

Flood Emergency Response Plan

SummitCare Penrith

Prepared for The Trustee for Peter Wohl Family Trust & The Trustee for Wohlren Family Trust c/o Centurion Project Management / 22 January 2026

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1.0 Introduction

TTW has been engaged by the Trustee for Peter Wohl Family Trust & The Trustee for Wohlren Family Trust c/o Centurion Project Management to provide a Flood Emergency Response Plan (FERP) for SummitCare Penrith, an aged care facility located at 366 Jamison Road, Jamisontown, NSW 2750.

The purpose of this FERP is to summarise the flood risks associated with the site, identify preparation measures that should be undertaken to mitigate such risks, and provide an action plan with steps to be carried out during a flood event. The details of this report are based on currently available information and correspondence undertaken at the time of writing.

1.1 Reference Documents

- Australian Institute of Disaster Resilience (AIDR) Guideline 7-3: Flood Hazard (2017)
- Bureau of Meteorology (2024) Service Level Specification for Flood Forecasting and Warning Services for New South Wales and the Australian Capital Territory
- Bureau of Meteorology (2025) Climate Data Online (Daily Rainfall Data), Available at: <https://www.bom.gov.au/climate/data/#mapoption>
- Bureau of Meteorology (2025) Jamisontown Detailed Forecast, Available at: <https://www.bom.gov.au/places/nsw/jamisontown/forecast/detailed/>
- Infrastructure NSW (2017) 'Resilient Valley, Resilient Communities' – Hawkesbury-Nepean Valley Flood Risk Management Strategy
- NSW Department of Planning and Environment (2021) Considering Flooding in Land Use Planning Guideline
- NSW Department of Planning and Environment (2023) Flood Risk Management Manual <https://www.environment.nsw.gov.au/topics/water/floodplains/floodplain-manual>
- NSW Department of Planning, Housing and Infrastructure – Planning Circular PS 24-001, Update on addressing flood risk in planning decisions, 1st March 2024
- NSW Department of Planning, Housing and Infrastructure (2025) Shelter in place guideline for flash flooding
- NSW Reconstruction Authority (2024) Hawkesbury-Nepean River Flood Study – Flood Study Report
- NSW SES (2024) Hawkesbury-Nepean Fact Sheet – “Know how to get out”, Available at: https://www.nsw.gov.au/sites/default/files/noindex/2023-10/ins9015_knowhowtogetoutfactsheet_v10.pdf
- NSW SES (2024) Hawkesbury-Nepean Fact Sheet – “Your Get Ready to Go Kit”, Available at: https://www.ses.nsw.gov.au/modules/custom/ses_hfm/assets/pdf/ins9015_yourhomeemergencykitfactsheet_v10_film_web.pdf
- NSW SES (2024) Hawkesbury-Nepean Interactive Flood Map, Available at: <https://www.ses.nsw.gov.au/hawkesbury-nepean-floods>
- Penrith City Council (2019) Peach Tree and Lower Surveyors Creeks Flood Study, Final Report, Volume 1, 2 and 3. Available at: <https://floodata.ses.nsw.gov.au/dataset/peach-tree-and-lower-surveyors-creek-flood-study-report>
- Penrith City Council (2019) Penrith Development Control Plan 2014, Volume 1, Part C3 – Water Management. Available at: <https://www.penrithcity.nsw.gov.au/building-development/planning-zoning/planning-controls/development-control-plans>
- State Emergency Management Committee (2020) Hawkesbury-Nepean Valley Flood Emergency Plan 2020-1.0 – A Sub Plan of the State Emergency Management Plan (EMPLAN)

1.2 Proposed Development

SummitCare Penrith is an existing aged care facility with a current capacity of 95 beds. It has been proposed that the site be upgraded to increase capacity, including an extension of the existing buildings to upgrade the site to a complex community home comprised of four buildings. The redevelopment of the site will provide 92 apartments with an assumed 1.5 residents per room, representing an increase of approximately 43 residents.

However, following redevelopment works, Summitcare Penrith will transition into a more capable and independent living seniors use, primarily offering Independent Living Units (ILUs). Residents will typically have their own car space, be mobile, and not receive regular nursing care. Only six existing residents currently have special care needs and require nursing assistance, and there is no intention to increase the capacity of specialised care units as part of the proposed works.

This FERP is provisional and has been prepared on the basis that the redeveloped facility will operate primarily as an independent living seniors' community with a reduced reliance on external emergency services for evacuation. However, senior residents remain inherently more vulnerable than the general population, and this has been appropriately accounted for in the planning framework.

Several concept design options for the site have been reviewed and tested. The current architectural concept site plan is shown in Figure 1.



Figure 1: Proposed ground floor plan for the site (Source: Jackson Teece drawing number DA-110, dated 19 January 2026)

2.0 Flood Behaviour

The site is situated within the Peach Tree and Lower Surveyors Creek catchment. Flood levels in the catchment are a combination of overland flooding from rainfall over the local catchment, alongside backwater effects in Peach Tree Creek from flooding in the Nepean River.

The site is consequently at risk from both regional and local catchment flooding.

2.1 Regional Flooding – Hawkesbury-Nepean River

The Hawkesbury-Nepean River is a major regional river system influencing flood behaviour across the Penrith and western Sydney floodplain. Flooding within this system is characterised by long-duration events driven by widespread rainfall and upstream catchment contributions, with significant backwater effects extending into connected tributaries, including Peach Tree Creek.

The regional flood behaviour adopted for this assessment is based on the outcomes of the 2024 Hawkesbury-Nepean River Flood Study (HNRFS) prepared for the NSW Reconstruction Authority (NSWRA).

Flood levels and extents have been taken directly from the NSWRA hydraulic model outputs, and no additional hydraulic modelling or assessment of post-development flood behaviour has been undertaken as part of this study.

Refer to the Flood Impact and Risk Assessment report submitted along with this FERP for more detailed information on regional flood behaviour.

2.1.1 Flood Depths and Levels

Figure 2 and Figure 3 present flood depths and levels surrounding the site during a Hawkesbury-Nepean flood in the 1% AEP and PMF events, respectively.

The following observations have been made:

- The site is not impacted by Hawkesbury-Nepean flooding in the 1% AEP event, which represents the primary design flood level typically adopted for development assessment. In this event, floodwaters terminate at the northern extent of Harris Street, adjacent to the site's northwestern corner, with a peak flood level of 26.45m AHD. The proposed ground floor levels of the new buildings are set to 27.8m AHD, a minimum of 1350mm above this.
- Offsite, flood depths in the 1% AEP event increase significantly further west of the site, cutting off westward travel on Jamison Road. Flood depths exceed 2.0m at the crossing over Peach Tree Creek. To the east of the site, roads are flood-free.
- In the 0.5% AEP event, the wider site is inundated, with a peak flood level of 27.75m AHD. However, impacts are limited to external areas in this event, as the proposed buildings are set 50mm above this flood level and would not experience above-floor inundation.
- In the PMF event, flood extent increases substantially, inundating most of the Penrith and Jamisontown regions. Flood depths across the south of the site exceed 6.0m, with a flood level of 32.65m AHD. This would result in above-floor inundation of between 4.85-4.95m within the proposed buildings.
- In comparison with large areas of the Hawkesbury-Nepean floodplain, which experience deep and high-hazard inundation in more frequent events, the site occupies a relatively elevated position and is subject to comparatively low flood risk.

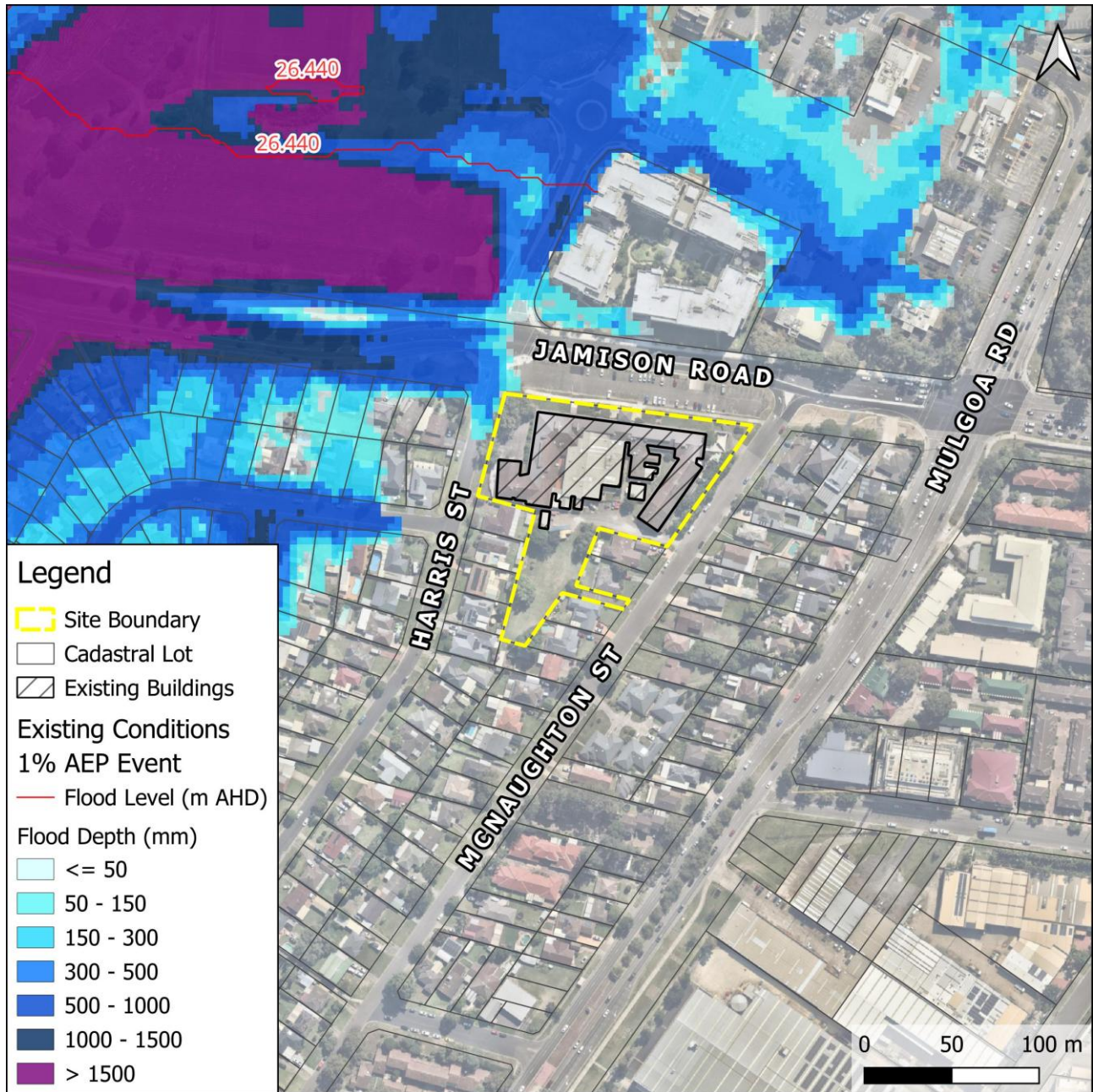


Figure 2: 1% AEP flood depths and levels at the site during a regional Hawkesbury-Nepean River flood

