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FLOOD IMPACT AND RISK ASSESSMENT

OPAL HealthCare

RESIDENTIAL AGED CARE FACILITY

26-30 Norbrik Drive, Bella Vista, NSW

Revision 03

FEBRUARY 2026

Our Job No. 22G84





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Project verification

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GLOSSARY

ARI	Average Recurrence Interval
AEP	Annual Exceedance Probability
AHD	Australian Height Datum (National Survey datum)
DA	Development Application
DECC	Department of Environment and Climate Change
RAFTS	Computer software package for 1D hydrologic analysis
HEC-RAS	Computer software package for 1D hydraulic modelling
FFL	Finished Floor Level
Flow	Volume of water per time (also known as flow rate) (m ³ /s or L/s)
Freeboard	Height difference between flood water surface level and finished floor level
FWL	Flood Water (Surface) Level
Hydraulic	Science of a moving liquid in a confined space
Hydrograph	Graph showing the rate of flow versus time past a specific point in a river, channel, or conduit carrying flow.
Hydrologic	The study of the water on the earth and in its atmosphere
LPI	Department of Land and Property Information
RL	Reduced Level (surface elevation)
PMF	Probable Maximum Flood level
Sheet Flow	Overland flow with the form of a continuous but not concentrated flow on a surface
Topography	The arrangement of the natural and artificial physical features of an area
Velocity	Measure of the speed and direction of the water flow (m/s)



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1. INTRODUCTION

Henry & Hymas has been engaged by Opal HealthCare to prepare this Flood Impact and Risk Management Report (The Report) to support the State Significant Development Application (SSDA) for the proposed new stage to the existing Opal Bella Vista on Lot 1, DP1217654 located at 26-30 Norbrik Drive, Bella Vista.

This report has been prepared in response to enquiries by the Secretary's Environmental Requirements (SEARs) in relation to flooding and drainage enquiries for the proposed development. The report will address the issues raised in item number 19, relating to flooding including:

- identification of flood panning area and levels – Chapter 2
 - flood extents and velocities up to the PMF event – Chapter 2
 - site access/egress route – Chapter 3
 - effects of climate change – Section 2.5
 - provisions from NSW Flood Risk Management Manual and other guidelines – Chapter 3
- preparation of Floor Impact and Risk Assessment – The Report
- flood risk management measures – Section 2.3 and Chapter 3

The property measures 5.95ha and is bound by Old Windsor Road along the western boundary, Norbrik Drive along the northern boundary and residential lots along the eastern and southern boundary.

The proposed development is localised to a reduced area, in the south-west corner of the above-mentioned property, and is designed to include a new residential building for agedcare surrounded by landscaping works and an associated below ground basement carpark to tie in with the surrounding stages of the same development. The locality sketch of the site is shown in Figure 1 below.



Figure 1 - Locality Sketch

1.1. Existing Site

As part of the masterplan works, the development as a whole has been designed to provide stormwater detention for the entire lot. A primary pond and detention basin has been constructed as part of the Stage 1 of the masterplan works as a landscaping feature to include an element of stormwater detention storage and a supplementary dry storage detention



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tank has been constructed below the basement carpark, to detain both the overflows from the primary pond and detention basin and the rainwater runoff from the above structures.

Two existing Ø375 stormwater connection pipe stubs have been constructed to service the stormwater discharge from the works proposed as part of the current stage of works and direct the site discharge to the dry storage detention facility.

1.2. Proposed works

The development includes a multi storey building with landscape works that is designed smoothly connect with the rest of the development on the ground floor and a basement carpark directly below the building, also designed to tie in with the rest of the basement carpark.

All drainage works from the ground level, including roof downpipes, are proposed to discharge into the basement stormwater network and discharge to the two existing Ø375 stormwater connection pipe stubs.

1.2.1. Project description

The proposal involves the construction and operation of a Residential Aged Care Facility at 28 Norbrik Drive, Bella Vista, including:

- Site preparation works;
- Construction of a 5-storey Residential Aged Care Facility (RACF), comprising of:
 - 135 one-bed units, including 15 bed high care and memory care wing at ground floor level;
 - Back of house, including commercial kitchens and laundry facilities at basement level
 - Staff administration area;
 - Resident amenities including central social hub, café, function room, shared resident spaces, gym and wellness rooms;
- Outdoor courtyard, activity space, shared garden areas, and children's play area
- Augmentation and extension of existing services including electrical supply, hydraulic services, and fire services;
- Construction of basement car parking for 35 spaces;
- Construction of 9 on grade parking spaces, drop off bay, and ambulance bay; and
- Provision of associated landscaping.

In addition, the SSD requests DPHI to require an amendment to the following concept approval conditions of the 992/2016/JP/Mod E:

- 31a - Flood Study (Stages 3-6)
- 31b - Basin Storage Capacity and Detention Performance (Stages 3-6)



2. FLOOD STUDY

2.1. Flood Assessment

The flood risk for the proposed development has been assessed in relation to Council's specific guidelines:

- The Hills Shire Council LEP 2019, Section 5.21 Flood Planning and
- The Hills Shire Council Development Control Plan, Part C, Section 6.

Based on these guidelines, given the development consists of Seniors Living complex, including aged care, the development is classified as 'Sensitive Land Use'. On this basis, the floor level for habitable floors is required to be set no lower than 'FPL4' which is identified as the PMF level. Non habitable floor levels, however, shall be set no lower than 'FPL3' which is identified as the 1% AEP level + 0.5m freeboard.

2.2. Existing Flood Behaviour

Since the proposed development is within the extent of, and is covered by the approved Masterplan Development Application for the overall AVEO site, the previously prepared flood modelling and reporting has been used as the reference for the various flood levels applicable for the site.

The flood levels vary across the overall AVEO site with flood levels decreasing from the northern side to the southern side as the flood is conveyed through the site. The site stormwater system consists of an existing dam (Primary Pond) with overflow from the pond via a weir to a secondary detention tank (Supplementary Detention Storage Facility) located beneath the basement carpark with discharge from the system to an overland flow path at the southern end of the site.

The weir in the Primary Pond was designed and constructed to restrict the top water level in the Primary Pond to RL71.50m AHD for storm events up to and including the 1% AEP storm event. At this level, the weir is engaged and is designed to direct runoff from storm events up to the PMF storm into and through the Supplementary Detention Storage Facility below the basement carpark.

Table 1 below provides a summary of the flood levels experienced by the property as flood water is conveyed through the site.

Table 1: Flood levels

Flood Location	1% AEP Flood Level	PMF Flood Level
Primary Pond	71.50m AHD	72.00m AHD
Supplementary Detention Storage Facility	65.70m AHD	67.00m AHD

Flood extents and velocities were established for the proposed development as part of the GHD - Aveo Norwest Dam Review Dam Break and Consequence Category Assessment Report dated July 2020. An extract showing the flood extent and velocity experienced by the site in the 100YR and PMF storm events are provided in Figures 2, 3, 4 and 5.

It is to be noted that the floodwater experienced by the site shown in the figures below is fully contained within the primary pond and the storage detention facility below the basement, therefore not interfering with accessways or accessible areas.



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Figure 2 - 100YR Flood Extent



Figure 3 - 100YR Flood Velocity



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Figure 4 - PMF Flood Extent

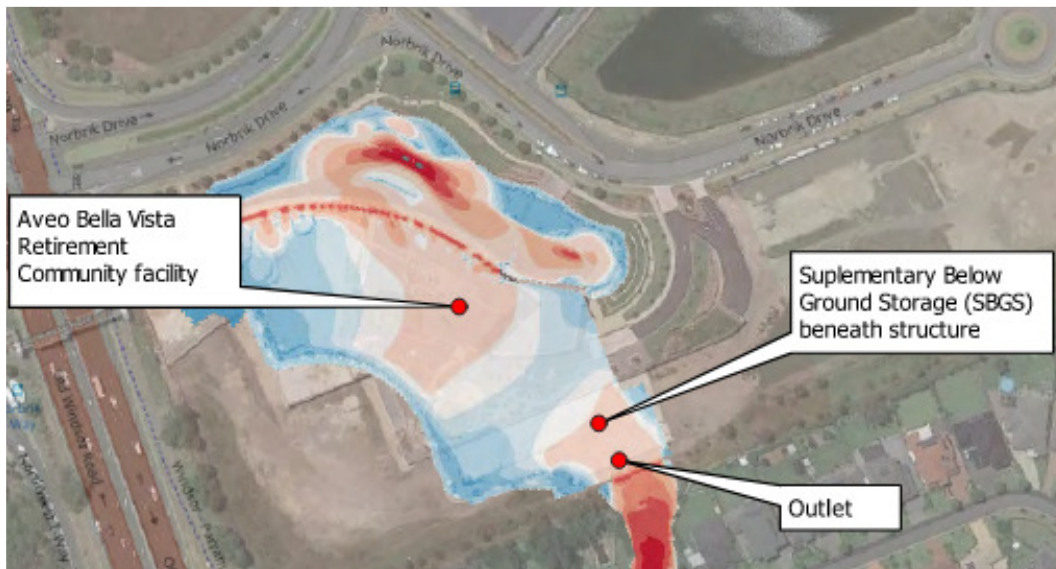


Figure 5 - PMF Flood Velocity



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2.3. Recommended Flood Planning Levels

On a large site such as the AVEO site, the relevant flood level applicable to an individual stage or component of the development is identified as the flood level adjacent to the particular stage. As such, the lowest habitable floor level for the proposed development is proposed to be set at RL72.70m AHD.

In accordance with Council's requirements for habitable floor level mentioned earlier (Section 2.1), the proposed level is higher than the PMF level (RL72.00) and therefore can be considered compliant. On this basis, the proposed development satisfies Council's requirements in relation to freeboard to the PMF.

2.4. Flood Risk Assessment

The risks imposed from the development on life, vehicles, the building and flood behaviour can be considered minimal. The risks of flooding are minimal for human life through the evacuation emergency plan which is shown below in Section 3 below.

The risk to the properties' electrical systems will be minimised by ensuring all electrical wiring and ports located external to the building and basement envelope are located above the PMF level of RL72.00m.

Flood behaviour, storage and extent is not changed or affected due to the redevelopment not changing or affecting any part of the pre-existing site.

Flood modelling for the site was previously undertaken as part of the overall AVEO development and approved by The Hills Shire Council in accordance with their DCP. Council's DCP does not make specific reference to the inclusion of climate change as part of the flood modelling for the site, however, since the current stage of the development is covered by flood modelling that was prepared for the overall site, it is not expected that additional modelling will be required.

2.5. Climate Change

The Hills Shire Council Development Control Plan (DCP) does not make specific reference to the inclusion of climate change as part of the flood modelling for a new development.

