



Flood Emergency Response Plan

39-65 Old Castlereagh Road, Castlereagh

Jacob 4765 Investments

27 June 2025

Document Status

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ACKNOWLEDGEMENT OF COUNTRY

The Board and employees of Water Technology acknowledge and respect the Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of Country throughout Australia. We specifically acknowledge the Traditional Custodians of the land on which our offices reside and where we undertake our work.

We respect the knowledge, skills and lived experiences of Aboriginal and Torres Strait Islander Peoples, who we continue to learn from and collaborate with. We also extend our respect to all First Nations Peoples, their cultures and to their Elders, past and present.



Artwork by Maurice Goolagong 2023. This piece was commissioned by Water Technology and visualises the important connections we have to water, and the cultural significance of journeys taken by traditional custodians of our land to meeting places, where communities connect with each other around waterways.

The symbolism in the artwork includes:

- Seven circles representing each of the States and Territories in Australia where we do our work
- Blue dots between each circle representing the waterways that connect us
- The animals that rely on healthy waterways for their home
- Black and white dots representing all the different communities that we visit in our work
- Hands that are for the people we help on our journey



IMPORTANT: WHAT TO DO DURING A FLOOD EMERGENCY

If you are reading this report because there is an ongoing flood emergency at 39-65 Old Castlereagh Road, Castlereagh, refer to Chapter 5 for a list of emergency triggers and response actions.

Alternatively, you can use the flood emergency response checklist provided in Appendix A. This has the same content as Chapter 5, but in the more convenient form of a checklist for use during a flood emergency.

Emergency contact details are included in Appendix C.

Any flood response directive issued by the NSWSES or by delegated authority to others acting on its behalf must be followed by site management and staff. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with this FERP.



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1 INTRODUCTION

1.1 Context and Background

Jacob 4765 Investments is preparing a concept development application for the construction of a mixed-use tourism development at 39 – 65 Old Castlereagh Road, Castlereagh. The proposed development is located within the Penrith Lakes Scheme and is therefore subject to the State Environmental Planning Policy (Precincts—Western Parkland City) 2021 and the Penrith Lakes Development Control Plan – Stage 1 (DCP).

The site is comprised of three lots, as shown in Figure 1-1 with a regional perspective provided in Figure 1-2:

- Lot 12/DP793163;
- Lot 14/DP793163; and
- Lot 16/DP793163.



Figure 1-1 Lot Layout

The site is subject to flooding from the Nepean River, which flows westwards 500 m south-west of the site (Figure 1-2). The site is also affected by local overland flooding which flows northward across the site from Old Castlereagh Road towards the Regatta Lake.

As the proposed development intends to increase the number of people that could be on the site and is located on land below the Probable Maximum Flood (PMF) level Section 3.1.1 of the DCP requires a flood emergency management plan or Flood Emergency Response Plan (FERP) be prepared.



Figure 1-2 Site Location

The DCP details the following requirements for the FERP:

3) The flood emergency management plan must address the following matters:

- a) an overview of the flood risk and resilience of the site and the surrounding area;
- b) details the requirements for governance and documentation of flood preparedness and response at Penrith Lakes;
- c) measures to be undertaken by occupants of the site to manage the risk to life in the event of a flood;
- d) measures to be undertaken by occupants of the site to ensure the efficient evacuation of people in the event of an early flood warning;
- e) immediate flood relief and recovery actions to be undertaken by occupants of the site following a flood event or false alarm of a flood event; and
- f) long-term review of systems and processes to ensure the efficient evacuation of the site and recovery measures to be undertaken by occupants of the site following a flood event or false alarm of a flood event.

In addition:

- 1) Development that will increase the number of people on the land below the probable maximum flood (PMF) level at Penrith Lakes covered by this DCP must be consistent with the Early Flood Evacuation Guideline (if available), or the objective to achieve early site evacuation and/or non-attendance in the event of a flood or probable flood.



This FERP has been prepared to address the above development controls. It details the most appropriate flood emergency management strategy for the proposed development.

This report was prepared with reference to the following flood data:

- *Hawkesbury-Nepean River Flood Study* (NSW Reconstruction Authority, 2024)
- Site specific modelling of local flooding undertaken by Water Technology (2025) based on the Cranebrook Overland Flow Flood Study which was prepared for, and adopted by, Penrith City Council.

1.2 Scope of this FERP

The primary focus of this FERP is managing flood risk to life, with some measures to reduce risk to private property. It does not include measures to reduce the risks of flooding to corporate property or profitability.

The report is organised in the following sections:

- Chapter 1 contains:
 - a description of the context and location
 - a detailed description of the proposed development, including the relevant architectural plans
 - a description of the proposed site management arrangements (operational hours, number of people and vehicles on site)
- Chapter 2 contains a description of flood behaviour and the site affectation
- Chapter 3 reviews the available flood warnings applicable to the site
- Chapter 4 details key emergency management considerations, including a list of features to be incorporated on the premises to mitigate flood risk
- Chapter 5 details actions to be undertaken before, during and after a flood emergency to keep everyone safe. This includes a list of triggers, a description of the staff roles/responsibilities and an emergency checklist
- Appendix A summarises the content of Chapter 5 in a checklist format for use before, during and after an actual emergency
- Appendix B provides a list of flood emergency items that should be kept on site
- Appendix C is a contact list to be maintained by the Chief Flood Warden.

1.3 Location and Overview

The proposed development is intended to replace 2 existing houses and a number of sheds on the site with 3 multi-storey buildings for tourism purposes. The western building will be a club, the central building will be an indoor recreation centre and the eastern building a hotel with 147 hotel rooms. Floor plans and sections are shown in Figure 1-3 through to Figure 1-6.

An undercroft carpark would be located at ground level beneath all 3 buildings (Figure 1-3).

The proposed club building includes the following:

- Ground floor: Club entry, waste storage, undercroft parking (Figure 1-3)
- Level 1: Club, amenities and a waste room (Figure 1-5)
- Level 2: Mezzanine (Figure 1-6).



Figure 1-3 Ground Floor Plan

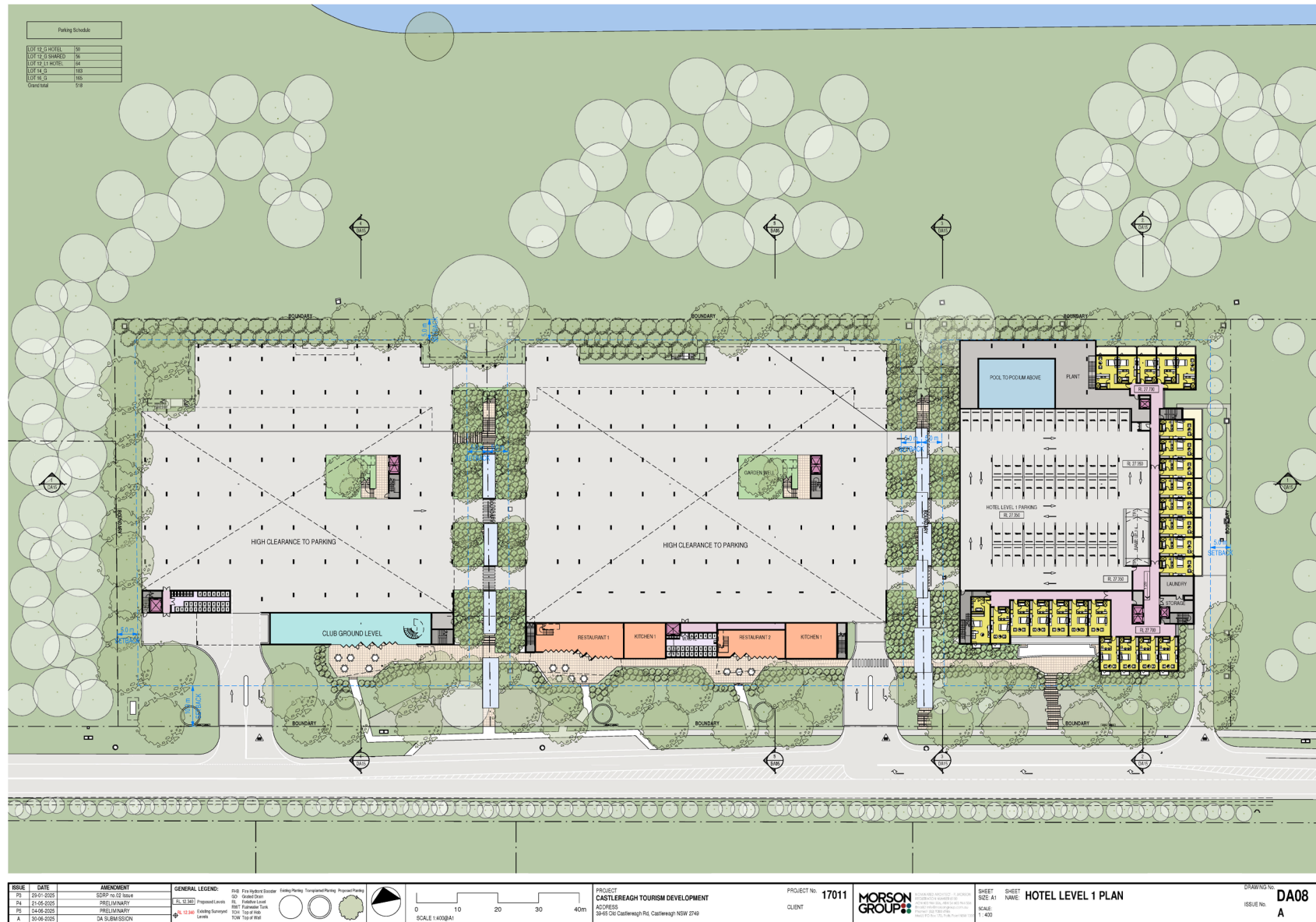


Figure 1-4 Hotel Level 1 Floor Plan

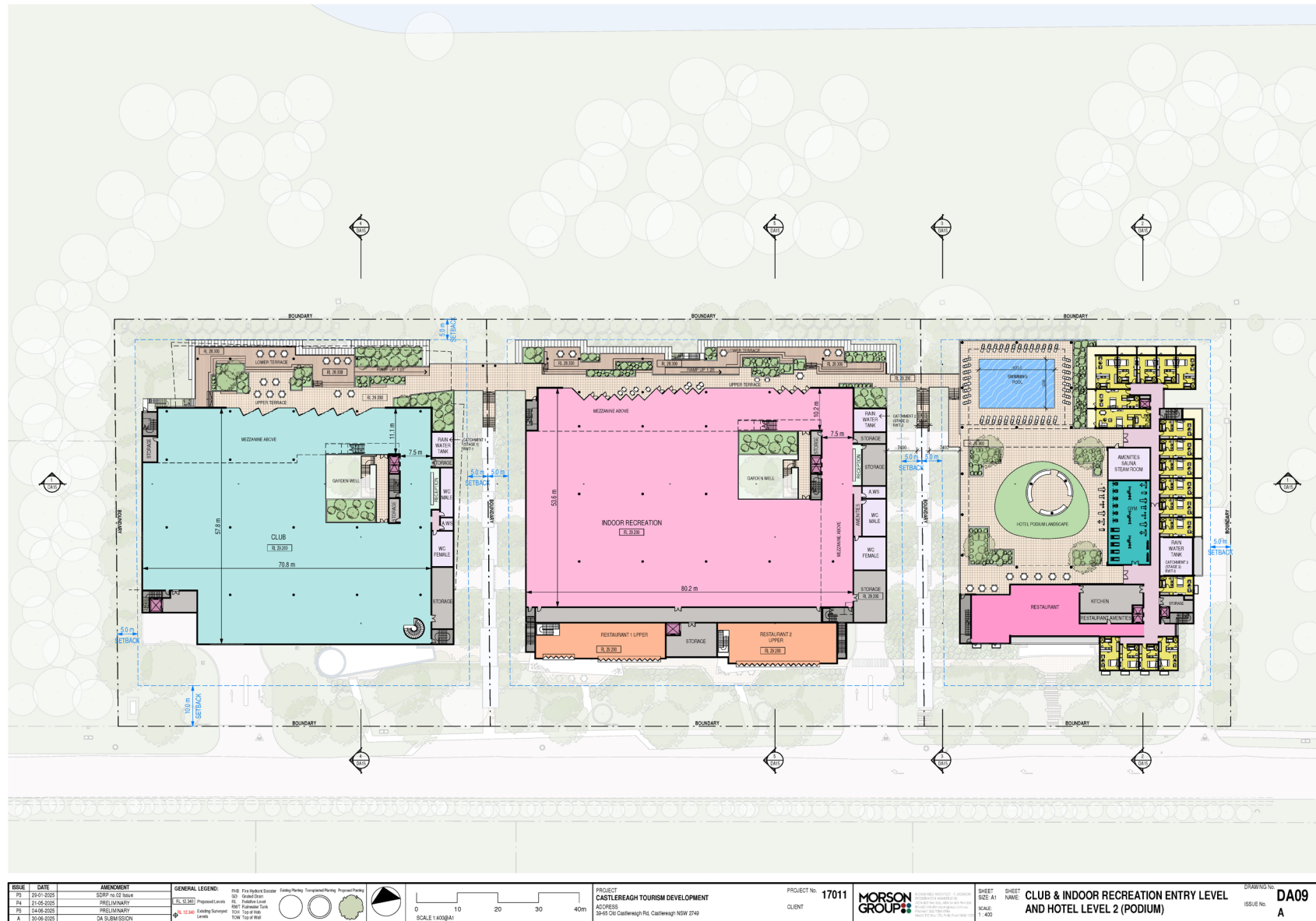
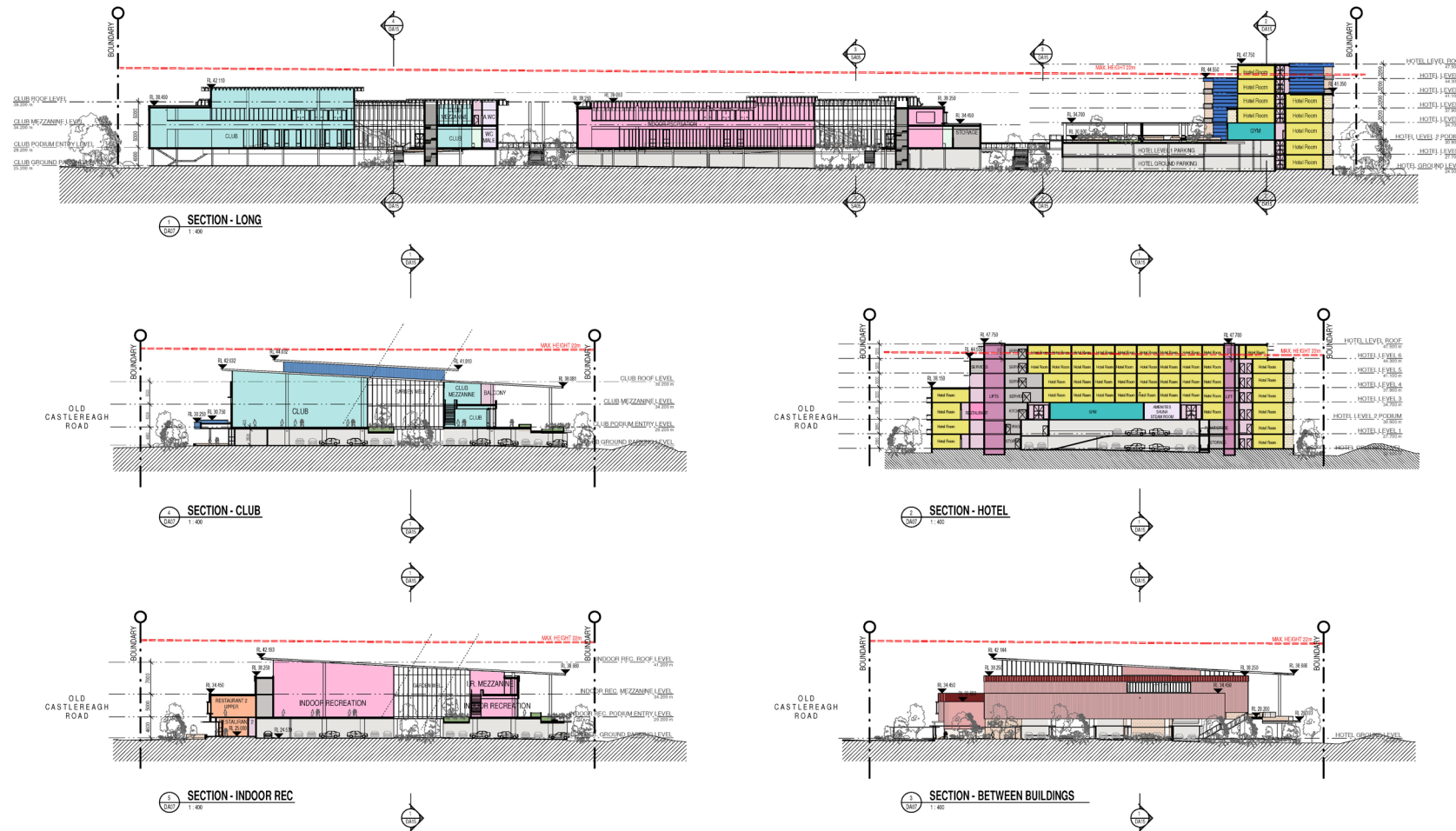


Figure 1-5 Floor Plan of Club and Indoor Recreation Level 1 and Hotel Level 2



ISSUE	DATE	AMENDMENT	GENERAL LEGEND:		PROJECT		PROJECT No.	MORSON GROUP		DRAWING No.			
PS	20-05-2025	PRELIMINARY	010: Fire Hydrant Storage	020: General Storage		CASTLEREAGH TOURISM DEVELOPMENT	17011		SHEET SIZE: A	DA15			
PS	21-05-2025	PRELIMINARY	030: Proposed Land Use	040: Existing Surrounds							ADDRESS	CLIENT	SHEET NAME: SECTIONS
PT	04-06-2025	PRELIMINARY	050: Top of Road	060: Fire Hydrant Storage							39-45 Old Castlereagh Rd, Castlereagh NSW 2140	SCALE: 1:400	
A	09-06-2025	DA SUBMISSION	070: General Storage	080: Top of Road									
18/06/2025 20:39:17 C:\Users\user\OneDrive\Dropbox\Ruben Hernandez Fernandez\CASTLEREAGH\17011-OCR TO\Architecture\CAD\17011-Castlereagh_DA-MASTERFILE_20250618_RH1.rvt													

Figure 1-6 Sections



The indoor recreation facility includes:

- Ground floor: 2 restaurants and 2 kitchens, undercroft parking (Figure 1-3)
- Level 1: Indoor recreation area and amenities (Figure 1-5)
- Level 2: Mezzanine.