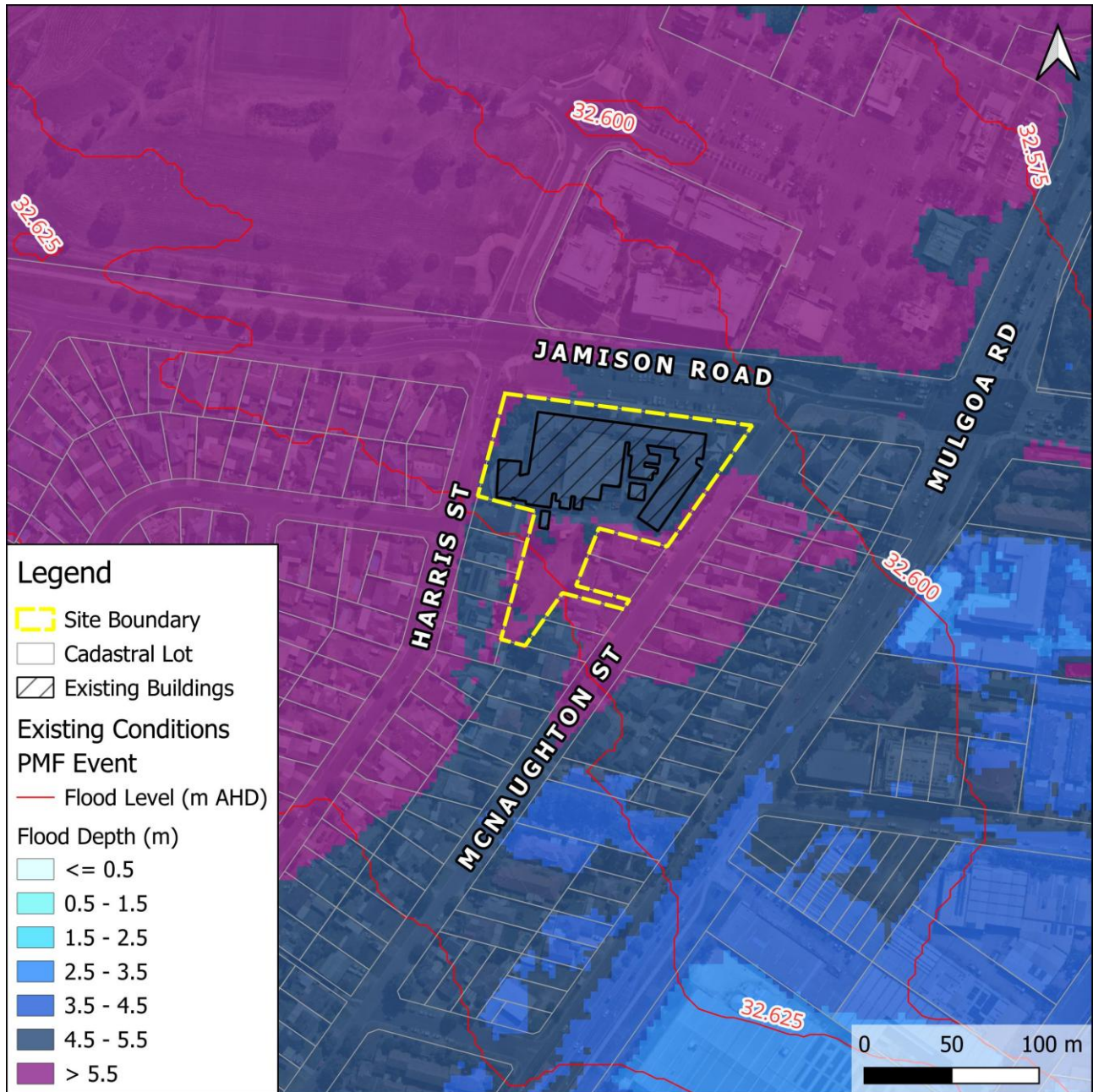


Figure 3: PMF depths and levels at the site during a regional Hawkesbury-Nepean River flood (Note flood depth symbology has been altered for the PMF event due to the significant depths in this event)

2.1.2 Flood Hazard Classification

For both regional and local flooding, the relative vulnerability of the community to flood hazard has been assessed by using the flood hazard vulnerability curves set out in 'Handbook 7 – Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia' of the Australian Disaster Resilience Handbook Collection (2017). These curves assess the vulnerability of people, vehicles and buildings to flooding based on the velocity and depth of flood flows.

The flood hazard categories are presented in Figure 4, ranging from a level of H1 (generally safe for people, vehicles and buildings) to H6 (unsafe for vehicles and people, with all buildings considered vulnerable to failure). Table 1 outlines the threshold limits for each hazard category.

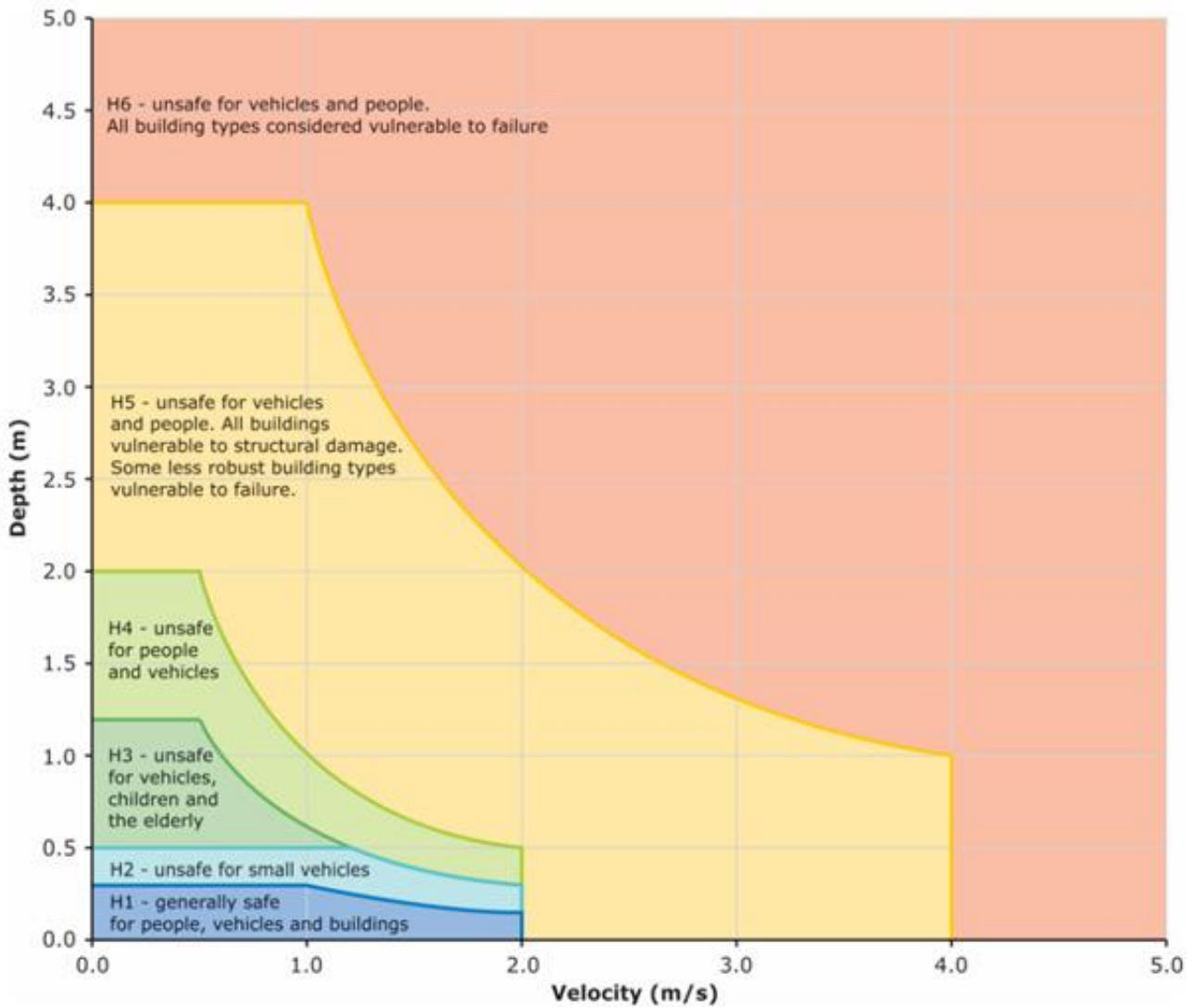


Figure 4: Flood hazard vulnerability curve (Source: Flood Risk Management Guide FB03 - Flood Hazard, NSW Department of Planning and Environment, 2022)

Table 1: Hazard vulnerability threshold limits

Hazard Classification	Description	Classification Limit (m ² /s)	Limiting still water depth (D) (m)	Limiting velocity (V) (m/s)
H1	Generally safe for people, vehicles and buildings	$D \times V \leq 0.3$	0.3	2.0
H2	Unsafe for small vehicles	$D \times V \leq 0.6$	0.5	2.0
H3	Unsafe for vehicles, children and the elderly	$D \times V \leq 0.6$	1.2	2.0
H4	Unsafe for people and vehicles	$D \times V \leq 1.0$	2.0	2.0
H5	Unsafe for people and vehicles. All buildings vulnerable to structural damage.	$D \times V \leq 4.0$	4.0	4.0
H6	Unsafe for people and vehicles. All building types considered vulnerable to failure.	$D \times V > 4.0$	–	–

Figure 5 and Figure 6 present the hazard classification of Hawkesbury-Nepean River flooding in the 1% AEP and PMF events, respectively. The following observations have been made:

- Although the northern portion of Harris Street is untrafficable in the 1% AEP event (with a hazard classification of H3, regarded as unsafe for vehicles), site users can travel south on this road, turning left onto Willoring Crescent and then onto Mulgoa Road. Alternatively, the McNaughton Street driveway is flood-free in the 1% AEP event.
- Flood hazard across the site in events up to the 0.5% AEP is predominantly low to moderate, with severe high hazard conditions only arising in very rare events approaching the PMF.
- In the PMF event, flows within the site and across the surrounding area are classified as H6 hazard level, unsafe for people and vehicles, with all buildings vulnerable to structural failure.

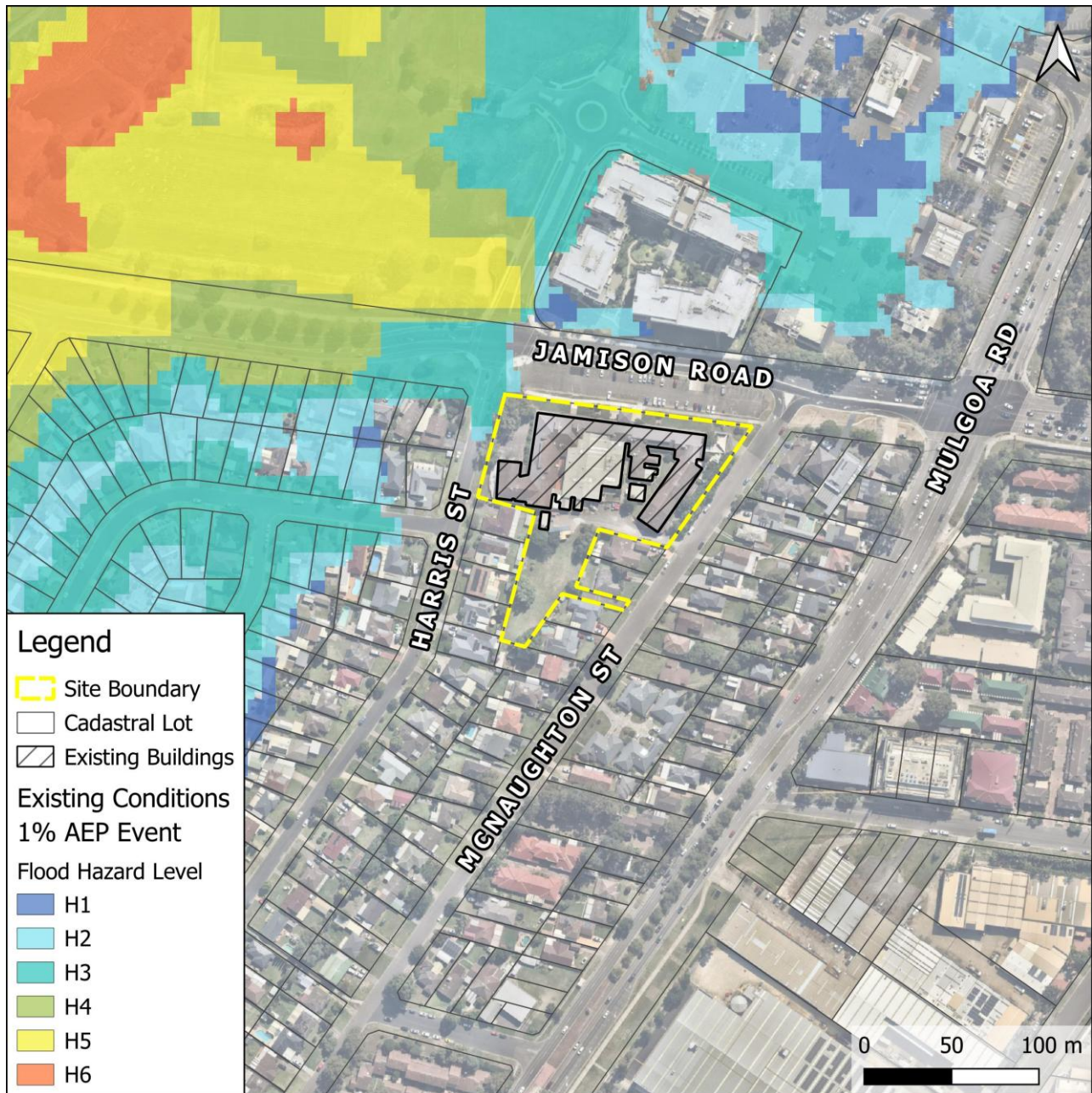


Figure 5: 1% AEP flood hazard levels at the site during a regional Hawkesbury-Nepean River flood