The subject area of works is found to be included within the overall AVEO development, for which extensive flood modelling has been previously undertaken. Since the flood modelling prepared for the site as a whole was approved by The Hills Shire Council, which is inclusive of the portion of site subject of this report, it is not expected that additional modelling will not be required.

3. FLOOD EMERGENCY RESPONSE PLAN

3.1. Site Access/Egress

The access and egress for the site in case of a flood event will be required to be via the basement carpark driveway located at the north eastern part of the site, off Norbrik Drive. The existing kerb at this location is set at a level of RL74.90m AHD, which is located above the various flood levels for the site, therefore maintaining the driveway safe for access/egress.



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3.2. Purpose

The definition of a Flood Emergency Response Plan (FERP), in accordance with the Australian Institute for Disaster Resilience, 2020 is:

Flood emergency response (management) plan - A flood emergency plan is a set of agreed arrangements that provide a framework for the management of a flood. A flood emergency plan provides a robust and adaptable framework that outlines the progression of emergency management functions and the parts that each actor will play. This includes defining the roles and responsibilities of different agencies and outlining the strategies for the performance of key flood management capabilities.

The State Emergency and Rescue Management Act 1989 (SERM Act), s5, defines the stages of an emergency (known as the comprehensive approach), as follows:

- prevention in relation to an emergency includes the identification of hazards, the assessment of threats to life and property and the taking of measures to reduce potential loss to life or property, and
- preparation in relation to an emergency includes arrangements or plans to deal with an emergency or the effects of an emergency, and
- response in relation to an emergency includes the process of combating an emergency and of providing immediate relief for persons affected by an emergency, and
- recovery in relation to an emergency includes the process of returning an affected community to its proper level of functioning after an emergency.

This site-specific Flood Emergency Response Plan primarily relates to the preparation and response stages as far as the management of the property is concerned and provides only limited information and procedures to assist the redevelopment in the recovery stage.

3.3. Limitations

It is important to understand there are limitations associated with this site-specific Flood Emergency Response Plan. During an unfolding rainfall or flood event, site-specific FERPs may not be able to provide:

- access to the scale of the event;
- knowledge of rapidly changing conditions;
- uncertainty of predictions and consequences;
- actions and timing necessary on a community scale that considers local flood conditions.

The redevelopment may or do not have:

- an awareness of the uncertainties of flooding;
- capacity to undertake training for flood emergency response;
- access to the information and resources available to the NSW SES during flooding;
- access to new information as it becomes available.

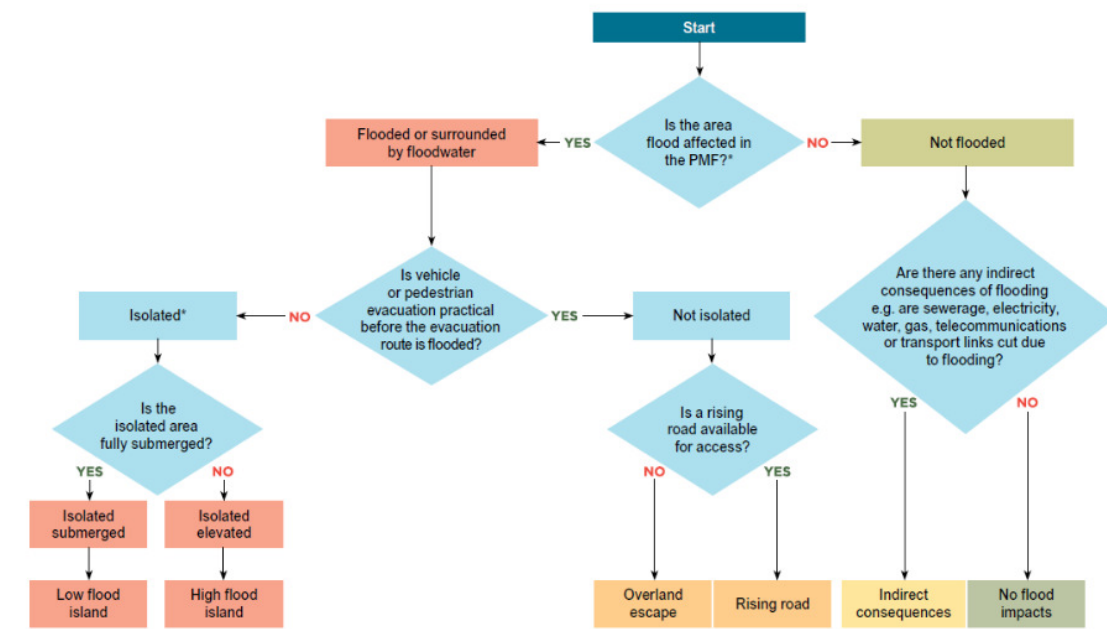
This FERP may not capture the foregoing information.

It is important to note that Local Flood Plans are updated as new information becomes available and as lessons are learnt from flood events, therefore when the Local Flood Plan is updated, a formal review of this FERP should be undertaken and the FERP updated.

3.4. Flood Response Classification

To support Emergency Management Planning, the Flood Risk Management Guide EM01 (Department of Planning and Environment, 2023) provides guidance based on the nature of flooding and the redevelopments interaction with the local flood plain.

Based on Figure 6 below, and the excerpt of the EM01, the flood emergency response classification for the development is defined as “Rising road”.



Note:

*This is either the PMF, equivalent or the event being used to determine the Flood Emergency Response Classification

Figure 6 – Flow chart to determine relevant flood emergency response classification

A detailed description of a rising road route is provided below, in conjunction with Figure 7.

Areas with rising road access are those areas where access roads rise steadily uphill and away from the rising floodwaters. The community will not be completely isolated before inundation reaches its maximum extent, even in the PMF. Evacuation can take place by vehicle or on foot along the road as floodwater advances.

People should not be trapped unless they delay their evacuation from their homes, for example, people living in 2-storey homes may initially decide to stay but reconsider after water surrounds them. (EM01, 2023).

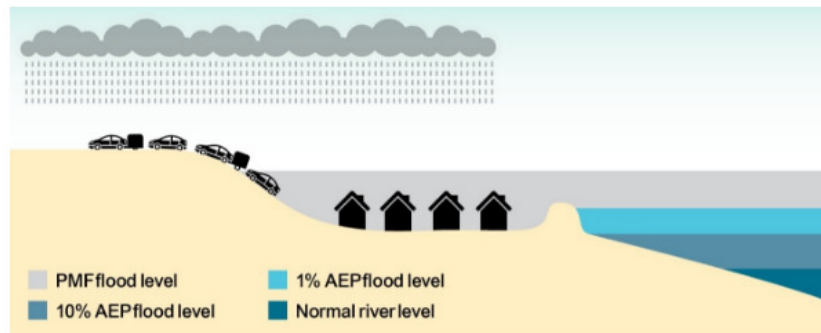


Figure 7 – Depiction of rising road access Route (EM01, 2023)

Table 4: Response Required for Different Flood ERP Classification

Classification	Description	Response Required		
		Resupply	Rescue / Medivac	Evacuation
High flood island	Area not flooded, but surrounded by floodwaters (cut off).	Yes	Possibly	Possibly
Low flood island	Area first surrounded by floodwaters (limiting evacuation) and is then inundated.	No	Yes	Yes
High trapped perimeter	Area not flooded, but is cut off by floodwaters and impassable terrain/structures.	Yes	Possibly	Possibly
Low trapped perimeter	Area first cut off by floodwaters and impassable terrain/structures, and is then inundated.	No	Yes	Yes
Area with overland escape route	Areas affected by flooding and where vehicle access is cut off, but evacuation on foot is possible.	No	Possibly	Yes
Area with rising road access	Areas affected by flooding, but where roads are accessible to vehicles, rising away from floodwaters.	No	Possibly	Yes
Indirectly affected areas	Areas not inundated, but may be subject to disruptions to utility supply, transport links or communications.	Possibly	Possibly	Possibly

3.5. Forecast, Warning and Alert Services

Public Warning process

The NSW SES works with the Bureau of Meteorology and Councils to develop warning systems and ensure consistent warning products and messaging across the state. The NSW SES uses gauge information to prepare flood intelligence, issue warnings and respond to flooding. However, there are many assets, such as flood and weather gauges, which are owned by the community, private organisations and government agencies, that are currently not used by the NSW SES to inform public warnings. The Bureau of Meteorology, NSW SES and Councils all issue different warning products.

Bureau of Meteorology

The Bureau of Meteorology has the responsibility to issue severe weather warnings, Flood Watches and Flood Warnings. This information is used by the NSW SES to release relevant warning products which instruct the community to take certain actions that support warning products issued by the BOM.

Warnings issued by the Bureau of Meteorology are described below:



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- Severe thunderstorm warnings – range in character from short-lived events to systems producing widespread damage across broader areas. Weather phenomena accompanying these storms include any combination of large hail, damaging or destructive winds, tornadoes and intense rainfall leading to local flash flooding.
- Severe weather warning – are provided for potentially hazardous or dangerous weather and are issued (in a flooding context) for very heavy rain that may lead to flash flooding.
- Flood Watch – Flood Watch provides early advice of potential riverine flooding to emergency services and communities at risk of flooding. Flood watches are issued (up to four days in advance of large-scale weather systems) when the combination of forecast rainfall and catchment or other hydrological conditions indicate that there is a significant risk of potential flooding.
- Flood Warning – Flood Warnings are issued by the Bureau to advise that flooding is occurring or expected to occur in a geographical area based on defined criteria. Flood Warnings may include either qualitative or quantitative predications or may include a statement about future flooding that is more generalised. The type of prediction depends on the quality of real-time rainfall and river level data, the capability of rainfall and hydrological forecast models and the level of service required.

New South Wales State Emergency Service (NSW SES) and Australian Warning System (AWS)

The NSW SES moved to the Australian Warning System (AWS) for flood notifications on 30 September 2022. The AWS is a nationally consistent, three-tiered approach designed to make warnings clearer and lead people to take action ahead of severe weather events. The warning system comprises warning levels, action statements, hazard icons, colours and shapes. Warnings are based on impacted community with increased localised information.

In addition to existing channels, warnings will be published to the Hazard Watch platform at hazardwatch.gov.au and displayed on the NSW SES website. More information is available at <https://www.ses.nsw.gov.au/about-us/our-warnings>.

The warning levels, action statements and icons are as described below and in Figure 8.

There are three levels within the AWS (Advice, Watch & Act) and Emergency Warning. For each level, there are a series of clear action statements to guide positive action by the community. These include 'stay informed', 'prepare to evacuate' and 'move to higher ground' as shown below:

- Advice – an incident has started. Stay up to date in case the situation changes.
 - Stay informed
 - Monitor conditions
 - Reduce threat: return with caution
- Watch and Act – conditions are changing and you need to start taking actions now to protect you and your family.
 - 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



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Figure 8 – Warning levels, action statements and icons (Sources: EM01)

3.6. Method of Dissemination of Alerts and Notification Platforms

Warnings may be disseminated in a variety of ways including through mass media (ABC Radio), on agency websites and social media platforms. Formal warnings may not always be received, so it is important to be aware of the situation by listening to the radio and monitoring warnings and alerts on various internet sites and river height levels. If it feels unsafe, act early and move away from the threat to a safe location.

