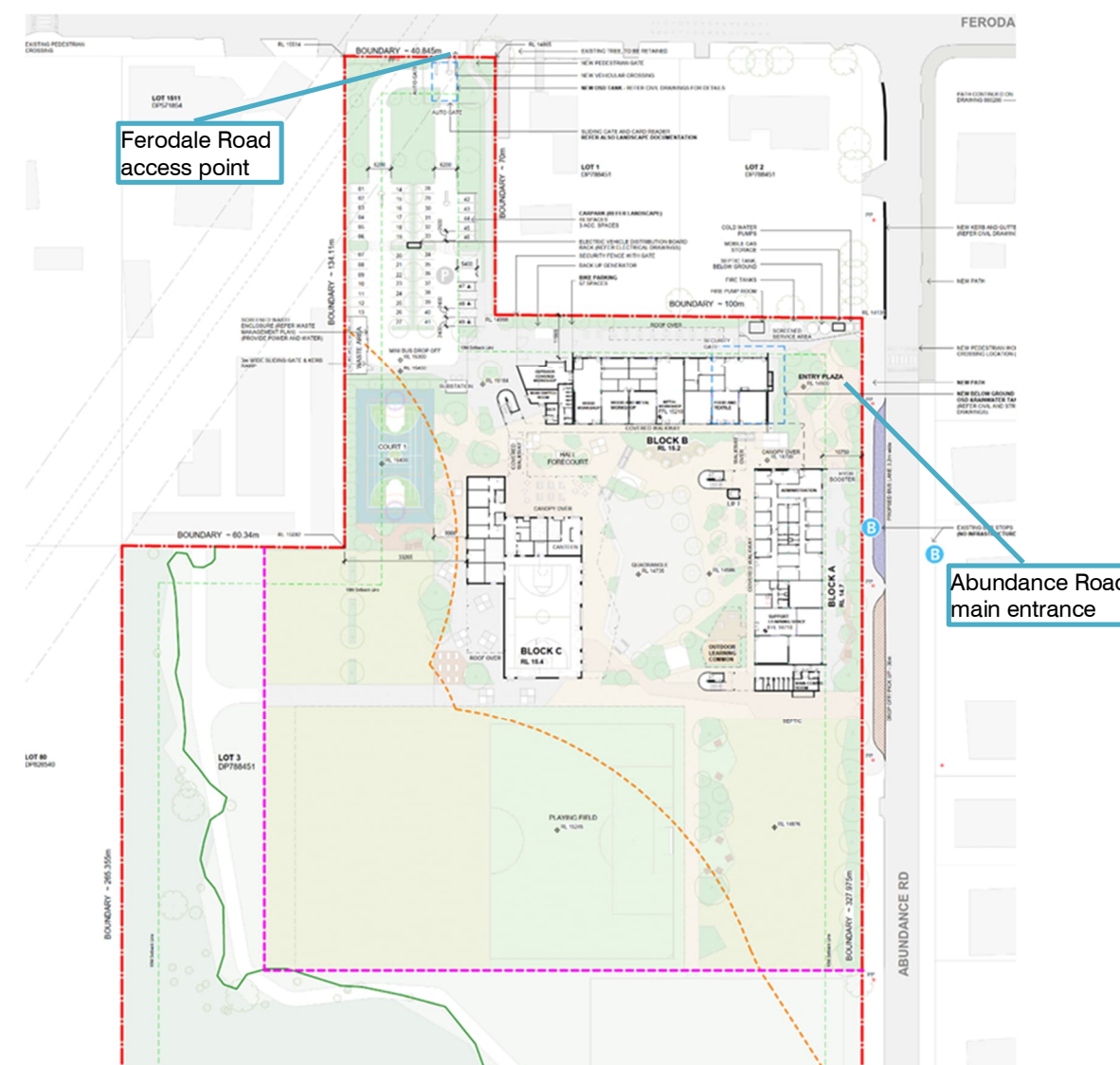


Figure 2 Site Plan (NBRS)

2.1 Key Access point

Key access points to the site are the entry to the car park on Ferodale Road, and the main entrance on Abundance Road. Ferodale Road provides access to vehicles, while the Abundance Road gate provides access for pedestrians, with bus stop and kiss and ride facilities on Abundance Road.