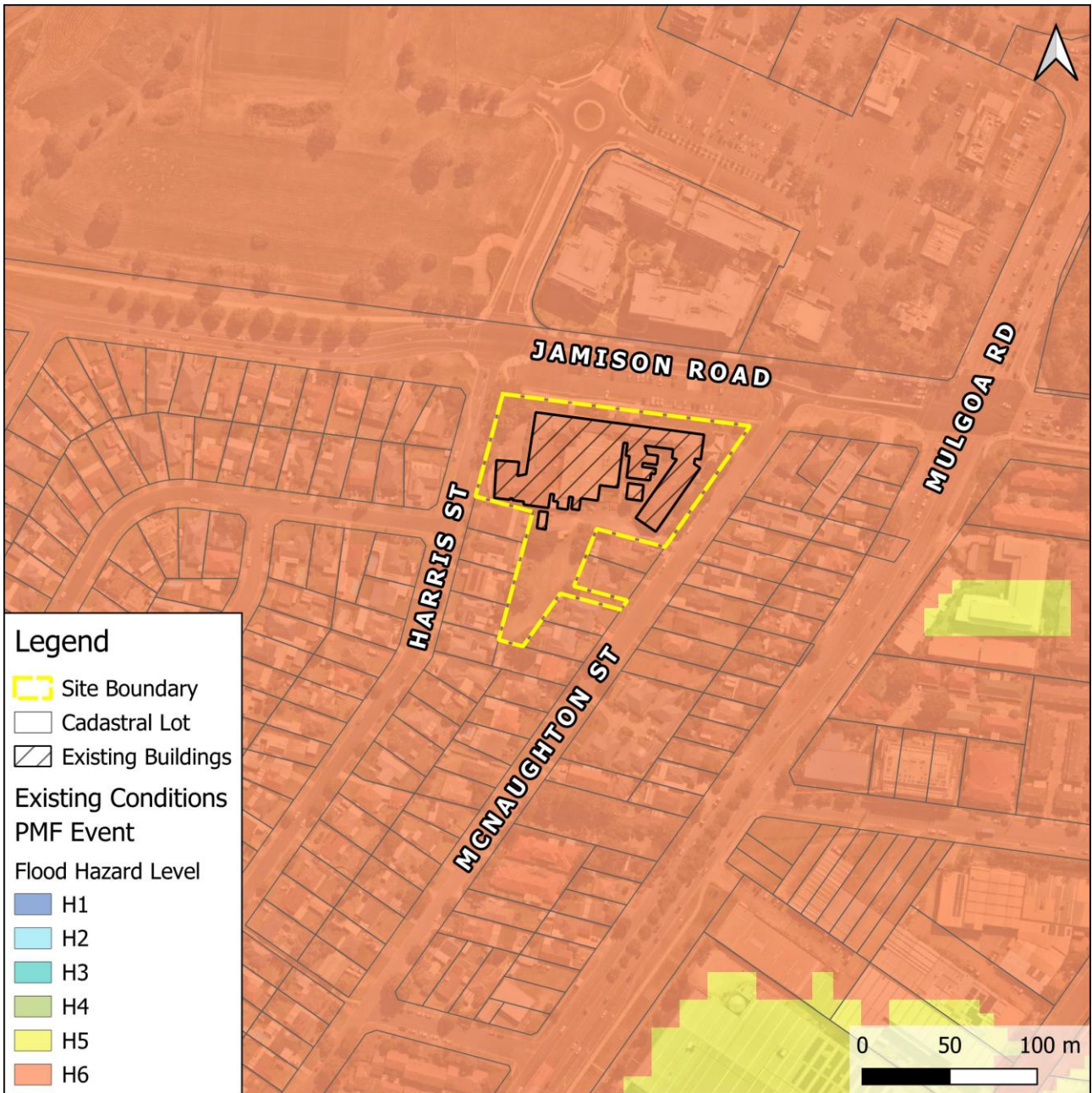


Figure 6: PMF hazard levels at the site during a regional Hawkesbury-Nepean River flood

2.2 Local Catchment Flooding

TTW obtained Penrith City Council's TUFLOW model developed by Catchment Simulation Solutions for the 2019 Peach Tree and Lower Surveyors Creek (PTLSC) Flood Study to determine the local catchment flood behaviour in the area.

The model was updated to account for an increase in tailwater levels along the Nepean River, which forms the downstream boundary of the local flood model. The 2024 Hawkesbury-Nepean Flood Study suggests a notable increase in flood level in the Nepean River within the Penrith region, owing to updated representation of vegetation density here. Refer to TTW's Flood Impact and Risk Assessment (FIRA) Report submitted alongside this report for further information on the amendments made to Council's model.

2.2.1 Flood Depths and Levels

Figure 7 and Figure 8 present flood depths and levels at the site under post-development conditions in the 1% AEP and PMF events, respectively. The following observations have been made:

- The majority of the site is situated above the 1% AEP flood extent, with the exception of isolated areas across the east of the site, where flows overtop from the sag point on McNaughton Street.
- The proposed buildings are flood-free (not subject to above-floor inundation) in all events up to and including the 0.2% AEP event. However, with an FFL RL 27.8, all four proposed buildings are flood-affected during the critical duration 120-minute PMF event. They are not inundated during the 15-minute PMF storm event.
- Table 1 provides an overview of the maximum PMF level adjacent to each building, alongside the potential number of beds impacted within the facility. Figure 9 demonstrates the location of each flood level assessment point.
 - Flood impacts are greatest for Building C, where the flood level reaches 28.35m AHD, resulting in above-floor inundation of up to 550mm in depth. Building A is comparatively less affected, with a peak flood level of 27.90m AHD, 100mm above the FFL.
 - A total of 33 beds on the ground floor would be impacted by flash flooding in this event.
 - Vertical evacuation of ground-floor residents is only required only during exceptionally rare and extreme storm events. The emergency response actions for these residents during local catchment flood events are outlined in more detail in Section 3.2 and 4.3.2.
- In terms of the surrounding area, McNaughton Street is affected by overland flows in all modelled events, including the 10% AEP event. This is reflective of the limited capacity of the stormwater pipes here, which were found to reach full capacity in events as frequent as the 50% AEP event. However, flood depths in the 10% AEP event are less than 150mm at the existing driveway entry onto McNaughton Street and is consequently regarded as trafficable in this more frequent event.
- In the 1% AEP event, overland flows pond to a level of 27.10m AHD at the sag point on McNaughton Street, backing up into the south of the site and over the driveway entrance. Depth within the road reserve reach a maximum of 700mm within the gutter.
- By contrast, the proposed Harris Street driveway (where the proposed basement car park entry is located) is flood-free in the 1% AEP event.

Table 2: Summary of the maximum PMF level and depth at the proposed buildings and the number of beds impacted in the critical 120-minute storm event

Building	FFL (m AHD)	Max Adjacent PMF Level (m AHD)	Max Depth of Above-Floor Inundation	Number of Beds on Ground Floor
A	27.80	27.90	100 mm	10 beds
B		28.30	500 mm	9 beds

C	27.80	28.35	550 mm	14 beds
D		28.30	500 mm	0 beds

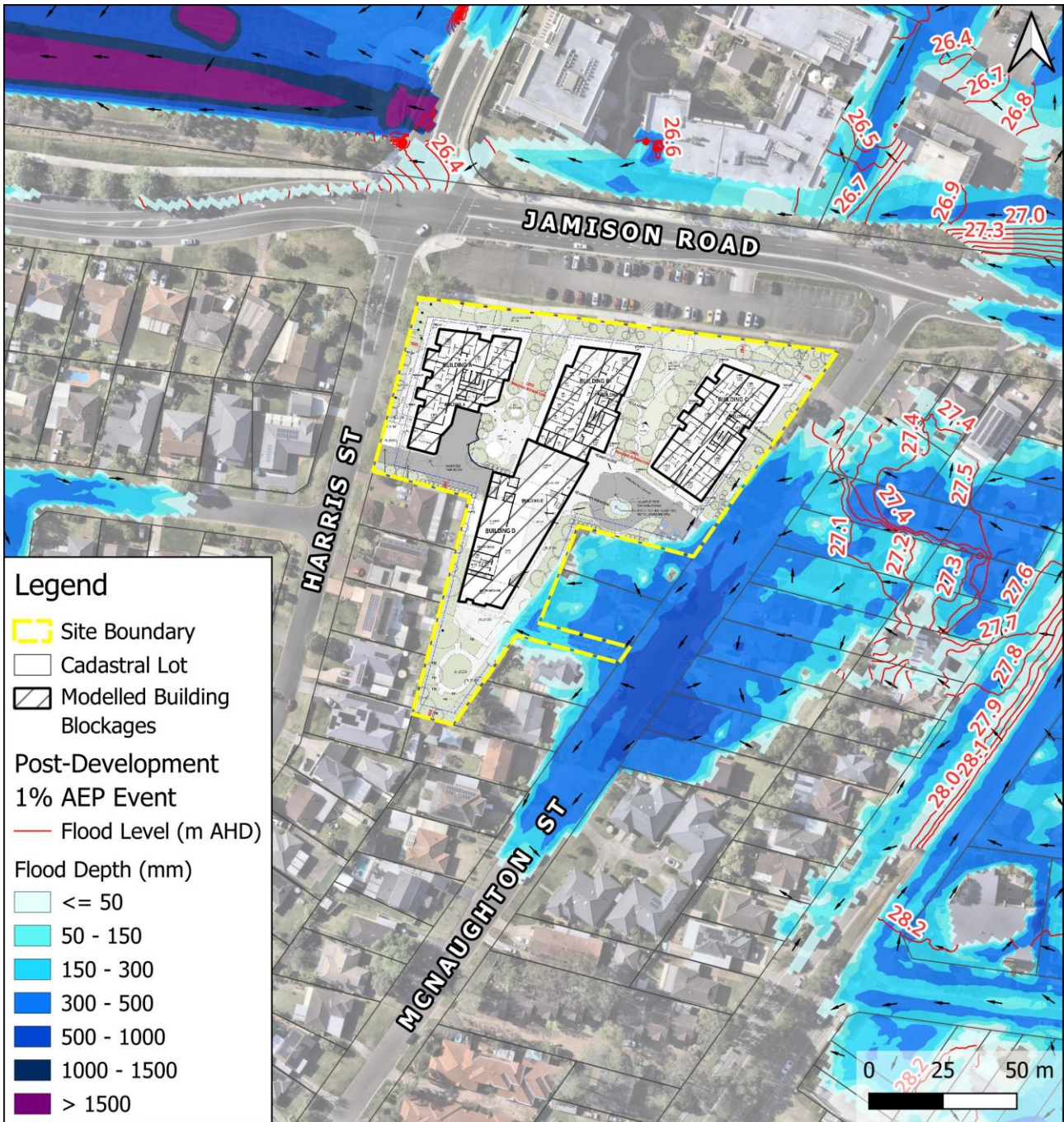


Figure 7: 1% AEP flood depths and levels at the site under post-development conditions during local catchment flooding

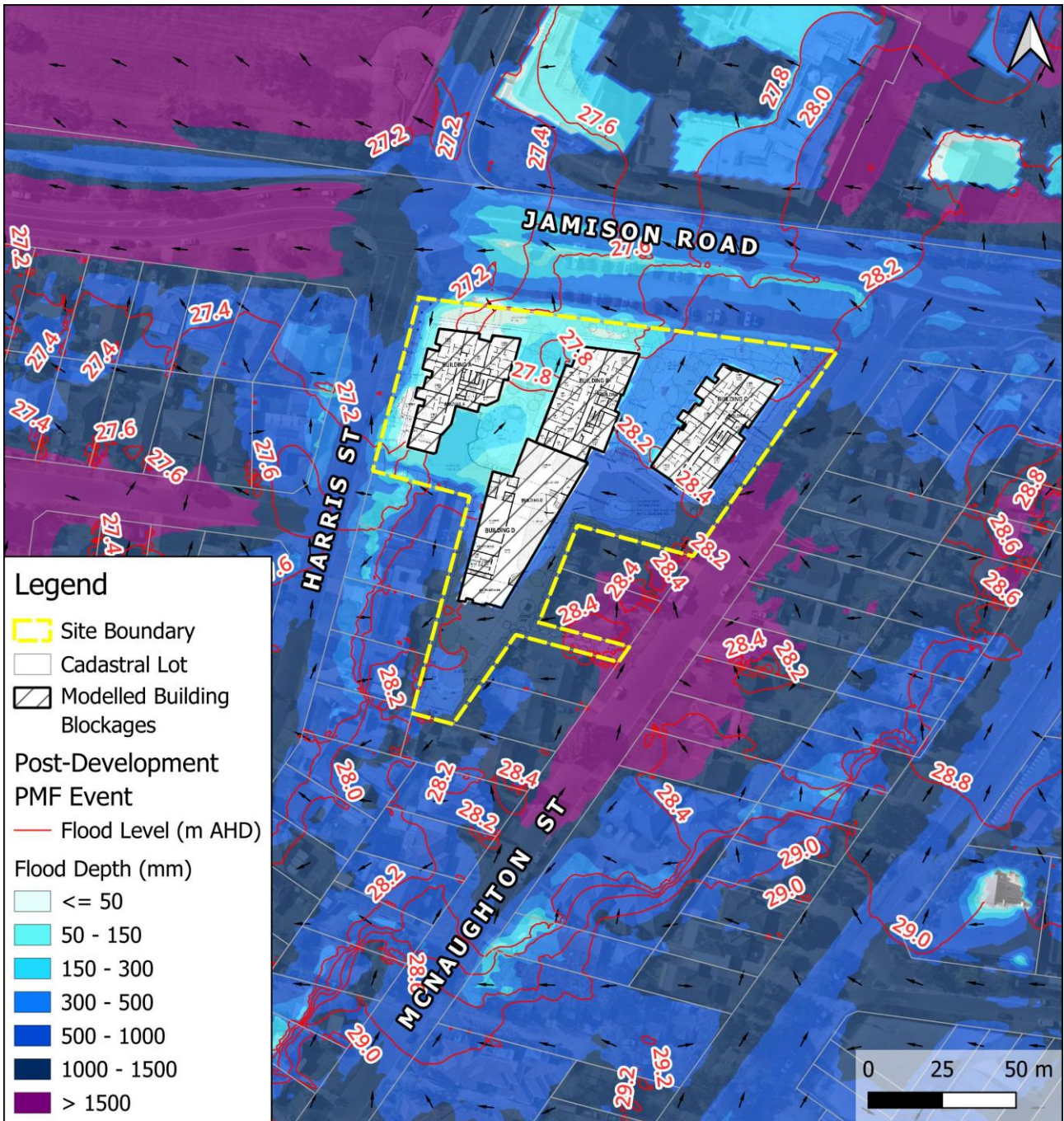


Figure 8: PMF depths and levels at the site under post-development conditions during local catchment flooding

