

NSW Department of Education Liverpool Boys and Girls High School Upgrade Flood Emergency Management Plan

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Contents

Contents	2
Document Control	4
1.0 Introduction	5
2.0 Flood Behaviour	8
2.1 Flood Investigation	8
2.2 Flood Extents.....	8
2.3 Flood Hazard	9
2.4 Proposed Development.....	11
2.4.1 Description of Works.....	11
3.0 Flood Response Assessment	12
3.1 Identification of Risks	12
3.2 Flood Evacuation Route	12
3.2.1 Liverpool Boys and Girls High School	12
3.2.2 Gulyangarri Public School	13
3.2.3 Evacuation Trigger.....	14
4.0 Flood Emergency Management Plan.....	14
4.1 Total Warning Time	15
4.2 Official Flood Warnings	15
4.3 Site Specific Warnings	16
4.4 Important Contacts	16
5.0 Flood Response Preparation	17
5.1 Flood Preparation & Response Team.....	17
5.2 Flood Preparation & Response Team Responsibilities.....	18
5.3 Flood Emergency Kit	19
5.4 Flood Signage	20
5.5 Flood Awareness Training.....	20

5.6 Flood Monitoring.....	20
5.7 Flood Preparation Review	20
5.8 Flood Response	22
5.9 Early or Pre-emptive Facility Closure	23
5.10 Post-flood Response	23
5.11 Monitoring and Reviewing Control Measures	23
6.0 Conclusion	24
Appendix A	26
Appendix B	28
Appendix C	29

Document Control

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1.0 Introduction

This Flood Emergency Response Plan (FEMP) has been prepared by Woolacotts on behalf the NSW Department of Education (the Applicant) to assess the potential environmental impacts that could arise from the redevelopment of the Liverpool Boys High School and Liverpool Girls High School, at 18 Forbes Street, Liverpool NSW, 2170 (the Site).

This report has been prepared to document and discuss the management of risk to personal safety of school visitors, staff and students in the event of a flood

This report accompanies a Review of Environment Factors that seeks approval for redeveloping the Liverpool Boys and Liverpool Girls High Schools into a single co-educational school, including:

- Construction and operation of a six-storey school building, including school hall and gymnasium;
- Associated parking and building services;
- Tree removal;
- Associated landscaping and play spaces;
- Augmentation of service infrastructure; and
- Associated off-site infrastructure works to support the school, including (but not limited to) services, kiss and drop point and pedestrian crossings.

Refer to the Review of Environmental Factors prepared by Ethos Urban for a full description of works.

Site Description

The site is located at 18 Forbes Street, Liverpool, within the Liverpool Local Government Area (LGA). The site is legally described as Lot 1 DP1137425 and has a total area of approximately 74,973m².

The site comprises a broadly rectangular portion of land which currently contains the existing Liverpool Boys High School, Liverpool Girls High School, and the Gulyangarri Public School, which commenced operations in January 2024 and is located to the east of the wider site.

The site's western portion contains Liverpool Boys High School and Liverpool Girls High School. Liverpool Girls High School in the site's southwest comprises three, two-storey buildings. Liverpool Boys High School in the site's northwest, comprises approximately four, two-storey buildings, with adjacent at-grade carparking and various sports courts.

An aerial image of the site is shown at Figure 1 below.