2.2 Key Flood Behaviour

2.2.1 Existing Flood Behaviour

The current flood behaviour on the school site and surrounding area is based on the FIRA prepared by enstruct in January 2025, and the Medowie Floodplain Risk Management Study and Plan prepared in April 2016 by WMA Water for Port Stephens Council:



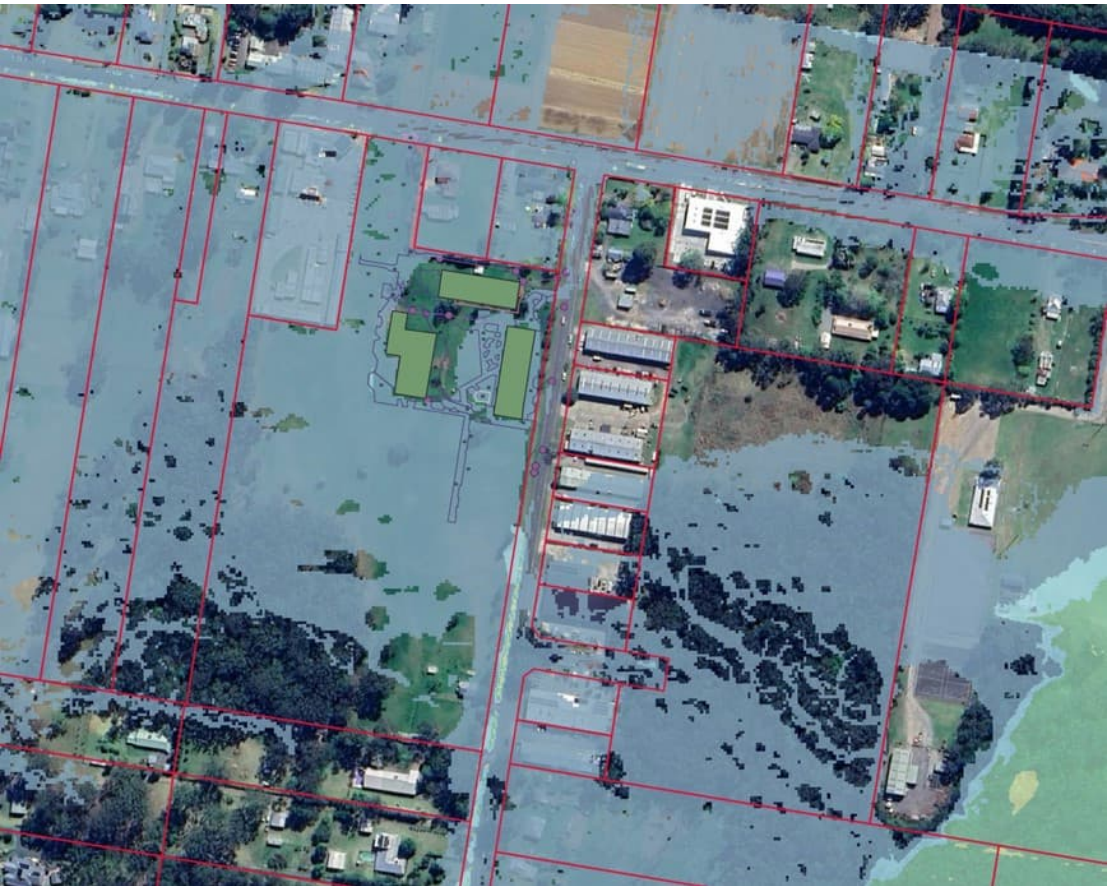


Figure 5 1% AEP Flood Hazard (proposed conditions). Refer to the following figure for colour legend.