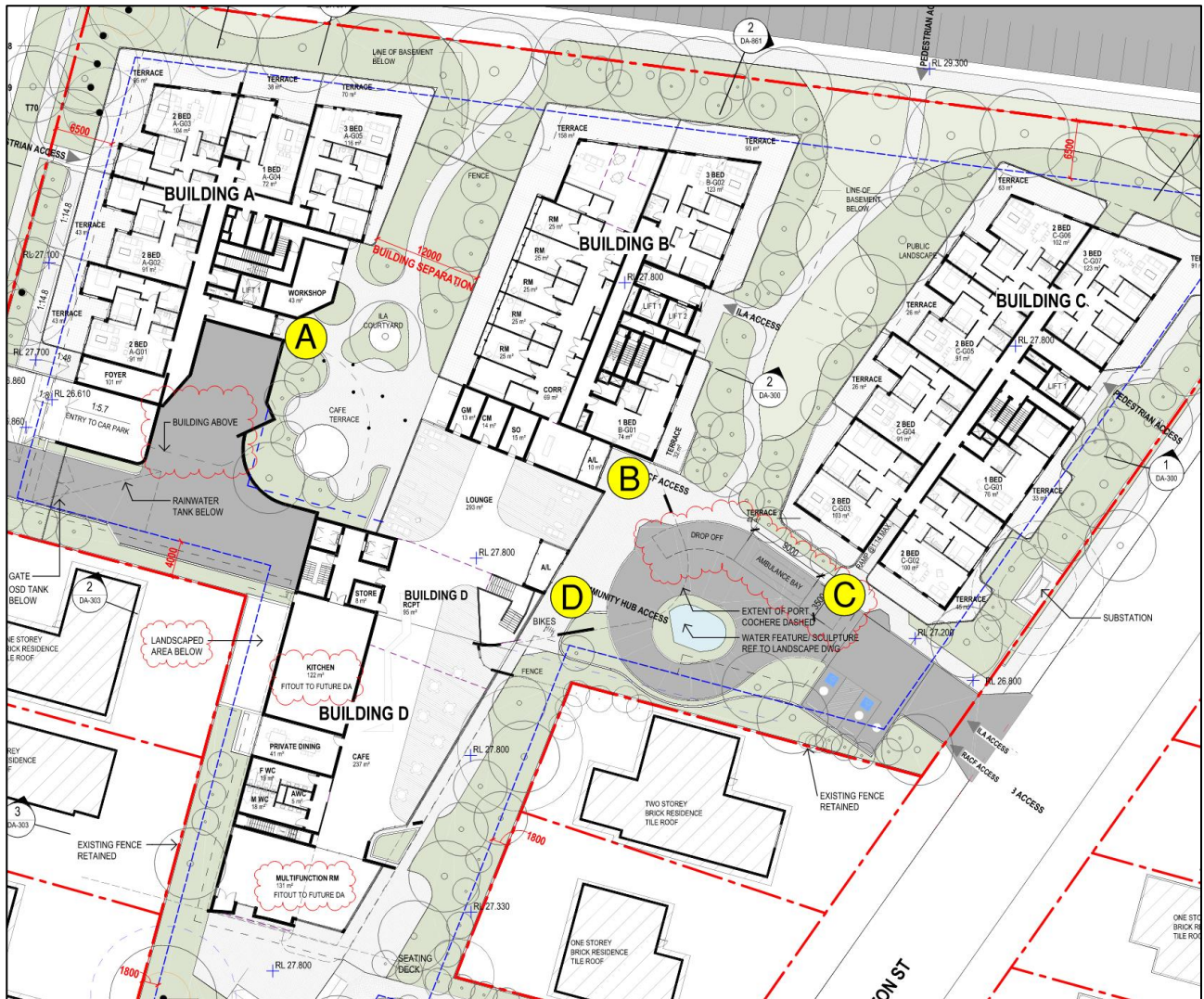


Figure 9: Maximum PMF level locations adjacent to each proposed building, refer to Table 2

2.2.2 Flood Hazard Classification

Figure 10 and Figure 11 present flood depths and levels at the site under post-development conditions in the 1% AEP and PMF events, respectively. The following observations have been made:

- In the 1% AEP event, flooding within the site boundary is low hazard (H1-H2 hazard level). Along McNaughton Street, where the existing stormwater system surcharges, flows are categorized as H3 hazard (unsafe for vehicles, children, and the elderly). Similarly, floodwaters along the western portion of Jamison Road reach H4-H5 hazard (unsafe for vehicles and people) where the Peach Tree Creek is conveyed below Jamison Road Bridge.
- Egress from the site is possible in the 1% AEP event via low-hazard roads to the east along Jamison Road. However, access into and out of the site is restricted by H2–H3 hazard levels (unsafe for vehicles) adjacent to the McNaughton Street driveway. The current configuration provides fewer vehicle access options than the proposed layout, which includes an additional access point on Harris Street.
- In the PMF event, the majority of flows at the site are categorised as H3 hazard level. However, flows across the currently undeveloped southern portion of the property reach a H4 hazard level. Access roads are also affected by high hazard flows in the PMF, including Jamison Road (in both directions), Mulgoa Road, Harris Street and McNaughton Street.

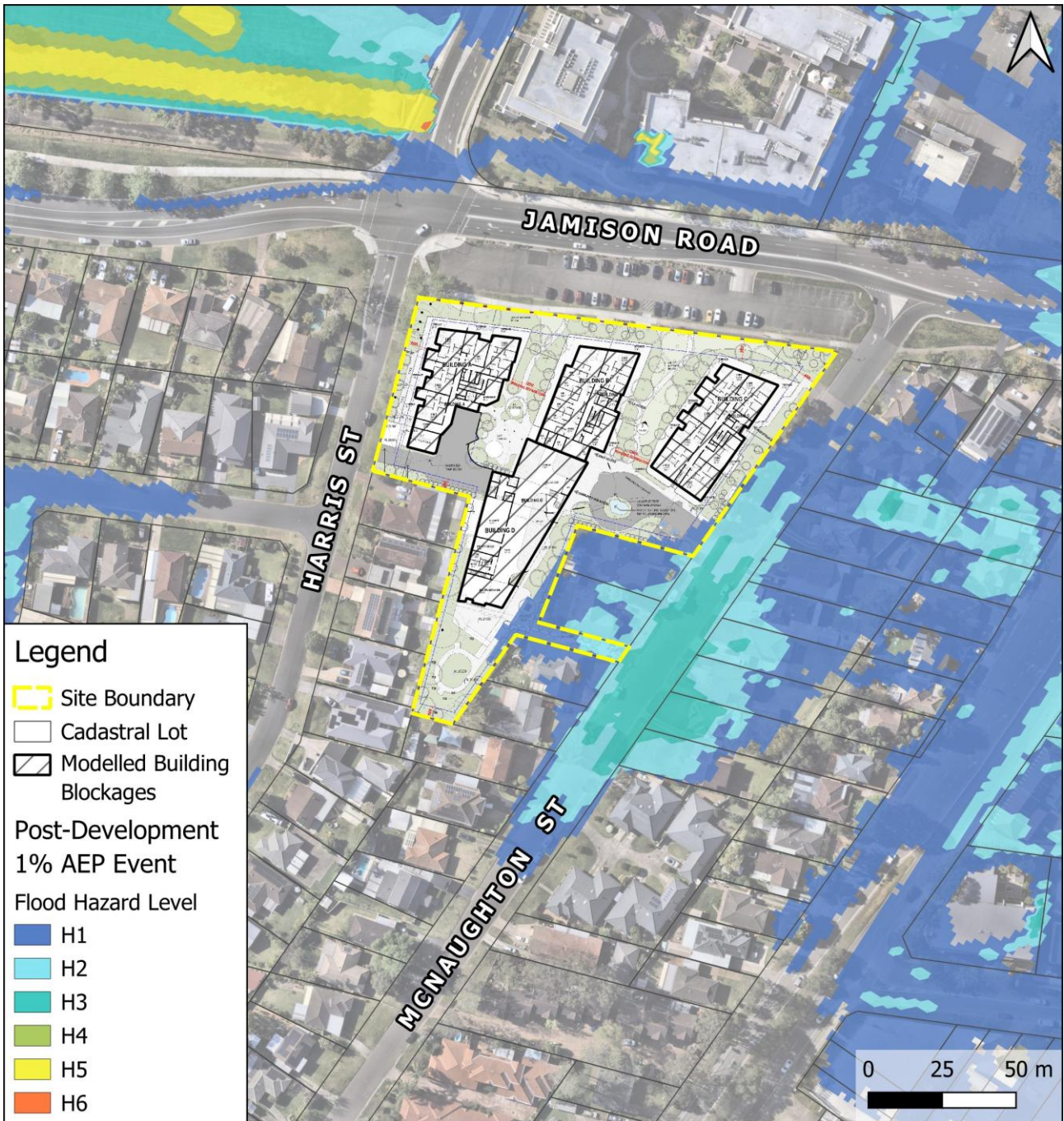


Figure 10: 1% AEP flood hazard levels at the site under post-development conditions during local catchment flooding

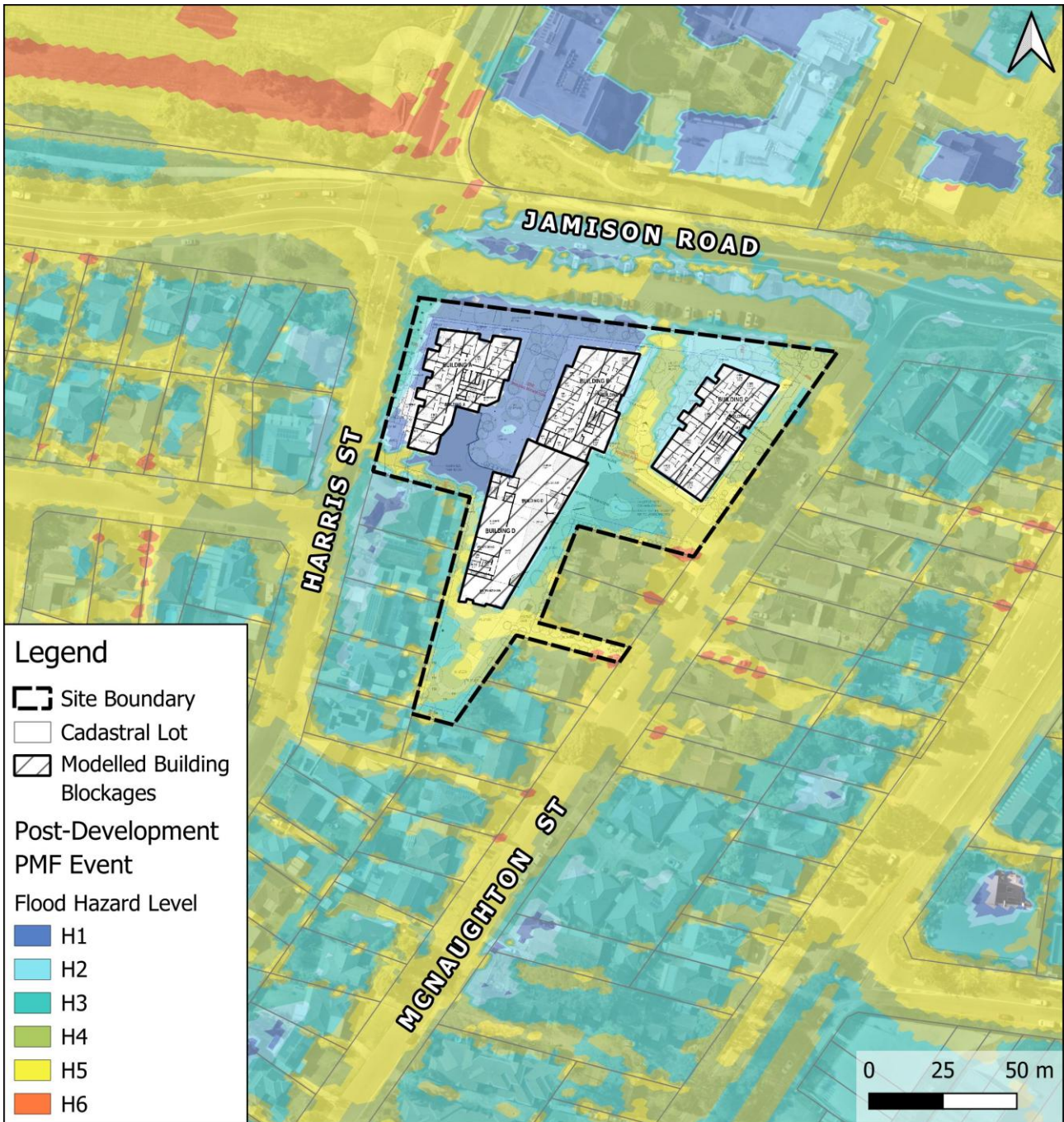


Figure 11: PMF hazard levels at the site under post-development conditions during local catchment flooding

2.3 Inundation and Recession Times

2.3.1 Regional Flooding

Flooding in Penrith associated with Hawkesbury-Nepean River events typically develops over a prolonged period, rather than occurring immediately after the onset of the storm. As the system is large and influenced by upstream catchments, reservoir storage and flood wave travel times, river levels in Penrith can take days to rise following the critical rainfall. As a result, inundation in the Penrith area is generally characterised by slow-building riverine flooding, with ample lead time between the initial storm and any local overtopping or isolation. Section 4.3 outlines the relevant trigger levels and lead times.