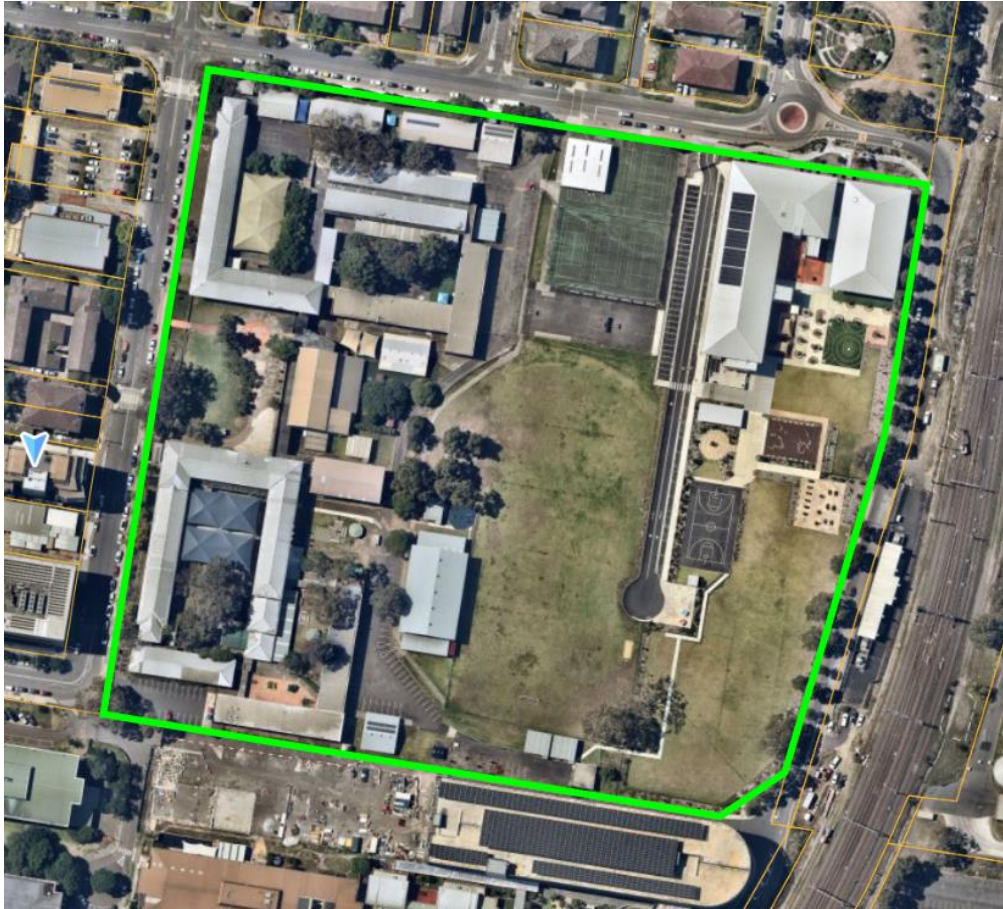


Figure 1 – Site Location Plan
(Image adopted from Nearmaps)

Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential flood impacts are low and will not have significant adverse effects on the locality, community and the environment;
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

The following documents have been taken into account in the preparation of this report.

- Flood Risk Management Guideline LU01 2023.
- Flood Risk Management Manual 2023.
- Liverpool City Flood Emergency Sub Plan 2023
- Liverpool City Council Development Control Plan 2008 – Part 1: General Controls for All Development.
- Flood Emergency Response Plan by FloodMit with reference No. J2205_R8 updated Oct 2022.

- Australian Building Codes Board. Information Handbook, Construction of Buildings in Flood Hazard Areas. www.abcb.gov.au. 2012.
- Australian Building Codes Board. Standard, Construction of Buildings in Flood Hazard Areas. www.abcb.gov.au. 2012.
- Australian Emergency Management Institute. Technical Flood Risk Management Guideline: Flood Hazard. (2014).
- NSW Government. Flood risk management manual, the policy for management of flood liable land. (2023).
- NSW Government. Planning Circular PS 24-001. (2024).

REF Requirement Table

Item	REF Requirement	Relevant Section of Report
1.0	Flood Hazard & Behaviour	
1.1	Flood Behaviour And Mechanisms	Section 2.1
1.2	Flood Hazard	Section 2.3
2.0	Evacuation & Emergency Response	
2.1	Assembly Points and Flood Free Routes	<i>Section 3.2, Appendix C</i>
2.2	Emergency Management Triggers	<i>Section 3.2.3</i>
2.3	Warning Times and Notifications	<i>Section 4.1, 4.3</i>
2.4	Flood Monitoring and Warning Systems	<i>Section 4.3, 5.6</i>
2.5	Messaging and Communication Protocols	Section 4.4
2.6	Roles and Responsibilities	<i>Section 5.1, 5.2</i>
2.7	Awareness Training	<i>Section 5.5</i>
2.8	Mechanisms for Flood Review	<i>Section 5.7, 5.11</i>

2.0 Flood Behaviour

2.1 Flood Investigation

The proposed development is located within the Liverpool City Council Local Government (LGA).