The NSW SES provides advice using any combination of the below methods:

- Flood warnings through official NSW SES website
- HazardWatch Web App
- Emergency Alert (via mobile phone SMS +61 444 444 444')
- Mobile and fixed public address systems
- Two-way radio
- Telephone/Fax
- Door knocking
- Mobile and fixed sirens
- Distribution through established community liaison networks/partnerships:
 - ABC Radio
 - ABC Emergency 'Incident Map'
 - Local Council
 - Authorised social media sites.

The Early Warning Network is also available and can be subscribed to for:

- Location specific warnings <https://www.earlywarningnetwork.com.au/services-location>
- Regional warnings <https://www.earlywarningnetwork.com.au/regional-alerting>

The Public Information and Inquiry Centre will be established by the NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.

3.7. Flood Evacuation

Evacuations will take place when there is a risk to public safety. Circumstances may include:



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- Evacuation of people when their homes or businesses are likely to flood;
- Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access; and
- Evacuation of people where essential energy and/or utility services are likely to fail or where buildings have been or may be made uninhabitable

The NSW SES will consider the following in evacuation decisions:

- Duration of evacuation;
- Characteristics of the community;
- Numbers requiring evacuation;
- Availability of evacuation routes and transport;
- Time available for evacuation;
- Evacuee management requirements; and
- Resources and delivery of evacuation information.

NSW SES Incident Controllers, and flood planners will carefully consider the risks involved in conducting evacuations;

All evacuation decisions will be made as per the NSW SES Communication and Dissemination of Evacuation Decisions Standard Operating Procedure and Evacuation operations are to be consistent with the NSW Evacuation Management Guidelines;

The NSW Police Force will coordinate the provision of overall security for evacuated areas.

3.8. Evacuation Plan

Should residents on site receive the NSW SES Evacuation Warnings and Orders prior to site inundation, then residents are encouraged to evacuate the site as their primary flood safety strategy, if they have the opportunity to do so. If unable to leave the premises, the residents shall shelter in place within the building on Ground Floor (FFL72.70) or on higher levels.

Specific evacuation routes and emergency shelter locations have yet to be provided for The Hills Shire Council Flood Emergency Sub Plan 2023 and will be at the discretion of the NSW SES or NSW Police Force subject to emergency conditions. Refer to Appendix D for The Hills Shire Council Flood Emergency Sub Plan 2023.

All evacuation decisions will be made as per current NSW SES policies and procedures, consistent with the NSW Evacuation Management Guidelines.

Understanding the ultimate evacuation route will be at the discretion of the NSW SES (or NSW Police) subject to emergency conditions it is understood suitable elevation options for the development are present. The currently proposed evacuation route is shown in Figure 9 below.

If occupants are confined within the site after flood inundation, evacuees should shelter in place on Ground Floor (FFL72.70) which is above the PMF flood level (RL72.00). Once shelter in place protocols is initiated, occupants on site are to await further orders from NSW SES.

It is to be noted that the orders of emergency evacuation from NSW SES and the NSW Police should be considered the primary response.



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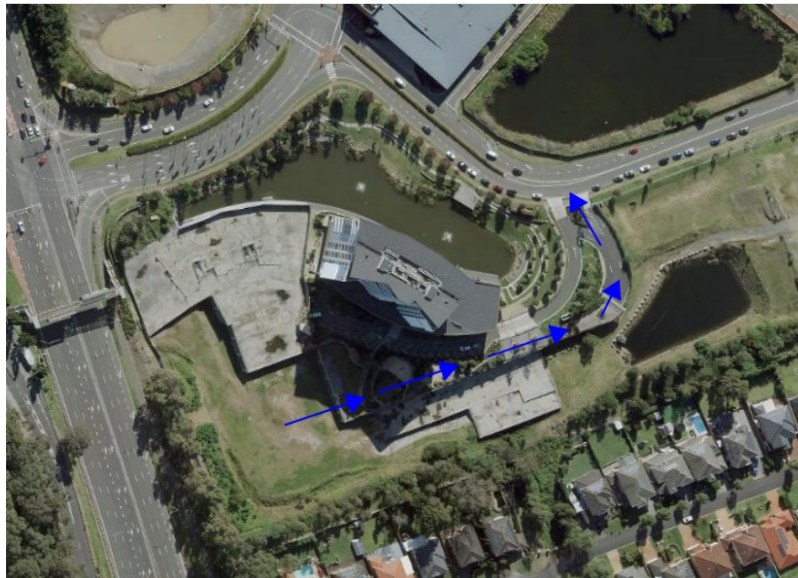


Figure 9 – Evacuation Route

4. CONCLUSIONS

This Flood Risk Management Report has assessed the potential flood impacts associated with the proposed Seniors Living redevelopment at Opal Bella (26-30 Norbrik Drive, Bella Vista). The development involves the construction of a building within the complex, as per the original masterplan for the site, which is not expected to alter existing flood behaviour or increase flood risk to neighbouring properties.

A comprehensive flood risk assessment has been conducted in line with all relevant planning instruments. It has been demonstrated that the development will comply with the applicable Flood Planning Level (1% AEP level + 0.5m freeboard), and all critical infrastructure such as electrical installations will be positioned above this level.

Mitigation strategies have been identified to manage residual flood risks, including securing equipment and ensuring appropriate evacuation protocols. A site-specific Flood Emergency Response Plan (FERP) has been developed in accordance with current NSW SES guidelines, outlining procedures for early warning, evacuation, and shelter-in-place responses if needed.

Based on the findings, the flood-related risks posed by the proposed development are considered to be low, and acceptable within the context of current planning policies and floodplain management practices.



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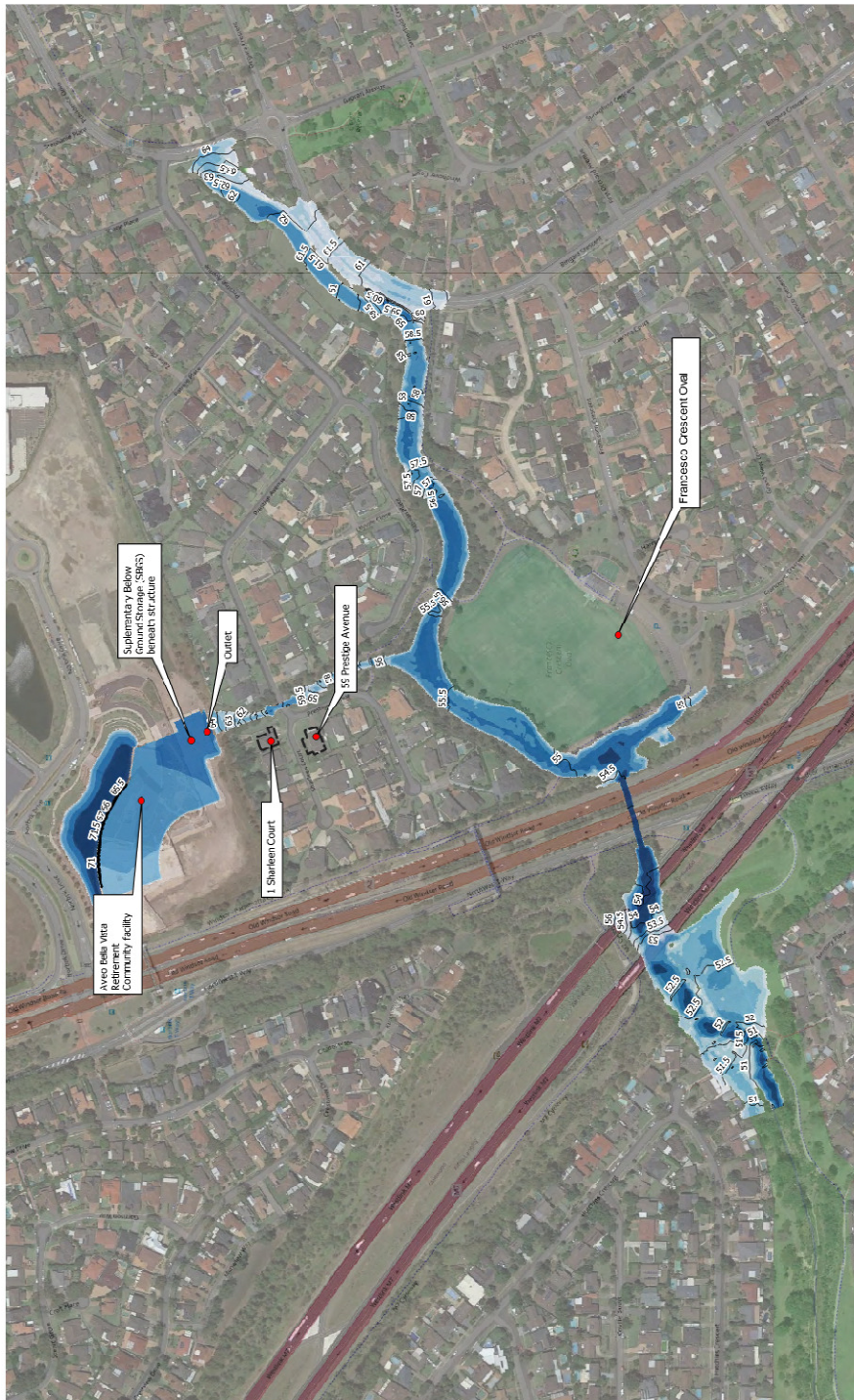
APPENDIX A – ARCHITECTURAL PLAN





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APPENDIX B – 1% AEP FLOOD EXTENT AND VELOCITIES



Job Number: 21-27601
 Reviser:
 Date: 04/05/2020
 Figure B01

Aveo Group
 Circa Business Park Detention Basin
 Dambreak and CCA
 Depth and Level 1 in 100AEP (no breach)