The proposed hotel includes:

- Ground floor: Hotel lobby, hotel offices, hotel rooms, waste storage, loading bay, undercroft parking (Figure 1-3)
- Level 1: Hotel rooms, parking, pool plant room (Figure 1-4)
- Level 2: Swimming pool, gym, restaurant, kitchen, hotel rooms, rain water tank (Figure 1-5)
- Levels 3 – 6: Hotel rooms (Figure 1-6).

1.4 Floor Levels and Access

The floor levels of the proposed development and the surface levels of the carpark are provided in Table 1-1. All habitable rooms, including hotel rooms, are at or above 24.50 m AHD. The surface levels of the undercroft carpark range from 23.6 m AHD in the east to 25.2 m AHD in the west (Figure 1-3).

Table 1-1 Floor levels of proposed buildings

Location		Level (m AHD)
Club	Undercroft Carpark	24.90 – 25.20
	Ground Floor	25.20
	Level 1	29.20
	Level 2	34.20
Indoor Recreational Facility	Undercroft Carpark	24.30 – 25.20
	Ground Floor	25.0
	Level 1	29.20
	Level 2	34.20
Hotel	Undercroft Carpark	23.60 – 24.30
	Ground Floor	24.50
	Level 1 Carpark	27.35
	Level 1 Hotel Rooms	27.70
	Level 2	30.90
	Level 3	34.70
	Level 4	37.90
	Level 5	41.10
	Level 6	44.30

The site is accessible by vehicle via 3 driveways from Old Castlereagh Road (Figure 1-3). The first is located at the south-western corner of the site and provides access to the undercroft carpark below the club building. The second is located between the indoor recreational facility and the hotel building, providing access to the



carparks below these buildings (including the Level 1 carpark in the hotel building). The third is located at the south-eastern corner of the site and provides access to the waste area at the south-eastern corner of the hotel building, which has a ground level of 23.30 m AHD. This last driveway does not provide access to the parking areas and therefore is not significant for vehicular access to the site.

The undercroft parking areas beneath each of the buildings are joined via driveways.

Pedestrian access to each of the buildings would be via entrances off the footpath running along the southern margin of the 3 buildings (Figure 1-3).

There are several low points in the local roads around the site, which may become inundated during floods and pose constraints for vehicles exiting the site. These include a low point of 23.9 m AHD on Old Castlereagh Road at the south-eastern corner of the site, a low point of 24.6 m AHD on Andrews Road and a low point of 24.5 m AHD on Castlereagh Road (Figure 1-2).

1.5 Site Operation and Population

The proposed development would include about 50 staff and could have up to 1,610 visitors (i.e., patrons and guests) at any given time (Figure 1-7). This includes 290 patrons and guests of the hotel, 685 patrons of the restaurants and indoor recreation facility in the centre of the site and 635 patrons of the club building.

LOT / USE	FLOOR AREA/Hotel	CAR SPACES	POPULATION (Staff)	POPULATION (Patrons/Guests)	WC's (including Urinals) Requirements
LOT 12					
HOTEL	147 hotel Rooms	178	10	290	160
LOT 14					
FAST FOOD	1298m ²	30	10	50	10
INDOOR RECREATION	5713m ²	159	15	635	25
LOT16					
CLUB	5177m ²	169	15	635	25
TOTAL		536	50	1610	220

Figure 1-7 Floor areas and population numbers of the proposed development

A total of 536 parking spaces will be provided, the majority of which would be located in the undercroft parking areas beneath the 3 buildings. The level 1 carpark for the hotel would have 62 parking spaces and would also include bike parking.

The operational hours of the proposed development are summarised in Table 1-2.

Table 1-2 Operational Hours

Area	Operational Days	Operational Hours
Hotel	365 days per year	24/7
Club	365 days per year	24/7
Indoor Recreational Facility	365 days per year	9 am to midnight
Restaurants	365 days per year	6 am to midnight



1.6 Topography and Drainage

The precinct is situated in one of a series of floodplains formed by the topography within the Hawkesbury-Nepean valley. After exiting the Fairlight Gorge, the Nepean River expands into a wider channel with a broad floodplain at Regentville and then flows past Penrith on the east bank of the River and Emu Plains on the west bank. A sharp bend in the river and a narrowing of the channel downstream of Emu Plains creates a constriction which is responsible for the flooding of the Penrith and Emu Plains floodplain.

The site is on the outside of this bend at a level of around 24 m AHD compared to the normal river level which is at about 12 m AHD. Boundary Creek enters the River from the east about 1.3 km south of the site.



2 FLOOD RISKS

2.1 Flood-Generating Weather

Coastal areas of eastern Australia mostly receive flooding rains from so-called “east coast lows” that develop from time to time over the adjacent Tasman Sea. These are intense depressions off the coast and can produce thunderstorm activity associated with troughs. Depressions can develop at any time of year but are most likely when sea surface temperatures are high and the air is humid. Therefore, these events usually occur in the summer months and over the first half of the year.

Flooding can also be a winter-spring phenomenon, associated with unusually frequent or active extra-tropical depressions and fronts. However, some major events have occurred in the summer half-year as systems of tropical origin extend or move south. Flooding over inland areas is usually associated with southward-moving tropical systems, but in the cooler months, it may occur when well-developed cloud bands extend across the interior from the oceans north and northwest of Australia. East Coast Lows are historically prevalent in the winter months.

Rainfall patterns are also dependent on longer term weather patterns. Flooding is more prevalent in a La Nina year when rainfall is significantly greater than the mean average rainfall.

Thunderstorms, which generally occur during the summer, can also result in localised flooding which could impact specifically on the site and Old Castlereagh Road in front of the site. Sydney has experienced severe thunderstorms in the past and because large expanses of the urban area are paved, much of the rainfall becomes flood run-off. This could result in localised flooding at the site but is unlikely to be the cause of flooding in the Nepean River.

The Hawkesbury-Nepean Valley has been flooded in numerous large rainfall events, although the March 2021 flood at Penrith was the first major flood in 30 years. In summary, there are many different weather events which could cause flooding at the site and this could happen at any time of year.

2.2 The Meaning of Flood Probability

Flood probability can be expressed in more than one way. For example, a flood may be described as having a 100-year Average Recurrence Interval (ARI). This means that over many thousands of years, a flood of this magnitude would occur on average once in 100 years. This does not mean that a flood of this size only occurs once every 100 years. It is possible to have floods of this size in consecutive years or even 2 in the same year. This happened in several locations in Queensland and Victoria in 2010 and 2011.

Another way of expressing flood probability is in terms of Annual Exceedance Probability (AEP). A 100-year ARI flood has roughly a 1 in 100 AEP. That is, each year and every year it has a 1 in 100 or 1% chance of being reached or exceeded. This is perhaps a more helpful way of thinking about flood probabilities. A flood with a 1% AEP has about a 1 in 2 chance of being reached or exceeded in the average person's lifetime. There were 4 floods of about this size on the Georges River between 1860 and 1889 but there has not been another since. This underlines the randomness of flood frequency.

Bigger floods can and do occur. There were several floods with greater than a 1% AEP experienced in NSW between 2020 and 2023. A flood with a 1 in 500 (0.2%) AEP has about a 1 in 6 chance of being reached or exceeded in the average person's lifetime, the same as tossing a die and getting a 6. This was about the frequency of the Lismore flood in 2022 and of the Taree flood in 2025. The Eugowra flood in 2022 was larger than a 1 in 5,000 (0.02%) AEP event, which has about a 1 in 60 chance of being reached or exceeded in the average person's lifetime.



The largest flood that can occur is referred to as the Probable Maximum Flood (PMF). Although it has a very low probability of occurring in any one year (about 1 in 90,000 at Penrith), events approaching a PMF have been recorded. Flooding may occur at any time of year and at any time of day.

2.3 Flood Behaviour

The site is subject to flooding from the Nepean River, which flows approximately 600 m to the south-west of the site, and also from overland flows which flow from south to north across Old Castlereagh Road, through the site and into the Regatta Lake.

2.3.1 Nepean River

Riverine flood behaviour is described based on modelling undertaken as part of the *Hawkesbury-Nepean River Flood Study* (NSW Reconstruction Authority, 2024).

2.3.1.1 Historical Flooding

The largest flood on record in the Hawkesbury-Nepean valley occurred in 1867 when the river level reached 26.9 metres Australian Height Datum (AHD) at Victoria Bridge at Penrith. The 1867 flood had a flood level of 19.7 m AHD downstream at Windsor, which suggests it had a magnitude of between the 0.5% AEP and 0.2% AEP design events. There is sedimentary evidence and oral traditions from First Nations people indicating that at least one flood larger than the 1867 flood has occurred on the Nepean River under current climatic conditions prior to European settlement. A PMF event would reach a level of approximately 32.7 metres AHD at Victoria Bridge.

Table 2-1 outlines the history of recorded floods over the last 65 years in the valley.

Table 2-1 Design flood levels and comparison with historical flood levels over the last 65 years (since 1960)

Flood	Chance per year	Peak flood level at Victoria Bridge Gauge (m)	Peak flood level at Victoria Bridge, Penrith (m AHD)	Peak flood level at the site (m AHD)	Year equalled or exceeded
50% AEP	1 in 2	3.2	17.3	Not flooded	1986, 1987, 1989, 2020, 2024
20% AEP	1 in 5	6.8	20.9	Not flooded	1975, 1988, March 2022
10% AEP	1 in 10	9.2	23.3	Not flooded	1961, 1964, 1978, 1990, 2021, July 2022
5% AEP	1 in 20	11.0	25.1	Not flooded	No record
2% AEP	1 in 50	12.0	26.1	Not flooded	No record
1% AEP	1 in 100	12.7	26.8	23.8	No record
0.5% AEP	1 in 200	13.1	27.2	24.1	No record
0.2% AEP	1 in 500	13.8	27.9	24.8	No record
0.1% AEP	1 in 1,000	14.2	28.3	25.2	No record
0.05% AEP	1 in 2,000	15.1	29.2	26.9	No record
0.02% AEP	1 in 5,000	15.9	30.0	28.3	No record
PMF	< 1 in 5,000	18.5	32.6	31.9	No record



2.3.1.2 Flooding on Site

Table 2-2 describes riverine flood behaviour at the site and along Andrews Road. Figure 2-1 through to Figure 2-5 show the flood extent and hydraulic hazard in the 5% Annual Exceedance Probability (AEP), 2% AEP, 1% AEP, 0.2% AEP and Probable Maximum Flood (PMF) riverine events in existing conditions.

The site would not be subject to riverine flooding in the 2% AEP event (Figure 2-2). However, in the 1% AEP flood the northern margin of the site would flood (Figure 2-3), with shallow (< 0.05 m) flooding in the northern portion of the undercroft carpark beneath the hotel building (Table 2-2). This flooding is caused by the Penrith Lakes filling from the river and, as the lake levels rise, water flowing through pipes in the embankment north of the site and into the lower parts of the site.

In the 0.2% AEP event (Figure 2-4) most of the undercroft carpark beneath the hotel and indoor recreational facility buildings would be inundated, while the ground floor hotel rooms, hotel lobby and hotel would flood to depths of 0.3 m.

The habitable area (i.e., kitchens and restaurants) on the ground floor of the indoor recreational facility would only flood to a depth of 0.2 m in the 0.1% AEP riverine flood. On the other hand, during the 0.05% AEP event this area would flood to a depth of 1.9 m and the ground floor of the club would flood to a depth of 1.7 m.

In the 0.02% AEP flood Level 1 of the hotel would be inundated, with a depth of 0.95 m in the Level 1 carpark and of 0.6 m in the hotel rooms on this floor.

The riverine PMF (Figure 2-5) would inundate Level 2 of the hotel to a depth of 1.0 m and would flood Level 1 of both the indoor recreational facility and the club building to a depth of 2.7 m. In this event all 3 buildings would be subject to H6 flooding. The threat to life or property posed by floodwaters can be measured with a parameter named hydraulic hazard, which is based on the combination of maximum flood depth and velocity at any given location. Figure 2-6 shows the national hydraulic hazard classification and the threat to life and property associated with each hazard class from H1 (minimum hazard) to H6 (maximum hazard). The H6 floodwaters that would surround the proposed buildings in the PMF would be unsafe for vehicles and people and buildings that have not been designed and constructed to withstand the forces associated with flooding would be vulnerable to failure.

The following area would be above the reach of floodwaters in the PMF:

- Level 2 of the club building
- Level 2 of the indoor recreational facility
- Levels 3 – 6 of the hotel building.

2.3.1.3 Site Isolation and Rate of Rise

Flood level hydrographs of riverine flooding at the Victoria Bridge gauge (Figure 2-7) show that in an event rising as fast as the 72-hour duration 0.02% AEP flood, flood levels at the gauge can rise from 24.35 m AHD to the 2% AEP flood level (26.1 m AHD) within 6 hours. This corresponds to a rate of rise of 0.3 m/hour.

It should be noted that in the 24-hour duration PMF (Figure 2-7) the rate of rise between 24.35 m AHD and 26.1 m AHD at the Victoria Bridge gauge would be 0.71 m/hour and in the 72-hour duration PMF the rate of rise would be 0.33 m/hour.



Table 2-2 Riverine flood behaviour on site and on Andrews Road

Flood	Peak flood level at the site (m AHD)	Max. Hydraulic Hazard at the site	Max. Hydraulic Hazard on Andrews Rd	Site Affection	Site Isolation*
5% AEP	Not flooded	Not flooded	Not flooded	Not flooded	Not isolated
2% AEP	Not flooded	Not flooded	H2	Not flooded	Isolated by low hazard flooding
1% AEP	23.8	H3	H4	- Flood depths of up to 0.05 m in northern part of hotel undercroft carpark - Depths of up to 0.4 m in waste area at south-eastern corner of hotel - No above floor flooding of habitable areas	Isolated by medium hazard flooding
0.5% AEP	24.1	H4	H5	- Flood depths of up to 0.4 m in northern part of hotel undercroft carpark - Depths of up to 0.7 m in waste area at south-eastern corner of hotel - No above floor flooding of habitable areas	Isolated by high hazard flooding
0.2% AEP	24.8	H4	H5	- Above floor flooding of 0.3 m in the ground floor hotel rooms, hotel lobby and hotel offices - Flood depths of up to 1.2 m in the hotel undercroft carpark - Flood depths of up to 0.5 m across most of the indoor recreational facility undercroft carpark	Isolated by high hazard flooding
0.1% AEP	25.2	H5	H6	- Above floor flooding of 0.7 m in the ground floor hotel rooms, hotel lobby and hotel offices - Above floor flooding of 0.2 m in the ground floor kitchens and restaurants of the indoor recreational facility	Isolated by high hazard flooding



Flood	Peak flood level at the site (m AHD)	Max. Hydraulic Hazard at the site	Max. Hydraulic Hazard on Andrews Rd	Site Affection	Site Isolation*
				- Flood depths of up to 1.6 m in the hotel undercroft carpark - Flood depths of up to 0.9 m across most of the indoor recreational facility undercroft carpark - Flood depths of up to 0.3 m in the northern portion of the club undercroft carpark	
0.05% AEP	26.9	H6	H6	- Above floor flooding of 2.4 m in the ground floor hotel rooms, hotel lobby and hotel offices - Above floor flooding of 1.9 m in the ground floor kitchens and restaurants of the indoor recreational facility - Above floor flooding of 1.7 m in the ground floor of the club - Flooding of the undercroft carpark to depths of between 1.7 m and 3.3 m	Isolated by high hazard flooding
0.02% AEP	28.3	H6	H6	- Above floor flooding of 0.95 m in Level 1 hotel carpark - Above floor flooding of 0.6 m in Level 1 hotel rooms - Above floor flooding of 3.3 m in the ground floor kitchens and restaurants of the indoor recreational facility - Above floor flooding of 3.1 m in the ground floor of the club	Isolated by high hazard flooding
PMF	31.9	H6	H6	- Above floor flooding of 1.0 m in Level 2 of the hotel - Above floor flooding of 2.7 m in Level 1 of the indoor recreational facility and of the club - Level 2 of the club and the indoor recreational facility and Levels 3 – 6 of the hotel would be above the reach of flooding	Isolated by high hazard flooding

* Low hazard: H1 and H2, Medium hazard: H3 and H4, High hazard: H5 and H6. Site isolation determined based on the road network current in 2025

