

11 March 2026

Nicole William
Illawarra Retirement Trust
3/77 Market Street
Wollongong NSW 2500

Via email: nwilliam@irt.org.au

Dear Nicole

Our ref: 24050188_L03V01_Response_to_NSWSES

Retirement Village at 4-6 Popes Road, Woonona – Response to NSW SES RFI

In July 2025 Illawarra Retirement Trust (IRT) submitted a State Significant Development Application (SSDA) for the redevelopment of the existing IRT Woonona Seniors Housing site located at 4-6 Popes Road, Woonona. Water Technology was engaged to prepare the Flood Emergency Response Plan (FERP) to accompany the SSDA.

The New South Wales State Emergency Services (NSW SES) has provided comments on the SSDA. This letter contains responses to the comments provided by the NSW SES that relate to the FERP.

1 SUBMISSION BY NSW SES

Responses to the FERP-related submissions made by the NSW SES are set out in Table 1.

Table 1 Responses to NSW SES submission

Item Number	NSW SES	Response
Principle 1	<p>Any proposed Emergency Management strategy should be compatible with any existing community Emergency Management strategy.</p> <p>Any proposed Emergency Management strategy for an area should be compatible with the strategies identified in the NSW State Flood Plan and the Illawarra (Wollongong) Local Flood Emergency Sub Plan. Evacuation of hospitals and aged care can be complex and is known to be associated with an increased rate of mortality in patients and nursing facility residents. To minimise disruption to essential services, and</p>	<p>The Illawarra Flood Emergency Sub Plan (NSW SES, 2023) states that:</p> <p style="text-align: center;"><i>1.6.1 The protection and preservation of human life (including the lives of responders and the community) is the highest priority.</i></p> <p>The proposed development prioritises the protection and preservation of human life. As the driveway and local streets can be subject to hazardous flash flooding with little warning, or in some circumstances potentially with no warning time, the most appropriate flood emergency response strategy for the site is for site occupants to shelter in place in their dwellings beyond the reach of the PMF. This strategy prevents site occupants from coming into contact with hazardous floodwaters.</p> <p>The NSW SES flood plan for the Illawarra also states:</p>



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	<p>to reduce the risks associated with evacuation of aged care facilities, the NSW 2022 Flood Inquiry recommends essential services infrastructure is situated as much as possible above the flood planning level and the PMF.</p> <p>The proposal to shelter in place is inconsistent with the NSW Shelter in Place Guidelines and the Flood Risk Management Manual (2023) Principle 9, as the surrounding roads are impacted by high hazard flooding and relates to a sensitive use.</p> <p>Rainfall forecasts have a degree of uncertainty and are not a reliable indication that flooding will occur. Further, the current trigger of 44mm of rain over a 3-hour period is likely to be a relatively frequent occurrence, and therefore be disruptive, increase complacency and anxiety at best.</p> <p>Please note that NSW SES do not “give all clear”, and therefore this trigger should be removed from any FERP.</p>	<p><i>1.6.2 Evacuation is the primary response strategy for people impacted by flooding.</i></p> <p>However, given the potential for flash flooding in the local streets evacuation is not suitable as a primary flood emergency response strategy for the site as it would require site occupants to evacuate into potentially flooded streets. This would not be conducive to the protection and preservation of human life and would place site occupants at unnecessary risk. This is also the case for many sites within the Wollongong LGA. Therefore, evacuation of the development and the aged care facility is not proposed.</p> <p>Under the Wollongong DCP 2009 flood refuges are permitted in the Collins Creek floodplain assuming there is reliable access to the refuge above the PMF level. All habitable floor levels would be above the PMF level and all buildings subject to the SSDA would be accessible from one another via flood-free routes in the PMF. Therefore, the proposed shelter in place strategy aligns with the relevant controls in the DCP.</p> <p>The local roads would be subject to H5 or H6 flooding in the PMF. However, the primary flood emergency response strategy is to shelter in place and therefore site occupants would not come into contact with high hazard flooding. Further, although the proposed development includes sensitive land uses the existing development on the site includes the same land uses subject to the same evacuation constraints as the proposed development. Therefore, the proposed development does not propose any new sensitive land uses for the site.</p> <p>The FERP has been updated to remove the trigger based on the NSW SES issuing an “all clear”. These actions are instead triggered by floodwaters receding from the driveway and local roads.</p>
Principle 2	<p>Decisions should be informed by understanding the full range of risk to the community.</p> <p>Decisions relating to future development should be risk-based and ensure Emergency Management risks to the community of the full range of floods are effectively understood and managed.</p> <p>Further, risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood. Climate change should also be considered.</p>	<p>The full range of risk to life up to and including the PMF has been considered in the FERP. The proposed flood emergency response strategy has been developed to address the flood risk up to and including the worst case scenario of a PMF.</p> <p>While the site can be isolated by H1 floodwaters in the 20% AEP flood, occupants of the buildings subject to the SSDA would not be exposed to hydraulic hazards of H5 or H6 in an event of any magnitude. The primary flood emergency response strategy for the occupants is to shelter within their dwellings or to access the Wellness Centre, which would be accessible from all new ILUs via pathways above the PMF level.</p> <p>A crucial requirement for any flood refuge is that it is structurally stable in a Probable Maximum Flood. In the</p>