Flood information relating to The Site has been obtained from the following documents:

- Georges River Flood Study Final Draft Report, January 2020 (BMT 2020)

The above documents indicate that The Site is impacted by George Rivers flooding. Riverine/creek flooding occurs when a creek or river overflows its banks, causing water to spread into areas that are normally dry. This type of flooding is a common occurrence during heavy rainfall, or other weather events that result in an increased volume of water flowing into the creek.

2.2 Flood Extents

Following the Council engineer's advice, the site was determined to be affected by a Probable Maximum Flood (PMF). Woolacotts utilised the existing TUFLOW model to determine the PMF flood level, as shown in Figure 2 for the PMF flood extent.



Figure 2 – PMF Extent Map
(Image adopted from Council TUFLOW model)

2.3 Flood Hazard

The Liverpool City Council – hereafter referred to as The Council – has categorised flood liable land as follows:

- **High Flood Risk Category:** This includes land below the 1% Annual Exceedance Probability (AEP) flood level that faces high hydraulic hazards or significant evacuation difficulties. Development in this category is typically restricted due to the high potential for flood damage, risks to life, and evacuation challenges. Compliance with flood-related building and planning controls is crucial to mitigate flood damages.
- **Medium Flood Risk Category:** This includes land below the 1% AEP flood level that does not face high hydraulic hazards and has no significant evacuation difficulties. While there is still a considerable risk of flood damage, it can be minimized with appropriate development controls.
- **Low Flood Risk Category:** This encompasses all other land within the floodplain (within the extent of the probable maximum flood) that is not classified under the High or Medium Flood Risk Categories. The risk of flood damage in this category is low for most land uses, and most developments are permitted.
- **No Flood Risk Mapping:** This indicates areas where flood risk categories have not been determined yet. Applicants may need to conduct a flood study to determine the flood extent and appropriate Flood Risk Categories to apply necessary controls as required by the Development Control Plan.

The flood hazard for the site is based on the velocity and depth of the floodwaters. Flooding from the George River for PMF storm event classifies the site as a low flood hazard level. Refer to Figure 3 below which was adopted from Liverpool City Council Hydraulic Hazard Map.



Figure 3 – Flood Hazard from George River
(Image adopted from the Liverpool Online Flood Map)

Flood hazard mapping has been developed through the application of ARR 2019 and Australian Emergency Management Institute (AEMI) flood hazard guidelines. The guidelines consider the threat to people, vehicles and buildings based on flood depth and velocity at a specific location. The AEMI flood hazard mapping can be used to assess the flood hazard for site occupants and proposed site usage, as well as for the community surrounding The Site. The hazard categories are shown in Figure 4 below.