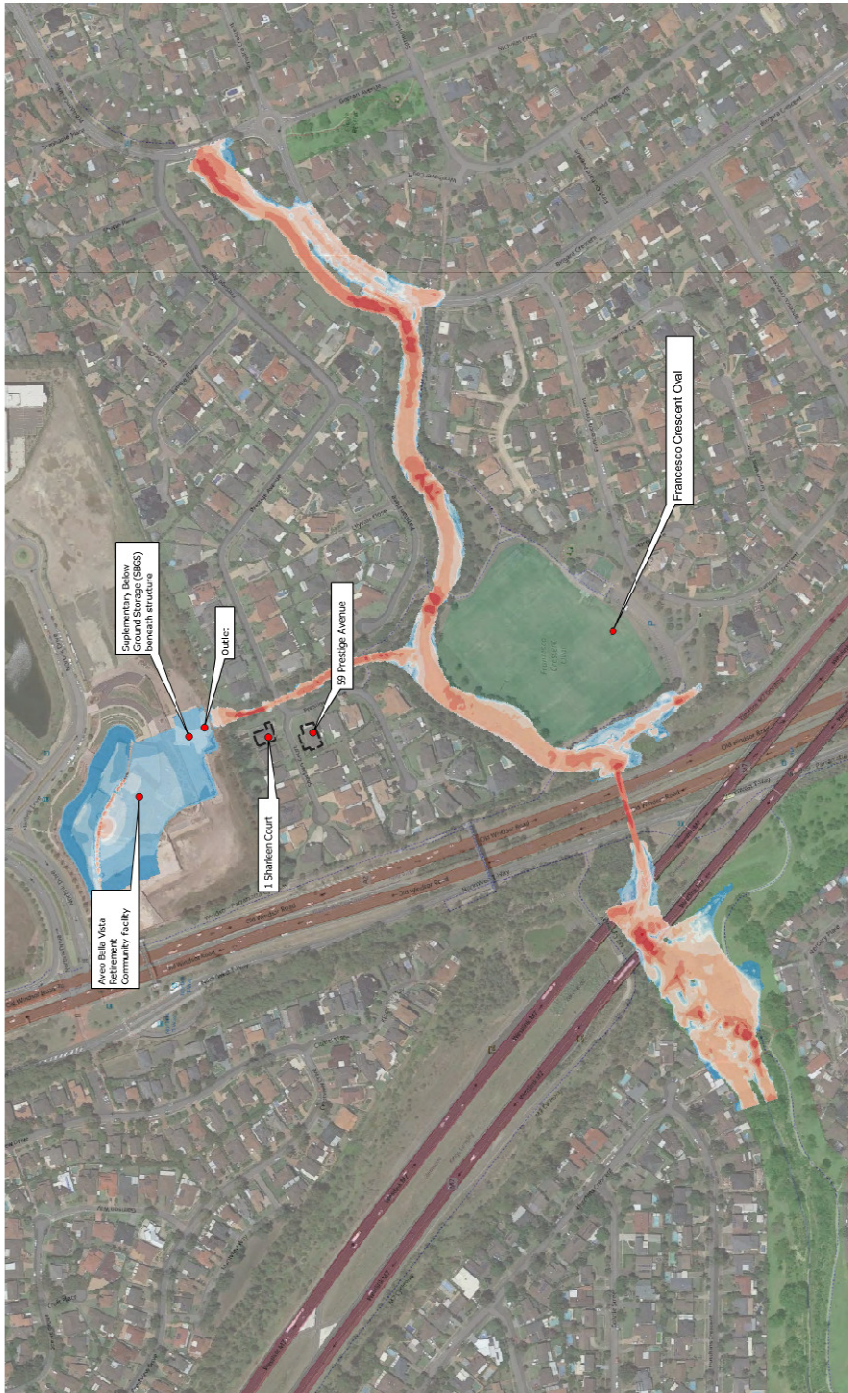
Scale 3000
 Paper Size A3
 Map projection: Transverse Mercator
 Datum: NAD 83
 Units: U.S. Feet

LEGEND
 — Flood Level (m/s) 0.5
 Depth (ft) 1
 0.015 2
 0.1 0.3
 0.5
 >2

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Job Number 21.7601
Revision 04/05/2020
Date

Figure B02

Aveo Group
Orca Business Park Development Basin
Dambreak and CCA
Velocity 1 in 100AEP (no breach)



LEGEND

Velocity (m/s)	0.0-0.4	2.0-3.0
	<0.1	1.0-2.0
	0.1-0.2	0.5-1.0
	0.2-0.3	1.6-2.0



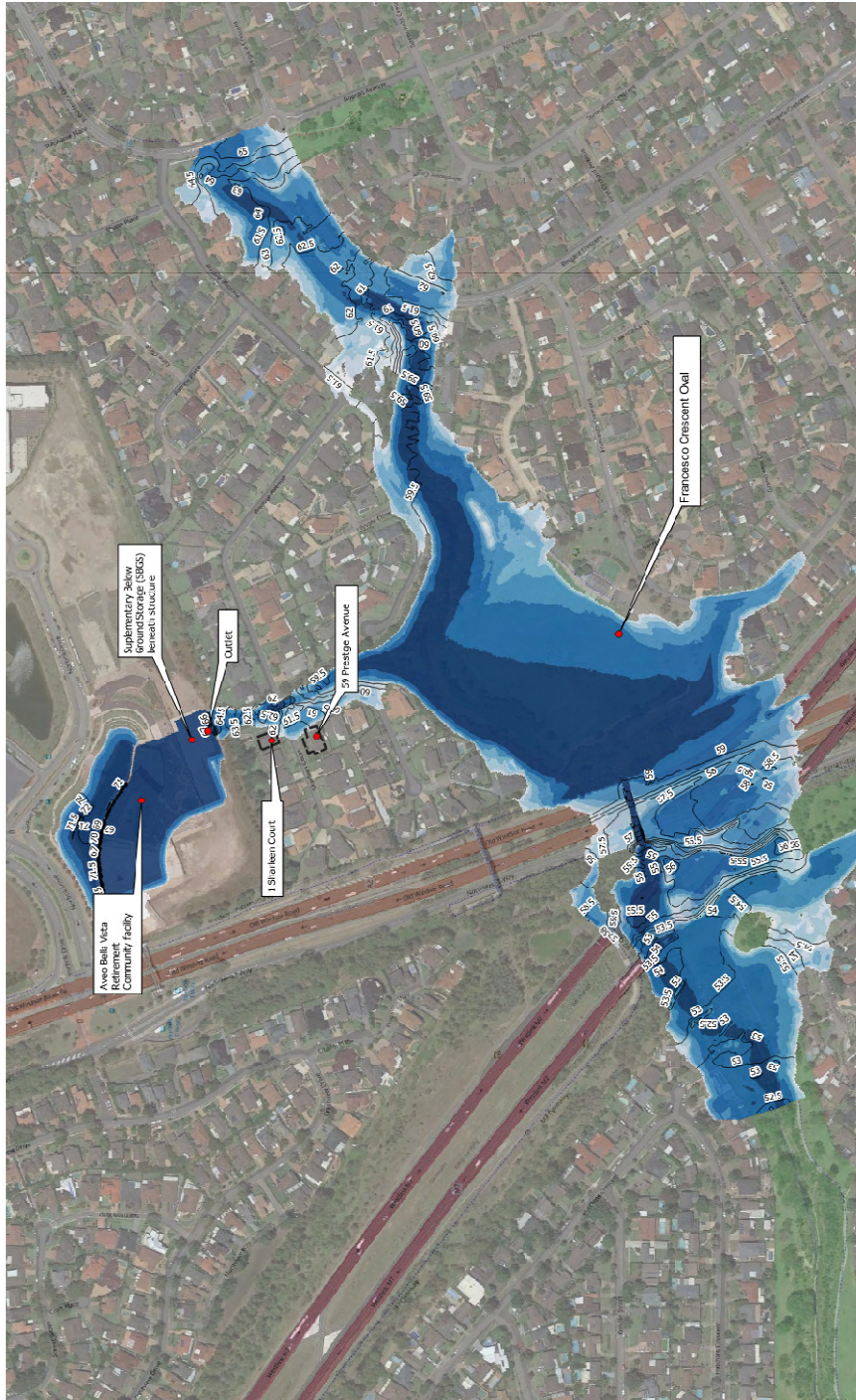
Scale 3000
Pipe Size A3
Map Symbols: This is a MapInfo
for information only. It is not
for use in any other software.
B31 CAN/NSA 100.0-2015

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APPENDIX C – PMF FLOOD EXTENT AND VELOCITIES



Scale 3000
 Paper Size: A3
 Map projection: International Meridian
 GCS: NAD 83
 MDA: Zone 56

LEGEND
 — Flood Level (mAHF)
 ■ Depth (m)

0.5	0.015
1	0.1
2	0.3
>2	

Aves Group
 Circa Business Park, Deleation Basin
Dam Break and CCA
 Depth and Level PMF (no breach)

GHD

Job Number: 21-27601
 Revision: 04/09/2020
 Date: Figure B05

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APPENDIX D – THE HILLS SHIRE FLOOD EMERGENCY SUB PLAN



THE HILLS
Sydney's Garden Shire



THE HILLS SHIRE FLOOD EMERGENCY SUB PLAN

A Sub Plan of the Local Emergency Management Plan (EMPLAN)

Volume 1 of the The Hills Shire Local Flood Plan

Endorsed by The Hills Shire Emergency Management Committee

May 2023

AUTHORISATION

The The Hills Shire Flood Emergency Sub Plan is a sub plan of the The Hills Shire Local Emergency Management Plan (EMPLAN). It has been prepared in accordance with the provisions of the **State Emergency Service Act 1989 (NSW)** and is endorsed by the Local Emergency Management Committee in accordance with the provisions of the **State Emergency and Rescue Management Act 1989 (NSW)**.

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Endorsed

Signature:

Lothlean

Chair, Local Emergency Management Committee

Print Name:

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5/7/23

DISTRIBUTION LIST

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VERSION HISTORY

Version Number	Description	Date
	The Hills Local Flood Plan	Dec 2010
	Baulkham Hills Local Flood Plan	Feb 1993
1	The Hills Shire Flood Emergency SubPlan – Local Flood Plan Vol 1	July 2022
1.1	The Hills Shire Flood Emergency SubPlan – Local Flood Plan Vol 1	May 2023

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

Manager Planning & Engagement
 NSW State Emergency Service
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nswses.communityplanning@ses.nsw.gov.au

Amendments that have been entered in this plan are listed in the table below.

Amendment Number	Description	Updated by	Date
01	Update of wording to section 5.4.1, 5.12 and 5.13 relating to flood warnings, to reflect the change to the Australian Warning System	Donna McKeon	23.11.2022
02	Update of wording from 'BoM' to 'Bureau'	Donna McKeon	23.11.2022
03	Update to section 1.8.1b to include commitment of exercising plan every five years and within two years of the plan being reviewed	Donna McKeon	23.11.2022
04	Update of 5.14.4 from 'DPIE' to 'DPE' to reflect Department of Planning, Industry and Environment to Department of Planning and Environment	Donna McKeon	23.11.2022
05	Update to section 5.10.1.b, c,d, from State Rescue Board Land Rescue Policy to State Rescue Board NSW State Rescue Policy	Donna McKeon	23.11.2022
06	Deleted My Road Info from section 5.4.1.h	Donna McKeon	23.11.2022
07	Updated 6.2.2 (c) reference from Resilience NSW to NSW Reconstruction Authority	Savitha Balu	23.03.2023
08	Update of Section 2.1 to reflect latest advice on declared dams, dam break flooding and DSEPs	Savitha Balu	17.04.2023
09	Update to Section 5.9.9a - insert (NSW Department of Primary Industries, supported by Local Land Services) and delete reference to wildlife.	Savitha Balu	17.04.2023
10	Standardised version numbers to reflect the FESP endorsed as Volume 1 of LFP is Version 1 and this update including above amendments is Version 1.1	Savitha Balu	17.04.2023

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1 OUTLINE AND SCOPE

1.1 PURPOSE

1.1.1 The purpose of this plan is to set out the multi-agency arrangements for the emergency management of flooding in The Hills Shire Local Government Area (LGA).