Figure 6 PMF flood hazard (proposed conditions)

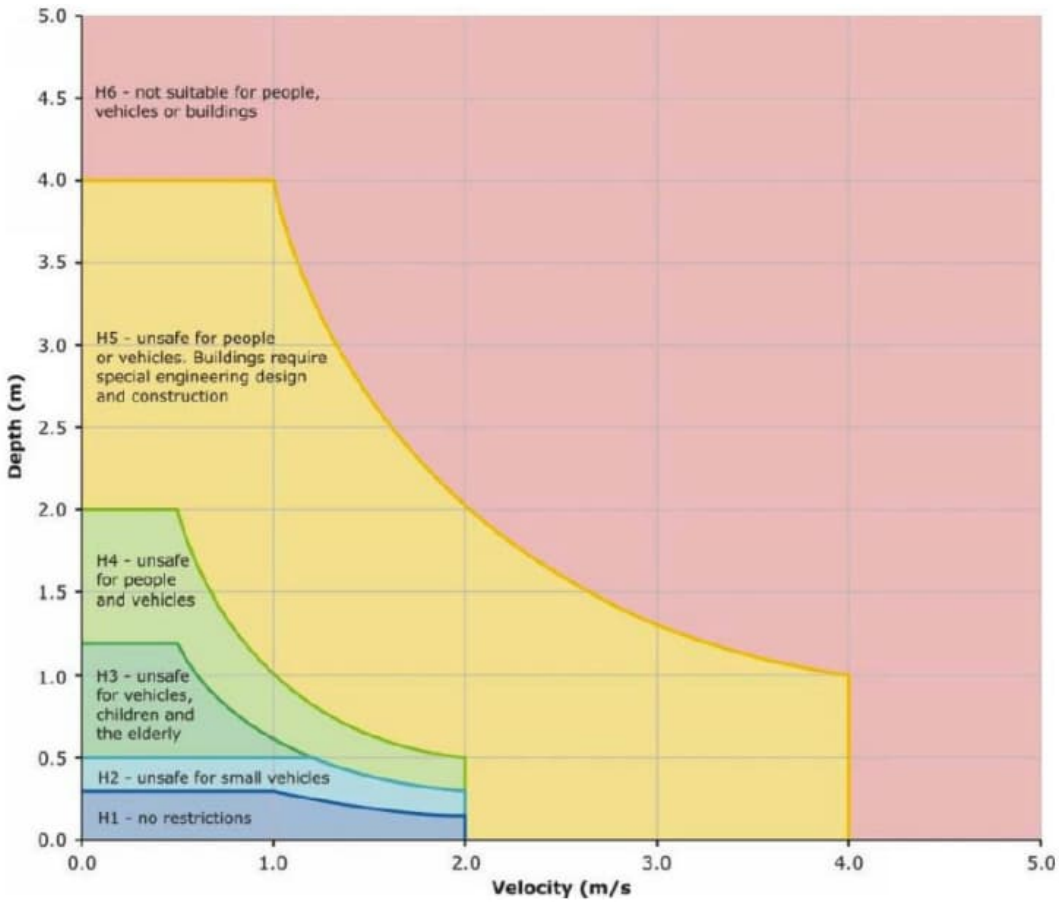


Figure 7 Flood hazard categories

Ferodale Road is the main link from the subject site to Medowie Town Centre and Medowie Road. During a 1% AEP flood event, Ferodale Road will be flood affected at Campvale Drain (Brad’s Bridge), cutting off this access route. Alternative access and egress is available to the west via Ferodale Road, Fairlands Road, and on to Grahamstown Road, ultimately linking to the Pacific Highway at Raymond Terrace to the west. Refer to Figure 8

Fairlands road may be subject to overland flow with up to 100mm depth during a 1% AEP event and 250mm depth during a PMF. This overland flow from a catchment in the order of 15 ha, so is likely subside shortly after a storm peak.

This access route is flood affected and considered unsafe for small vehicles during the 1 in 500 AEP flood event, and unsafe for all vehicles during the peak of a PMF event. While the site should be closed down if extreme weather is forecast, any persons at the site during a flood event should shelter in place until flood waters recede.

Regarding Hazard Classification, the evacuation routes from the site to the west is noted as **H1**, generally safe for people, vehicles and buildings for storms up to the 1 in 100-year storm event.