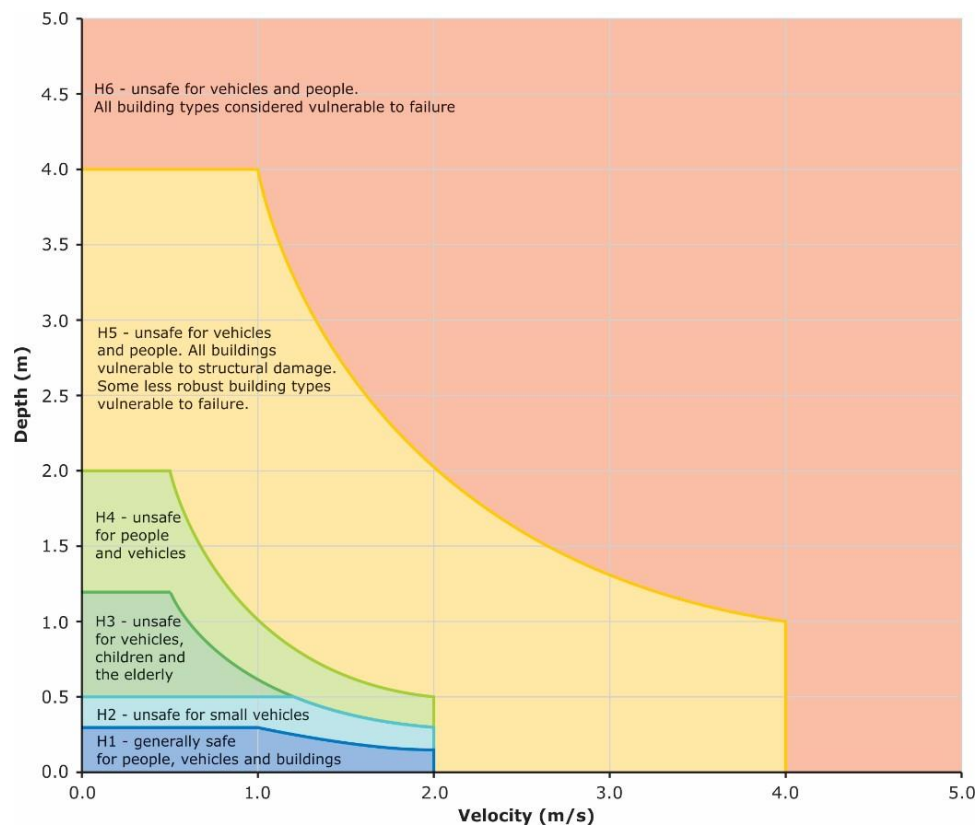


Figure 4 – Flood Hazard Curves
(Source: Australian Emergency Management Handbook 7)

2.4 Proposed Development

2.4.1 Description of Works

The proposed development includes [REDACTED] construction a 6-story building (for combined co-education use) situated at the northwest corner and a library above a proposed gymnasium at the eastern corner. Refer to Figure 5 below for Lower Ground Floor Plan.