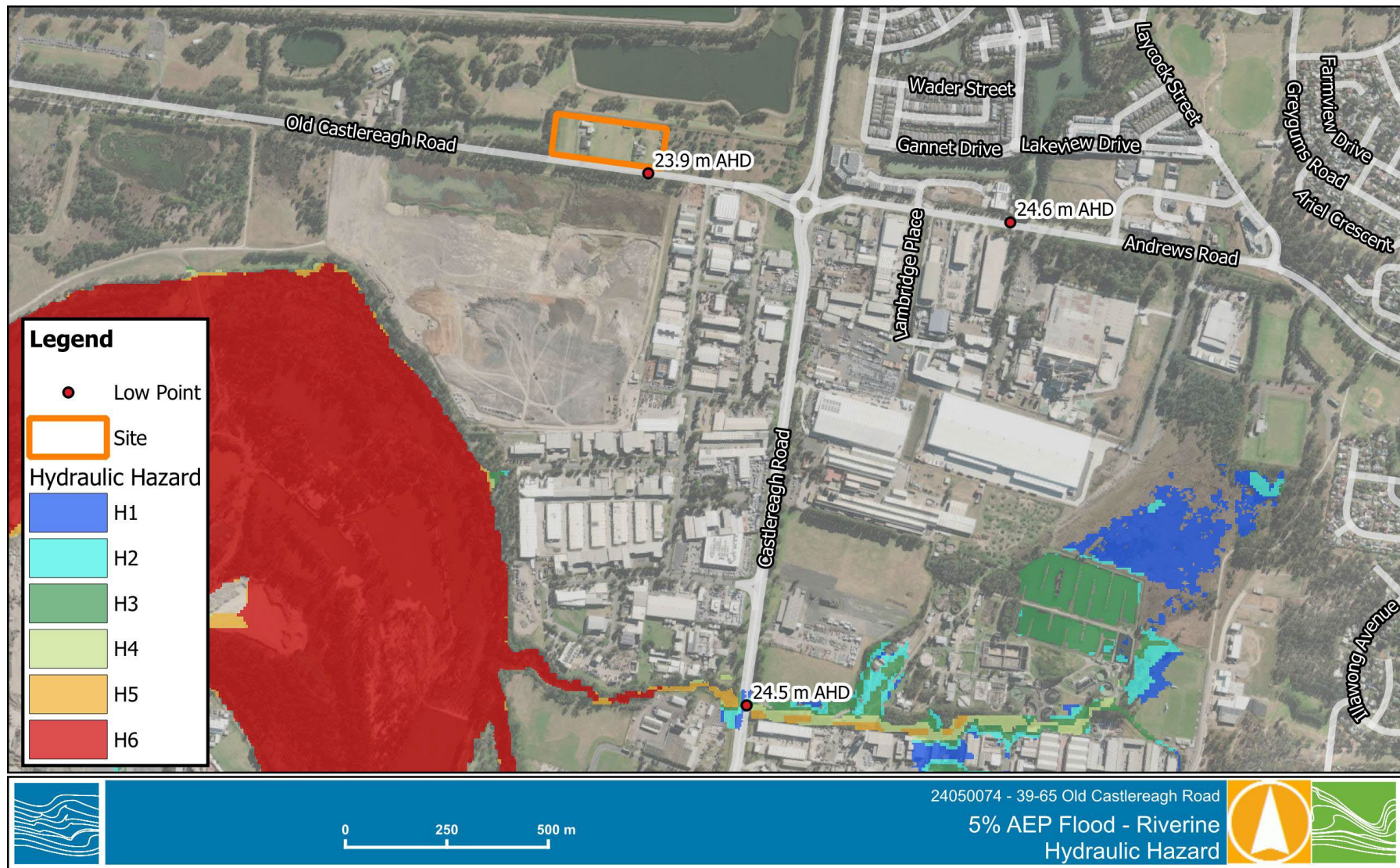


Figure 2-1 Hydraulic hazard in the 5% AEP riverine flood

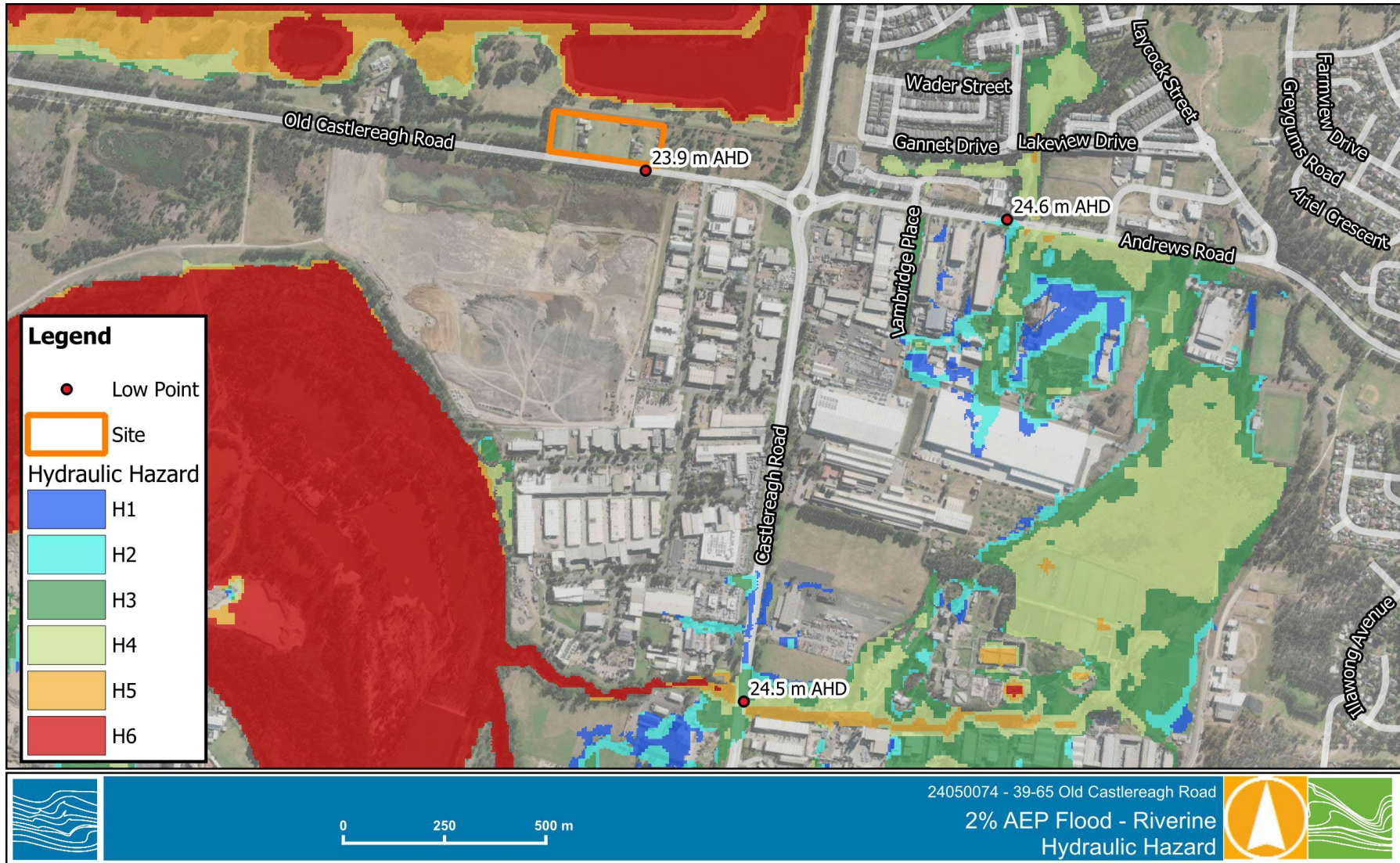


Figure 2-2 Hydraulic hazard in the 2% AEP riverine flood

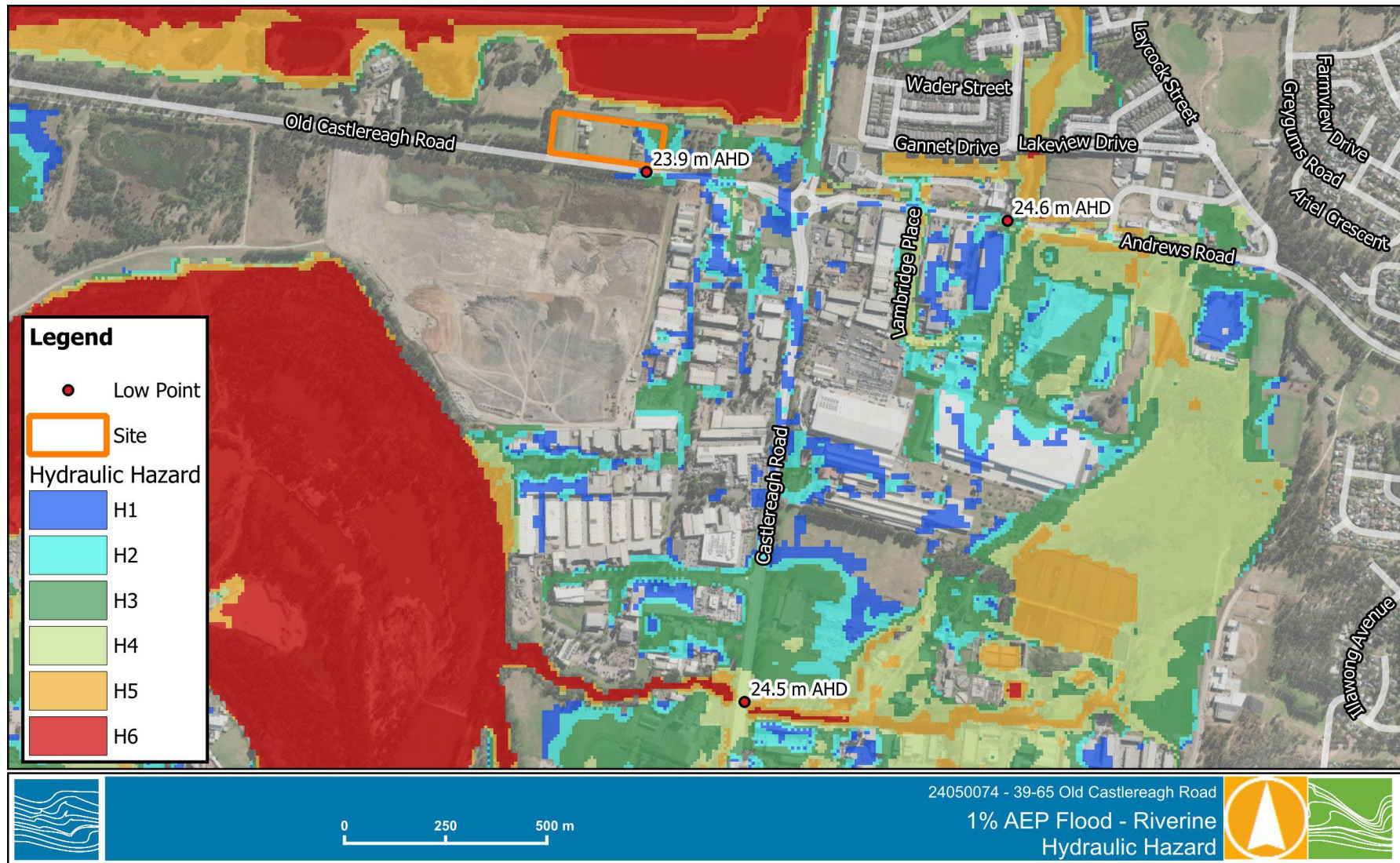


Figure 2-3 Hydraulic hazard in the 1% AEP riverine flood

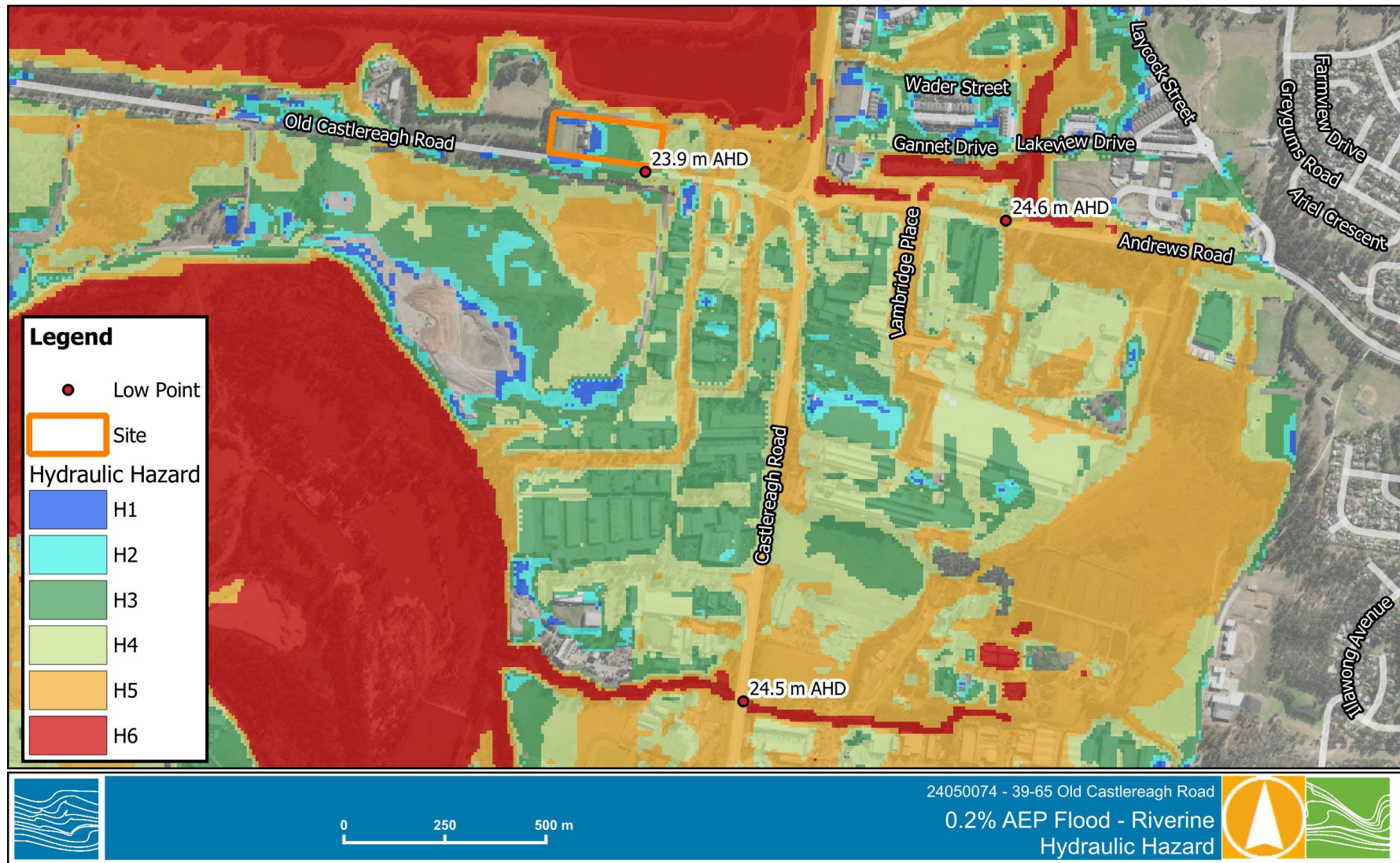


Figure 2-4 Hydraulic hazard in the 0.2% AEP riverine flood



Figure 2-5 Hydraulic hazard in the riverine PMF

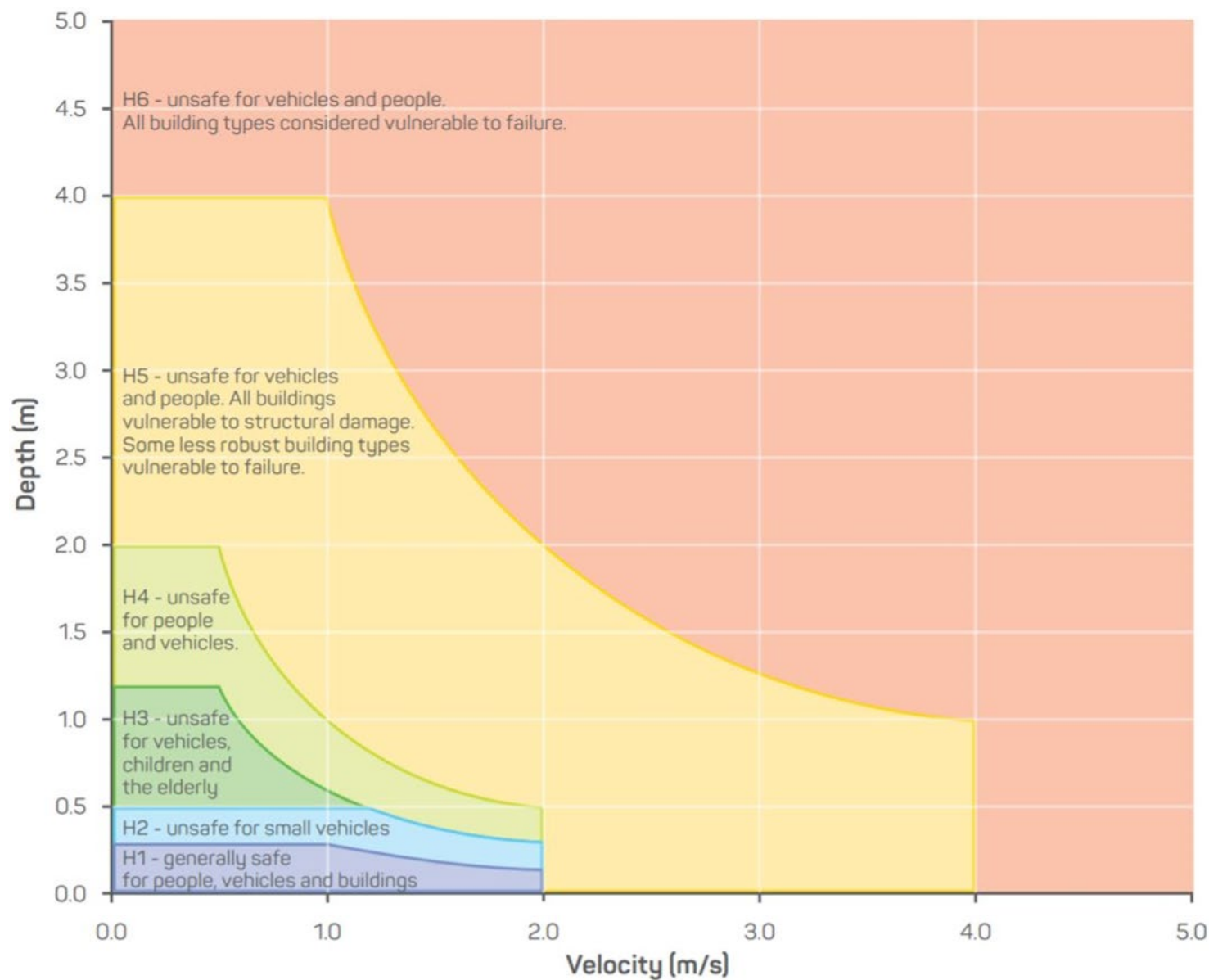


Figure 2-6 Flood hazard vulnerability curves (AIDR, 2017)