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	<p>The site is identified as a High and Medium Flood Risk Precinct, with hydraulic hazards up to H5. It is noted that the site itself is partially prone to flooding from the stormwater channel to the north and Collins Creek to the south, in both the pre and post development conditions. Flooding and isolation occur at least as frequently as the 20% AEP (likely more frequent because of climate change), with hydraulic hazards reaching H5 and H6 in sections of the site. This is unsafe for people, vehicles and buildings may be subject to structural damage.</p> <p>The time to onset of flooding is as little as 15 minutes, however duration of potential isolation is anticipated to be less than 6 hours¹⁴. We recommend undertaking longer duration flood events to confirm the potential maximum duration of isolation. Historical events often have longer time of isolation than design events due to them often being caused by east coast lows that can be more prolonged.</p>	<p>PMF, floodwaters in the vicinity of buildings A and B could present a hydraulic hazard of H3, while floodwaters to the north of the north-western corner of Building E could reach a hydraulic hazard of H5. Therefore, a requirement of the FERP is that these buildings will need to remain stable when subject to the forces associated with flooding in a PMF. A Design Intent Statement has been obtained, outlining the structural design requirements for PMF floodwaters in relation to Buildings A, B, and E (Appendix E of the FERP).</p> <p>IRT has acknowledged the NSW SES's recommendation that longer duration events be modelled. It should be noted that all flood-related RFIs have been addressed directly with the Department of Planning, Housing and Infrastructure (DPHI). Should DPHI require any further clarification, including further flood modelling, these matters could be incorporated as conditions of consent.</p>
Principle 3	<p>Development of the floodplain does not impact on the ability of the existing community to safely and effectively respond to a flood.</p> <p>Development strategies relying on an assumption that mass rescue may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES.</p>	<p>The primary flood emergency response strategy for the proposed development is to shelter in place using on-site resources. The implementation of the strategy does not require external resources, does not rely on the possibility of mass rescue and does not impact the ability of the existing community to evacuate or refuge in response to a flood.</p>
Principle 4	<p>Decisions on development within the floodplain does not increase risk to life from flooding.</p> <p>Managing flood risks associated with flooding requires careful consideration of development type, likely users, and their ability respond to minimise their risks. This includes consideration of:</p> <ul style="list-style-type: none"> • Isolation – There is no known safe period of isolation in a flood, the longer the period of isolation the greater the risk to occupants who are isolated. 	<ul style="list-style-type: none"> • Isolation - Section 2.3.3 of the FERP demonstrates that the site could be isolated for up to approximately 2 hours from the commencement of rainfall in a 90-minute duration PMF. This is significantly below the 12 hour maximum set out in the NSW DPHI's Shelter in Place Guideline for Flash Flooding. Although a longer duration PMF may result in a longer duration of isolation, longer duration events would also have lower flood levels and hydraulic hazard and therefore it is not anticipated that during a longer duration event