2.3.2 Local Catchment Flooding

Table 3 presents a summary of the inundation and recession times at the site in three events of varying durations to consider the range of possible warning and isolation periods. Although it does not produce the highest flood levels, the 15-minute PMF storm is critical in terms of the rapid time of inundation, with both the Harris Street and McNaughton Street access routes cut off by high hazard flows within 15-minutes of the onset of the storm.

From a review of these three storm events, the maximum isolation period is approximately 4 hours and 30 minutes during the 120-minute PMF event. After this period, vehicular access is available via the Harris Street driveway. McNaughton Street is subject to frequent flooding due to the insufficient capacity of the drainage outlets. Recession times across this area are also prolonged due to the flood storage effects of the lower lying land. During a flood event, the egress point onto McNaughton Street should therefore be closed off for the full duration of the event. The secondary access onto Harris Street is typically lower hazard and is the first route to return to trafficable conditions.

It should be emphasised that this road hazard analysis is based on modelling results. In reality during a flood event, the flood affectation on individual roads may vary from what is described in this FERP. As described in more detail in Section 4.0, flood warnings and the Hazards Near Me app should also be monitored by site users to keep informed on which routes can be taken following a flood event.

Table 3: Time to inundation and recession at the site (from local catchment flooding)

Storm Duration	Time to Inundation	Recession Time
0.2% AEP (360 minutes)	<u>1hr 45mins after the onset of the storm</u> , the driveway onto McNaughton Street becomes cut off by flows with a hazard level of H2 (unsafe for small vehicles)	<u>3hrs 15 mins after the onset of the storm</u> , flows ponding within the sag point of McNaughton Street begin to recede. However, the driveway at this frontage does not return to trafficable conditions for several more hours. Despite this, the proposed driveway on Harris Street is flood free in this event and ultimately reduces the isolation of the site.
PMF (15 minutes)	<u><15mins after the onset of the storm</u> , onward travel via both access points is cut off by flows with a hazard classification of H3 (unsafe for vehicles). The proposed buildings are not inundated during the 15-minute PMF storm.	1hr after the onset of the storm, flows begin to recede. Flows across the northeastern extent of Jamison Road return to trafficable (H1) conditions approximately 2 hours after the onset of the storm. McNaughton Street remains cut off for several more hours due to prolonged ponding at the sag point.
PMF (120 minutes)	<u>15-30mins after the onset of the storm</u> , the sag point on McNaughton Street is impacted by flows with a hazard classification of H3 (unsafe for vehicles), cutting off access to this driveway. <u>1hr after the onset of the storm</u> , Buildings B-D are first inundated. <u>1hr 30mins after the onset of the storm</u> , Building A is first inundated, and flows at the Harris Street driveway reach H5 hazard level.	<u>2hrs 45mins after the onset of the storm</u> , flows begin to recede. However, flows remain hazardous. <u>4hrs 30mins after the onset of the storm</u> , flows at the Harris Street driveway return to trafficable, low hazard (H1) conditions. McNaughton Street remains cut off for several more hours due to prolonged ponding at the sag point.

3.0 Flood Response Strategy

3.1 Regional Flooding

In the event of a high magnitude Hawkesbury-Nepean flood, the emergency response strategy is to evacuate in advance of flooding. There will be sufficient flood warnings and notifications to allow for pre-emptive evacuation of the site. Specific triggers are outlined in more detail in Section 4.3.

An SMS should be sent to staff at the earliest opportunity to advise of the site closure. Evacuation is to be coordinated with the Nepean Blue Mountains Local Health District in line with the existing emergency management plan for the site. For the six residents requiring specialised care, this may include pre-emptive external relocation to another unaffected aged care facility in advance of the emergency situation (to decrease pressure on critical systems). This would involve liaising with sister facilities at the discretion of facility management.

3.2 Local Catchment Flooding

In the context of local flooding, the site is impacted by flash flood events, which are characterised by minimal warning times and short durations. Under these conditions, pre-emptive evacuation of the site is generally not feasible or warranted.

Shelter-in-place (SIP) guidance published by the NSW Department of Planning, Housing and Infrastructure (DPHI) in January 2025 provides a framework for assessing the suitability of SIP as an emergency response strategy in flash flood environments, together with relevant design considerations. The specific triggers for initiating shelter-in-place measures and vertical evacuation (*where necessary*) are detailed in 4.3.2.

Table 4 summarises the key factors for consideration and assesses the proposed development against these requirements. Based on this assessment, SIP is considered an appropriate and practical emergency response strategy for the site in the context of local flash flood events, where there is insufficient warning to enable pre-emptive evacuation.

Flood modelling for the site has been undertaken for the 15-minute and 120-minute duration PMF storm events. The modelling indicates that the site is not impacted during the 15-minute PMF event, with overland flooding affecting the site only under the more extreme conditions represented by the 120-minute PMF event. Vertical evacuation of ground-floor residents will be required if such an extreme event is forecast. As noted in Table 2, there are 33 beds located at ground-floor level across Buildings A to C. Given the comparatively lower flood impact to Building A, it is recommended that residents with lower mobility (including the six residents requiring specialised care) are accommodated within Building A where practicable. It is understood that this will be evaluated in relation to medical access and equipment and considered as part of the overall emergency management plan.

The specific triggers for initiating shelter-in-place measures and vertical evacuation (where necessary) are detailed in 4.3.2.

Table 4: DPHI shelter-in-place considerations and TTW review

SIP Guideline	Response
Initial assessment	
1. Does shelter in place align with existing emergency management strategies for the area, as determined through the flood risk management process and by the NSW SES?	Pre-emptive evacuation of the site is recommended when there is advanced warning of a major storm event, which is consistent with the flood response strategy discussed in the Penrith City Local Flood Emergency Sub Plan (Section 5.8.5 of the sub plan). However, the main flood mechanism impacting the immediate area around the site is flash flooding via overland flow. Flash

	flood events are characterised by minimal warning times and therefore there may not be sufficient warning time available to achieve evacuation at the site, as discussed below.
Has evacuation off-site (the primary emergency management strategy) been investigated and determined to be unachievable?	<p>With less than 15 minutes from the onset of the shorter duration (15-minute) PMF storm until inundation of both access roads to the site (refer Table 3), there is little warning time to implement evacuation off-site during local catchment flooding.</p> <p>As evident in Figure 11, there is no way in or out of the site that does not go through hazardous (H2 or higher) waters during the critical duration PMF event. NSW SES state that evacuation of a site must not require people to drive or walk through floodwaters. It is therefore recommended that the site is prepared for a shelter-in-place strategy.</p>
Does the development include medical centres, emergency service and community facilities, and sensitive and hazardous land uses, some of which may not be suitable for shelter in place?	The facility primarily offers ILUs, with residents who are generally mobile and independent. Only six residents require specialised care and nursing assistance.
Shelter in place for greenfield development is not supported	N/A
Whether there is existing government developed flood warning systems that give advanced detailed forecasts of flash flooding to allow sufficient time to evacuate to the proposed refuge locations ²	<p>There is less than 15 minutes from the onset of the 15-minute PMF storm until both access routes are cut off by hazardous flows. Flood warning systems and flood forecasting is discussed in more detail in Section 4.0.</p> <p>While there are flood warnings issued by the Bureau of Meteorology and the Australian Warning System (which may be available in the event of a Hawkesbury-Nepean River flood), the inherently limited warning time associated local catchment flooding limits the capacity of NSW SES to issue flood notifications and action statements for overland flood events. It is important to note that the warnings outlined in Section 4.0 may not be available or occur with advanced warning for local flooding.</p>
² Flash flood warning systems are not failsafe and should not be the only mechanism to get people to shelter in place.	
Can the community effectively be informed of the risks associated with the emergency management strategy?	Section 7.0 of this FERP outlines the importance of education and signage in informing site users the flood risks present on site and the flood protocols and procedures involved in the SIP strategy.
Following satisfaction of the above, the following must be assessed:	
Detailed assessment of evacuation off-site (the primary emergency management strategy) to determine that evacuation off-site is not achievable	<p>During a local catchment flood event, there is less than 15 minutes from the onset of the 15-minute PMF storm until inundation of the adjoining roads, with minimal warning time to implement evacuation off-site.</p> <p>As shown in Figure 11, there is no route in or out of the site that does not go through hazardous waters during the critical duration PMF event. NSW SES state that evacuation of a site must not require people to drive or walk through flood water. It is therefore recommended that the site is prepared for a shelter-in-place strategy.</p>

<p>The flood behaviour at the site, with consideration of climate change and assessment of the potential maximum duration of isolation up to and including the PMF to identify that:</p> <ul style="list-style-type: none"> a) flash flooding is the only flood risk present at the site, whether it be from overland flooding, local creek or riverine flooding, and b) the flooding occurs within less than 6 hours from the commencement of causative rain and the duration of shelter in place due to isolation by floodwaters is less than 12 hours from the commencement of rainfall, and c) the development is not subject to high hazard flooding (e.g. floodways, high hazard H5 or H6 areas) or surrounding roadways are not subject to high hazard flooding.³ <p>³ Flood Risk Management Guideline FB03 Flood Hazard, DCCEE, 2023.</p>	<p>Consideration of climate change has been made in Section 7.4 of TTW's Flood Impact and Risk Assessment (FIRA), submitted alongside this FERP. The SSP2-4.5 projections for 2030 and 2100 were tested, with a respective 16% and 35% uplift in rainfall (in accordance with the updated ARR2019 v4.2 climate change factors). In the 1% AEP climate change event, model outputs show a flood level increase of 308mm on McNaughton Street in the 2100 scenario, reaching 27.38m AHD. With an FFL of 27.80m AHD, the site is suitably protected against the impact of future climate change on local overland flows.</p> <ul style="list-style-type: none"> a) The regional flood risk to the site is detailed in Section 2.1. The site is not directly impacted by Hawkesbury-Nepean flooding until extreme, infrequent events. Initial inundation of the proposed buildings does not occur until an extremely rare event with a magnitude between the 0.5% AEP and 0.2% AEP. In the event of a large Hawkesbury-Nepean flood, the emergency response strategy is pre-emptive evacuation of the site in line with NSW SES evacuation orders. b) There is less than 15 minutes from the onset of the 15-minute PMF storm until inundation of surrounding access roads. The duration of isolation is short due to the flashy nature of flooding in the area, with the site cut off for a maximum duration of approximately 4 hours and 30 minutes in the 120-minute PMF event (based on the available model simulations). c) The surrounding access roads are subject to high hazard flooding (up to H5) in the critical duration PMF event. Despite this, it is deemed more hazardous to attempt to evacuate the site once a severe storm event has already commenced, as this would involve moving site users from safe refuge into roads of high hazard.
<p>How shelter in place will be:</p> <ul style="list-style-type: none"> ▪ used as part of the site's emergency management response, including actions before, during and after sheltering in place, and ▪ communicated to occupants and visitors of the building and how this communication will be maintained for the life of the development. 	<p>Section 8.0 of this FERP outlines how SIP will be implemented at the site, including actions before, during and after.</p> <p>Section 4.4 outlines how this will be communicated to the site users and how this will be maintained.</p>
<p>An understanding of the secondary risks and how the proponent proposes they will be managed is outlined in the FIRA. Secondary risks include medical emergencies, building fire, health and wellbeing.</p> <p>Table 12 of EM01 should be used to consider whether the risks could be effectively managed.</p>	<p>Secondary emergencies are considered in Section 3.3.</p> <p>Table 12 of the EM01 notes that a risk management consideration is limiting exposure of people to floodwaters. The EM01 document suggests that this can be aided by providing sufficient readily accessible habitable areas above the PMF to cater for potential occupants, clients, and visitors.</p> <p>The Level 1 FFL of Buildings A-C is set to 31.00m AHD, 2.5m above the maximum PMF level from local catchment flooding. There is adequate space in which site users can shelter across Levels 1-4 of Buildings A-C. Building D consists of a café and multifunction room and does not have any upper levels. Access</p>