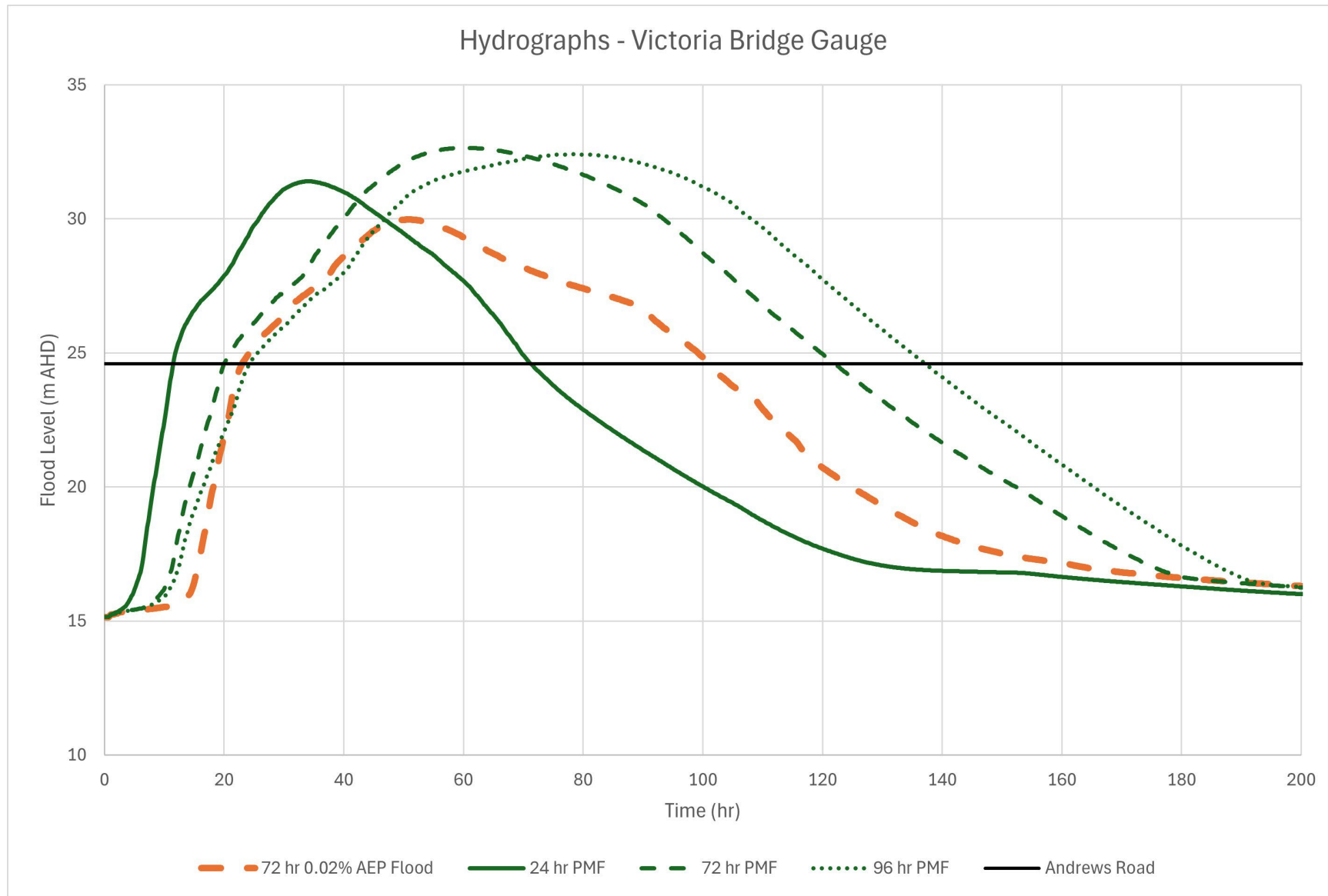


Figure 2-7 Flood level hydrographs for riverine flooding at the Victoria Bridge gauge



Riverine flooding would back up from the Nepean River along Boundary Creek, inundating the 24.5 m AHD low point on Castlereagh Road before inundating the 24.6 m AHD low point on Andrews Road. The site would become isolated by riverine flooding once floodwaters cut the low point on Andrews Road. In the 96-hour PMF the flood level at the gauge could remain at or above 24.6 m AHD (the elevation of the low point on Andrews Road) for 4.7 days (Figure 2-7). During a large riverine flood there is likely to be a gradient between the flood level at the gauge and the flood level at Andrews Road, with the latter being slightly lower. Therefore, the duration of isolation of the site in a 96-hour duration riverine PMF is likely to be slightly less than 4.7 days. It is possible that a longer duration PMF would result in a longer duration of isolation.

2.3.1.4 Emergency Response Classification

Guideline EM01 *Support for Emergency Management Planning* from the NSW Flood Risk Management Manual (NSW DPE, 2023) outlines a classification system for areas within the floodplain which determines whether those who fail to evacuate by car:

- have safe walking access to a flood free area
- would be isolated and/or overwhelmed by rising floodwaters.

The Guideline EM01 provides details of the classification system.

According to this classification system the site is located on a Low Flood Island (LFI). This is an area whose evacuation routes get cut before the area begins to flood but as floodwaters rise the whole area can be inundated.

2.3.2 Overland Flooding

The following analysis of overland flooding is based on site-specific modelling undertaken by Water Technology in 2025 for post-development conditions. The modelling shows that overland flooding flows northwards across Old Castlereagh Road at the south-eastern corner of the site before continuing to flow northwards along the site's eastern margin.

2.3.2.1 Flood Behaviour

Table 2-3 describes riverine flood behaviour at the site and along Andrews Road. Figure 2-8 through to Figure 2-11 show the flood extent and hydraulic hazard in the 50% AEP, 1% AEP, 0.2% AEP and PMF riverine events in post-development conditions.

The site would be isolated by H1 floodwaters in overland floods at least as frequent as the 20% AEP event (Figure 2-8). H1 floodwaters generally do not cause stability issues for people or vehicles (Figure 2-6), although it is never advisable to drive or walk through floodwaters of any hydraulic hazard because conditions below the surface are unknown and the flood level could keep rising.

It is only in events larger than the 0.2% AEP overland flood (Figure 2-10) that the site would become isolated by flooding with a hydraulic hazard greater than H1. In the overland PMF Old Castlereagh Road adjacent to the site would be subject to flooding with a maximum hydraulic hazard of H3, while Andrews Road would be subject to H5 flooding. In this event the ground floor hotel rooms, hotel lobby and hotel offices would be subject to above floor flooding with a maximum depth of 0.05 m. All other habitable areas in the proposed development would be above the overland PMF level.

The sub-catchment upstream of the site has an area of approximately 0.83 km². Based on the ARR Guideline v4.2 (Ball et al., 2019) the AEP of a Probable Maximum Precipitation (PMP) event in a catchment of this size is approximately 1.0×10^{-7} (i.e., 1 in 10,000,000 in any given year). Therefore, the AEP of a PMF in this sub-catchment is approximately 1.0×10^{-7} .



Table 2-3 Overland flood behaviour on site and on Andrews Road

Flood	Max. Hydraulic Hazard on Old Castlereagh Rd	Max. Hydraulic Hazard on Andrews Rd	Site Affection	Site Isolation*
50% AEP	Not flooded	H1	H1 flooding along the northern, eastern and western margins of the hotel building	Isolated by low hazard flooding
20% AEP	Not flooded	H1	H1 flooding along the northern, eastern and western margins of the hotel building	Isolated by low hazard flooding
10% AEP	Not flooded	H1	H1 flooding along the northern, eastern and western margins of the hotel building	Isolated by low hazard flooding
5% AEP	Not flooded	H1	- H1 flooding along the northern, eastern and western margins of the hotel building - H2 flooding at north-eastern corner of hotel	Isolated by low hazard flooding
2% AEP	Not flooded	H1	- H1 flooding along the northern, eastern and western margins of the hotel building - H2 flooding at north-eastern corner of hotel	Isolated by low hazard flooding
1% AEP	H1	H1	- H1 flooding along the northern, eastern and western margins of the hotel building - H2 flooding at north-eastern corner of hotel	Isolated by low hazard flooding
0.5% AEP	H1	H1	- H1 to H3 flooding along the northern, eastern and western margins of the hotel building - H1 flooding in the northern portion of the hotel undercroft carpark - H1 flooding along the northern margins of the indoor recreational facility and club buildings	Isolated by low hazard flooding



Flood	Max. Hydraulic Hazard on Old Castlereagh Rd	Max. Hydraulic Hazard on Andrews Rd	Site Affection	Site Isolation*
0.2% AEP	H1	H1	■ H1 to H3 flooding along the northern, eastern and western margins of the hotel building ■ H1 flooding in the northern portion of the hotel undercroft carpark ■ H1 flooding along the margins of the indoor recreational facility and club buildings	Isolated by low hazard flooding
PMF	H3	H5	■ Up to H3 flooding in hotel undercroft carpark ■ H1 flooding in eastern portion of undercroft carpark below indoor recreational facility ■ H1 and H2 flooding along the margins of the indoor recreational facility and club buildings ■ Above floor flooding to a depth < 0.05 m in ground floor hotel rooms, hotel lobby and hotel offices	Isolated by high hazard flooding

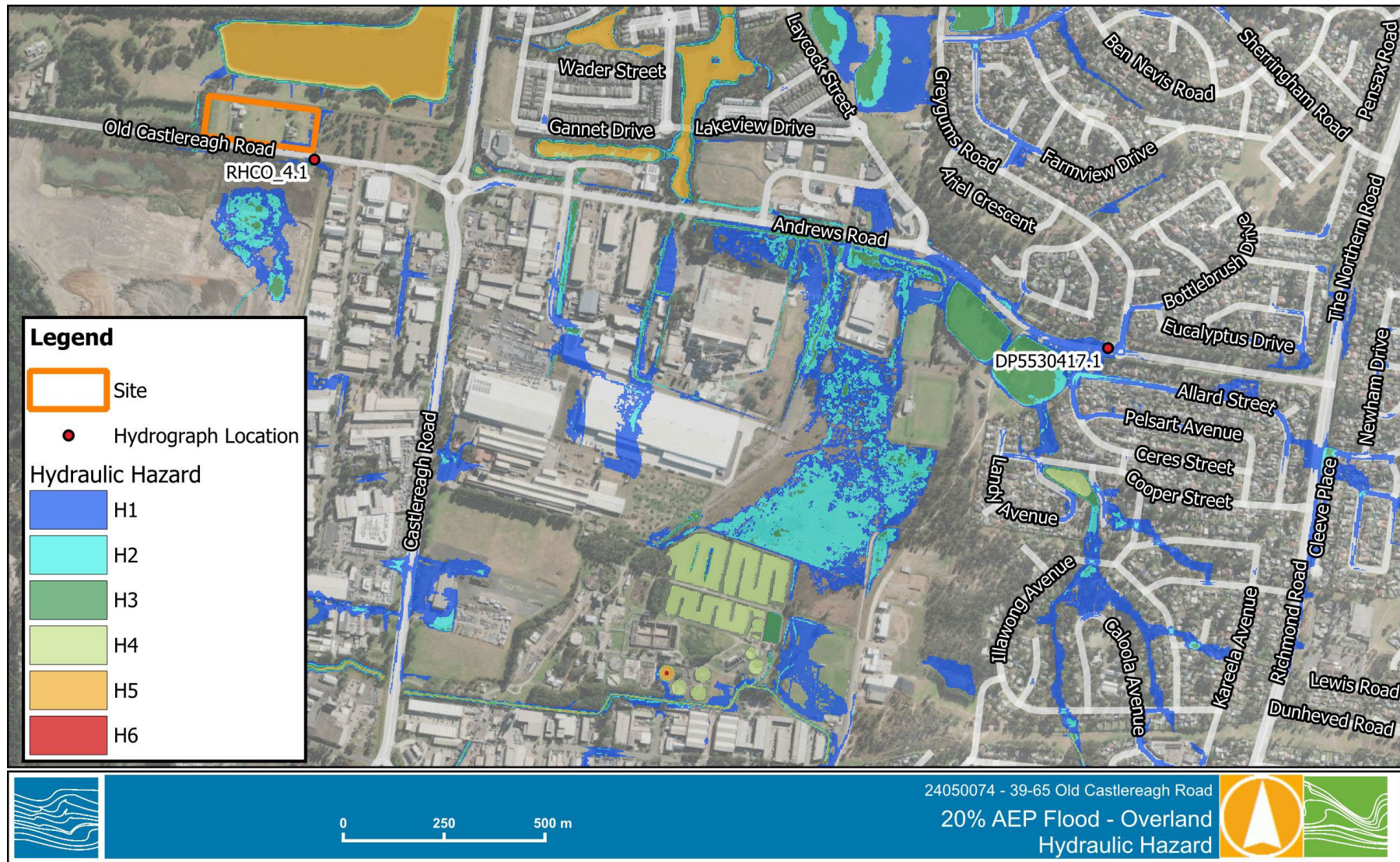


Figure 2-8 Hydraulic hazard in the 20% AEP overland flood in post-development conditions

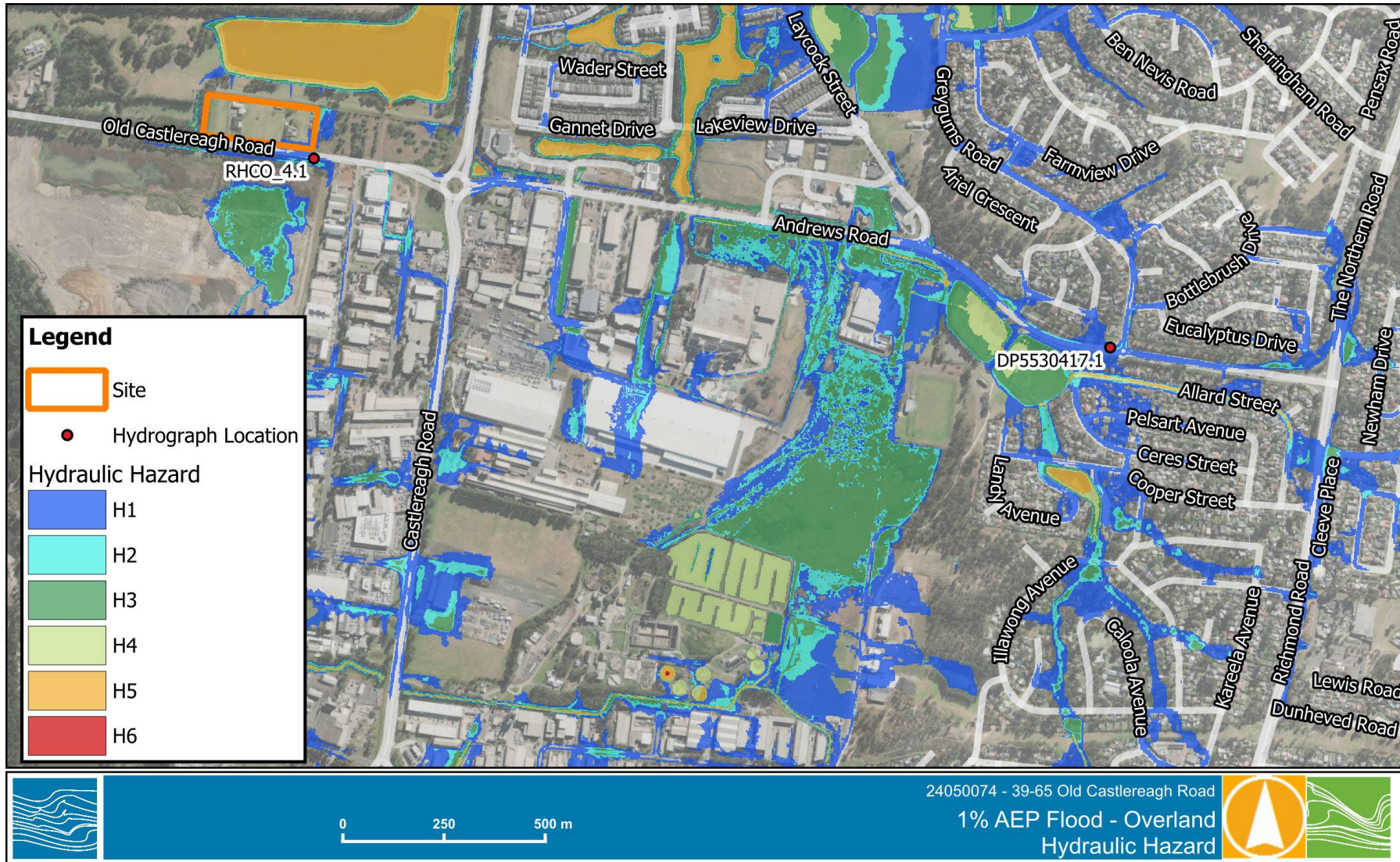


Figure 2-9 Hydraulic hazard in the 1% AEP overland flood in post-development conditions