1.2 AUTHORITY

1.2.1 This Plan is written and issued under the authority of the *State Emergency and Rescue Management Act 1989* (NSW) ('SERM Act'), the *State Emergency Service Act 1989* (NSW) ('SES Act') and the NSW State Emergency Management Plan (EMPLAN).

1.2.2 This plan is a sub plan to The Hills Shire Council Local Emergency Management Plan (EMPLAN) and is endorsed by The Hills Shire Emergency Management Committee (LEMC).

1.2.3 This plan is also a sub plan to the Hawkesbury Nepean Flood Emergency Sub Plan.

1.3 ACTIVATION

1.3.1 This plan does not require activation. The arrangements set out in this plan are always active.

1.3.2 The Hills Shire Council Emergency Management Plan (EMPLAN) is active at all times in anticipation of the need to coordinate support and resources requested by combat agencies, including the NSW State Emergency Service (NSW SES).

1.4 SCOPE

1.4.1 The area covered by this plan is The Hills Shire LGA. The principal towns, villages, rivers and creeks are shown in Appendix A.

1.4.2 The council area is in the NSW SES Metro Zone and for emergency management purposes is part of the North West Metro Emergency Management Region.

1.4.3 The Plan sets out The Hills Shire Council level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in The Hills Shire LGA. Hazard and Risk information can be found in Volume 2 of the Local Flood Plan, and NSW SES Response Arrangements can be found in Volume 3.

1.4.4 In this plan a flood is defined as a relatively high water level which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves (including tsunamis) overtopping coastline defences.

1.4.5 The arrangements for the emergency management of tsunamis are dealt with in the NSW State Tsunami Emergency Sub Plan.

- 1.4.6 This plan outlines the local level arrangements for the management of downstream consequences of dam failure, however it does not cover the management of flooding of an underground mine by inrush or other cause, which should be covered by the Mine Sub Plan for the respective mine.

1.5 GOALS

- 1.5.1 The primary goals for flood emergency management in NSW are:
- a. Protection and preservation of life;
 - b. Establishment and operation of flood warning systems;
 - c. Issuing of community information and community warnings;
 - d. Coordination of evacuation and welfare of affected communities;
 - e. Protection of critical infrastructure and community assets essential to community survival during and emergency incident;
 - f. Protection of residential property;
 - g. Protection of assets and infrastructure that support individual and community financial sustainability and aid assisting a community to recover from an incident; and
 - h. Protection of the environment and conservation values considering the cultural, biodiversity and social values of the environment.

1.6 KEY PRINCIPLES

- 1.6.1 The protection and preservation of human life (including the lives of responders and the community) is the highest priority.
- 1.6.2 Evacuation is the primary response strategy for people impacted by flooding.

1.7 ROLES AND RESPONSIBILITIES

- 1.7.1 General responsibilities of emergency service organisations and functional areas are set out in the NSW State EMPLAN.
- 1.7.2 The roles and responsibilities of agencies in flood are described in Appendix A to the [State Flood Plan 2018](#).
- 1.7.3 Specific roles and responsibilities for agencies, functional areas and organisations in relation to flooding within The Hills LGA are detailed within this Plan, Appendix B.
- 1.7.4 Any agency with agreed responsibilities in this Plan that are temporarily, or no longer able to fulfil their responsibilities must as soon as possible notify the:
- a. NSW SES Incident Controller (for local level responsibilities during response operations);
 - b. NSW SES Metro Zone Commander (for regional level responsibilities outside of response operations); and

- c. NSW SES The Hills Local Commander (for local level responsibilities outside of response operations).

1.8 PLAN MAINTENANCE AND REVIEW

1.8.1 The NSW SES will maintain the currency of this plan by:

- a. Ensuring that all supporting emergency services and functional areas, organisations and officers mentioned in it are aware of their roles and responsibilities;
- b. Conduct a minimum of one exercise every five years or within two years of the plan being reviewed.
- c. Reviewing the contents of the plan:
 - When there are changes which alter agreed plan arrangements;
 - When changes to land use strategic plans and policies increase the population at risk;
 - After a flood including from after action reviews, reports or inquiries;
 - As determined by the NSW SES Commissioner.
- d. The plan is to be reviewed no less frequently than every five years or after a significant flood event.

1.9 SUPPLEMENTARY DOCUMENTS

1.9.1 Supplementary material published in previous versions of the Local Flood Plan is maintained on the NSW SES website at: <https://www.ses.nsw.gov.au/about-us/flood-storm-and-tsunami-plans/> including:

- a. [Flood Plan Glossary](#);
- b. [NSW SES Resupply Flowchart](#).

2 OVERVIEW OF NSW FLOOD HAZARD AND RISK

2.1 THE FLOOD THREAT

2.1.1 The NSW SES maintains information on the nature of flooding and effects of flooding on the community in The Hills Shire LGA. This is outlined in Volume 2 of the Local Flood Plan – Hazard and Risk in The Hills Shire LGA.

2.1.2 Declared dams that are relevant to local communities in the Hills Shire LGA are listed below.

- a. Detention basins that are located within the LGA are addressed in Volume 2 of the Local Flood Plan as required by their potential to impact local communities, along with any similar declared dams in adjacent LGAs with a potential to impact in the Hills Shire. These declared dams are listed below.

Dam Name	Owner	Location
Sierra Place Detention Basin	The Hills Shire Council	Baulkham Hills
Gooden Reserve Retaining Basin	The Hills Shire Council	Baulkham Hills
Rouse Hill Basin 9	Sydney Water	Rouse Hill
Rouse Hill Basin 9B	Sydney Water	Kellyville
Rouse Hill Basin 16	Sydney Water	Kellyville
The Gables Lake and Basin	Celestino Pty Ltd	Gables
Castle Hill Golf Course Basin	Castle Hill Country Club	Norwest
Rouse Hill Basin 5	Sydney Water	Blacktown LGA
Rouse Hill Basin 13	Sydney Water	Blacktown LGA

- b. Larger storage dams, listed below, are declared dams that are located outside the Hills Shire but also have a potential to impact on local communities in the LGA (amongst multiple LGAs) are addressed in the broader regional flood plan.

Dam Name	Owner	LGA
Cataract Dam	Water NSW	Wollondilly
Cordeaux Dam	Water NSW	Wollongong
Avon Dam	Water NSW	Wingecarribee
Nepean Dam	Water NSW	Wingecarribee
Warragamba Dam	Water NSW	Wollondilly

3 PREVENTION/ MITIGATION

3.1 INTRODUCTION

- 3.1.1 The Floodplain Development Manual outlines the NSW Government's Flood Prone Lands Policy which details the framework for managing flood prone land in New South Wales. Incorporation of floodplain risk management into land use planning is one of the key means to limit the exposure to flood risks to our communities and help build long term resilience to future flood events.

3.2 LAND USE PLANNING

- 3.2.1 **Strategy:** Work with land use planning and consent authorities to advocate that the risks arising from floods are considered so as to prevent the creation of intolerable impacts of these hazards on the community.

3.2.2 **Actions:**

- NSW SES will provide strategic input about land use planning matters which have or will create significant flood risk;
- NSW SES will provide responses to land use planning proposal referrals that have or will create significant flood risk;

3.3 FLOODPLAIN RISK MANAGEMENT

3.3.1 **Strategy:** NSW SES advocates for the recognition of emergency management considerations through participation in the floodplain risk management program.

3.3.2 **Actions:**

- a. NSW SES will provide coordinated and consistent emergency management advice to councils and other agencies in relation to the management of land that is subject to flooding or coastal inundation; and
- b. NSW SES will provide advice, support and technical resources for NSW SES representatives to contribute effectively to local Floodplain Management Committees.

4 PREPARATION

4.1 INTRODUCTION

4.1.1 Preparation includes arrangements or plans to deal with an emergency or the effects of an emergency.

4.2 FLOOD EMERGENCY PLANNING

4.2.1 **Strategy:** NSW SES develop, review and maintain Flood Sub Plans

4.2.2 **Actions:**

- a. Develop and review this NSW SES Local Flood Plan as required. Local Flood Plans outline the specific arrangements for management of flood events within an LGA, and may include cross boundary arrangements; and
- b. Review plans as per [Section 1.8](#).

4.2.3 Local EMPLAN Consequence Management Guides for flood are not required for communities covered by NSW SES Local Flood Plans.

4.3 FLOOD INTELLIGENCE SYSTEMS

4.3.1 **Strategy:** NSW SES develop and maintain a flood intelligence system to identify flood behaviour, its impact on the community and required response actions.

4.3.2 **Actions:**

- a. Gather and assess flood information for the full range of flood types and severities;
- b. Collect, collate and assess information on the characteristics of communities at risk and the potential effects of flooding on communities at risk; and
- c. Share flood intelligence information with supporting agencies.

4.4 DEVELOPMENT OF WARNING SYSTEMS

4.4.1 **Strategy:** Develop, maintain and prepare systems for the provision of flood warnings and associated warning services.

4.4.2 **Actions:**

- a. All levels of government work in partnership to develop and maintain flood warning infrastructure;
- b. NSW SES maintains a list of the requirements for flood warnings for flood gauges in NSW (including flood classifications, warning times required and key statistics) and can be found in the supplementary document to the [State Flood Plan 2018](#) (see Section 1.9). Gauges of relevance within (The Hills Shire LGA are also listed in Volume 3 of this Plan;
- c. The NSW SES will recommend new warning services and changes to warning alert levels for gauges to the NSW Flood Warning Consultative Committee.
- d. The State Government, in partnership with Local Government, is responsible for developing and maintaining flash flood warning systems for local catchments where required;
- e. Dam Owners will provide Dam Failure Warning Systems (where required) and consult NSW SES on alert levels and messaging. Alert level definitions are listed in Dam Safety Emergency Plans;
- f. NSW SES will maintain a dedicated dam failure hotline and procedures to ensure priority dissemination of dam failure warnings.
- g. NSW SES will develop and maintain warning and flood information products by:
 - Utilising flood intelligence data;
 - Developing pre-written warning and flood information products;
 - Continuously reviewing warning and flood information products; and
 - Consulting with affected communities, key stakeholders, Dam Safety NSW and the NSW Flood Warning Consultative Committee; and
 - Maintain Operational Readiness.