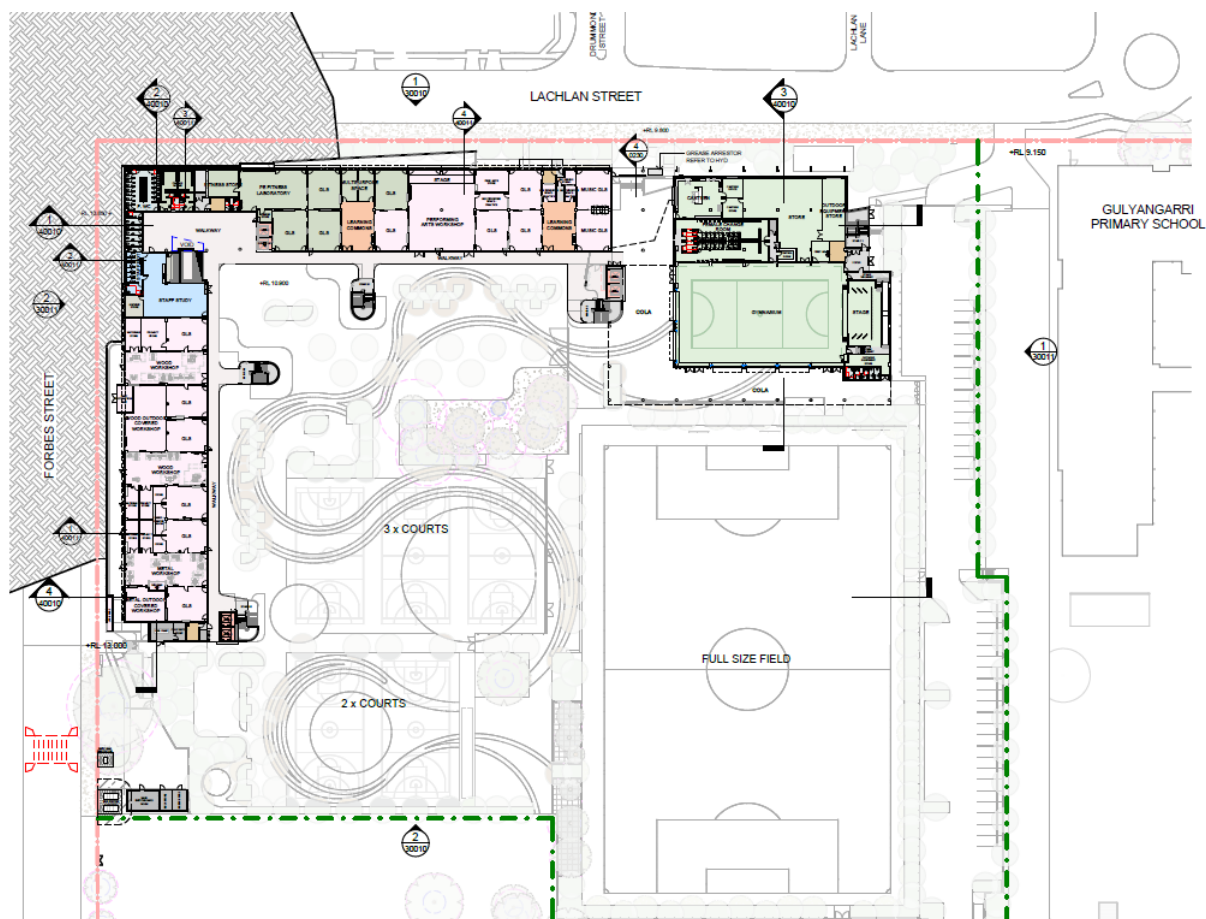


Figure 5: Lower Ground Floor Plan

(Image adopted from NBRs Architectural Drawings Project #24089, Rev 13)

Liverpool City Council (referred to as "The Council") recommended using the PMF flood level for the lowest habitable floor for the proposed development. Consequently, a minimum floor level of 10.80m AHD must be adopted to meet council requirements – Refer to Appendix B.

3.0 Flood Response Assessment

3.1 Identification of Risks

The development of educational facilities is categorised as 'Sensitive Uses and Facilities' under Section 9 of Part 1 of the Liverpool Development Control Plan 2008. The site's flood risk is designated as Low Flood Risk according to the Liverpool Flood Map, and floodplain controls have been established in accordance with the Georges River Floodplain.

Given the site's classification as a sensitive development and the flood hazard outcomes outlined in Section 2.3, the safest course of action is to evacuate all individuals from the site before a flood event, if possible, to minimize the risk of anyone being stranded. The recommended procedures for minimizing risk in response to flooding, in order of preference, are as follows:

- If flooding is anticipated that could isolate the site, evacuate all non-essential personnel and impose restrictions on transport to the site.
- If flooding is forecasted that will definitely isolate the site, evacuate everyone.
- If evacuation is not possible due to riverine flooding, remain on site.

The proposed site, including all buildings, will be flood-resistant for events up to the PMF storm event, which has a flood level of 10.80m AHD. If evacuation is necessary, it must occur before flooding begins, as standard sedan-type vehicles will no longer be able to navigate the evacuation route once floodwaters reach a certain depth. Early evacuation can be done if a higher-clearance vehicle is available.

Besides flood depths, the velocity of floodwaters is another critical factor affecting safe evacuation. According to the council, the site does not present significant evacuation challenges, making it generally safe for vehicles to navigate floodwaters. However, driving through floodwater is never advisable and should only be considered as an absolute last resort.

3.2 Flood Evacuation Route

According to FloodMit, flood emergency assembly locations may not be needed if the school is closed before the start of the school day or if an early closure is successfully carried out within the available flood warning time. However, for situations where early closure is unsuccessful or a small number of students and staff remain on-site, designated assembly points have been established.

The aforementioned assembly locations and access routes are detailed in Appendix C.

3.2.1 Liverpool Boys and Girls High School

FloodMit recommends that relocation of all remaining high school occupants to the gymnasium area should be completed no later than when flooding is observed within Gulyangarri Public School buildings (estimated at 7.1m at Liverpool Weir). The relocation should be completed within approximately one hour. Evacuation from the site via Forbes Street should commence upon all occupants being relocated to the gymnasium area. Refer to Figure 6 below for flood assembly areas and Appendix C for flood evacuation route.

