

Our Ref: ID 2094

20 September 2023

Penny Smith
NSW Department of Education
C/- EPM Projects
PO Box 1449
Chatswood NSW 2067

email: acropley@epmprojects.com.au
cc: michael.stubbs@one.ses.nsw.gov.au

Dear Penny,

Notification under section 3.10 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 in relation to the proposed construction of new school buildings at Broadwater Public School

Thank you for the notification under section 3.10 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* in relation to the proposed Development Notification of Broadwater Public School, Broadwater. It is understood that the proposed works include:

- Demolition of existing buildings that are no longer habitable due to flood damage.
- Construction of a new elevated school buildings to replace existing damaged buildings including administration, amenities, and general learning area.

The NSW State Emergency Service (NSW SES) is the agency responsible for dealing with floods, storms and tsunami in NSW. This role includes, planning for, responding to, and coordinating the initial recovery from floods. It is the preference of NSW SES that all schools follow the application of sound land use planning and flood risk management. This includes site location, design and stormwater management measures that minimise any risk to the community. Furthermore, schools or sections of schools that are at known risk of flooding or isolation are closed prior to flooding commencing and when there is an indication that flooding is likely, for example, when there is a flood warning.

In accordance with section A2.4 of the [Support for Emergency Management Planning](#), the NSW SES is opposed to the imposition of development consent conditions requiring private flood evacuation plans rather than the application of sound land use planning and flood risk management. The NSW SES also does not have statutory authority to endorse or approve flood emergency response plans. However, noting the potential risk to life as a consequence of the proposed development, we have reviewed the proposed upgrade and the information provided, including:

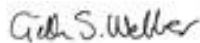
- Architectural Plans prepared by Pedavoli Architects – August 2023
- Civil Report and Flood Impact Assessment prepared by Henry & Hymes – August 2023
- Flood Impact Assessment prepared by Acor – 26 August 2022
- Flood Emergency Response Plan prepared by Acor – 24 August 2023

The NSW SES have also reviewed existing flood information held by NSW SES including Richmond River Flood Mapping Study 2010, Mid-Richmond Floodplain Risk Management Study 2002 available to the NSW SES, noting the parts of the proposed development is at risk of flooding in a 5% Annual Exceedance Probability (AEP) flood extent and the adjacent roads may be cut by floodwaters.

In summary, as the school is subject to high hydraulic hazard flooding, all buildings are vulnerable to failure. Ideally, the school would be situated on a more suitable location, appropriate for sensitive uses. However, noting the site is an existing school, the design should consider this hazard, and where possible be built to withstand the forces of flooding, up to a PMF. Further, as a consequence of the high flood risk, all school occupants must be evacuated prior to the onset of flooding. The preferred emergency strategy for this school is early closure prior to the commencement of flooding and preferably school closure before the start of the school day.

Please feel free to contact Gillian Webber via email at rra@ses.nsw.gov.au should you wish to discuss any of the matters raised in this correspondence. The NSW SES would also be interested in receiving future correspondence regarding the outcome of this referral via this email address.

Yours sincerely



Gillian Webber

Planning Coordinator, Emergency Risk Management – Regional
NSW State Emergency Service

ATTACHMENT A: Principles Outlined in the Support for Emergency Management Planning Guideline¹

Principle 1 Any proposed Emergency Management strategy should be compatible with any existing community Emergency Management strategy.

Any proposed Emergency Management strategy for an area should be compatible with the evacuation strategies identified in the relevant local or state flood plan or by the NSW SES. This is subject to change, particularly warning levels, warning gauges, evacuation timings and evacuation centre.

Private emergency plans are not considered to be an effective measure for addressing continuing risk to users of new development, nor suitable for addressing the impacts the development may have on the emergency management risks to the existing community. The vulnerability or capability of occupants and their ability to enact a plan, as well as the flood characteristics of a future event are not known at the time of the plan's creation². Unless occupants are able to self-evacuate for all possible flood events in consideration of future development, which is not the case for the current site, and the plan is owned, understood, practised and uncertainties of flooding understood by occupiers, it will almost certainly be forgotten or fail to be effective, particularly in events where the plan assumptions are overwhelmed.