4.4.3 **Strategy:** Ensure NSW SES, supporting agencies, functional areas and the community are prepared and familiar with the strategies and arrangements within the Flood Sub Plan and supporting documents.

4.4.4 **Actions:**

- a. NSW SES will consult stakeholders throughout the development of plans;
- b. NSW SES will inform stakeholders of content changes after revisions;
- c. NSW SES will ensure their facilities and resources are maintained and operationally ready;
- d. NSW SES will train personnel for their expected flood operation roles; and
- e. NSW SES will regularly brief stakeholders on the exercise arrangements contained in this Flood Sub Plan.

4.5 **COMMUNITY RESILIENCE TO FLOODING**

4.5.1 **Strategy:** NSW SES provides and maintains a flexible volunteer workforce to support community resilience.

4.5.2 **Actions:**

- a. Ensure ongoing recruitment and training of a diverse range of volunteers.
- b. Ensure pre-planning to facilitate the management of spontaneous volunteers and community members during a flood.

4.5.3 **Strategy:** NSW SES works with individuals, communities, businesses and government agencies to build flood resilience.

4.5.4 **Actions:**

- a. Work with communities to understand and manage the risks associated with floods, including providing business continuity guidance (NSW SES Business Floodsafe), family preparedness (NSW SES Home Floodsafe) and other engagement strategies.
- b. NSW SES will collate, assess and disseminate flood information to the community.
- c. Collaborate with individuals, businesses, government agencies and communities when developing flood intelligence, preparedness and response information.
- d. Plan for floods collaboratively with communities through community and stakeholder participation and engagement.

5 RESPONSE

5.1 INTRODUCTION

5.1.1 Flood response operations will begin:

- a. On receipt of a Bureau of Meteorology (Bureau) Severe Weather Warning or Thunderstorm Warning that includes heavy rain or storm surge; or
- b. On the receipt of a Bureau Flood Watch or Flood Warning; or
- c. On receipt warnings for flash flood; or
- d. On receipt of a dam failure alert; or
- e. When other evidence leads to an expectation of flooding.

5.2 INCIDENT MANAGEMENT ARRANGEMENTS

5.2.1 **Strategy:** Maintain effective control of flood operations across New South Wales.

5.2.2 **Actions:**

- a. The NSW SES uses the Australasian Inter-service Incident Management System (AIIMS) to manage the flood response;
- b. Control of flood response will be at the lowest effective level and may be scaled to suit the incident;
- c. The NSW SES State Controller will appoint Incident Controllers and establish Incident Control Centres (see NSW SES facilities on map in Appendix A);

- d. For riverine flood operations on the Hawkesbury Nepean River system the arrangements in the Hawkesbury Nepean Flood Emergency Sub Plan (HNFESP) will apply. The arrangements in this plan will be subject to that Sub Plan.
- e. For local flood operations the Incident Controller, in consultation with participating supporting emergency services and Functional Areas will determine the appropriate breakdown of an incident area into Divisions and/or Sectors in accordance with the principles of AIIMS as well as the predefined Divisions and Sectors outlined within Volume 3 of this Plan.

5.2.3 **Strategy:** Maintain Incident Control Centre(s).

5.2.4 **Actions:**

- a. NSW SES will operate Incident Control Centre(s) as required;
- b. The NSW SES Incident Control Centre(s) will:
 - Control resources from NSW SES and coordinate resources of supporting emergency services and functional areas;
 - Manage Request for Assistance (RFA) tasking and ensure they are actioned in a timely manner;
 - Undertake response planning and determine future resourcing requirements; and
 - Coordinate information flow, including warnings, public information and social media.

5.2.5 **Strategy:** Provide effective liaison between the NSW SES and supporting agencies or functional areas in accordance with Local EMPLAN.

5.2.6 **Actions:**

- a. Supporting emergency services and Functional Areas should provide Liaison Officers to NSW SES Incident Control Centre(s) and/or Emergency Operation Centres as required; and
- b. NSW SES will provide Liaison Officer(s) to Emergency Operations Centres as required.

5.2.7 **Strategy:** Coordinate resources and logistics support to ensure operational effectiveness.

5.2.8 **Actions:**

- a. The NSW SES Incident Controller will notify agencies of potential access issues between locations, for the consideration of pre-deploying of resources;
- b. The NSW SES may request resources and logistics support directly from a supporting emergency service or Functional Area.
- c. Wherever possible, supporting organisations are to provide their own logistic support in consultation with NSW SES where appropriate.
- d. The NSW SES Incident Controller will control air support operations and may utilise supporting agencies in the management of aircraft.

5.3 USE OF INFORMATION AND COLLECTION OF INTELLIGENCE

5.3.1 **Strategy:** Ensure flood information is effectively communicated and collected during a flood.

5.3.2 **Actions:**

- a. Information relating to the consequences of flooding, response strategies, situational awareness and operational updates will be distributed by NSW SES to supporting emergency services and Functional Areas listed under this Plan;
- b. All supporting emergency services and Functional Areas will accurately record and report information relevant to their activities and any real time flood information (including road closure information) to the NSW SES Incident Controller. This may be in the form of a combined Emergency Operations Centre (EOC) report, or direct from agencies where an EOC has not been established;
- c. The NSW SES may establish and operate a Joint Intelligence Unit to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information; and
- d. Reconnaissance, mapping, damage assessments, intelligence validation and post flood evaluation will be coordinated by NSW SES. This may occur post impact and continue into the recovery phase.

5.3.3 **Strategy:** Ensure flood intelligence is incorporated into operational decision-making.

5.3.4 **Action:** The NSW SES will use flood intelligence and official forecasts and warnings, to undertake an assessment of the predicted impact of a flood and to inform operational decision-making.

5.4 PROVISION OF INFORMATION AND WARNINGS TO THE COMMUNITY

5.4.1 **Strategy:** Timely and effective warnings are distributed to the community.

5.4.2 **Actions:**

- a. The Bureau issues public weather and flood warning products before and during a flood. These may include:
 - Severe Thunderstorm Warnings with reference to heavy rainfall
 - Regional Severe Thunderstorm Warnings with reference to heavy rainfall
 - Detailed Severe Thunderstorm Warnings (for Sydney / Newcastle / Wollongong) with reference to heavy rainfall
 - Severe Weather Warnings with reference to heavy rainfall and/or storm surge
 - Flood Watches and
 - Flood Warnings.
- b. Dam Owners will utilise Dam Emergency Plans to provide warnings and information to NSW SES and communities (where appropriate).

- c. NSW SES Incident Controllers will issue the following NSW SES Flood Warnings aligning to the Australian Warning System:
 - Advice;
 - Watch and Act; and
 - Emergency Warning
- d. NSW SES will contact the Bureau to discuss the development of flood warnings as required.
- e. NSW SES will provide alerts and deliver flood information to affected communities using a combination of the following methods:
 - Mobile and fixed public address systems;
 - Two-way radio;
 - Emergency Alert (SMS and voice message alerting system);
 - Telecommunications (including Auto dial systems);
 - Standard Emergency Warning Signal;
 - Doorknocking;
 - Mobile and fixed sirens;
 - Variable message signs;
 - Community notices in identified hubs;
 - Distribution through established community liaison networks, partnerships and relationships; and
 - NSW SES social media and website.
- f. NSW SES may request supporting agencies redistribute NSW SES alerts and information, including through the provision of doorknocking teams;
- g. Road closure information will be provided to the community through the following agencies/methods:
 - Local Government Council websites; and
 - Transport for NSW 'Live Traffic' website: www.livetraffic.com or 'Transport InfoLine': 131 500. VMS messaging on roadways may also be used to advise motorists.
- h. The Public Information and Inquiry Centre will be established by the NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.
- i. The Disaster Welfare Assistance Line will be established by Disaster Welfare Services where required to provide information on welfare services and assistance. Assistance line contact details will be broadcast once Disaster Welfare Services commence.

5.5 PROTECTION OF PROPERTY

5.5.1 **Strategy:** Coordinate the protection of property from destruction or damage arising from floods.

5.5.2 **Action:** NSW SES, supporting agencies, and community volunteers will assist the community (where resources are available, feasible and safe to do so) in:

- a. The protection of properties through flood protection systems (e.g. sandbagging) to minimise entry of water into buildings; and
- b. The lifting or moving of household furniture and commercial stock/equipment.

5.6 ROAD AND TRAFFIC CONTROL

5.6.1 **Strategy:** Coordinate the closing and re-opening of flood affected roads.

5.6.2 **Actions:**

- a. The Hills Shire Council will coordinate the closure and reopening of council managed roads;
- b. The Transport Management Centre (TMC) in coordination with Transport for NSW will coordinate the closure and reopening of the state road network;

5.6.3 The NSW Police Force may close and re-open roads but will normally only do so (if The Hills Shire Council or Transport for NSW have not already acted) and if public safety requires such action;

5.6.4 **Strategy:** Coordinate traffic control measures in flood affected areas.

- a. The NSW SES Incident Controller may direct the imposition of traffic control measures into flood affected areas in accordance with the provisions of the *State Emergency Service Act, 1989* and the *State Emergency Rescue Management Act, 1989*.
- b. The NSW SES Incident Controller may request the Local Emergency Operations Controller provide suitable personnel to assist with traffic coordination.

5.7 PROTECTION OF ESSENTIAL SERVICES

5.7.1 Arrangements for the protection of local assets are outlined in Volume 3 of this NSW SES local Flood Plan. In addition, Local and Region EMPLAN's contain infrastructure inventories.

5.7.2 **Strategy:** Minimise disruption to the community by ensuring protection of infrastructure and supply of essential energy and utility services.

5.7.3 **Actions:**

- a. Transport Services Functional Area will keep the NSW SES informed of the status of transport infrastructure;
- b. The Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications);

- c. The Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Government Radio Network;
- d. The Engineering Services Functional Area is to coordinate the assessment and restoration of critical public buildings for example hospitals; and
- e. Functional Areas will keep the NSW SES informed of the status of utilities and infrastructure.

5.8 EVACUATION

5.8.1 Evacuation is the NSW SES's primary response strategy for managing the population at risk of flooding.

5.8.2 Community specific evacuation arrangements are located in Volume 3 of this Plan.

5.8.3 **Strategy:** Conduct planning to ensure all evacuation constraints are considered.