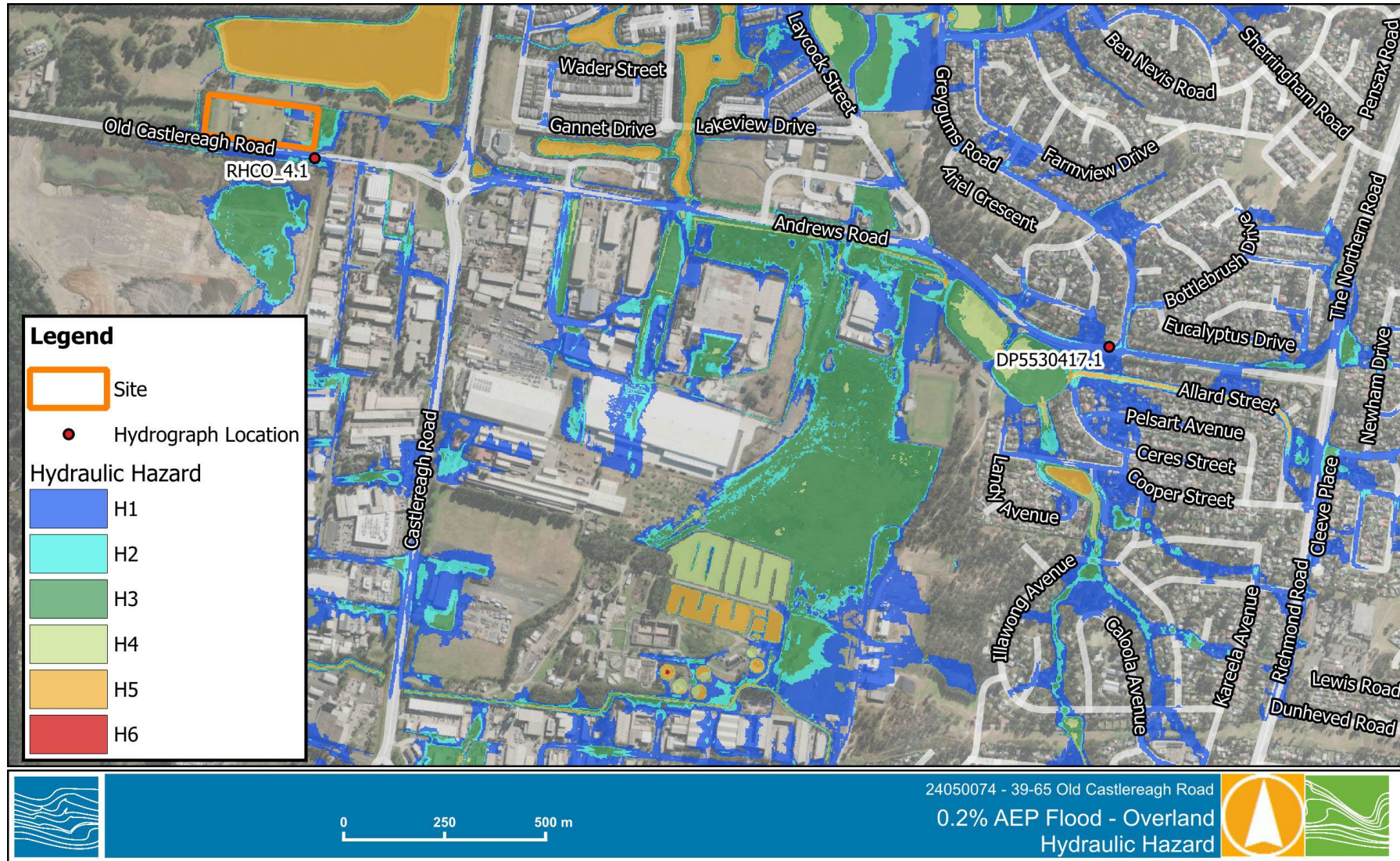


Figure 2-10 Hydraulic hazard in the 0.2% AEP overland flood in post-development conditions

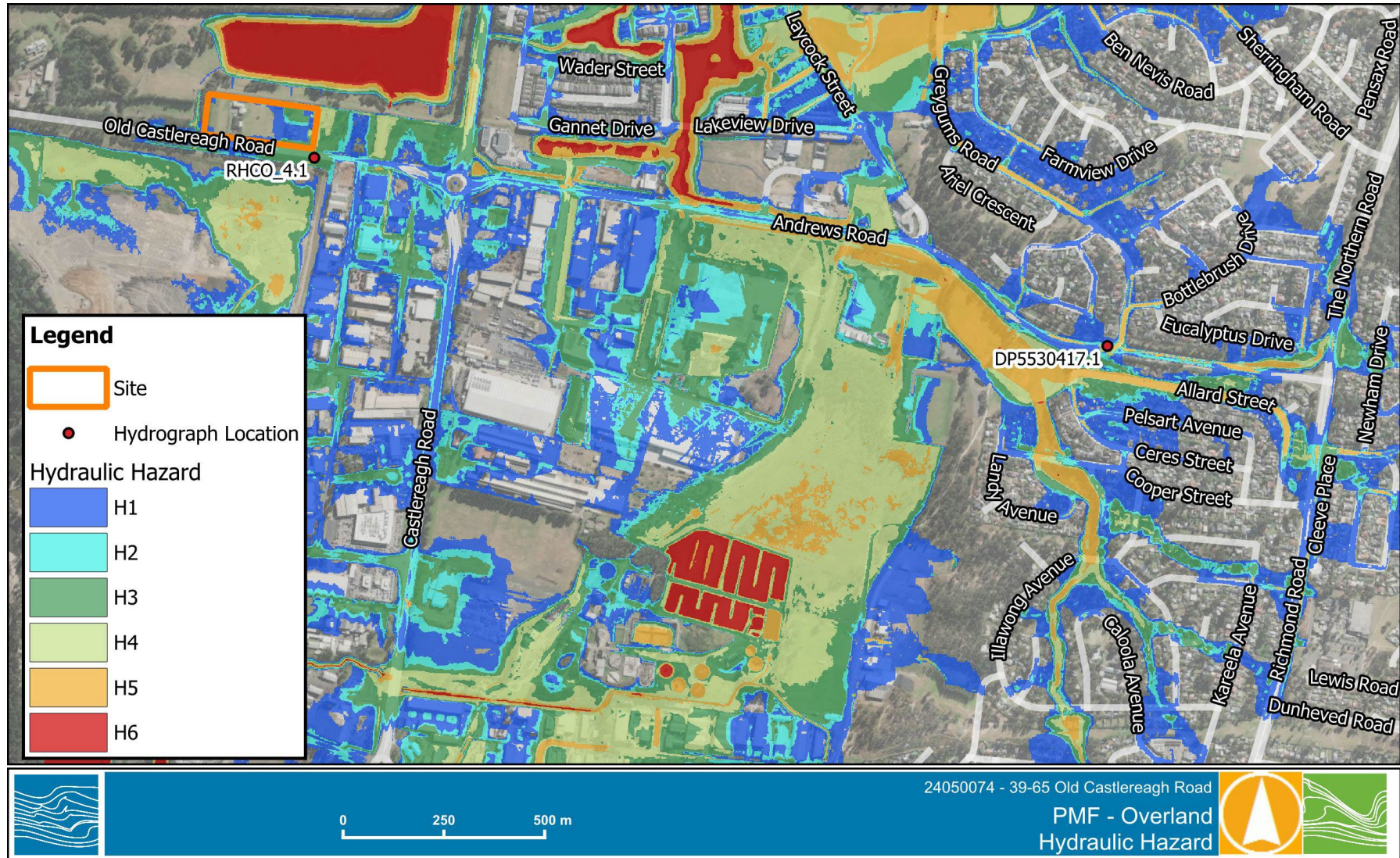


Figure 2-11 Hydraulic hazard in the overland PMF in post-development condition



2.3.2.2 Rate of Rise and Duration of Isolation

Figure 2-12 shows flood level hydrographs for a range of durations of the overland PMF on Old Castlereagh Road at the south-eastern corner of the site (location RHCO_4.1), while Figure 2-13 shows hydrographs from Andrews Road near the intersection with Greygums Road (location DP5530417.1). These hydrographs indicate that the site can be isolated by floodwaters within 30 minutes of the start of rainfall in the 3-hour duration PMF.

In the 6-hour duration PMF the site can be isolated by floodwaters on Old Castlereagh Road for approximately 7.5 hours (Figure 2-12). Floodwaters with a depth exceeding 0.3 m over the road would have a duration of almost 5 hours in this duration of the PMF.

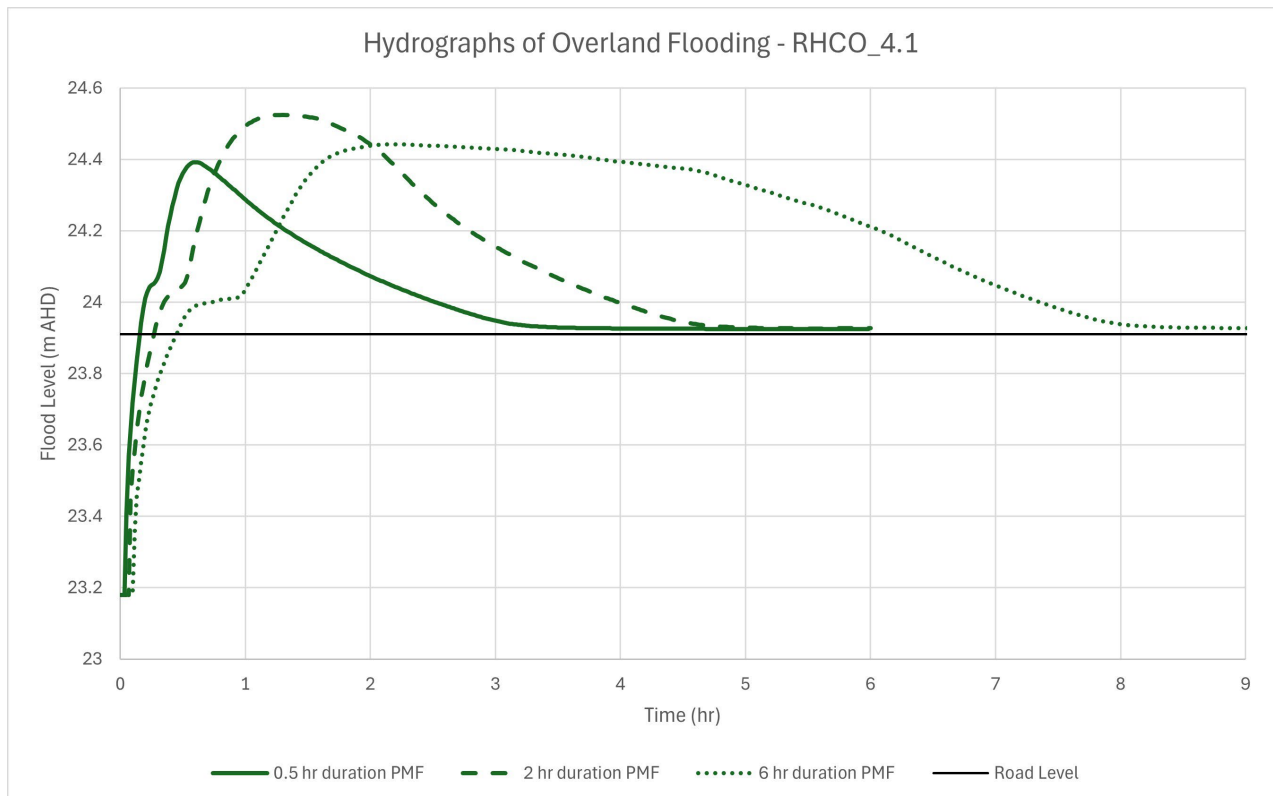


Figure 2-12 Hydrographs of overland flooding at location RHCO_4.1 (Old Castlereagh Road)

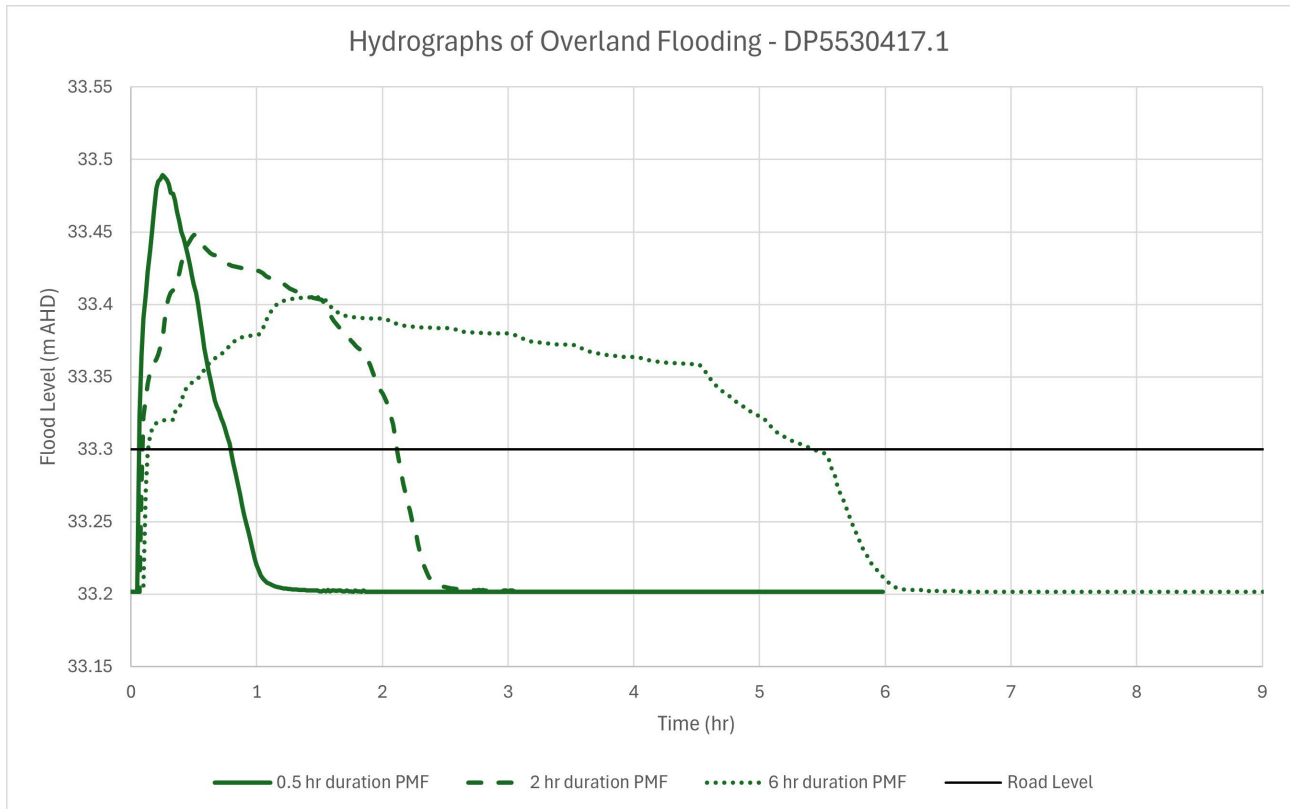


Figure 2-13 Hydrographs of overland flooding at location DP5530417.1 (Andrews Road)



3 AVAILABLE FLOOD FORECASTS AND WARNINGS

3.1 Bureau of Meteorology (BoM)

The Bureau of Meteorology (BoM) has warning products that could provide an indication of an increased flood threat. These are summarised in Table 3-1.

Table 3-1 Warning products provided by the BoM

BoM Product	Description	Warning lead-time	Where the product can be accessed	What to monitor for
Severe Weather Warnings	Issued for potentially hazardous or dangerous weather that is not solely related to severe thunderstorms, tropical cyclones or bushfires. The warnings describe the area under threat and the expected weather hazards. Warnings are issued with varying lead-times, depending on the weather situation. Occasionally, severe weather may occur without the relevant warning having been issued by the BoM.	1 – 24 hours	- Issued directly to the media when there is a high probability of flash flooding Can be found at: http://www.bom.gov.au/nsw/warnings/ - BOM Weather app	Severe Weather Warnings with reference to intense rainfall or flooding for the <u>Sydney Metropolitan Forecast Area</u>
Severe Thunderstorm Warnings	Issued for events that may produce heavy rainfall with the potential to result in flash flooding. As severe thunderstorms can develop quickly, these warnings may not provide much warning time.	As little as minutes, but generally a few hours.	- Issued directly to the media when there is a high probability of flash flooding - Can be found at: http://www.bom.gov.au/nsw/warnings/ - BOM Weather app	Severe Thunderstorm Warnings for the <u>Sydney Metropolitan Forecast Area</u>
Rainfall Maps	Coarse forecast rainfall maps which can be used to estimate the amount of rain expected to fall over the next 4 days, as well as the next 24 hours.	1 – 4 days	Can be found at: http://www.bom.gov.au/jsp/watl/rainfall/pme.jsp	Intense or prolonged rainfall in the Penrith, Warragamba, Nattai or Camden areas or in other areas upstream of Penrith in the Nepean River catchment
Rainfall Forecasts	Rainfall forecasts which can be used to estimate the amount of rain expected to fall within 3-hour windows over the next 3 days.	Up to 3 days	BOM Weather app	Intense or prolonged rainfall in the Penrith, Warragamba, Nattai or Camden areas or in other areas upstream of Penrith in the Nepean River catchment



BoM Product	Description	Warning lead-time	Where the product can be accessed	What to monitor for
Radar Service	Shows current rainfall locations and intensities. The radar station to be used for the site would be the 128 km Sydney (Terrey Hills) Radar Loop	90 minutes (BoM Weather App only)	- Can be found at: http://www.bom.gov.au/products/IDR713.loop.shtml - BOM Weather app	Intense or prolonged rainfall in the Penrith, Warragamba, Nattai or Camden areas or in other areas upstream of Penrith in the Nepean River catchment
Flood Watch	Provide early advice regarding the potential for flooding in a particular area.	24 – 96 hours	- Issued directly to the media when there is potential of flooding - Can be found at: http://www.bom.gov.au/nsw/warnings/ - BOM Weather app	Flood Watches with reference to the <u>Hawkesbury and Lower Nepean Rivers Flood Watch Area</u>
Flood Warning	Issued when there is greater certainty that flooding is expected. Issued for waterways that take more than 6 hours to respond to rainfall	6 hours	- Issued directly to the media when there is potential of flooding - Can be found at: http://www.bom.gov.au/nsw/warnings/ - BOM Weather app	Flood Warning for a flood level of 24.35 m AHD (gauge reading: 10.25 m) or greater at the Victoria Bridge gauge (Penrith)



BOM Weather 4.2
Australia's weather app
Bureau of Meteorology
Designed for iPad
#1 in Weather
★★★★★ 4.5 - 4.6 K Ratings
Free

The BOM Weather app can be set to show only the relevant warnings that apply to the area set by the user, as well as three-hourly rainfall forecasts. The use of this app is particularly recommended because it provides most of the available BoM data that can be used to inform the emergency plan on mobile devices, and the BoM warnings can be prioritised as push notifications.