Figure 8 PMF flood extents and potential access/egress route

3 Flood and Evacuation Warnings

The Campvale Drain catchment is a relatively small catchment area, and therefore there can be little to no warning for rising flood waters. Any early warning will be based on weather forecasts and approaching storm 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. 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. You should be prepared to act should flooding occur.

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, the NSW SES issues warnings in line with the Australian Warning System (AWS), 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.

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.

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 1233 ABC NEWCASTLE 1233 AM and 95.9 FM, ABC NEWS RADIO 1458 AM and 95.1 FM, RADIO NATIONAL 1512 AM and 98.3 FM, SBS RADIO 1412 AM, TRIPLE J 102.1 FM, 2HD 1142 AM, NEWY 87.8 FM 87.8 FM, RAW FM 88.0 FM, TRIPLE M 102.9 FM, NEW FM 105.3 FM, HIT FM 106.9 FM.

4 Flood Response Preparation

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the school 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 site personnel for flood risks.

4.1 Flood Inundation Time

Peak flood levels were observed during the 30-minute storm event to several hours for the 1% AEP and the PMF storm event. The high intensity short duration flood behaviour is considered flash flooding and there would be insufficient or no warning following the start of the storm event. This is considered short duration 'flash flooding' and the warning provided would be for immediate safety precautions such as evacuation off the open playing fields, emergency evacuation out of areas where significant water will be stored, temporary refuge in buildings on site, and accounting for people on site.

4.2 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 all personnel of the procedures when responding to a flood event.

Flood Emergency Kit

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

- A copy of the school 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 building throughout the school 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.

5 Flood Response Personnel

Summarised below are the personnel involved in the management of the flood response at the site, and corresponding responsibilities. Personnel information to be provided by SINSW.

Table 2: Personnel and Responsibilities

Emergency Response Role	Responsibility	Responsible Person’s name	Phone Number	Responsibility
Emergency Control Organisation	WHS Team			<ul style="list-style-type: none">Coordinate flood evacuation drills
Chief Warden	Principal			<ul style="list-style-type: none">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; andManage the evacuation process in consultation with SES or Emergency Services.
Deputy Chief Warden	Supports Chief Warden			Make site users (including parents and carers) aware of the broader area flood risk, and appropriate actions during flooding.

5.1 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 high school for these purposes.

6 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 Raymond Terrace Police Station on 02 4983 7599.

7 Assembly Point (AP) and Evacuation Routes

Flood warnings may not be issued by the SES, so this is not a reliable indicator that evacuation is required. If the SES flood warnings are issued with sufficient time prior to the flood emergency overnight, it is recommended that the school driveway at Ferodale Road 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. Students are to be advised that the front entry on Abundance Road is not to be used. 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 western boundary which may prevent safe exit from the site until the storm event subsides.

Monitor radio and other communications taking particular notice of:

- Fairlands Road: Flood maps indicate this evacuation route may be impacted by flooding. Evacuation should not be attempted if there is notice of flooding here.
- Grahamstown Road and Richardson Road: These roads are on the evacuation route between the subject site and Raymond Terrace. 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 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.

8 Flood Response Actions

8.1 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 New High School for Medowie 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.

8.2 During School Hours and After hours



Once a Flood Watch and Act for the Medowie area or Port Stephens Council LGA has been issued:

- 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

- Update the New High School for Medowie Facebook/Social Media pages and send an email/text message to all parents 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 for storms causing flooding on Ferodale Road
- Students to move towards the site entrance 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
- Staff to leave the site following student evacuation
- Leave signage at site entrance that evacuation has occurred.

8.3 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.

Block C is the recommended location to be utilised as a refuge space. It has the following features which make is suitable:

- a large amount of space
- shelter above the PMF on the ground floor, with higher floor levels also available
- toilet facilities
- water supply
- it is close to both Ferodale Road and Abundance road access/egress points.

9 Revision of Flood Emergency Response Plan

This plan should be reviewed if the Port Stephens Council requirements or Campvale Drain Flood Study, Plans and Maps are revised, and if the street drainage surrounding the site is upgraded.