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	<ul style="list-style-type: none"> • Secondary risks – This includes fire and medical emergencies that can impact on the safety of people isolated by floodwater. The potential risk to occupants needs to be considered and managed in decision-making. • Consideration of human behaviour – The behaviour of individuals such as choosing not to remain isolated from their family or social network in a building on a floor above the PMF for an extended flood duration or attempting to return to a building during a flood, needs to be considered. 	<p>site isolation would exceed 12 hours from the start of rainfall.</p> <ul style="list-style-type: none"> • Should a fire occur during a flood all occupants of the buildings subject to the SSDA would be able to exit their buildings directly to land above the PMF level. In particular, the north-eastern corner of the site to the east of Buildings E (the Wellness Centre) and the refurbished Blue Gum Sanctuary would remain flood-free and would be accessible from all of these buildings via paths above the PMF level. Although direct ambulance access to the site would be cut in the 10% AEP event and ambulance access to the eastern footpath would be cut in the 5% AEP event, in the event of a medical emergency in a larger flood professional medical care could be provided by a registered nurse on site in the Flametree aged care facility. At least one registered nurse will be on duty at all times in the Flametree aged care facility. On the night shift there is generally one registered nurse rostered, while there are generally 2 or 3 rostered on during the morning and afternoon shifts. The Care Manager, Senior Care Coordinator and Regional Clinical Manager are also all registered nurses and will often be on site. The aged care facility is accessible via flood free routes from all other buildings subject to the SSDA. • The flood emergency response strategy set out in the FERP takes into consideration human behaviour. For example, a communal refuge is provided for seniors living occupants of the redevelopment who do not wish to remain in their dwelling, isolated from the seniors living community. These occupants would also be able to return to their dwellings via pathways beyond the reach of the PMF. Appendix F of the FERP also includes messaging to inform the primary contacts of the aged care residents that the site has been isolated by flooding and that it is not safe to try and reach the site. The messaging informs the contacts that flooding should only last a few hours and all residents are sheltering in their own rooms above the reach of even the largest floods to reduce the risk of family members attempting to access the site.
Principle 5	<p>Risks faced by the itinerant population need to be managed. Any Emergency Management strategy needs to consider people</p>	<p>The flood emergency response strategy set out in the FERP provides actions and refuge for any visitors to the area or the development. Any visitors without</p>



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	visiting the area or using a development.	access to a dwelling would be able to shelter in the Wellness Centre, which is the communal flood refuge.
Principle 6	<p>Recognise the need for effective flood warning and associated limitations. As the site is subject to flash flooding, there is limited opportunity for the community to respond to a flood threat in an appropriate and timely manner.</p> <p>We emphasise that there are no flood watches or flood warnings issued for this catchment.</p>	<p>As identified by the NSW SES and as set out in Section 3 of the FERP the BoM would not issue Flood Warnings relevant to the site. Given this and that there may be little or no warning available ahead of the site becoming isolated by flash flooding evacuation off site is not recommended. The primary flood emergency response strategy for the proposed development is to shelter in place. The main proposed refuges for the buildings subject to the SSDA are the residents' dwellings and the Wellness Centre, which would be accessible from all new ILUs via pathways above the PMF level. Therefore, access to the proposed refuge locations for the proposed development is not constrained by flooding and there is sufficient time for residents to access their dwellings or the communal refuge.</p>
Principle 7	<p>Ongoing community awareness of flooding is critical to assist effective emergency response. Development within a floodplain will necessitate ongoing involvement from the NSW State Emergency Service (SES) in community awareness, preparedness, and response activities. It is essential that all site users, both during and after the construction phase, are informed of flood risk and the measures in place to reduce risk to life. This includes:</p> <ul style="list-style-type: none"> • Raising awareness of flood risk • Strengthening community connections • Promoting preparedness actions • Installing appropriate signage • Conducting emergency drills <p>Importantly, a private flood management plan is insufficient to address flood risk on this site.</p>	<p>The FERP contains actions for informing site users of the flood risk and measures required to reduce risk to life. This includes actions for ensuring that:</p> <ul style="list-style-type: none"> • All ILU residents are made aware of the risk of flooding and of site isolation due to flooding and are encouraged to keep non-perishable food and drinks in their dwellings; • General flood information about the site is permanently displayed on the facility's website (see Appendix F of the FERP) • As part of the sales process all new residents are made aware that the site is affected by flooding and may become isolated every few years on average. In large and unlikely events isolation can last for a few hours. ILU residents requiring frequent medical or personal support may need to evacuate more frequently than once per year to ensure they are able to access medical attention. <p>The FERP also includes details of flood preparedness actions (Section 5.3.1 and 5.3.2), flood signage to be installed at the site (Section 4.4), ensuring staff are given induction and training into their flood emergency response responsibilities (Section 5.3.1) and training Flood Wardens in implementation of the flood emergency response procedures (Section 5.3.1).</p> <p>The proposed redevelopment does not rely on a private flood management plan to address flood risk on the site. Flood risk is primarily addressed through structural flood risk mitigation measures, such as the passive exclusion of floodwaters in an event of any</p>



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		magnitude from all buildings which allows site occupants to safely occupy their dwellings or other parts of their buildings during a flood. This includes the exclusion of floodwaters from the basement, although it is not recommended that site occupants remain in the basement during a flood. Further, occupants of the seniors living units subject to the SSDA would be able to access the other new buildings, the communal refuge (i.e., the Wellness Centre) and the Flametree aged care facility via paths and sections of the site that are beyond the reach of the PMF. The FERP has been developed to address the residual risk to life once these structural measures have been put in place.

Yours sincerely

Rhiannon Garrett
Senior Scientist
rhiannon.garrett@watertech.com.au
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Water Technology pays respect to all First Nations peoples, their cultures and to their Elders, past and present.