	<p>to this building should be restricted when a significant storm is forecast.</p> <p>Table 12 of the EM01 also notes that to reduce human behaviour risks, “Where facilities, such as businesses, schools and childcare centres have site emergency plans that consider flooding these plans should be regularly exercised similar to building fire evacuation drills.” Flood drills have been recommended in Section 7.4 of this FERP.</p> <p>Table 12 also states “Consider developing a PA system to communicate evacuation directions and safety messages to the population in the lead-up to and during a flood to assist in improving the safety of the community.” A PA system has been recommended in Section 4.4 of this FERP.</p>
<p>Design criteria for consideration</p>	
<ul style="list-style-type: none"> ▪ the floor level of the shelter in place part of the development be above the PMF, and 	<p>Level 1 of Buildings B-D is to be set to 31.00m AHD, 2.5m above the PMF flood level from local catchment flooding.</p>
<ul style="list-style-type: none"> ▪ structural soundness for conditions in a PMF event, considering flood and debris forces, be verified by a suitably qualified structural engineer, and 	<p>This should be verified by the project’s structural engineering team.</p>
<ul style="list-style-type: none"> ▪ area and access to the area does not rely on access to electricity, is self-directing, and have clearly marked internal access for all people on site, including consideration of access for potential occupants and/or visitors 	<p>Access and clearly marked internal access will be achieved.</p>
<ul style="list-style-type: none"> ▪ protection from weather and appropriate heating and cooling 	<p>This will be achieved.</p>
<ul style="list-style-type: none"> ▪ access to personal hygiene facilities such as a toilet 	<p>This will be achieved.</p>
<ul style="list-style-type: none"> ▪ a minimum floor space of 2 m² per person 	<p>Overall, the site will provide refuge space well over 2sqm per person with various spaces across the site for refuge, including circulation areas and a games room in Building A.</p>
<ul style="list-style-type: none"> ▪ items for self-sufficiency that are stored, maintained and are regularly updated in an accessible location above the PMF, including sufficient drinking water and food for occupants, fire extinguishers, radios and torches with spare batteries, and a first aid kit with an automated external defibrillator (AED) 	<p>Refer to Section 7.5 for this recommendation.</p>
<ul style="list-style-type: none"> ▪ centralised communal shelters may be considered but must be freely accessible internally at all times and externally accessible during events 	<p>This will not be required. There will be sufficient spaces available to refuge, including circulation areas and a games room in Building A.</p>

<ul style="list-style-type: none"> access is provided to onsite systems that generate power of the shelter in place location during and after the event for a full range of flood events up to the PMF 	<p>The electrical substation servicing the site is predicted to be inundated during the PMF event, which may result in loss of grid power. Given the extent of flooding across the broader floodplain, loss of power during extreme events is anticipated and cannot be mitigated by relocating the substation given that the entire site is impacted in the PMF.</p> <p>As part of the proposed upgrade works, it is recommended that a permanently installed backup generator be provided to maintain essential services during flood events. This will support emergency lighting, fire systems, communications, and care-related services for residents requiring assistance.</p> <p>The generator and associated infrastructure should be located above the PMF flood level where practicable or designed to be flood resilient.</p>
<ul style="list-style-type: none"> detail how these requirements will be maintained and enforced for the life of the development. 	<p>Flood Emergency Response Plans are 'living documents' which need to be regularly reviewed once the site is operational to ensure they remain appropriate to address the risk to the site, can be practically implemented, and consider changing information and lessons learnt from any floods since the last review.</p> <p>It is recommended that the FERP is reviewed following staff changes, flood drills as well as flood events to ensure that the details remain relevant.</p>

3.3 Secondary Emergency

Although shelter-in-place is the emergency response strategy should a severe flash flood event begin without sufficient warning, any decision to shelter-in-place must be accompanied by alternative plans in the event of a secondary emergency (e.g. medical or fire) or if some site users refuse to shelter-in-place.

While all site users should be advised to stay in place (at least until the magnitude of the flood is clearer), if they insist on leaving or if there is a secondary emergency during a flash flood event, the Hazards Near Me app should be monitored by site users to keep informed on which routes can be taken following a flood event.

The following items should be considered to ensure sufficient preparedness in the event of a secondary emergency:

- FIRE:** Ensure adequate access to fire extinguishers and internal fire suppression systems (e.g. sprinklers).
- FIRE:** Check that they are not reliant on mains pressure that may fail.
- MEDICAL:** Designate trained personnel and maintain a flood-resilient first aid station with supplies sufficient for prolonged isolation.
- MEDICAL:** Nominate a safe, elevated, easily accessible area for care of injured or ill persons until external assistance can arrive.
- MEDICAL:** Consider evacuation aids including stretchers, wheelchairs, or other aids for internal transfer if ambulance access is limited.
- POWER:** Install and maintain flood-resilient automatic backup generators or battery systems for critical power (lighting, communications, medical equipment). Substation should be flood-proofed as far as practicable.

4.0 Flood Warnings and Notifications

4.1 Bureau of Meteorology

Severe weather and thunderstorm warnings are issued by the Bureau of Meteorology (BoM). These warnings are continually updated with descriptions of the likely conditions, including predicted extreme rainfall depths. Flood warnings are issued by the BoM when flooding is occurring or is expected to occur in an area. Warnings may include specific predictions of flood depths dependent on real-time rainfall and river level data. These warnings are distributed by BoM to Councils, Police and the relevant local SES, as well as being available on the BoM website.

- A **Flood watch** is issued by the BoM up to four days prior to a flood event. A watch is generally updated daily and may be issued before, during, or after rainfall has occurred.
- **Flood warnings** are issued by the BoM when flooding is occurring or expected to occur in a particular area. Warnings may include specific predictions of flood depths dependent on real-time rainfall and river level data. These warnings are distributed to Council, Police, and the relevant local SES, as well as being available on the BoM website, through telephone weather warnings and radio broadcasts.
- A **Severe Weather Warning** is issued by the BoM when severe weather is occurring or expected to develop, that is the direct consequence of a thunderstorm. For broad severe weather such as east coast lows or vigorous cold fronts, Severe Weather Warnings are aimed to be issued 24-36 hours ahead of the expected onset. This warning time may be reduced particularly for more localised severe weather. Once a severe weather warning is issued it is routinely updated every six hours until the threat has passed but may be updated more frequently for rapidly evolving situations.
- A **Severe Thunderstorm Warning** is issued by the BoM whenever there is sufficient meteorological evidence to suggest that severe thunderstorm development is likely, or when a severe thunderstorm has been directly reported or observed. Regional warnings are provided for one or more forecast areas and aim to give 3 hours warning before thunderstorms develop. Detailed thunderstorm warnings are provided for capital cities (including this site) and aim to give 60 minutes warning before severe thunderstorms develop. Warnings are updated routinely every 30-60 minutes until the threat has passed or more frequently if required.

According to BoM's Service Level Specification (2024), flood warnings are initiated for the Penrith area once the river level at the Penrith gauge exceeds the "minor" level of 3.9m (i.e. a flood level of 18.0m AHD). Flood warnings should be reviewed to inform of any mainstream flood risks surrounding the site.

For local catchment flooding, however, there is unlikely to be any flood warnings issued for the site given the limited warning time associated with this type of flash flooding. Triggers should consequently focus on severe weather and thunderstorm warnings. This is outlined in more detail in Section 4.3.2.

4.2 NSW SES Australian Warning System

NSW SES has recently implemented the Australian Warning System (AWS) which replaces their previous evacuation orders and warnings system. The AWS is a new national approach to information and 'Calls to Actions' for hazards including flooding. The System uses a nationally consistent set of icons, with three warning levels: Advice, Watch and Act, and Emergency Warning. The storm warnings are described in Figure 12, and the flood warnings are shown in Figure 10.



Figure 12: Australian Warning System – three warning levels (severe storms)



Figure 13: Australian Warning System – three warning levels (riverine flooding)

The NSW SES utilises a range of sources to build detailed flood intelligence within local communities, including information from flood studies and historical flood data. As part of the transition to the Australian Warning System, the NSW SES has increased flexibility to tailor warnings at the community level, based on the expected consequences of severe weather events.

The Site Manager is responsible for monitoring information from the AWS. Impacted communities will continue to receive flood warnings through the NSW SES website, NSW SES social media channels and by listening to local ABC radio stations. The NSW SES has also developed an all-hazards warning platform, Hazard Watch, to provide an additional channel for communities to access important warning information.

Each warning has three components:

- **Location and hazard:** The location and the type of hazard impacting the community.
- **Action statement:** For each warning level there are a range of action statements to guide protective action by the community. These statements evolve as the warning levels increase in severity. Statements range from 'prepare now' at the Advice level, to 'avoid the area' at the Watch and Act level, to 'seek shelter now' in the Emergency Warning level. As the situation changes and the threat is reduced, the level of warning will decrease accordingly.
- **The warning level:** The severity of the natural hazard event based on the consequence to the community.

It is also important to acknowledge that neither the NSW SES nor the Bureau of Meteorology can provide special individual flood warning services for each affected property. The more specific the warning requirement for individuals and sites becomes, the more difficult it is for the NSW SES to deliver warnings in the short time frames that often apply. Site operators must be weather aware and act early on publicly broadcast severe weather and flood warnings.

4.3 Triggers

4.3.1 Regional Flooding

Flood warnings for the region are based on water level data recorded at the Nepean River at Penrith gauge, located at the Victoria Bridge, labelled in Figure 14. While this gauge is located downstream of the subject site, it is hydraulically representative of flood behaviour affecting Jamisontown East due to the broad floodplain and backwater-dominated conditions in this reach.

Table 5 provides an overview of the BoM data for this gauge. Flood warnings are initiated when the water level at this gauge exceeds 3.9m (the “minor” flood, equivalent to a flood level of 18.0m AHD), with a minimum lead time of 6 hours before this exceeded. Table 6 provides an overview of the flood level at the Victoria Bridge gauge in each event in relation to the minor, moderate and major flood classifications.

In their review and commentary (dated 2 September 2025) on the initial Environmental Impact Assessment for SummitCare Seniors Housing, NSW SES confirmed that the Jamisontown East area is triggered for evacuation around a prediction of **12.0m at the Victoria Bridge gauge** (i.e. a flood level of 26.10m AHD), due to loss of access to the evacuation route and to reduce the risk of evacuees trapped in their cars for hours in rising floodwaters.

Once this evacuation notice is issued, staff, residents and visitors must evacuate via the primary evacuation route, outlined in Section 5.0. Evacuation of the six residents receiving specialised care is to be co-ordinated with the Nepean Blue Mountains Local Health District in line with the existing emergency management plan for the site.

- Although NSW SES will issue the evacuation order, the Site Manager should begin to monitor the live river height data once the “Major” Level 2 Warning is issued. Live data for the Victoria Bridge gauge is available on the BoM website in 15-minute intervals:
 - <https://www.bom.gov.au/fwo/IDN60233/IDN60233.567047.tbl.shtml>
 - <https://www.bom.gov.au/fwo/IDN60233/IDN60233.567047.plt.shtml>

Table 5: BoM Nepean River at Penrith (Victoria Bridge) gauge flood level classifications and lead time (Source: BoM, 2024)

Name	Station Number	Gauge Zero (m)	Flood Classification (m)			Target Warning Lead Time	
			Minor	Moderate	Major	Time	Trigger Height (m)
Nepean River at Penrith	567047	14.136	3.90	7.90	10.40	6 hours	>8.9 (23.0m AHD)
						8 hours	>11.3 (25.4m AHD)

Table 6: Summary of flood levels

Design Flood	Flood Warning (SES)	Gauge Height (m)	Gauge Level (m AHD)	Flood Level at Site (m AHD)
–	Minor	3.9	18.0	Not Impacted
–	Moderate	7.9	22.0	
10% AEP	–	9.2	23.3	
–	Major	10.4	24.5	
5% AEP	–	11.0	25.1	
–	JAMISON EAST EVACUATED	12.0	26.10	
1% AEP	–	12.7	26.8	
0.5% AEP	–	13.1	27.2	
0.2% AEP	–	13.8	27.9	28.70



Figure 14: Nepean River at Penrith (Victoria Bridge) gauge location in relation to the site

4.3.2 Local Catchment Flooding

The inherently limited warning time associated with flash flooding limits the capacity of both the BoM and NSW SES to issue warnings and flood notifications with sufficient lead time for local catchment events. It is important to note that flood warnings may not be available or occur with sufficient advanced warning.