The Emergency Planning Committee shall be responsible for ensuring the Flood Emergency Response 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.

10 SES Correspondence

In preparing this FERP, the SES has been consulted provided the following feedback, which has been integrated into this document.

SES comments	Response
Recommend updating the Flood Emergency Response Plan to:	
Include clear flood emergency response responsibilities and actions, in a sequential order to include associated trigger points and timeframes;	Section 5 of this FERP outlines key personnel and responsibilities. Section 8 outlines emergency response actions with trigger points based on the AWS.
Remove all references to Flood Bulletins as these warning products and terminology are no longer in use. The NSW SES utilises the Australian Warning System (AWS) which is a nationally consistent, three-tiered approach to issue clear warnings and lead people to take action ahead of severe weather events.	Section 3 of this document references the AWS, with references to Flood Bulletins removed.

Note that warnings to the community in a flash flood environment are often limited to Severe Weather/Thunderstorm Warnings or Flood Watches for the general area, often with no specific forecasts or advice available on the local impacts of flash flooding. Flash flooding at this location does not currently have water level gauges that can provide information to the public about the potential scale of the flood’s impacts.	Section 8 of this FERP has been prepared on the basis of warnings being issued for the general area. Section 7 advises to monitor the radio and other communications channels for specific information impacting potential evacuation routes.
Reiterate that there are currently no formal flood warning products available for flash flooding at the site, therefore we recommend monitoring BoM Severe Weather/ Severe Thunderstorm Warnings as the most appropriate form of advice to prompt early evacuation, and not expect flood warnings, as stated in the FERP.12 School closure should be proactive and not rely on receipt of any warnings provided by NSW SES. Currently, the NSW SES Australian Warning System (AWS) flood-specific warning products are associated with riverine flooding.	Section 7 has been updated with clear guidance that flood warnings may not be provided.
Note that Shelter in Place (SIP) is being considered (in case evacuation becomes unsafe)13 and we recommend ensuring that any proposed refuge space aligns with the Shelter in Place Guideline For Flash Flooding and the Red Cross Preferred Sheltering Practices for Emergency Sheltering in Australia.14 As part of identifying flood refuge opportunities, we recommend: <ul style="list-style-type: none">• Identifying and analysing the available refuge space, facilities and the maximum number of people who may require sheltering at any given time, to ascertain if this complies with the SIP requirements (for example, having a minimum floor space of 2 m² per person).• considering that any proposed refuge location should be above the height of the PMF, and provide appropriate shelter, water supply, waste management, sanitation, food and space management for the entire period people need to take refuge there.• considering the high hazard flooding on the surrounding road network and the sensitive nature of the development.	Section 8.3 of this document has been updated to nominate Block B as the refuge space.

Reiterate that the FERP should include clear flood emergency response actions, including arrangements for sheltering, associated trigger points and timeframes. Section 8 of the FERP does not provide clarity around evacuation triggers, proposed sheltering arrangements. In addition, a number of actions appear to be out of order (e.g display signage that evacuation has occurred before actual evacuation). Please note that NSW SES does not have statutory authority to endorse or approve flood emergency response plans.	Section 8 has been updated in response to this feedback
Recommend ensuring that all site users, including parents and carers, are made aware of the flood risk at the site and broader area for the lifespan of the development. Evacuation must not require people to drive or walk through flood water.	Table 2 has been updated to assign the duty of informing site users of the broader area flood risk to the Deputy Chief Warden.

11 Conclusion

It is important to monitor all storm 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. Flood warnings may not be available.

The management strategy can be summarised as:

- Close the site where there is sufficient storm warning or where there is extreme weather conditions forecast by the BOM
- Evacuate the site where there is sufficient warning and the site is occupied
- Failing the above measure, shelter in place until the storm subsides, with all the buildings located above the PMF level.

If the site were occupied up to a 1% AEP storm event, evacuation routes from the site are generally safe for people and vehicles, following evacuation procedures outlined in this FERP.

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 PSC revises flood planning requirements and flood studies, 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: Port Stephens Local Emergency Management Plan (EMPLAN) 2022