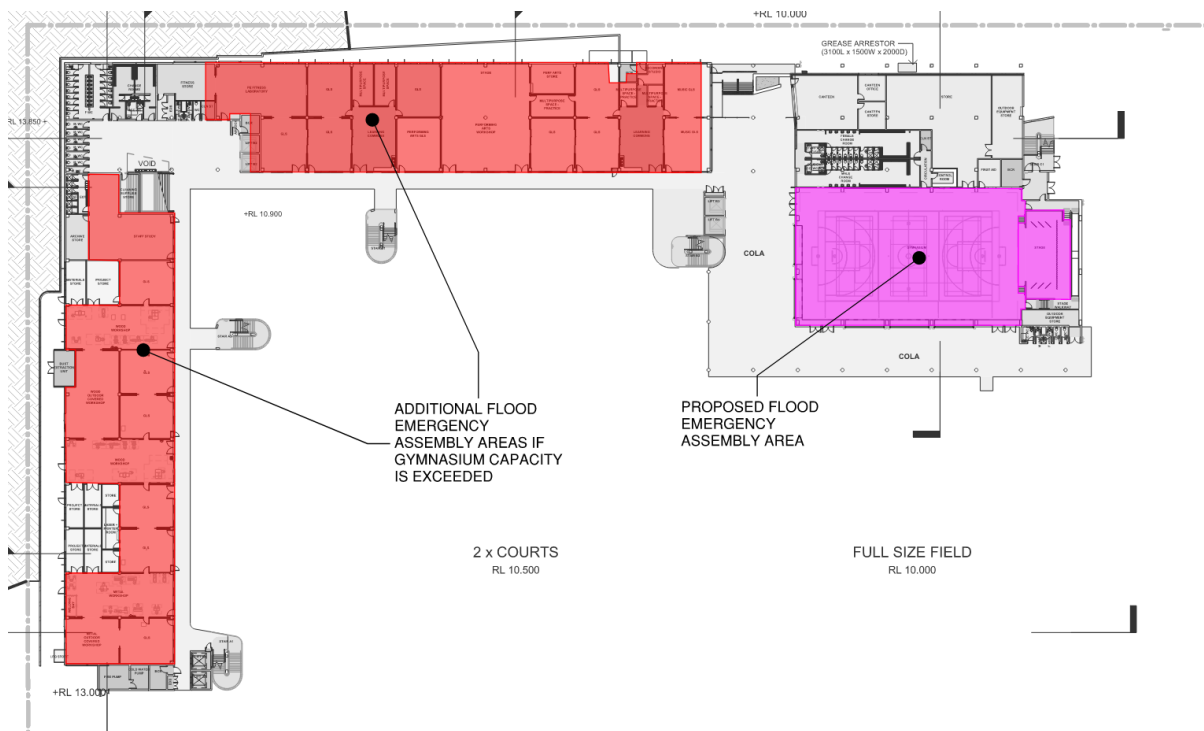


Figure 6: Flood Emergency Assembly Area

(Image adopted from NBRs Architectural Drawings Project #24089, Rev 13)

3.2.2 Gulyangarri Public School

The new primary school lacks suitable flood emergency assembly points on its premises. FloodMit advises relocating any remaining students and staff to higher ground on the western side of the school, near Forbes Street.

The lawn in front of the Liverpool Boys High School (LBHS) Hall is suggested as a dry weather assembly point, while the Hall itself, with a capacity of 500 people standing (CBRE comm, 2022), serves as a wet weather location. However, due to the proposed works for the new Liverpool High School (LHS), the LBHS Hall is to be demolished. Therefore, the recommended revised assembly location is the new LBGHS gymnasium area, which is covered and located above the PMF level of 10.80m AHD.

FloodMit recommends that this relocation should be completed no later than when flooding is observed along Burnside Drive (estimated at 6.4m at Liverpool Weir) and before the existing primary school buildings are inundated (estimated at 7.1m at Liverpool Weir). The relocation should be completed within approximately one hour.

Currently, the only access route from the primary school to the Liverpool High School Hall is via the public footpath on Lachlan Street and Forbes Street. This route is not ideal during severe weather, as small children could be exposed to heavy rainfall. FloodMit suggests further investigation into alternative access options.