It is important to understand that warnings may not be received during a flood, for example as a consequence of telecommunications outages, and contingencies should be in place within the FERP. Furthermore, the FERP must be self-sufficient and need to consider that other sections in the community may be placing demands of public and private transport resources.

It is noted that the flood characteristics for the site obtained from Ballina Shire Council is in a 1% AEP flood velocity is up to 0.5m/s and the flood risk precinct is 'Low Hazard' and 'High Depth Hazard'.³ Therefore, it is recommended that the school is closed prior to any predicted flooding in the area and note the closure of the school is recommended when the river height at Coraki River gauge is forecast to exceed minor level or approach moderate⁴.

Principle 2 Decisions should be informed by understanding the full range of risks to the community.

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.

¹ Department of Planning and Environment (2022) – Support for emergency management planning Flood risk management guideline EM01

² Department of Planning and Environment (2022) – Support for emergency management planning Flood risk management guideline EM01 A2.4.2 p. 6

³ Civil Engineering Report Broadwater Public School, Henry & Hymas (August 2023), page 14

⁴ Civil Engineering Report Broadwater Public School Henry & Hymas (August 2023), page 15

There is no such thing as a safe period of isolation, however, the longer the period of isolation, the more chance there is for mishap requiring external intervention. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agency to respond in these times.

Emergency services are also exposed to greater risks than if flood-free access was available. This unnecessarily exposes emergency service personnel to flood situations which may lead to the injury or death. In recognition of this possibility, emergency services are under an increasing demand to consider the safety of personnel. Each circumstance must be subject to an individual risk assessment at the time. If, after conducting a risk assessment of an incident, a NSW SES Commander or team leader is unsatisfied with the level of risk involved, the response will be delayed until the risk can be reduced or is no longer present.

The probability of a fire occurring on a site whilst it was isolated and surrounded by floodwaters would be greater due to power surges, electrical faults and the use of ad hoc heating and lighting measures such as candles. The likely delay in response times during floods would greatly exacerbate the chances of a fire spreading from its point of origin, of which increases the risk of injury or death to occupants of the building. This was the case in the 2011 Brisbane floods where a fire broke out inside Suncorp Stadium (Lang Park), which was flooded at the time.

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

Although unclear in the provided documents, logically if the students and teachers live in the local community, the school is unlikely to add to additional evacuation traffic, particularly if the school closes early to ensure the safety of the students, staff, and visitors.

Principle 4 Decisions on development within the floodplain does not increase risk to life from flooding.

The NSW SES notes the revised flood planning level for the site based on the draft Richmond River Flood Study 2023 is confirmed to be 5.10mAHD (which is the 2100 1% AEP flood level +500mm freeboard). The minimal floor level has been set to 5.5mAHD to create usable space beneath raised buildings.⁵ The key divergence from previous flood studies is the estimation of the PMF level for Broadwater is 9.37mAHD and previous flood study the PMF is 8.41mAHD. On page 12 of the FERP Table 2-1, flood characteristics at school location, the PMF is noted as 6.0mAHD and it is unclear where this figure came from.

The site itself is prone to flooding in a 5% AEP flood extent and it is possible for the school to be isolated by floodwater with road access routes to/from the school possibly being cut. The

⁵ Civil Engineering Report Broadwater Public School Henry & Hymas (August 2023), page 15

NSWS SES also notes that a 1% AEP (climate change year 2100) has predicted depths of 4.4mAHD⁶ and therefore the long-term suitability of this site as use for an educational facility should be considered given the potential sea level rise due to climate change.

The local and regional road network is prone to local and riverine flooding and would require caregivers to ensure they have adequate time to collect the children prior to the roads becoming flooded. As this age group of students are largely unable to self-evacuate, the evacuation time would require additional travel time required for caregivers to reach the building prior to access becoming affected and proceed to safety. **Evacuation must not require people to drive or walk through flood water.** Therefore, ideally the school would be closed prior to the impact of flooding.