Alternative triggers are required for the site to ensure adequate response time, primarily involving continued monitoring of Severe Weather Warnings, rainfall forecasts, and media updates via local radio stations and social media.

This section outlines the sequence of events that will trigger the implementation of the flood response actions outlined in Section 8.0.

Shelter-in-Place Trigger – Visual Observation and Electrical Gauge

The use of severe weather warnings alone as a trigger for shelter-in-place procedures during local catchment flooding would lead to the frequent initiation of flood response strategies. As an alternative, a staged approach is recommended to monitor the triggering of the flood response strategy:

1. **STEP 1:** BoM Severe Weather Warning for heavy rainfall is issued for the area.
2. **STEP 2:** If Step 1 is affirmative, the Site Manager is to commence visual monitoring of the area southeast of Building D. Once flows ponding within the sag point on McNaughton Street begin to rise beneath the elevated deck south of Building D, initiate shelter-in-place actions for all buildings, restrict access to basement areas and suspend café operations.

To ensure no risk to staff, a visual observation can rely on an external camera to allow for remote observation with no requirement for staff to enter potentially dangerous conditions. In addition, it is recommended that an automatic electrical gauge is installed to the east of the elevated deck south of Building D. This can incorporate a raised pit set at 27.40m AHD. Once water fills the pit, it will trigger the internal gauge and notify the Site Manager to initiate shelter-in-place procedures.

Vertical Evacuation Trigger – Monitoring of Detailed Rainfall Forecast

Vertical evacuation of residents is expected to be required only during exceptionally rare and extreme storm events. Given the limited historical likelihood of such events and the absence of flood impacts up to the PMF event, the trigger for vertical evacuation has been deliberately set at a high threshold to avoid unnecessary disruption to residents and site operations. The following actions are to be implemented:

3. **STEP 3:** If Step 2 is affirmative, the Site Manager is to begin regular monitoring of the detailed 3-hour forecast for Jamisontown to determine whether total rainfall is expected to exceed 110mm. This threshold is based on BoM IFD rainfall intensities for the 0.1% AEP event. The 25% probability is to be used to ensure a more conservative approach (Figure 15).

Detailed forecast linked here: <https://www.bom.gov.au/places/nsw/jamisontown/forecast/detailed/>

		Rainfall							
From		2:00 AM	5:00 AM	8:00 AM	11:00 AM	2:00 PM	5:00 PM	8:00 PM	11:00 PM
50% chance of more than (mm)		–	–	–	–	0	0	0	0
25% chance of more than (mm)		–	–	–	–	1	3	2	0
10% chance of more than (mm)		–	–	–	–	6	9	8	2
Chance of any rain		–	–	–	–	30%	40%	40%	20%

Figure 15: BOM detailed 3-hourly forecast to be monitored during a severe weather warning.

4. **STEP 4:** If Step 3 is affirmative, initiate vertical evacuation of ground floor residents, visitors and staff within Buildings A-C to Levels 1-4.

While the Site Manager is responsible for monitoring information from BoM and AWS, NSW SES recommend that all site users refer to the HazardWatch website and the Hazards Near Me app.

If access to BoM forecasts is unavailable due to power, communications or network outages, vertical evacuation may also be initiated based on observed on-site conditions – i.e. if rapidly rising runoff or ponding approaches external building entrances. Where practicable, the Site Manager is to consider the persistence or intensification of heavy rainfall when determining whether vertical evacuation is required.

4.4 Emergency Signals

The site should have a Public Announcement (PA) system that can be used by the Site Manager to inform all staff of the chosen response strategy in the event of a flood emergency. This ensures that staff with key responsibilities in the Plan can begin to fulfil their duties without delay.

The PA system should be used alongside SMS and email updates to staff and residents to inform them of any severe weather or flood warnings covering the site or key access routes.

5.0 Hawkesbury-Nepean Flood Evacuation

5.1 Flood Evacuation Route

The official evacuation routes for the Penrith region are the Great Western Highway and the M4 Motorway, depicted in Figure 16. Before evacuating, site users are advised to follow NSW SES advice on evacuations and check live traffic information via www.ses.nsw.gov.au and www.livetraffic.com or the Live Traffic app.

It is noted that the majority of residents within SummitCare Penrith are in ILUs, without specialised care or nursing assistance. These residents have their own car space and are mobile. It is expected that most residents would therefore prefer to self-evacuate and should be advised of the below evacuation routes. For the remaining residents, evacuation should be co-ordinated with Nepean Blue Mountains Local Health District in line with the existing emergency management plan for the site.

Great Western Highway Evacuation Route:

- The Entry Point for the Great Western Highway Evacuation Route is located at the roundabout at the intersection of Parker Street and the Great Western Highway.
- The Exit Point is just beyond where the Great Western Highway meets with the M7 Motorway at Eastern Creek. From here people can take either the M7 or M4 motorways.
- Can be closed if South Creek level reaches 25.2m AHD

M4 Western Motorway Route:

- The entry point for the M4 Western Motorway Regional Evacuation Route is located at the roundabout located on Russell Street / Leonard Parade, Emu Plains.
- The Exit point is located just beyond where the M4 Motorway meets with the M7 Motorway at Eastern Creek. From here people can take either the M7 or M4 motorways.
- Closed at 32.8m AHD, can also be closed at 28.5m AHD at South Creek

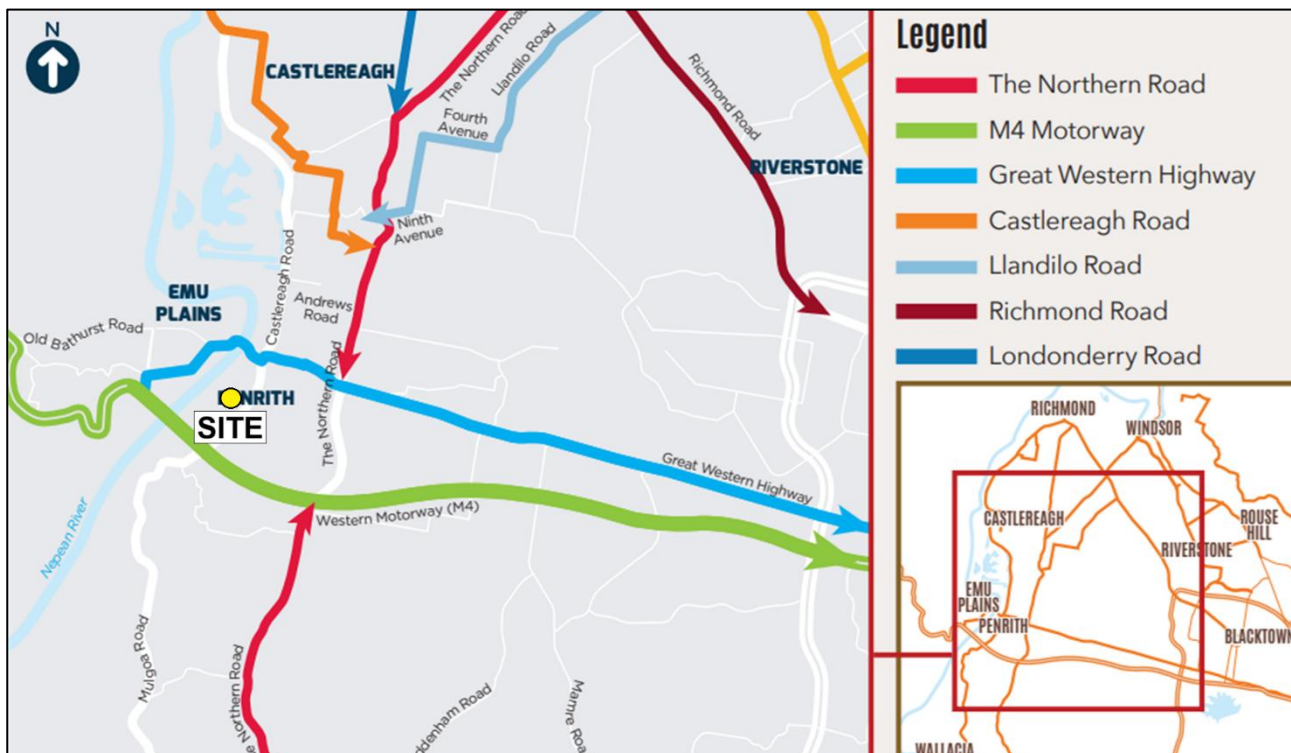


Figure 16: Official evacuation routes for the Penrith region, including the M4 Western Motorway (green) and the Great Western Highway (blue)

5.2 Flood Evacuation Model

Flood evacuation within the Hawkesbury Nepean Valley has been assessed at a regional scale through the NSW Government’s Hawkesbury Nepean Flood Evacuation Model (FEM). The FEM is a strategic planning tool developed to understand evacuation demand, route capacity, and constraints across the valley under a range of flood scenarios. It is intended to inform regional land use planning, emergency management strategy, and infrastructure prioritisation, rather than to assess individual developments.

Within the Penrith local government area, the FEM indicates that evacuation outcomes vary spatially. Jamisontown is generally less constrained than low-lying areas such as Emu Plains, North Penrith or parts of South Creek, owing to its proximity to higher ground and major arterials. In these scenarios, evacuation performance is strongly influenced by the timing of evacuation rather than by local access or egress limitations.

Table 7 provides an overview of the FEM findings for the region, suggesting that evacuation constraints affecting Jamisontown primarily arise in extreme flood scenarios, particularly the 1 in 1000-year event and under future population growth and climate change scenarios. In these cases, evacuation performance deteriorates due to cumulative demand across the Hawkesbury Nepean Valley exceeding the capacity of shared regional evacuation routes, rather than due to suburb-specific constraints.

These findings reinforce the need for early, proactive evacuation, which forms the basis of the site-specific procedures outlined in this FERP.

Table 7: Overview of FEM scenarios and findings for Jamisontown

FEM Scenario	General Findings for Jamisontown	Outcomes
Current population, moderate to high flood scenarios (1 in 500 chance per year and more frequent events)	Evacuation demand across Jamisontown is manageable provided evacuation occurs early, before key evacuation routes are affected.	Reinforces the importance of early evacuation triggers and proactive response rather than reliance on late evacuation.
Current population, extreme flood scenarios (1 in 1000 chance per year)	Regional evacuation capacity becomes constrained due to shared arterial routes and progressive inundation of low-lying roads.	The proposed development would have an improved evacuation compared with the existing due to the implementation of this flood emergency response plan, regular flood drills, increased awareness and education of residents. This will encourage early evacuation.
2041 committed development scenario with climate change, large flood scenarios (1 in 1000 chance per year)	Evacuation outcomes deteriorate across the Hawkesbury Nepean Valley, including Penrith, due to increased population competing for the same constrained road network. The FEM identifies this scenario as one of the highest evacuation risk cases at a regional scale.	
Delayed or reactive evacuation (all scenarios)	Significantly increases congestion and reduces successful evacuation outcomes, particularly in Penrith where routes are shared with multiple catchments. Early evacuation consistently improves outcomes regardless of flood magnitude.	

6.0 Flood Response Team

In the event of a severe flood, various staff members will be responsible for specific tasks as detailed in Table 8. Before the site is in operation, these roles must be delegated to specific staff members.

Table 8: Staff Flood Responsibilities

Role	Responsibilities
Site Manager	<ul style="list-style-type: none"> ▪ Monitor flood warnings and notifications from BoM and AWS ▪ Monitor BoM weather and detailed rainfall forecast data ▪ Inform staff and residents of flood risk ▪ Organise regular monitoring and testing of flood observation methods, including visual testing, testing of electrical gauge ▪ Coordinate flood SIP drills ▪ Initiate shelter-in-place actions during significant local catchment flooding ▪ Initiate pre-emptive evacuation of the facility during significant regional flooding
First Aid Officer	<ul style="list-style-type: none"> ▪ Coordinate assistance for less able staff members or visitors ▪ Prepare a Flood Emergency Kit that includes a portable radio, torch, spare batteries, first aid materials, emergency contact numbers, candles, waterproof matches, waterproof bags and required medications
Staff	<ul style="list-style-type: none"> ▪ Check visitor log so all site users can be accounted for ▪ Report missing site visitors to Site Manager

In the event of a severe flood, key telephone numbers applicable to the site have been listed in Table 9 below.

Table 9: Key Contact Numbers

<u>IMPORTANT TELEPHONE NUMBERS</u>	
Site Manager	tba
Safety/First Aid Officer	tba
<u>External Contacts</u>	
Police/Ambulance (for life-threatening emergencies)	000
NSW State Emergency Services (SES)	132 500
Fire & Rescue NSW – Penrith Fire Station	02 9493 1086
Penrith Police Station	02 4721 9444
Nepean Hospital	02 4734 4420

7.0 Preparation for Flood Response

7.1 Emergency Contacts and Evacuation Arrangements

For all new and existing residents, the Site Manager must confirm their preferred evacuation strategy (i.e. self-evacuation, evacuating with family/friends, or evacuation requiring assistance) prior to occupancy. Primary and secondary emergency contact information should also be obtained.