Importantly, the BoM Severe Weather Warnings, Severe Thunderstorm Warnings and Flood Watches may occasionally be issued without necessarily being followed by the event that they are predicting or may not be issued at all ahead of an actual thunderstorm or flood event. As such, these warnings are to be considered like an indication – not a certainty – that a flood affecting the site might occur. Similarly, the lack of such warnings does not mean that a flood event affecting the site within the following hours or days is impossible.

The BoM also issues Flood Warnings when there is greater certainty that flooding is expected. Quantitative Flood Warnings are available for the Nepean River.



The closest gauge to the site for which a quantified flood forecast is provided is at the Nepean River at Penrith (i.e., the Victoria Bridge) gauge. This gauge has a local gauge datum of 14.1 m AHD. This means that to find the river level (or flood level) at the gauge in m AHD, 14.1 m must be added to the gauge reading:

$$\text{Flood level (m AHD)} = 14.1 \text{ m AHD} + \text{Gauge reading (m)}$$

The current target warning lead time for this gauge is 6 hours, which is for flood levels exceeding 23.0 m AHD (gauge reading: 8.9 m) on the Nepean River at Victoria Bridge. This level is greater than the moderate flood level for the gauge (Table 3-2). The BoM also provides a target lead warning time for this gauge of 8 hours for flood levels exceeding 25.4 m AHD (gauge reading: 11.3 m), which would be greater than the major flood level for the gauge. These warning times are based on the flood travel times from upstream rainfall and stream gauges to the Penrith gauge and are independent of the rate of rise of the flood.

Table 3-2 Flood classifications at the closest water level gauge

Flood Classification	Flood Level at Gauge 567047 (Penrith – Victoria Bridge) (m AHD)	Gauge Reading (m)
Minor	18.0	3.9
Moderate	22.0	7.9
Major	24.5	10.4

The Flood Evacuation Modelling Assessment prepared for the proposed development finds that early flood evacuation of the site should be triggered by a quantitative Flood Warning for a flood level of 24.35 m AHD or greater (a gauge reading of 10.25 m or greater) at the Penrith (Victoria Bridge) gauge. Therefore, the site should have 6 hours of lead warning time available for early evacuation before 24.35 m AHD is reached at the gauge. It also needs to be remembered that it is the **forecast** level at the Penrith gauge, not the observed level at the gauge, which needs to be used to trigger evacuation of the proposed development because it is the time it takes to reach the forecast level which is needed to effect evacuation.

River levels at the 567047 (Nepean River at Penrith) gauge can be monitored here:

<http://www.bom.gov.au/fwo/IDN60233/IDN60233.567047.plt.shtml>

In summary, Severe Weather Warnings and Flood Watches provide anywhere between 1 hour to 4 days of warning time that flooding may occur. These types of warnings can be issued several times per year. Flood Warnings are issued when there is more certainty that riverine flooding will occur and upstream river levels can also be monitored to provide warning that flooding is moving downstream towards Penrith. In addition, 6 hours of flood warning time is available for riverine flooding before flood levels at the Penrith gauge (Victoria Bridge) reach 24.35 m AHD or higher (gauge reading: 10.25 m or higher).

3.2 NSW State Emergency Service

The NSW State Emergency Service (SES) is also likely to issue warnings using the Australian Warning System (AWS) which is a nationally consistent, 3-tiered approach designed to provide clear warnings and lead people to take action ahead of severe weather events. The warning system comprises warning levels, action statements, hazard icons, colours and shapes. The 3 warning levels and corresponding actions are:

- **Advice** – an incident has started. Stay up to date in case the situation changes.
 - Stay informed
 - Monitor conditions
 - Reduced threat: return with caution



- **Watch and Act** – conditions are changing and you need to start taking action now.
 - Do not enter floodwater
 - Prepare to evacuate
 - Prepare to isolate
 - Avoid the area
- **Emergency Warning** – the highest level of warning. You may be in danger and need to take action immediately.
 - Evacuate now / Evacuate before [time]
 - Shelter now
 - Move to higher ground



Hazards Near Me NSW
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Free

NSW SES warnings can be monitored through the [Hazards Near Me](#) app and it is possible to set it to receive notifications for a particular location.

3.3 Observations

It would also be possible to observe what is happening around the site and use visual cues to indicate site isolation by overland flows. The observation of floodwaters along the eastern margin of the site (i.e., next to the hotel) would indicate that the site may become isolated within minutes. Observation of floodwaters across Old Castlereagh Road in front of the site, particularly in the area in front of the hotel, would indicate that the site is already isolated. Old Castlereagh Road can be observed from the hotel lobby on the ground floor of the hotel.



4 EMERGENCY MANAGEMENT CONSIDERATIONS

4.1 Flood Emergency Response Strategy

This Flood Emergency Response Plan recognises that protection of life is of critical and primary importance. Consistent with any emergency protocol, the protection of all lives is the first priority, the comfort of staff and visitors is second, and protection of site property is third.

Generally speaking, there are 2 main types of responses to a flood emergency. These are to either:

- Evacuate off-site away from the building/s to an area above the reach of floodwaters in the PMF. This is the NSWSES preferred response, provided that the risks of evacuating are deemed acceptable; or
- Take Shelter in Place (SIP), which is to evacuate vertically within the site to higher floor levels and wait until floodwaters have receded and the emergency has passed. SIP may be considered an alternative to evacuation only when the risks of evacuating are higher than the risks of SIP. SIP requires suitable access to a suitable shelter above the PMF level. The shelter must be protected from the weather, be structurally stable in a PMF and have sufficient floor area for all people likely to be on site at any one time. Additional requirements to increase the comfort of the people taking shelter may be needed depending on the specific circumstances.

Given that the site can be isolated by riverine floodwaters for a duration of at least 4.5 days, the primary flood emergency response strategy for the proposed development must be to evacuate the site in response to riverine flooding. The proposed strategy is for the proposed development to undertake early flood evacuation, consistent with the Penrith Lakes DCP – Stage 1.

Shelter in place is **NOT** a recommended flood emergency response strategy for the site. However, it should be noted that Level 2 of the club building, Level 2 of the indoor recreational facility and Levels 3 – 6 of the hotel building would be above the riverine PMF level. Therefore, should occupants of the proposed development fail to evacuate prior to the evacuation route becoming cut by floodwaters they could shelter above the floodwaters in these areas, informing the NSW SES of their situation. The consequences of failed evacuation for the site occupants thus would not be drowning, but isolation potentially for a number of days. Sheltering on site should only be a last resort if evacuation has failed because the site could be isolated for 4.5 days, there is unlikely to be power, telecommunications or safe water supply and flood depths and velocities could cause buildings to fail.

It should be recognised that for this site there is an extremely low probability (less than 1 in 500 chance per year) of floodwaters entering buildings but a moderate probability (about 1 in 50 chance per year) of evacuation routes being cut.

The following sections describe in more detail the analysis that was undertaken to inform the identification of the proposed emergency response strategy.

4.2 Regional Evacuation

The NSW SES flood response strategy for the Hawkesbury Nepean Valley is set out in its Hawkesbury Nepean Flood Emergency Plan (2020). It involves evacuating all residential, business and other premises that are at risk of flooding and directing evacuees towards Sydney Olympic Park. It is expected that most evacuees will find their own temporary accommodation with friends and relatives or at commercial accommodation outside of the floodplain. Those who cannot, will be assisted at Sydney Olympic Park.

To achieve orderly and timely evacuation, the NSW SES has divided the floodplain into sectors and subsectors with designated evacuation routes.



The site is located in the southernmost subsector of the Penrith Lakes sector. This subsector includes the existing developments in the southern portion of the Penrith Lakes precinct, such as the Penrith Whitewater Stadium, the Castlereagh Conference Centre, the Penrith Lakes Environmental Centre and the approved Nepean Business Park. This subsector would evacuate either south along Castlereagh Road before heading east along Coreen Avenue and other streets to The Northern Road or east on Andrews Road to The Northern Road. All evacuation traffic on The Northern Road heads south. The subsector and evacuation routes are shown in Figure 4-1 and Figure 4-2. The vehicular evacuation route from the site to The Northern Road is shown in Figure 4-3.

The flood evacuation road network in the Hawkesbury-Nepean Valley is already constrained in existing conditions, particularly in the vicinity of Penrith and Windsor. Therefore, in 2022 NSW DPE and WMAwater developed an early flood evacuation system for the Penrith Lakes precinct (NSW DPE 2022; WMAwater, 2022). The system is intended to evacuate the non-residential (i.e., employment and tourism) developments in the precinct prior to evacuation being triggered for surrounding areas. That is, the system is designed to fully evacuate the employment and tourism developments prior to the NSW SES ordering the evacuation of surrounding areas (NSW DPE, 2022), thereby avoiding evacuating traffic from the employment and tourism areas from exacerbating existing constraints in the flood evacuation network.

The system is detailed in the Penrith Lakes Scheme Early Flood Evacuation Guideline (Guideline) (NSW DPE, 2022) and supported by a Flood Emergency Management Plan (FEMP) (WMAwater, 2022). Although the Guideline has not been adopted by the State Government, the Penrith Lakes – Stage 1 DCP specifies that development must be consistent with early flood evacuation.

The Flood Evacuation Modelling Assessment prepared for the proposed development demonstrates that a flood warning for a flood level of 24.35 m AHD or greater at the Penrith (Victoria Bridge) gauge would provide sufficient time for evacuation of the proposed development and existing developments in the Penrith Lakes sector in the 0.02% AEP event before evacuating vehicles from the Penrith North sector would start using the road network. Site occupants should evacuate immediately once this flood warning is issued. Evacuation should not be delayed as, depending on the number of other developments approved in the Penrith Lakes sector, there may be little surplus time available before the NSW SES triggers evacuation of residential areas and other evacuation sectors.

There is potential for overland flooding to inundate the evacuation route while evacuation of the site is occurring. However, these flows are unlikely to be hazardous. The evacuation route along Old Castlereagh Road and Andrews Road would only be subject to H1 flooding from overland flows in events up to and including the 0.2% AEP flood. The NSW SES prefers regional evacuation routes be flood free in the 0.2% AEP event. However, the existing regional evacuation route nominated by the NSW SES for the Penrith Lakes sector (i.e., The Northern Road) would be subject to H1 floodwaters in the 0.2% AEP overland event, which do not generally cause stability issues for vehicles (Figure 2-6). Therefore, the evacuation route would be trafficable in overland events up to and including the 0.2% AEP flood. While it is generally advisable not to drive through floodwaters, in this case it is preferable for site occupants to do so to ensure timely evacuation completion.

It would only be in overland events larger than the 0.2% AEP flood, with probabilities approaching that of the PMF (which has a probability of approximately 1 in 10,000,000 in any given year, see Section 2.3.2.1 for discussion) that the evacuation route would be cut by H2 or greater floodwaters.

Significant riverine flooding of the Nepean River at Penrith is likely to be the result of an East Coast Low sitting over parts of the catchment for a period of a few days. In order for overland flooding to compromise early flood evacuation, intense rainfall exceeding the magnitude of the 0.2% AEP event would need to occur within the precise 6-hour window in which site occupants would be evacuating the proposed development. The probability of this timing occurring in any given year is less than the probability of the 0.2% AEP overland flood occurring. Please note, though, that overland and riverine flooding can be caused by the same weather phenomena and therefore the probabilities of these occurring are not discrete from one another.

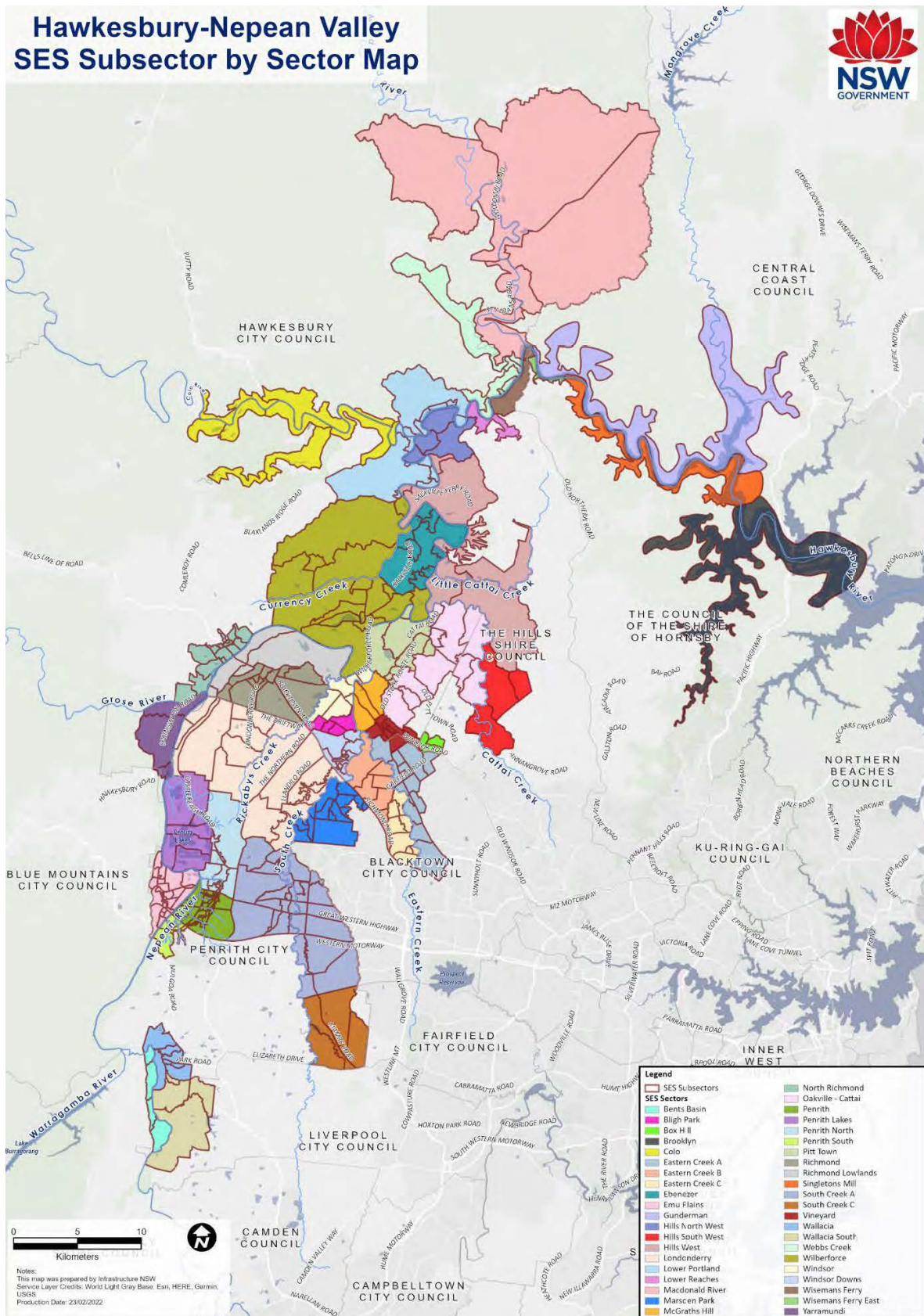


Figure 4-1 NSW SES sectors and subsectors in the Hawkesbury-Nepean floodplain (Infrastructure NSW, 2023)

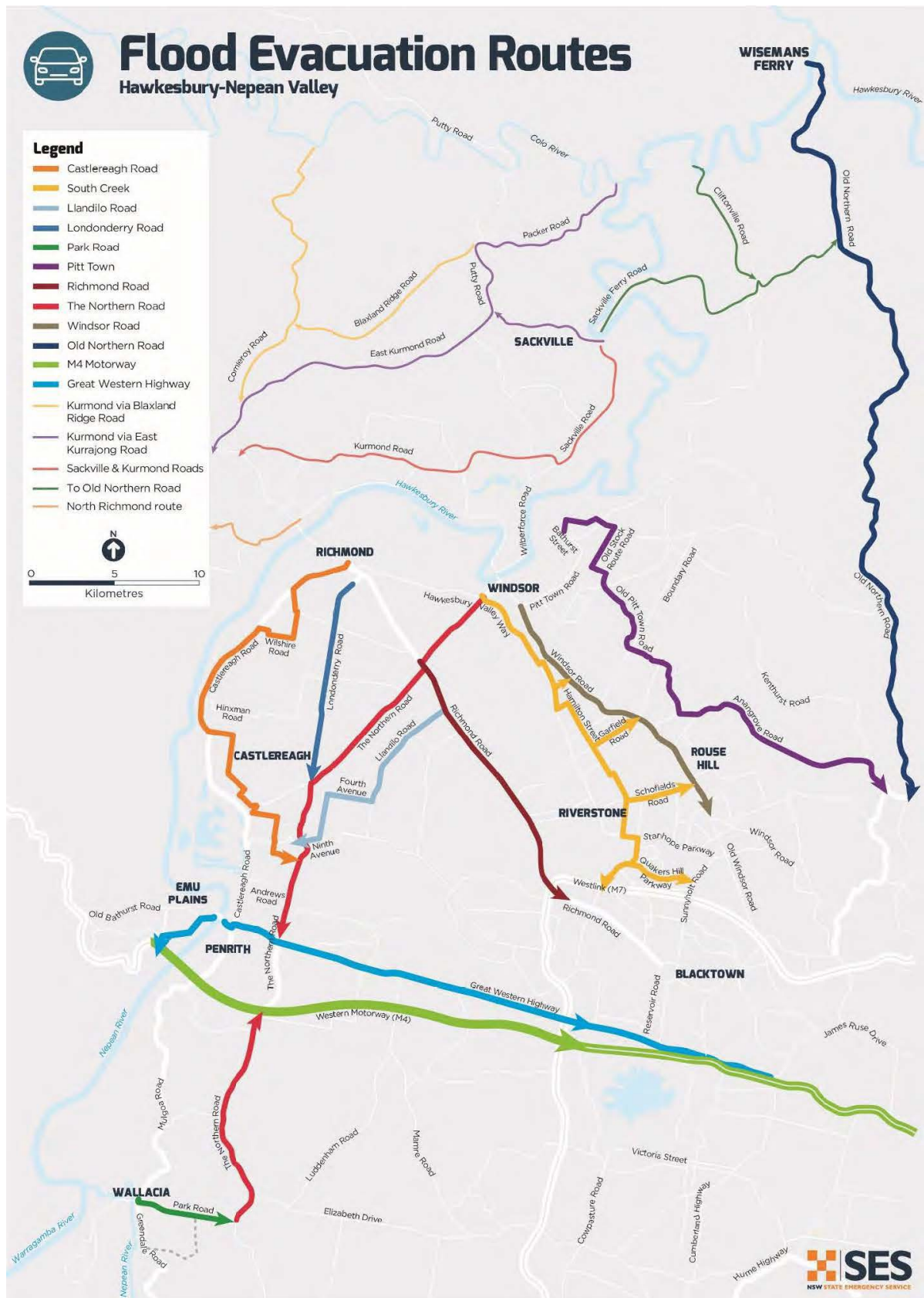


Figure 4-2 Major and secondary evacuation routes out of the Hawkesbury-Nepean Valley (Infrastructure NSW, 2023)