The NSW SES notes the structural design of the school has been undertaken to withstand floodwater for the 2100 1% AEP flood, which has a maximum flood level of 4.6mAHD (BMT 2023) and not considered design loads and forces of the PMF flood event, 9.37mAHD (BMT 2023)⁷.

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

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

If the occupants are unable to evacuate in time, or they intentionally shelter in place, rescue may be required. The likelihood of this increases if sewerage, power, medical or other emergencies occur during flooding and floodwater continues to overwhelm the building, or the building is subject to structural damage and/or failure.

The use of flood boats and helicopters may not always be feasible due to weather, resource availability or risks, which can result in large number of people trapped on the floodplain. There are significant risks associated with relying on rescue, including:

- Insufficient number of flood rescue boats for the number of people remaining on low flood islands.
- Insufficient air lift capacity.
- Severe weather which makes rescue by boat or air more difficult e.g. wind fetch caused waves.
- Potential exposure to sewage, contaminants, disease, poisons, hidden snags, dead animals and debris etc.
- Drowning or injuries related to floodwater hazards.

⁶ Civil Engineering Report Broadwater Public School Henry & Hymas (August 2023), page 13

⁷ Civil Engineering Report Broadwater Public School Henry & Hymas (August 2023), page 20

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

Any emergency plan must be exercised, evaluated and reviewed regularly. This should ensure the plan is practical, effective and reflects current arrangements and contacts.

Of note, in the FERP the correct acronym to use for the NSW State Emergency Service is NSW SES and on page 19, 3.5.3 Bureau of Meteorology we recommend stating, *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.*

29 August 2023

State Emergency Service
PO Box 6126
WOLLONGONG NSW 2500

Email: rra@ses.nsw.gov.au

Attn: **Elspeth O'Shannessy** elspeth.oshannessy@ses.nsw.gov.au
Sharon Ladeira sharon.anderson@ses.nsw.gov.au

Dear Elspeth and Sharon

Broadwater Public School - Development Notification

EPM Projects on behalf of the NSW Department of Education is writing to inform State Emergency Service (SES) about the proposed demolition of the existing buildings and construction of a new elevated school building at Broadwater Public School, 9 Byrnes Street, Broadwater (the site).

The existing buildings were significantly inundated during the February / March 2022 floods and most of the existing structures are no longer habitable due to the damages caused by the flood waters. As a result, the Department of Education is proposing to demolish all of the existing school buildings and construct a new elevated school building to replace it. The floor level of the new building will be located above the design flood level to increase flood resilience and create useable undercroft spaces.

The proposed works are capable of being undertaken as "development permitted without consent" under the provisions of section 3.37 of *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP), and therefore require assessment and determination under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). A Review of Environmental Factors (REF) is being prepared in accordance with section 5.5 of the EP&A Act, sections 170 and 171 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and the Department of Planning and Environment's *Guidelines for Division 5.1 assessments* (June 2022) (the Division 5.1 Guidelines).

EPM is carrying out notification of the proposed works on behalf of the NSW Department of Education and in accordance with Section 3.10 of the T&I SEPP. This works notification is accompanied by the following documents:

- Architectural Plans prepared by Pedavoli Architects (**Attachment A**)
- Civil Report and Flood Impact Assessment prepared by Henry & Hymas (**Attachment B**)
- Flood Impact Assessment prepared by Acor (**Attachment C**)
- Flood Emergency Response Plan prepared by Acor (**Attachment D**).

We note that we have previously meet with SES to discuss the works at Broadwater Public School on 24 January 2023, and feedback from this meeting has been incorporated into the design of the proposed development.