5.8.4 **Actions:**

- a. Evacuations will take place when there is a risk to public safety. Circumstances may include:
 - Evacuation of people when their homes or businesses are likely to flood;
 - Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access; and
 - Evacuation of people where essential energy and/or utility services are likely to fail or where buildings have been or may be made uninhabitable; and
- b. The NSW SES will consider the following in evacuation decisions:
 - Duration of evacuation;
 - Characteristics of the community;
 - Numbers requiring evacuation;
 - Availability of evacuation routes and transport;
 - Time available for evacuation;
 - Availability of evacuation centres;
 - Confidentiality of evacuees;
 - Evacuee management requirements; and
 - Resources and delivery of evacuation information.
- c. NSW SES Incident Controllers, and flood planners will carefully consider the risks involved in conducting evacuations;
- d. All evacuation decisions will be made as per the NSW SES Communication and Dissemination of Evacuation Decisions Standard Operating Procedure and

Evacuation operations are to be consistent with the NSW Evacuation Management Guidelines;

- e. The NSW Police Force will coordinate the provision of overall security for evacuated areas.

5.8.5 **Strategy:** Evacuate people pre-emptively from dangerous or potentially dangerous places and or locations created by the flood hazard to safe locations away from the hazard.

5.8.6 **Actions:**

- a. NSW SES will control and coordinate the evacuation of affected communities;
- b. The NSW SES Incident Controller will warn communities to prepare for a possible evacuation, where circumstances allow such lead time;
- c. The NSW SES Incident Controller will order any necessary evacuations and provide information to the community about when and how to evacuate;
- d. Support to evacuation operations may be requested from other emergency services and supporting agencies using arrangements in the local EMPLAN and supporting plans;
- e. Health Services Functional Area will coordinate the evacuation of hospitals, health centres and aged care facilities (including nursing homes) in consultation with the NSW SES and Welfare Services.
- f. School administration offices (Department of Education, Catholic Education Office and Private Schools) will coordinate the evacuation of schools in consultation with the NSW SES and Welfare Services, if not already closed.
- g. Caravan Park proprietors will inform the NSW SES Incident Controller when caravan park evacuations have been completed.
- h. People who are reluctant or refuse to comply with any Evacuation Order will be referred to the NSW Police Force.

5.9 EVACUEE MANAGEMENT AND WELFARE

5.9.1 Research and experience in flood operations shows that most evacuees go to family, friends and commercial accommodation outside the impact area.

5.9.2 **Strategy:** Maintain the welfare of communities and individuals affected by the impact of a flood.

5.9.3 **Actions:**

- a. NSW SES will provide initial welfare for evacuees where required but will hand the responsibility over to the Welfare Services Functional Area as soon as possible. In these cases, the NSW SES will brief the Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required;

- b. Potential Evacuation Centres are detailed in:

The Hawkesbury Nepean Flood Emergency Sub Plan - for Hawkesbury Nepean riverine flooding

Volume 3 of this Local Flood Plan – for local flooding

Local EMPLAN – note that some of these evacuation centres are located within the floodplain

- c. Welfare Services Functional Area will manage evacuation centres for affected residents and travellers in accordance with the Welfare Services Functional Area Supporting Plan;
- d. The Department of Education will manage the safety of students directly affected by flooding and will work with the NSW SES in the temporary closure of schools and will coordinate with NSW SES Transport and Welfare Services in the management of school evacuees.
- e. Disaster Victim Registration will be coordinated by the NSW Police Force with the Australian Red Cross managing the Register, Find and Re-unit Program;
- f. NSW SES will provide details of all residents assisted in evacuations to the Welfare Services Functional Area as early as possible;
- g. Where the expected remaining number of evacuees and the duration of evacuation is assessed to be beyond the capability and capacity of the established evacuation centre arrangements the SEOCAN may establish Major Evacuation Centres or Mass Care facilities; and
- h. The decision to establish Major Evacuation Centres or Mass Care Facilities will be made by the NSW SES and SEOCAN in consultation with members of the State Emergency Management Committee.

5.9.4 **Strategy:** Coordinate available and accessible health services for flood affected communities.

5.9.5 **Action:** The provision of environmental health advice, assessment of public health risks and coordination of immediate mental health support will be provided by Health Services Functional Area.

5.9.6 **Strategy:** Coordinate maintenance of food supplies for flood affected communities.

5.9.7 **Actions:** All matters relating to the primary production, manufacturing, processing and handling of all food from primary industries to retail, inclusive of all restaurants, food services and catering businesses should be referred to the NSW Food Authority through the Agriculture and Animal Services Functional Area.

5.9.8 **Strategy:** Maintain the welfare of animals impacted by a flood.

5.9.9 **Actions:**

- a. Agriculture and Animal Services Functional Area (NSW Department of Primary Industries, supported by Local Land Services) will coordinate the welfare of livestock, pets and companion animals including support to primary producers, animal holding establishments and community members; and
- b. Agriculture and Animal Services Functional Area role will assist with evacuation, emergency care of animals and assessment, humane destruction and disposal

of affected animals, and supply of emergency fodder, water and aerial support where necessary.

5.10 FLOOD RESCUE

5.10.1 **Strategy:** Control and coordinate flood rescue of people and domestic animals.

5.10.2 **Actions:**

- a. NSW SES will perform flood rescue, where training and equipment is suitable and where a risk assessment has indicated that the risk to rescuers is acceptable;
- b. Flood rescue operations will be conducted in accordance with the State Rescue Board NSW State Rescue Policy which sets out the framework, governance, responsibilities and requirements for the management and conduct of flood rescue in NSW;
- c. NSW SES may request other supporting emergency services to undertake flood rescues on behalf of the NSW SES. Agencies must be authorised/accredited to undertake flood rescue operations in accordance with State Rescue Board requirements, as prescribed by NSW SES. Supporting emergency services must supply information regarding rescues performed to the NSW SES. Notification arrangements with NSW Police Force are outlined in the State Rescue Board NSW State Rescue Policy; and
- d. Rescue agencies will conduct rescue of domestic small and large animals as per the State Rescue Board NSW State Rescue Policy (and may include Large Animal Rescue of family horses and cows at a residence or property). The rescue of livestock (which includes commercial animals found on farming and breeding enterprises) will be coordinated through Animal and Agriculture Services Functional Area.

5.11 RESUPPLY

5.11.1 **Strategy:** Coordinate resupply to towns and villages isolated by flooding to minimise disruption to the community.

5.11.2 **Actions:**

- a. NSW SES will advise communities and businesses if flood predictions indicate that areas are likely to become isolated, and indicative timeframes where possible.
- b. Retailers should be advised to ensure sufficient stock is available for the duration of the flood.
- c. When isolation occurs, NSW SES will establish loading points where retailers can instruct suppliers to deliver goods.
- d. NSW SES will endeavour to deliver mail to isolated communities but may not be able to do so according to normal Australia Post timetables.
- e. NSW SES will assist hospitals with resupply of linen and other consumables where able.

- f. NSW SES may request resupply assistance from supporting agencies.

5.11.3 **Strategy:** Coordinate resupply to rural properties isolated by flooding.

5.11.4 **Actions:**

- a. When requested, NSW SES will establish a resupply schedule and coordinate the resupply for isolated rural properties;
- b. NSW SES will provide local suppliers with designated loading points. Resupply items are to be packaged by the supplier; and
- c. Isolated households unable to afford resupply items will be referred to Welfare Services Functional Area for assistance.

5.12 RETURN

5.12.1 **Strategy:** Coordinate the safe return of communities to flood affected areas when the immediate danger to life and property has passed.

5.12.2 **Actions:**

- a. NSW SES Incident Controller will determine when it is safe to progressively return in consultation with the relevant Emergency Operations Controller and supporting agencies, considering the impact on the following:
 - Access and egress;
 - Communications;
 - Power supply;
 - Gas supply;
 - Infrastructure damage;
 - Hazardous materials; and
 - Public health risks (including sewerage).
- b. NSW SES Incident Controller will specify the level of access to affected communities as the following:
 - Not suitable for access;
 - Limited access by emergency services and response agencies;
 - Limited access by residents and/or business operators; or
 - Full access.
- c. NSW SES Incident Controller will issue an Advice Warning advising 'Reduced Threat: Return with Caution' message when the immediate danger to life and property has passed for areas assessed as safe; and
- d. The NSW SES will facilitate the return of evacuees to their homes.

5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy:** Conclude response operations.

5.13.2 **Actions:**

- a. Response operations will conclude when:
 - The physical impact of the flood has ceased;
 - All requests for assistance related to the flood have been completed;
 - The need for warning and evacuation no longer exist;
 - There is no further likelihood of rescuing people;
 - Resupply is no longer required (resupply operations may occur concurrently with the recovery phase);
 - Response to fire and hazardous material incidents have concluded (not including subsequent clean-up of contaminated sites); and
 - All affected areas have had a 'Reduced Threat: Return with Caution' issued.

5.14 **POST IMPACT ACTIONS**

5.14.1 **Strategy:** Learnings from the event are used to inform recovery and future events.

5.14.2 **Actions:**

- a. NSW SES will continue to engage with communities after significant floods through convening one or more community forums, workshops or other opportunities to provide communities a chance to provide feedback, address any concerns and provide input into the recovery process. These will typically include other agencies such as the Bureau of Meteorology, Welfare Services and The Hills Shire Council representatives;
- b. NSW SES will ensure that damage assessment information is provided to the relevant Emergency Operations Controller to inform the recovery impact assessment;
- c. NSW SES will conduct After Action Reviews, wherever possible, within three weeks of the end of response operations, which will involve all stakeholders. Findings will be shared and incorporated into improved disaster resilience planning;
- d. NSW SES will undertake/coordinate a comprehensive review of intelligence and plans following significant flood events.

5.14.3 **Strategy:** Participate in post flood data collection analysis.

5.14.4 **Actions:** NSW SES will work with the NSW Department of Planning and Environment (DPE) and The Hills Shire Council on post flood data collection analysis including review of flood intelligence where necessary.

6 **RECOVERY OPERATIONS**

6.1 **INTRODUCTION**

- 6.1.1 Recovery is the process of returning an affected community to its proper level of functioning after an emergency. It will generally commence simultaneously with the Response phase.
- 6.1.2 Recovery operations will be initiated and conducted as outlined in the NSW State EMPLAN and as further detailed in the NSW Recovery Supporting Plan.
- 6.1.3 Flood recovery operations for The Hills Shire area will be coordinated as per the recovery arrangements in Part 8 of the Hawkesbury Nepean Flood Emergency Sub Plan.

6.2 NSW SES RECOVERY ROLE

- 6.2.1 **Strategy:** NSW SES will support recovery operations and established Recovery Committees.
- 6.2.2 **Actions:**
 - a. NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the Recovery phase through its community engagement personnel;
 - b. NSW SES roles on Recovery Committees may include providing information about any continuing response, guidance on mitigation strategies and general advice and assistance to the committee as a subject matter specialist and or expert;
 - c. NSW SES will provide information to the NSW Reconstruction Authority to support applications to Treasury for Natural Disaster Relief and Recovery Arrangements;
 - d. The NSW SES, in conjunction with a Recovery Committee, will provide a service to support the information needs of a community immediately following a flood; and
 - e. NSW SES and where required supporting agencies will assist with clean-up operations after floods, where possible when resources and personnel permit.