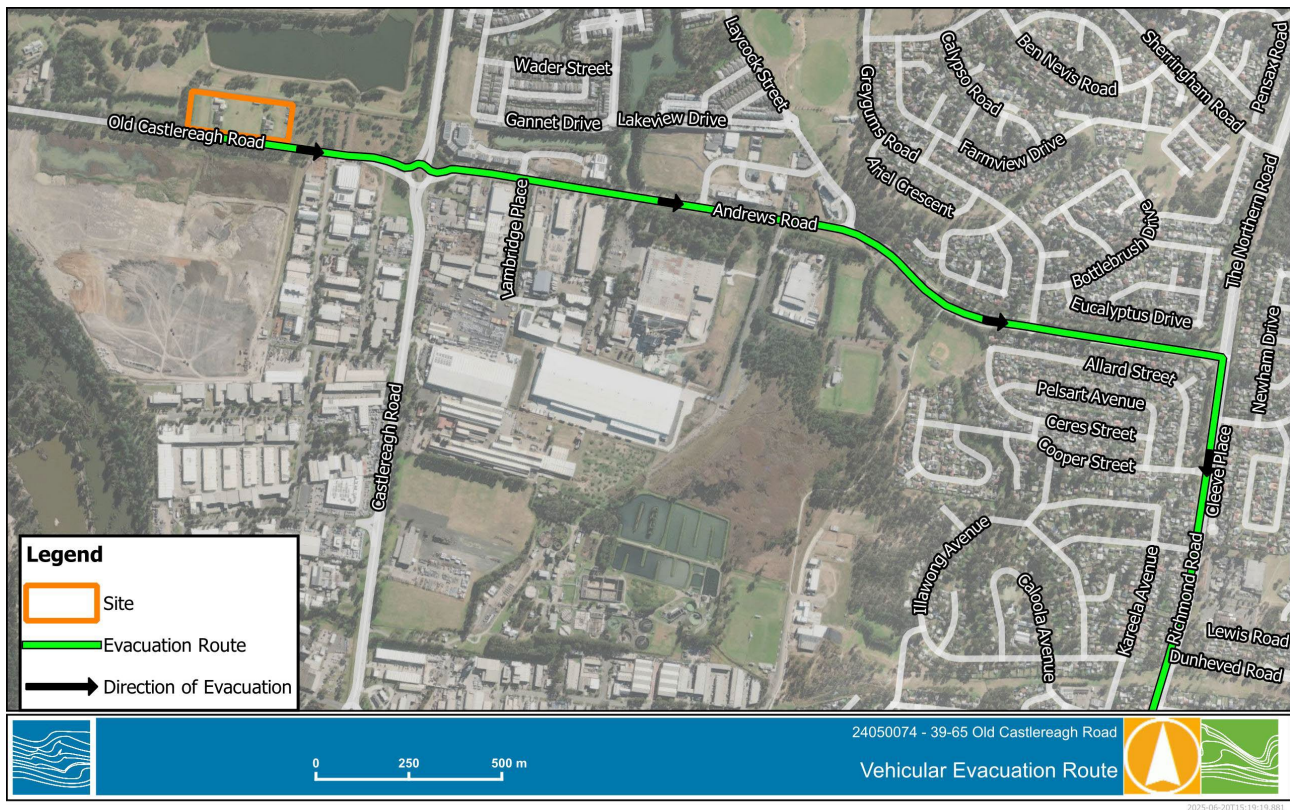


Figure 4-3 Vehicular evacuation route

4.3 Shelter in Place

Shelter in Place (SIP) is a flood emergency response strategy that may be adopted when there is an appropriate refuge on site above the PMF level. The NSW Department of Planning, Housing and Infrastructure (DPHI) has released a shelter-in-place guideline (2025), which suggests that SIP can be the most appropriate flood emergency response strategy when off-site evacuation cannot be achieved, where flooding can occur with little notice and where site isolation would be of short duration. However, there are several areas in which the proposed development is inconsistent with the criteria set out in the SIP Guideline:

- Early evacuation of the proposed development can be achieved ahead of riverine flooding (see Section 4.2.1 of this FERP and the Flood Evacuation Modelling Assessment)
- Flash flooding is not the only flood risk present at the site (i.e., the site is also impacted by riverine flooding)
- The site can be isolated for 4.5 days in a riverine flood, which exceeds the maximum duration of flood inundation/isolation of 12 hours set out in the Guideline
- The proposed development would be subject to high hazard (H6) flooding in the PMF.

Therefore, the proposed development is not consistent with the shelter in place criteria set out in the Guideline and sheltering in place is not recommended as a flood emergency response strategy for the proposed development. Early flood evacuation, as required by the Penrith Lakes DCP – Stage 1 and as discussed in Section 4.2 of this FERP, is the most appropriate flood emergency response strategy for the site.

However, it should be noted that Level 2 of the club building, Level 2 of the indoor recreational facility and Levels 3 – 6 of the hotel building would be above the riverine PMF level. Therefore, should occupants of the proposed development fail to evacuate prior to the evacuation route becoming cut by floodwaters they could shelter above the floodwaters in these areas, informing the NSW SES of their situation. The consequences of



failed evacuation for the site occupants thus would not be drowning, but isolation potentially for a number of days. Sheltering on site should only be a last resort if evacuation has failed because the site could be isolated for 4.5 days, there is unlikely to be power, telecommunications or safe water supply and flood depths and velocities could cause buildings to fail.

4.4 Flood Emergency Response Triggers

The recommended flood emergency response triggers are listed in Table 4-1.

Table 4-1 Emergency Response Triggers and Actions

Triggers from BoM or NSW SES	Alternate Triggers based on site observations	Actions to be taken
BoM issues a Severe Weather Warning for the Sydney Metropolitan area	Intense rainfall is observed on site	- Flood Wardens will monitor weather and flood warnings every 6 hours - Close the northern portion of the undercroft carpark below the hotel building
BoM issues a Flood Watch for the Nepean River at Penrith OR BoM issues a Minor flood warning for the Nepean River at Penrith		Flood Wardens will monitor forecasts, warnings and local conditions on site every 2 hours
BoM issues a Moderate flood warning for the Nepean River at Penrith		- Chief Flood Warden will notify patrons of the possibility of the site's closure if floodwaters continue to rise - Consider closure of certain facilities and cancellation of appointments and deliveries - Flood Wardens will continue to monitor forecasts, warnings and local conditions on site every 2 hours
BoM issues a flood warning for a flood level of 10.25 m or greater at Penrith OR BoM issues a Major flood warning for the Nepean River at Penrith OR NSW SES issues an Emergency Warning – Evacuate Now		Evacuate the site
NSW SES issues an Emergency Warning – Shelter Now		- Cease evacuation - Site occupants should remain in the buildings on Level 2 of the club or indoor recreational facility or Level 3 or above of the hotel building

The flood emergency response triggers listed above were selected based on the following considerations:

- A quantitative flood warning for a flood level of 10.25 m or greater at Penrith (Victoria Bridge) would provide 6 hours of lead warning time prior to this level being reached at the gauge. This would provide sufficient time for early flood evacuation of the site ahead of riverine flooding before evacuating traffic from nearby evacuation sectors and residential areas enter the road network.



- A Major flood warning for Penrith would provide 6 hours of lead warning time ahead of the major flood level (a gauge reading of 10.4 m) being reached at the Penrith gauge. In a flood rising at the rate of the 72-hour duration 0.02% AEP riverine event, this would provide approximately 5.7 hours of warning time prior to a flood level of 24.5 m AHD being reached at the gauge and evacuating traffic from nearby evacuation sectors entering the road network. This would provide sufficient time for early evacuation of the site.

4.5 Flood Risk Management Features

This Flood Emergency Response Plan assumes that the following features are integrated into the design, construction and operation of the proposed development to minimise the risk to life from flooding. It is a responsibility of site management to ensure that these features are installed and adequately maintained so that they remain fit for purpose at all times.

- All habitable floors will be located at or above 24.5 m AHD and therefore would not be subject to flooding in events up to and including the 0.5% AEP flood
- A number of staff are to be nominated as Flood Wardens. One will be nominated as Chief Flood Warden. There will be at least one Flood Warden on site for each of the club building, indoor recreational facility and the hotel building when they are operational (i.e., at least 3 Flood Wardens when all 3 buildings are operational).
- Flood Wardens are to be subscribed to the BoM Weather App and the NSW Hazards Near Me App
- The Chief Flood Warden (or Flood Warden on site) is to have access at all times to a laptop/tablet/smartphone with 4G/5G internet access and at least 48 hours of battery capacity
- Flood Wardens are to have smartphones or other portable methods of communicating with each other (e.g. radio) and with the Chief Flood Warden. These systems will have a minimum of 24 hours battery capacity (this can be achieved through the use of power banks)
- Public Address system audible in all parts of the site during heavy rainfall, including the undercroft carpark
- Level 2 of the club building, Level 2 of the indoor recreational facility and Levels 3-6 of the hotel are above the reach of flooding in events up to and including the PMF. Therefore, each building will have an area above the PMF level
- All buildings will be designed and constructed to remain structurally stable in the PMF
- A first aid kit and a list of emergency contact details should be kept in each of the buildings.
- A hard copy of this FERP is to be kept in each of the buildings.
- Flood signage will be installed around the site (all carparks, restaurants, recreational facilities and other communal areas). Signage will detail that the site is subject to flooding and provide the following instructions:
 - Evacuate the site immediately if instructed to do so by a staff member
 - Evacuate east along Old Castlereagh Road and Andrews Road and south on The Northern Road towards the Great Western Highway.
- Flood signage will need to be installed in the carparks indicating that the area is subject to flooding. Do not enter floodwaters. It is never safe to walk or drive through floodwaters.

Note that some flood risk management measures (such as flood signage details and staff procedures) will be finalised at subsequent Detailed Development Application stages.



5 FLOOD EMERGENCY RESPONSE PLAN (FERP)

5.1 Priorities

This FERP recognises that protection of life is of critical and primary importance. This FERP is principally concerned with the safety and comfort of all occupants on site. All flood emergency responses recommended in this FERP are to recognise the primacy of life and wellbeing over protection of property.

Nonetheless, it is recommended that site management and staff take all necessary measures outside of this FERP to manage the risks which flooding poses to the site and its property.

The FERP sets emergency management prevention, preparedness and response measures that are relevant to a flood emergency. It does not cover broader emergency management guidance for any other type of hazard that could affect the site.

5.2 Roles and Responsibilities

5.2.1 NSW State Emergency Services (NSWSES)

The NSWSES is the lead combat agency for flooding in NSW. It can command resources from other government organisations including local councils, Transport for NSW and the Police to assist in flood operations under its command.

Under the State Emergency and Rescue Management Act, 1989, the NSWSES has the power to direct any citizen or organisation to take actions in response to flooding. This includes the power to order evacuations.

Any flood response directive issued by the NSWSES or by delegated authority to others acting on its behalf must be followed by site management and staff. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with this FERP.

5.2.2 Site Management

Site management will be responsible for ensuring that:

- all flood management features listed in section 4.5 of this report are implemented and are regularly tested, serviced and repaired so that they remain fit for purpose at all times
- the Chief Flood Warden and Flood Wardens are familiar with this FERP
- the FERP is reviewed and updated every 5 years, following a flood that impacts the site or following a flood that triggers evacuation of the site. The consultant who reviews the FERP should check that the flood models and flood evacuation modelling used are still the most appropriate for the site.
- the FERP is kept up to date
- the flood emergency response strategy set out in the FERP is incorporated into the Site Operational Plans (SOPs) for each of the 3 buildings
- Flood Wardens are appointed from among the staff, are given flood risk management responsibilities and have sufficient training to implement this FERP
- the Chief Flood Warden and Flood Wardens are subscribed to the BoM Weather App and Hazards Near Me App to automatically receive weather and flood alerts and warnings
- there is at least one adequately trained Flood Wardens in each of the buildings when they are operational (i.e., if all buildings are operating there should be at least 3 Flood Wardens on site)



- all staff are given induction and training into their flood emergency response responsibilities and are made aware of the risk of flooding
- support the Chief Flood Warden and Flood Wardens in their duties
- appropriate post-flood site clean-up and recovery is undertaken
- there are sufficient financial, human and other resources to maintain and implement the FERP.

5.2.3 Chief Flood Warden

Site management will appoint a Chief Flood Warden from among the staff. The Chief Flood Warden will be responsible for:

- being familiar with all flood emergency management procedures set out in this document and with BoM warnings and rainfall data
- ensuring that all staff and Flood Wardens are aware of the flood emergency response procedures set out in this chapter and Appendix A of this FERP. They will organise training for themselves and the Flood Wardens in the implementation of these procedures.
- ensuring that all Flood Wardens know how to monitor flood forecasts and internal/external water levels
- subscribing themselves and Flood Wardens to the BOM Weather App and to the Hazards Near Me App to receive severe weather and flood warnings direct to their mobile devices
- ensuring an annual audit is undertaken of the resources necessary to implement the FERP
- organising the testing and maintenance of the public address system
- keeping a fully charged and functional mobile phone/laptop/tablet with 4G/5G internet access and at least 24 hours of battery charge on site at all times
- ensuring there is at least one adequately trained Flood Wardens in each of the buildings when they are operational (i.e., if all buildings are operating there should be at least 3 Flood Wardens on site)
- monitoring weather and rainfall forecasts through the Bureau of Meteorology website
- monitoring internal and external flood levels when required
- keeping soft and hard copies of the FERP on site and readily accessible to the Flood Wardens at all times, as per Section 4.5
- implementing this FERP in the event of a flood or delegating that task to an on-duty Flood Warden
- directing other staff to implement various aspects of this FERP, as required
- liaising with emergency service organisations and other external stakeholders, as required
- organising a review of the FERP every 5 years, following a flood that impacts the site or following a flood that triggers evacuation of the site
- reporting annually, and as requested, to site management on implementation and maintenance of the FERP.

The Chief Flood Warden may delegate the above tasks to others but bears ultimate responsibility for their implementation. If the Chief Flood Warden is not present on site a delegate from among the nominated Flood Wardens will take on the responsibilities of the Chief Flood Warden.



5.2.4 Flood Wardens

Flood Wardens should be selected from among the staff. If expedient, Fire Wardens should also be appointed as Flood Wardens. All Flood Wardens will be responsible for:

- ensuring that they are aware of the flood emergency response procedures set out in this FERP
- ensuring they know how to monitor flood forecasts, severe weather warnings and internal/external water levels
- ensuring a soft and hard copy of the FERP is on site and to report absences to the Chief Flood Warden
- implementing the procedures in this FERP during and after a flood.

Flood Wardens may delegate any of the actions set out in this FERP that need to be taken during or after a flood but bear ultimate responsibility for their implementation.

5.2.5 Staff, Patrons and Visitors

Staff, patrons and visitors are to follow the directions of the Flood Wardens during a flood emergency.

5.3 What to do Before, During and After a Flood

Management actions which are applicable to the entire site are included in the following sections. **Appendix A summarises all of the following actions as a check list to be used before, during and after a flood.** Appendix B lists items which should always be kept on site in case of flood. Appendix C provides an emergency contact list to be completed and kept updated by the Chief Flood Warden.

The flood emergency response operations are divided into four phases:

- Prevent – this applies at all times
- Prepare – this occurs when flooding of the site may be about to happen
- Respond – this occurs when a flood of the site is ongoing
- Recover – this occurs after a flood event

5.3.1 Prevent: Before a Flood

TRIGGER FOR ACTION — Always

ACTIONS:

- Site management will ensure there are sufficient financial, human and other resources to maintain and implement the FERP
- Site management will ensure all flood management features listed in section 4.5 of this report are implemented and are regularly tested, serviced and repaired so that they remain fit for purpose at all times
- The Chief Flood Warden will organise the testing and maintenance of the public address system
- Site management will ensure the FERP is reviewed and updated every 5 years, following a flood that impacts the site or following a flood that triggers evacuation of the site. The consultant who reviews the FERP should check that the flood models and flood evacuation modelling used are still the most appropriate for the site.
- The Chief Flood Warden will organise the review of the FERP every 5 years, following a flood that impacts the site or following a flood that triggers evacuation of the site.
- Site management will ensure the FERP is kept up to date



- The Chief Flood Warden will ensure an annual audit is undertaken of the resources necessary to implement the FERP
- The Chief Flood Warden will report annually, and as requested, to site management on implementation and maintenance of the FERP.
- Site management will ensure the flood emergency response strategy set out in the FERP is incorporated into the Site Operational Plans (SOPs) for each of the 3 buildings
- Site management will ensure Flood Wardens are appointed from among the staff, are given flood risk management responsibilities and have sufficient training to implement this FERP
- Site management will ensure the Chief Flood Warden and Flood Wardens are familiar with this FERP
- The Chief Flood Warden will ensure that all staff and Flood Wardens are aware of the flood emergency response procedures set out in Chapter 5 and Appendix A of this FERP. They will organise training for themselves and the Flood Wardens in the implementation of these procedures.
- The Chief Flood Warden will ensure all Flood Wardens know how to monitor flood forecasts and internal/external water levels
- The Chief Flood Warden and Flood Wardens will ensure they are familiar with the flood emergency response procedures set out in this FERP and with how to monitor flood forecasts, severe weather warnings and internal/external water levels
- Site management and the Chief Flood Warden will ensure that the Chief Flood Warden and Flood Wardens are subscribed to the BOM Weather App and to the Hazards Near Me App to receive severe weather and flood warnings direct to their mobile devices
- Site management and the Chief Flood Warden will ensure there is at least one adequately trained Flood Warden in each of the buildings when they are operational (i.e., if all buildings are operating there should be at least 3 Flood Wardens on site)
- Site management will ensure all staff are given induction and training into their flood emergency response responsibilities and are made aware of the risk of flooding
- The Chief Flood Warden will keep a fully charged and functional mobile phone/laptop/tablet with 4G/5G internet access and at least 24 hours of battery charge on site at all times
- The Chief Flood Warden will keep soft and hard copies of the FERP on site and readily accessible to the Flood Wardens at all times, as per Section 4.5 of this FERP
- The Flood Wardens will ensure a soft and hard copy of the FERP is on site and will report absences to the Chief Flood Warden.
- The Chief Flood Warden or delegate will monitor weather forecasts and warnings each morning.