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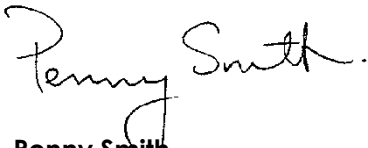
Any enquires or feedback can be provided on the proposal by way of letter or email submission. These must be made in writing, no less than 21 days from the date of this correspondence to:

Postal Address: NSW Department of Education
c/- EPM Projects
PO Box 1449
CHATSWOOD NSW 2067

Email address: planning@epmprojects.com.au
Phone: 0490 799 390 or (02) 9452 8300

Yours sincerely,

EPM Projects



Penny Smith
Senior Associate Planner
*B. Urban & Regional Planning (Hons), UNE
MPIA*



Amy Cropley
Associate Planner
*M. Urban Design (Urb Design & Planning) USyd
RPIA*

Attachment A – Architectural Plans (Pedavoli Architects)

Attachment B – Civil Report and Flood Impact Assessment (Henry & Hymas)

Attachment C – Flood Impact Assessment (Acor)

Attachment D – Flood Emergency Response Plan (Acor)



Our Reference: BR220288
Your Reference:

Level 7, 22 Cordelia Street
South Brisbane Qld 4101

06/10/2023

PO Box 3635
SOUTH BRISBANE Qld 4101

T 07 3844 5900

EPM Projects
PO Box 1449
Chatswood NSW 2067

Attention: Penny Smith

Dear Penny

Re: NSW State Emergency Service letter dated 20 September 2023

I refer to the letter addressed to you dated 20 September 2023 from NSW State Emergency Service (NSW SES) regarding proposed construction of new school buildings at Broadwater Public School (NSW SES reference 'ID 2094').

ACOR Consultants responds to the following items raised in the NSW SES letter:

- **'Principle 4 Decisions on development within the floodplain does not increase risk to life from flooding.'**
 - NSW SES stated the 'revised flood planning level for the site based on the draft Richmond River Flood Study 2023 is confirmed to be 5.10 m AHD (which is the 2100 1% AEP flood level +500mm freeboard)'.
 - ACOR Consultants has incorporated the updated flood planning level and various flood levels as stated in the draft Richmond Valley Flood Study 2023 and correspondence from Richmond Valley Council into the Broadwater Public School *Flood Emergency Response Plan* (DESIGN_DOC-231006-BROADWATER_FERP_REV04 Revision 04).
 - NSW SES stated 'ideally the school would be closed prior to the impact of flooding'.
 - The Broadwater Public School *Flood Emergency Response Plan* states the Bureau of Meteorology's target warning lead time (for issuing of Flood Warnings) for the automatic river height gauge at Coraki is 24 hours before the gauge reaches the 3.8 m (between Minor flood classification level of 3.4 m and Moderate flood classification level of 5.0 m). The flow travel time from Coraki to Broadwater is an additional 10 - 20 hours. The *Flood Emergency Response Plan* recommends that closure and evacuation of Broadwater Public School occurs when the river height at Coraki river height gauge is forecast (in a 'Flood Warning' to exceed Minor level or approach Moderate level. Therefore, the school would be closed prior to the impact of flooding.
- **Principle 5 Risks faced by the itinerant population need to be managed.**
 - NSW SES did not provide any detail on this item.
 - The Broadwater Public School *Flood Emergency Response Plan* has been updated to include a statement on management of itinerant population.

- **Principle 6 Recognise the need for effective flood warning and associated limitations.**
 - NSW SES listed several risks associated with rescue in the event occupants are unable to evacuate in time.
 - Due to the available warning time stated above and, in the Broadwater Public School *Flood Emergency Response Plan*, it is unlikely that occupants will not be able to evacuate in time.
 - The risks listed by NSW SES have been added to the Broadwater Public School *Flood Emergency Response Plan* (DESIGN_DOC-231006-BROADWATER_FERP_REV04 Revision 04).
- **Principle 7 Ongoing community awareness of flooding is critical to assist effective emergency response.**
 - NSW SES stated 'Of note, in the FERP the correct acronym to use for the NSW State Emergency Service is NSW SES and on page 19, 3.5.3 Bureau of Meteorology we recommend stating, 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.
 - ACOR Consultants has incorporated the above updates into the Broadwater Public School *Flood Emergency Response Plan* (DESIGN_DOC-231006-BROADWATER_FERP_REV04 Revision 04).

Yours faithfully,
ACOR CONSULTANTS PTY LTD

Karl Umlauff
Senior Water Resources Engineer