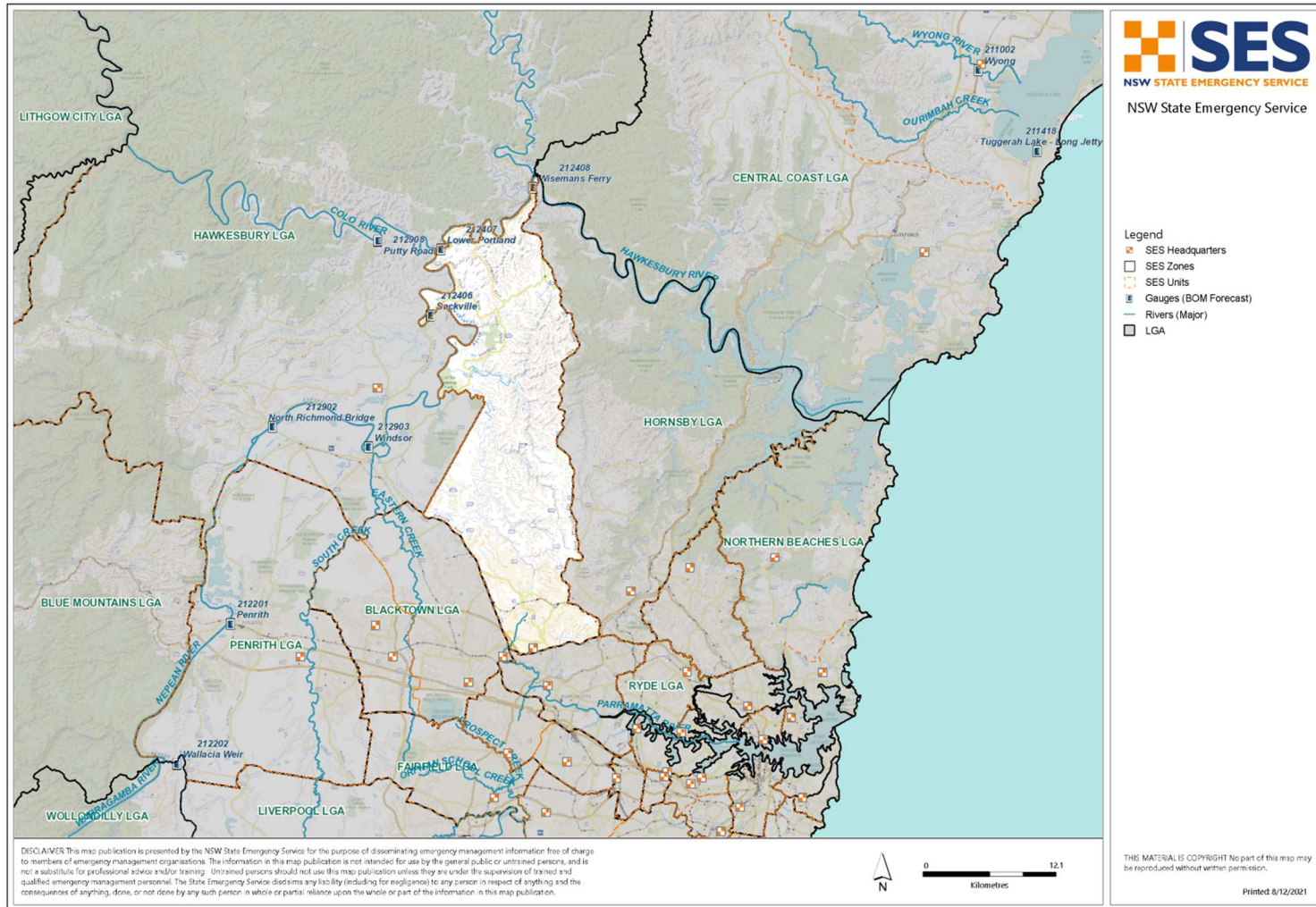
7 ABBREVIATIONS

- 7.1.1 A full list of abbreviations relevant to flooding can be found in Section 7 of the [NSW State Flood Plan 2018](#).

8 GLOSSARY

- 8.1.1 Common emergency service terminology can be found within the [Australian Disaster Resilience Glossary](#).
- 8.1.2 Readers should also refer to [NSW State EMPLAN Annex 9 – Definitions](#).
- 8.1.3 For a full list of flood definitions refer to the [Supporting Document - State Flood Plan Glossary](#).

Appendix A – Map of The Hills Shire LGA



Appendix B – Roles and Responsibilities

The general role and responsibilities of agencies in emergency management are described in [NSW State EMPLAN](#).

The roles and responsibilities of agencies and Functional Areas in flood are described in [Appendix A to the State Flood Plan 2018](#).

Additional roles and responsibilities under this plan are detailed below:

<p>Community Members</p>	<p>Preparedness</p> <ul style="list-style-type: none"> • Understand the potential risk and impact of flooding; • Prepare homes and property to reduce the impact of flooding; • Understand warnings and other triggers for action and the safest actions to take in a flood; • Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours; • Have an emergency kit; and • Be involved in local emergency planning processes. <p>Recovery</p> <ul style="list-style-type: none"> • Assist with community cleanup if required and able to do so. Participate in After Action Reviews if required.
<p>The Hills Shire Council</p>	<p>Preparedness</p> <ul style="list-style-type: none"> • Develop and implement floodplain risk management plans in accordance with the NSW Government’s Flood Prone Land Policy and the Floodplain Development Manual. • Establish and maintain floodplain risk management committees and ensure that key agencies are represented on such committees. • Provide levee studies, flood studies and floodplain management studies to the NSW SES. • Maintain Dam Safety Emergency Plans for the AH Whaling Reserve Detention Basin, Gooden Reserve Retaining Basin and Sierra Place Detention Basin and provide copies to the NSW SES. • Provide information on the consequences of dam failure to the NSW SES for incorporation into planning and flood intelligence. • Maintain a plant and equipment resource list for the council area. • Work with NSW SES on the development and implementation of a community engagement and capacity building program.

	<ul style="list-style-type: none"> • Develop and maintain arrangements for Sector Evacuation Routes in terms of the Hawkesbury Nepean Flood Emergency Sub Plan . <p>Response</p> <ul style="list-style-type: none"> • At the request of the NSW SES Local Controller, deploy personnel and resources for flood related activities. • Close and reopen council roads (and other roads nominated by agreement with Transport for NSW) and advise the NSW SES The Hills Local Controller and the Police. • Provide information on the status of roads. • Where time and resources permit, coordinate the provision of sand for sandbags when flooding is expected. • In the event of evacuations, assist with making facilities available for the domestic pets and companion animals of evacuees. <p>Recovery</p> <ul style="list-style-type: none"> • Provide for the management of health hazards associated with flooding. This includes removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition.
<p>Caravan Park Proprietors</p>	<ul style="list-style-type: none"> • Prepare a flood emergency plan for the Caravan Park. • Ensure that owners and occupiers movable dwellings are aware that the caravan park is flood liable by: <ul style="list-style-type: none"> ○ Providing a written notice to occupiers taking up residence. The notice will indicate that the caravan park is liable to flooding and designate the location of flood liable land within the park. ○ Displaying this notice and the emergency arrangements for the Caravan Park prominently in the park. • Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should: <ul style="list-style-type: none"> ○ Provide the manager of the caravan park with a contact address and telephone number in case of an emergency. ○ Leave any movable dwelling in a condition allowing it to be relocated in an emergency (i.e. should ensure that the wheels, axles and draw bar of the caravans are not removed, and are maintained in proper working order) (NSW Government, 2005). • Ensure that occupiers are informed of BUREAU Flood Advice Warnings. At this time, occupiers should be advised to: <ul style="list-style-type: none"> ○ Ensure that they have spare batteries for their radios. ○ Listen to a local radio station for updated flood information.

	<ul style="list-style-type: none"> ○ Prepare for evacuation and movable dwelling relocation. ● Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs. ● Coordinate the evacuation of people and the relocation of movable dwellings when floods are rising and their return when flood waters have subsided. Movable dwellings will be relocated back to the caravan park(s) by owners or by vehicles and drivers arranged by the park managers. ● Secure any movable dwellings that are not able to be relocated to prevent flotation . ● Inform the NSW SES of the progress of evacuation and/or movable dwellings relocation operations and of any need for assistance in the conduct of these tasks.
Child Care Centres and Preschools	<ul style="list-style-type: none"> ● Potentially impacted child care centres and preschools are to be contacted by the NSW SES in the event of possible flooding or isolation. a. When notified the child care centres and preschools should: <ul style="list-style-type: none"> ● Liaise with the NSW SES and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures. ● Assist with coordinating the evacuation of preschools and child care centres.
Owners of Prescribed Dams within or upstream of The Hills	<ul style="list-style-type: none"> ● Maintain and operate the Dam Failure Warning System for their Dam(s). ● Contribute to the development and implementation of community engagement and capacity building programs on flooding. ● Consult with NSW SES on the determination of dam failure alert levels and notification arrangements when developing Dam Safety Emergency Plans. ● Maintain a Dam Safety Emergency Plan and provide copies to the NSW SES. ● Provide information on the consequences of dam failure to the NSW SES for incorporation into planning and flood intelligence. ● Close and evacuate at risk camping grounds/recreational areas within their managed areas. ● Advise the NSW SES of any known significant safety deficiencies
Private Companies	<ul style="list-style-type: none"> ● Assist with the provision of: <ul style="list-style-type: none"> ○ Bus transport and drivers for evacuation, resupply or commuting purposes. ○ Trucks and drivers to relocate furniture. ○ Warehousing facilities to store furniture. ○ Sand for sandbagging. ○ Space for evacuation centres.

School Administration Offices	<ul style="list-style-type: none"> • Liaise with the NSW SES and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding and/or road closures (or where required, for students to be moved to a suitable location until normal school closing time). • Pass information to school bus drivers/companies and/or other schools on expected or actual impacts of flooding. • Assist with coordinating the evacuation of schools when flooding or isolation is expected to occur. • Provide space in schools for evacuation centres where necessary.
Service and Sporting Clubs	<ul style="list-style-type: none"> • Assist with: • Delivery of evacuation warnings. • Conduct of evacuations. • Lifting and/or moving household furniture and commercial stock. • Sandbagging. • Monitoring of levees. • Relocation of caravans.
Cross border assistance arrangement	<ul style="list-style-type: none"> • A local cross-border mutual assistance arrangement exists in which the NSW SES The Hills and the NSW SES Hawkesbury Unit will deploy resources to support each other. • The Hills SES will assist Hawkesbury SES with operations at MacDonald River and Webbs Creek.