5.3.2 Prepare: When a Flood is Possible

TRIGGER FOR ACTION:

BoM issues a Severe Weather Warning for the Sydney Metropolitan area

OR

Intense rainfall is observed on site

ACTIONS:

- The Chief Flood Warden will ensure all emergency contact details in Appendix C of the FERP are up to date



- The Chief Flood Warden will ensure there are sufficient Flood Wardens rostered for duty for the foreseeable duration of the potential flood event
- The Chief Flood Warden will remind the Flood Wardens of the procedures in this FERP
- Flood Wardens will refamiliarise themselves with their responsibilities during a flood.
- The Chief Flood Warden or delegate will monitor weather and flood warnings every **6 hours**
- The Chief Flood Warden will ensure there are soft and hard copied of the FERP in each of the buildings on site

TRIGGER FOR ACTION:

BoM issues a Flood Watch for the Nepean River at Penrith

OR

BoM issues a Minor Flood Warning for the Nepean River at Penrith

ACTIONS:

- The Chief Flood Warden will remind all staff rostered on in the next week of the procedures in the FERP
- The Chief Flood Warden or delegate will monitor weather and flood warnings and local conditions on site every **2 hours**.

TRIGGER FOR ACTION:

BoM issues a Moderate Flood Warning for the Nepean River at Penrith

ACTIONS:

- The Chief Flood Warden will notify patrons and all organisations/patrons booked to use facilities on the site in the next weeks of the possibility of the site's closure should floodwaters continue to rise
- Site management and the Chief Flood Warden, in consultation with managers of individual businesses, will consider the closure of certain facilities and the cancellation of appointments, deliveries and events scheduled for the next few days
- Flood Wardens will ensure any movable objects external to the buildings are either secured to prevent them from floating away or are brought inside the building. This includes objects such as garbage bins, storage containers or external furniture
- The Chief Flood Warden or delegate will continue to monitor weather and flood warnings and local conditions on site every **2 hours**.

5.3.3 Respond: During a Flood

TRIGGER FOR ACTION:

BoM issues a flood warning for a flood level of 10.25 m or greater for the Nepean River at Penrith

OR

BoM issues a Major Flood Warning for the Nepean River at Penrith

OR



NSW SES Issues an Emergency Warning – Evacuate Now

ACTIONS:

- The Chief Flood Warden or delegate will announce via the PA system:
 - Floodwater in the Nepean River are rising and the site will close
 - All patrons, visitors and staff should evacuate immediately towards Blacktown via Old Castlereagh Road, Andrews Road, The Northern Road and the Great Western Highway
 - Remember it is never safe to walk or drive through floodwaters.
- Flood Wardens will oversee evacuation of the facilities
- Flood Wardens will sweep the buildings on site to check that site occupants have evacuated before themselves evacuating off site.

TRIGGER FOR ACTION:

NSW SES issues an Emergency Warning – Shelter Now

ACTIONS:

- Evacuation must cease
- The Chief Flood Warden or delegate will repeatedly announce via the PA system that all remaining site occupants should immediately make their way to Level 2 of the club or of the indoor recreational facility or to Level 3-6 of the hotel
- The Chief Flood Warden or delegate will contact NSW SES on 132 500 (if possible) and advise of the situation.

5.3.4 Recover: After a Flood

TRIGGER FOR ACTION:

Emergency Services give the all-clear

ACTIONS:

- The Chief Flood Warden will ensure that no staff, patrons or visitors return to the site while flooding is still occurring or recently occurred
- Staff and patrons can return to site only after the all clear has been given by emergency services. The Chief Flood Warden will ensure they do not return to site until that time
- If there is any concern regarding the structural integrity of the buildings they should be assessed for structural damage by an engineer
- A hazard assessment will be undertaken by the Chief Flood Warden for the clean-up. Safe work methods statements will be prepared and personal protective equipment supplied consistent with the known hazards which can be associated with floods:
 - Slips, trips and falls,
 - Sharp debris,
 - Venomous animals,



- Contaminated water and sediments.
- Plumbing and gas to be checked by licensed plumber and defects rectified
- Electrical to be checked by licensed electrician and defects rectified
- Following the re-commencement of site activities, a de-brief will be held with key management staff and may involve NSW SES flood personnel/volunteers. If flooding isolated the site, inundated parts of the undercroft carpark or triggered evacuation of the site the flood event and response, including the use of this FERP and any emergency procedures will be reviewed
- Changes may be made to this FERP and the requirements for future emergency response should the review identify any improvements which may be made.



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New South Wales Department of Planning and Environment (NSW DPE) (2023). Flood Risk Management Guideline EM01: Support for Emergency Management Planning.

New South Wales State Emergency Service (NSW SES) (2020). Hawkesbury-Nepean Valley Flood Emergency Plan.

Infrastructure NSW (2023). Hawkesbury-Nepean Valley Flood Evacuation Modelling to Inform Flood Risk Management Planning.

APPENDIX A | FLOOD EMERGENCY RESPONSE
PLAN ACTION CHECKLIST





Stage	Trigger for Action	Action	Who is Responsible	What is Needed
Before a flood	Always	Site management will ensure there are sufficient financial, human and other resources to maintain and implement the FERP	Site Management	Flood Emergency Response Plan
		Site management will ensure all flood management features listed in section 4.5 of this report are implemented and are regularly tested, serviced and repaired so that they remain fit for purpose at all times	Site Management	Flood Emergency Response Plan (Section 4.5)
		The Chief Flood Warden will organise the testing and maintenance of the public address system	Chief Flood Warden	Public Address system
		Site management will ensure the FERP is reviewed and updated every 5 years, following a flood that impacts the site or following a flood that triggers evacuation of the site. The consultant who reviews the FERP should check that the flood models and flood evacuation modelling used are still the most appropriate for the site	Site Management	Flood Emergency Response Plan
		The Chief Flood Warden will organise the review of the FERP every 5 years, following a flood that impacts the site or following a flood that triggers evacuation of the site.	Chief Flood Warden	Flood Emergency Response Plan
		Site management will ensure the FERP is kept up to date	Site Management	Flood Emergency Response Plan
		The Chief Flood Warden will ensure an annual audit is undertaken of the resources necessary to implement the FERP	Chief Flood Warden	Flood Emergency Response Plan
		The Chief Flood Warden will report annually, and as requested, to site management on implementation and maintenance of the FERP	Chief Flood Warden	N/A
		Site management will ensure the flood emergency response strategy set out in the FERP is incorporated into the Site Operational Plans (SOPs) for each of the 3 buildings	Site Management	Flood Emergency Response Plan
		Site management will ensure Flood Wardens are appointed from among the staff, are given flood risk management responsibilities and have sufficient training to implement this FERP	Site Management	Flood Emergency Response Plan



Stage	Trigger for Action	Action	Who is Responsible	What is Needed
		Site management will ensure the Chief Flood Warden and Flood Wardens are familiar with this FERP	Site Management	Flood Emergency Response Plan
		The Chief Flood Warden will ensure that all staff and Flood Wardens are aware of the flood emergency response procedures set out in Section 5 and Appendix A of this FERP. They will organise training for themselves and the Flood Wardens in the implementation of these procedures	Chief Flood Warden	Flood Emergency Response Plan (Section 5, Appendix A)
		The Chief Flood Warden will ensure all Flood Wardens know how to monitor flood forecasts and internal/external water levels	Chief Flood Warden	Flood Emergency Response Plan
		The Chief Flood Warden and Flood Wardens will ensure they are familiar with the flood emergency response procedures set out in this FERP and with how to monitor flood forecasts, severe weather warnings and internal/external water levels	Chief Flood Warden, Flood Wardens	Flood Emergency Response Plan, BoM Weather app, Hazards Near Me app, Mobile phones / Computers with 4G/5G internet
		Site management and the Chief Flood Warden will ensure that the Chief Flood Warden and Flood Wardens are subscribed to the BOM Weather App and to the Hazards Near Me App to receive severe weather and flood warnings direct to their mobile devices	Site Management, Chief Flood Warden	BoM Weather app, Hazards Near Me app, Mobile phones / Computers with 4G/5G internet
		Site management and the Chief Flood Warden will ensure there is at least one adequately trained Flood Warden in each of the buildings when they are operational (i.e., if all buildings are operating there should be at least 3 Flood Wardens on site)	Site Management, Chief Flood Warden	N/A
		Site management will ensure all staff are given induction and training into their flood emergency response responsibilities and are made aware of the risk of flooding	Site Management	Flood Emergency Response Plan
		The Chief Flood Warden will keep a fully charged and functional mobile phone/laptop/tablet with 4G/5G internet access and at least 24 hours of battery charge on site at all times	Chief Flood Warden	Mobile phones / Computers with 4G/5G internet
		The Chief Flood Warden will keep soft and hard copies of the FERP on site and readily accessible to the Flood Wardens at all times, as per Section 4.5 of this FERP	Chief Flood Warden	Flood Emergency Response Plan



Stage	Trigger for Action	Action	Who is Responsible	What is Needed
		The Flood Wardens will ensure a soft and hard copy of the FERP is on site and will report absences to the Chief Flood Warden	Flood Wardens	Flood Emergency Response Plan
		The Chief Flood Warden or delegate will monitor weather forecasts and warnings each morning	Chief Flood Warden	BoM Weather app, Hazards Near Me app, Mobile phones / Computers with 4G/5G internet
When a flood is possible	BoM issues a Severe Weather Warning for the Sydney Metropolitan area OR Intense rainfall is observed on site	The Chief Flood Warden will ensure all emergency contact details in Appendix C of the FERP are up to date	Chief Flood Warden	Flood Emergency Response Plan (Appendix C)
		The Chief Flood Warden will ensure there are sufficient Flood Wardens rostered for duty for the foreseeable duration of the potential flood event	Chief Flood Warden	N/A
		The Chief Flood Warden will remind the Flood Wardens of the procedures in this FERP	Chief Flood Warden	Flood Emergency Response Plan
		Flood Wardens will refamiliarise themselves with their responsibilities during a flood	Flood Wardens	Flood Emergency Response Plan
		The Chief Flood Warden or delegate will monitor weather and flood warnings every 6 hours	Chief Flood Warden / Delegate	BoM Weather app, Hazards Near Me app, Mobile phones / Computers with 4G/5G internet
		The Chief Flood Warden will ensure there are soft and hard copied of the FERP in each of the buildings on site	Chief Flood Warden	Flood Emergency Response Plan
		The Chief Flood Warden will remind all staff rostered on in the next week of the procedures in the FERP	Chief Flood Warden	Flood Emergency Response Plan



Stage	Trigger for Action	Action	Who is Responsible	What is Needed
	BoM issues a Flood Watch for the Nepean River at Penrith OR BoM issues a Minor Flood Warning for the Nepean River at Penrith	The Chief Flood Warden or delegate will monitor weather and flood warnings and local conditions on site every 2 hours	Chief Flood Warden / Delegate	BoM Weather app, Hazards Near Me app, Mobile phones / Computers with 4G/5G internet
	BoM issues a Moderate Flood Warning for the Nepean River at Penrith	The Chief Flood Warden will notify patrons and all organisations/patrons booked to use facilities on the site in the next weeks of the possibility of the site's closure should floodwaters continue to rise	Chief Flood Warden	N/A
		Site management and the Chief Flood Warden, in consultation with managers of individual businesses, will consider the closure of certain facilities and the cancellation of appointments, deliveries and events scheduled for the next few days	Site Management, Chief Flood Warden	N/A
		Flood Wardens will ensure any movable objects external to the buildings are either secured to prevent them from floating away or are brought inside the building. This includes objects such as garbage bins, storage containers or external furniture	Flood Wardens	N/A
		The Chief Flood Warden or delegate will continue to monitor weather and flood warnings and local conditions on site every 2 hours	Chief Flood Warden / Delegate	BoM Weather app, Hazards Near Me app, Mobile phones / Computers with 4G/5G internet



Stage	Trigger for Action	Action	Who is Responsible	What is Needed
During a flood	BoM issues a flood warning for a flood level of 10.25 m or greater for the Nepean River at Penrith OR BoM issues a Major Flood Warning for the Nepean River at Penrith OR NSW SES Issues an Emergency Warning – Evacuate Now	The Chief Flood Warden or delegate will announce via the PA system: ■ Floodwaters in the Nepean River are rising and the site will close ■ All patrons, visitors and staff should evacuate immediately towards Blacktown via Old Castlereagh Road, Andrews Road, The Northern Road and the Great Western Highway ■ Remember it is never safe to walk or drive through floodwaters.	Chief Flood Warden / Delegate	Public Address system
		Flood Wardens will oversee evacuation of the facilities	Flood Wardens	N/A
		Flood Wardens will sweep the buildings on site to check that site occupants have evacuated before themselves evacuating off site	Flood Wardens	N/A
	NSW SES issues an Emergency Warning – Shelter Now	Evacuation must cease	Chief Flood Warden	N/A
		The Chief Flood Warden or delegate will repeatedly announce via the PA system that all remaining site occupants should immediately make their way to Level 2 of the club or of the indoor recreational facility or to Level 3-6 of the hotel	Chief Flood Warden / Delegate	Public Address system
		The Chief Flood Warden or delegate will contact NSW SES on 132 500 (if possible) and advise of the situation	Chief Flood Warden / Delegate	Mobile Phone
After a flood		The Chief Flood Warden will ensure that no staff, patrons or visitors return to the site while flooding is still occurring or recently occurred	Chief Flood Warden	N/A



Stage	Trigger for Action	Action	Who is Responsible	What is Needed
	Emergency Services give the all-clear	Staff and patrons can return to site only after the all clear has been given by emergency services. The Chief Flood Warden will ensure they do not return to site until that time	Chief Flood Warden	N/A
		If there is any concern regarding the structural integrity of the buildings they should be assessed for structural damage by an engineer	Site Management	Flood Emergency Contact List (Appendix C)
		A hazard assessment will be undertaken by the Chief Flood Warden for the clean-up. Safe work methods statements will be prepared and personal protective equipment supplied consistent with the known hazards which can be associated with floods: ■ Slips, trips and falls, ■ Sharp debris, ■ Venomous animals, ■ Contaminated water and sediments.	Chief Flood Warden	N/A
		Plumbing and gas to be checked by licensed plumber and defects rectified	Site Management	Flood Emergency Contact List (Appendix C)
		Electrical to be checked by licensed electrician and defects rectified	Site Management	Flood Emergency Contact List (Appendix C)
		Following the re-commencement of site activities, a de-brief will be held with key management staff and may involve NSW SES flood personnel/volunteers. If flooding isolated the site, inundated parts of the undercroft carpark or triggered evacuation of the site the flood event and response, including the use of this FERP and any emergency procedures will be reviewed	Site Management, Chief Flood Warden	Flood Emergency Response Plan
		Changes may be made to this FERP and the requirements for future emergency response should the review identify any improvements which may be made	Site Management, Chief Flood Warden	Flood Emergency Response Plan



APPENDIX B | FLOOD EMERGENCY ITEMS





Item	Date Checked
Fully charged mobile phone, tablet or laptop with 4G/5G internet access capabilities and at least 48 hours of independent power supply (battery capacity or portable power bank)	
Soft and hard copies of up-to-date primary contact lists	
Flood Emergency Kit - a plastic container clearly marked including: ■ Printed copy of the latest version of this FERP ■ Battery operated torches with in-date batteries in each and a set of in-date spare batteries for each ■ A battery-operated portable radio to listen to ABC radio (702 AM) for flood and other warning broadcasts. This must have in-date batteries and a set of in-date spare batteries ■ First aid kit	



APPENDIX C | FLOOD EMERGENCY CONTACT LIST





Name	Organisation	Role	Contact Details
		Chief Flood Warden	
		Flood Warden	
		Flood Warden... (as required)	
	Emergency Services	Fire/ ambulance/ police	000
	NSW SES	SES Local Controller	132 500
	Nepean Hospital	Medical	(02) 4734 2000
		Electricity Supplier	
		Gas Supplier	
		Water and Sewage Supplier	
		Telecommunications	
		Waste Collection	
		Water Pumping Services	

This list is to be completed and kept updated by the Chief Flood Warden at all times once operational.

Melbourne

15 Business Park Drive
Notting Hill VIC 3168

Brisbane

Level 5, 43 Peel Street
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First Floor, 40 Rowan Street
Wangaratta VIC 3677

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Stawell VIC 3380

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Sydney

Suite 3, Level 1, 20 Wentworth Street
Parramatta NSW 2150

Adelaide

1/198 Greenhill Road
Eastwood SA 5063

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7/3 Empire Street
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