7.2 Education

As part of the preparation for a flood event, all staff must be made aware and advised of the flood risks present on site and the flood protocols and procedures via signage. All staff must be made aware of their management responsibilities via briefing. This will form part of the mandatory site inductions that all staff must undertake prior to commencing work. A copy of this FERP, which includes emergency response procedures, will be made available in the main office. This FERP must be regularly reviewed by the Site Manager, or in the event of any staff restructure or other significant change, to ensure it is up to date.

It is recommended that staff and residents are educated on the potential flood risk and actions that will be undertaken during a flood event. Education should be based on the key preparedness actions provided by NSW SES, outlined below.

1) Know where to get updates and warnings:

- Bureau of Meteorology: download the BoM app or go to www.bom.gov.au
- NSW SES: visit their website at www.ses.nsw.gov.au or social media pages, including Facebook at www.facebook.com/NSW.SES
- HazardWatch: via their website (www.hazardwatch.gov.au) or the Hazards Near Me app
- Live Traffic: app or www.livetraffic.com
- ABC Radio (the official emergency broadcaster): listen at reception.abc.net.au or ABC Listen app

2) **Prepare a 'Get Ready to Go' kit:** Refer to Section 7.5 for what should be packed in the kit in advance and immediately prior to evacuation.

3) **Make a plan for evacuation:** Know where you will go, how you will get there, what evacuation routes you can use (refer Section 5.1), and how you will manage your health.

4) **Share your plan:** Inform staff, relatives, other residents, and friends what your plans are in the event of evacuation

7.3 Signage

It is important that the site has adequate signage for flood warning, similar to those in Figure 12. Flood warning signs should be positioned around the site to identify areas affected by Category H3 hazard and higher in the critical PMF event (from local catchment flooding), in accordance with the Flood Hazard Flood Risk Management Guide FB03, NSW Department of Planning and Environment. This includes the areas south and east of Buildings C and D. Refer to Figure 11 for hazard categorisation of flows in this event.

Permanent signage should also be placed at the driveway onto McNaughton Street, highlighting that this road is a flood hotspot.



Figure 17: Signage and Gauges

7.4 Flood Drills

To reduce human behaviour risks, this plan should be regularly exercised, in a similar manner to that of fire evacuation drills. It is recommended that flood drills be held annually to ensure all staff are familiar with the sound of the alert and their subsequent flood response actions. It is the responsibility of the Site Manager to ensure that shelter-in-place and evacuation drills are organised and that any issues with these drills are attended to, and if necessary, rerun. This includes testing of the electrical gauge used as the trigger for shelter-in-place actions.

Site manager should reconfirm the emergency contact details and preferred evacuation arrangements for each resident during this process.

These drills are required to test the suitability of the plan, identify gaps and to provide staff the opportunity to put into practice their specific responsibilities. If issues arise, this plan should be reviewed and updated. The Site Manager will also ensure that all site drills are recorded in an appropriate records book and any non-conformities reported and responded to.

7.5 Flood Emergency Kit

A Flood Emergency Kit should be prepared prior to a flood event taking place and regularly checked to ensure that supplies within the kit are sufficient and in working condition. This check could occur after the evacuation drill takes place to provide a regular schedule. The Kit should include:

- Radio with spare batteries;
- Torch with spare batteries;
- First aid kit and other medicines;
- Candles and waterproof matches;
- Waterproof bags;
- A copy of the Site Emergency Management Plan; and
- Emergency contact numbers.

This Emergency Kit should be stored in a waterproof container, and it is the responsibility of the Site Manager and First Aid Officer to make sure that this kit is maintained and available during an emergency. The NSW Shelter-in-place guideline recommends items for self-sufficiency that are stored, maintained and are regularly

updated in an accessible location, including sufficient drinking water and food for occupants, fire extinguishers, radios and torches with spare batteries, and a first aid kit with an automated external defibrillator (AED).




Residents within the Independent Living Units should also be advised to prepare their own “Get Ready to Go” kit, per NSW SES advice. Due to the depth of floods in the Hawkesbury-Nepean Valley, when an Emergency Warning to evacuate is issued there may be limited time to prepare. Figure 18 provides an overview of what should be included in the kit in advance, and what should be added immediately before evacuating.

What to do now	What you can place in your kit earlier	What to add to your Get Ready to Go kit when you are leaving
 <p>Either scan, photograph or upload to the cloud, key records and documents (insurance, ID, passports etc)</p>	 <p>Portable radio with spare batteries</p>	 <p>A few toys or family games</p>
 <p>Put key contact information into your mobile phone (eg doctor, electricity and water utilities etc)</p>	 <p>Torch with spare batteries</p>	 <p>A good supply of required medications</p>
 <p>Photograph or scan medication scripts</p>	 <p>First aid kit (with supplies necessary for your household)</p>	 <p>Any special requirements and supplies for babies, the disabled, infirm and/or elderly</p>
 <p>Check your home and contents insurance policy cover</p>	 <p>Candles and waterproof matches</p>	 <p>Fresh food and drinking water</p>
	 <p>Personal hygiene supplies</p>	 <p>Appropriate clothing and footwear for multiple changes for all household members</p>
	 <p>Waterproof bag for valuables such as important documents (eg passports or insurance) and valuables (photos, jewellery etc)</p>	 <p>Mobile phone and charger</p>

Figure 18: Get Ready to Go Kit (Source: NSW SES)

8.0 Flood Response Actions

8.1 Regional Flooding

Flood Emergency Response Plan – REGIONAL HAWKESBURY-NEPEAN FLOODING	
Flood Warning	Evacuation Protocols
<p>1) BoM issues a FLOOD WATCH</p> <p>or NSW SES issue a yellow “ADVICE” warning</p> 	<p>The following actions must be undertaken by the Site Manager:</p> <ol style="list-style-type: none"> 1) Notify all staff, residents, emergency contacts and any anticipated site visitors of the Flood Watch via SMS and email. The notification is to emphasise preparedness only and that no evacuation is required at this stage. 2) Confirm availability of relevant staff to assist with emergency actions if required. 3) Begin to monitor BoM flood warnings and forecast river heights, NSW SES updates via HazardWatch, and local radio broadcasts <p>If the flood event is not anticipated to impact the site (either directly or indirectly), the Site Manager is to continue hourly check-ins and postpone high risk activities, including unnecessary deliveries and external appointments.</p>
<p>2) NSW SES issue an amber “WATCH AND ACT” warning</p> 	<p>If the flood event is anticipated to impact the site, the Site Manager must undertake the following actions:</p> <ol style="list-style-type: none"> 4) Once a “Major” (Level 2) flood warning is issued for the Hawkesbury-Nepean system, commence active monitoring of live river height data at the Victoria Bridge gauge. NSW SES are expected to order evacuation once the river height reaches 12.0m. 5) Contact residents’ nominated emergency contact to reconfirm arrangements (i.e. self-evacuation, evacuating with family/friends, or evacuation requiring assistance). 6) Identify and review arrangements for the six residents with specialised care needs: <ul style="list-style-type: none"> ▪ Confirm transport requirements ▪ Confirm the nominated sister facility for relocation ▪ Confirm availability of clinical staff to accompany residents if required 7) Ensure the emergency kit is ready to use and assist residents with preparing their personal ‘Get Ready to Go’ kits with medications, essential documents, food etc. 8) Ensure staff are familiar with their flood response roles and escalation procedures.
<p>3) NSW SES issue a red “EMERGENCY” warning</p> 	<p>Upon receipt of a red EMERGENCY warning or evacuation notice / if the river height at Victoria Bridge reaches 12.0m:</p> <ol style="list-style-type: none"> 9) Issue an evacuation notification via SMS to staff, residents and residents’ emergency contacts, advising that site evacuation is being implemented and providing clear instructions on timing and arrangements. 10) Broadcast an alert message over the PA system confirming a significant flood event and instructing all site users to prepare for evacuation and await staff direction. 11) Coordinate relocation of residents with special care needs as a priority, ensuring required medications, care plans and support staff accompany each resident 12) Staff must check any available registers (including sign-in logs, if available) and complete a headcount to ensure all site users are accounted for. 13) Provide assistance to residents requiring support with evacuation, prioritising those with limited mobility or additional care needs. 14) The Site Manager is to follow any action statements provided via the AWS, including any changes to evacuation timing or routes. <p>For life-threatening emergencies phone 000 immediately.</p> <p>NOTE: Avoid driving or walking through floodwaters. These are the main causes of death during flooding.</p>

4) NSW SES issue a yellow
"ADVICE" warning –
"Reduced threat: return with
caution".



Once NSW SES issue a return with caution notice, the following actions should be taken by the **Site Manager** to support a safe and orderly return to normal operations:

- 15) Confirm that access routes to and from the site are safe and passable before permitting staff, residents or visitors to return.
 - 16) Undertake an initial site inspection to identify any residual hazards
 - 17) Restrict access to any affected areas of the site until they have been inspected and deemed safe by suitably qualified personnel.
 - 18) Coordinate the return of evacuated residents.
 - 19) Replenish emergency supplies and restock the emergency kit.
 - 20) Record any flood impacts, response actions and lessons learned to inform future updates of the FERP.
-

8.2 Local Catchment Flooding

Flood Emergency Response Plan – LOCAL CATCHMENT FLOODING

Flood Warning

1) BoM issues a
SEVERE WEATHER OR THUNDERSTORM WARNING

or NSW SES issue a yellow “**ADVICE**” warning



2) Flash flooding is observed via visual observation or the electrical flood gauge is triggered

or NSW SES issue an amber “**WATCH AND ACT**” or red “**EMERGENCY**” warning



3) Visual observation shows flood is receding or the alert has been downgraded by the relevant authorities and any flood event that occurred has passed.

Refuge Protocols

The following actions must be undertaken by the Site Manager:

- Notify all staff, site users and any anticipated site visitors of the severe weather warning via SMS and email and confirm availability of relevant staff to assist with emergency actions if required.
- Ensure the emergency kit is ready to use.
- Listen to the local radio station for updates on flash flooding. Monitor updates on social media and NSW SES platform Hazard Watch.
- Begin visual observation of flows ponding on McNaughton Street
- Ensure staff are familiar with their responsibilities during shelter-in-place procedures.

If the flood event is not anticipated to impact the site (either directly or indirectly), the **Site Manager** is to continue hourly check-ins and postpone high risk activities (e.g. unnecessary deliveries etc.).

If flood event is anticipated to impact the site, the **Site Manager** must undertake the following actions:

If several hours of notice has been given:

- Implement pre-emptive closure of the café onsite. Send SMS to staff and anticipated visitors to inform them and advise them of closure.

If warning time is deemed insufficient:

- An alert and warning message should be broadcast over the PA system confirming a significant flood event, notifying all site users to begin **shelter-in-place** procedures.
- If time permits, temporary signage should be implemented at both driveways, which should also be closed off. Access to the basement and any external doorways should be restricted.
- Send SMS to staff, emergency contacts and any anticipated site users advising them of the SIP strategy and asking them not to travel to site.
- Staff must check any available registers (including sign-in logs, if available) and complete a headcount to ensure all site users are accounted for.
- The **Site Manager** is to begin monitoring BoM’s detailed rainfall forecast for Jamisontown to determine if there is more than a 25% chance that total rainfall will exceed 110mm.
- If this is the case, the Site Manager must instigate vertical evacuation of all ground floor residents, staff and visitors to Levels 1-4 of Buildings A-C. Any site users still in Building D are to be directed to the upper Levels of Building B.
- The **Site Manager** is to follow any action statements provided via the AWS.
- **For life-threatening emergencies phone 000 immediately.**

NOTE: Avoid driving or walking through floodwaters. These are the main causes of death during flooding.

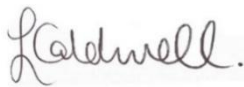
- The **Site Manager** is to confirm floodwater has subsided and that there is no ponding within the site.
- Flooded areas are to remain off limits until ponding has cleared. Site is to be inspected by the **Site Manager** if required. Once it has been deemed safe, the **Site Manager** may announce that site users no longer need to shelter-in-place.
- Egress via the McNaughton Street driveway should be limited until all floodwaters have receded.

9.0 Limitations and Revision of the Flood Emergency Response Plan

This FERP only addresses the flood response strategies during extreme flooding events for staff and site users within the site itself and is considered a guide only. It does not cover staff and site visitors' individual safe travel arrangements to the site, or when their safe travel arrangements may be disrupted by flooding and/or road closures. This FERP also cannot account for the behaviour of individuals, such as choosing not to shelter-in-place in a building on a floor above the PMF for the duration of a flood event, or attempting to enter dangerous areas during a flood.

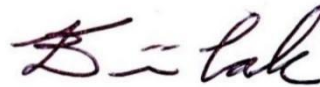
In addition, Flood Emergency Response Plans are 'living documents' which need to be regularly reviewed once the site is operational to ensure they remain appropriate to address the risk to the site, can be practically implemented, and consider changing information and lessons learnt from any floods since the last review.

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