3.2.3 Evacuation Trigger

The primary triggers for deciding to close the school before the start and after commencement of the school day are based on flood warning predictions provided by the Bureau of Meteorology (BOM). These trigger levels are outlined in Table 1.

Table 1: Triggers to Close Schools prior to Start of School Day	
Warning Level	Response Action
1 – Advice	Heightened level of threat. Stay up to date as the situation changes. Close school as instructed by SES and/or BOM.
2 – Watch and Act	Conditions are changing and you need to start taking action now to protect staff, students and visitors. Begin provisions to evacuate the site.
3 – Emergency Warning	The highest level of warning. Danger is imminent and immediately evacuate the site.

3.2.4 Evacuation During Construction and Temporary School Use

All construction personnel, staff, students and visitors are to begin evacuation from the site via Forbes Street no later than when flooding is observed within Burnside Drive unless advised otherwise by SES or BOM. The relocation should be completed within approximately one hour. Refer to Appendix C for flood evacuation route.

Refer to Table 1 above for trigger protocols.

4.0 Flood Emergency Management Plan

4.1 Total Warning Time

In the given model, floodwaters typically reach their highest levels at the site approximately 11 hours after the start of the PMF storm event, leading to the flooding classification of "riverine flooding" by the Bureau of Meteorology due to the rapid rise in flood rates from the Georges River. The PMF flooding lasts approximately 31 hours.

4.2 Official Flood Warnings

The Bureau of Meteorology (BoM) and NSW State Emergency Service (SES) issue a range of official warnings and flood advice through their websites, local radio, television, social media etc. For the BoM, official warnings include:

- **Severe thunderstorm warnings** – Issued when severe thunderstorms are expected. The warnings will describe the area under threat and the associated hazard/s (e.g. riverine flooding, high winds)
- **Severe weather warnings** – Issued when severe weather is expected to develop or move into an area. Severe weather includes high winds, heavy rain, abnormally high tides etc.
- **Flood Watch** – A warning that flood-producing rain is expected to happen in the near future
- **Flood Warning** – A warning of flooding at a predicted height, time, and location

For the SES, official warnings include:

- **Advice** – Provide information on what is expected to happen during a flood and the likely flood consequences. Personnel are to stay up to date as the situation changes.
- **Watch and Act** – Issued when flood conditions are beginning to change and immediate action is required. Once the warning has been issued you should get prepared to evacuate.
- **Emergency Warnings** – Issued when you are required to evacuate. The evacuation order advises people what to do and where to go.
- **All Clear** – Issued when it is safe to return to the site.

Other ways you may be informed of possible flooding is via:

- A door knock by emergency services,
- Word of mouth, or
- The SES may issue an Emergency Alert. An Emergency Alert is a message that is sent to your landline or mobile phone as a voice or text message.
- TV, radio and other media

4.3 Site Specific Warnings

In addition to the official warnings, it is strongly recommended that The Site adopt the following site-specific warning systems.

PA system

It is recommended that The Site adopt a public announcement (PA) system with an emergency tone that can be activated during a flood event. The PA system must have a backup power supply that is independent of the electrical grid in case of power failures.

It is also anticipated that this system will be utilised for other emergencies such as fires.

Warning Signs

Multiple flooding warning signs will be located throughout The Site to raise flood awareness for the facility personnel and provide clear directions on what to do during a flood event.

Communication With Gulyangarri Public School

During flood events, Gulyangarri Public School will be affected prior to the high school. As the flood emergency assembly area of Gulyangarri Public School is within the high school gymnasium area, communication and coordination between the two schools will be required. This also serves as a warning system to begin implementation evacuation protocols.

4.4 Important Contacts

Refer to Appendix A for a summary list of Important Contacts. The Chief Flood Warden is to fill out this list.

5.0 Flood Response Preparation

5.1 Flood Preparation & Response Team

To ensure the safety of the customers/visitors and staff during a flood emergency, a Flood Preparation and Response Team is required. This team will consist of Liverpool High School – hereafter referred to as “The School”-, a Chief Flood Warden, Deputy Flood Warden, Flood Wardens and First Aid Officers. Refer to Figure 7 below for the organisational structure of this team.

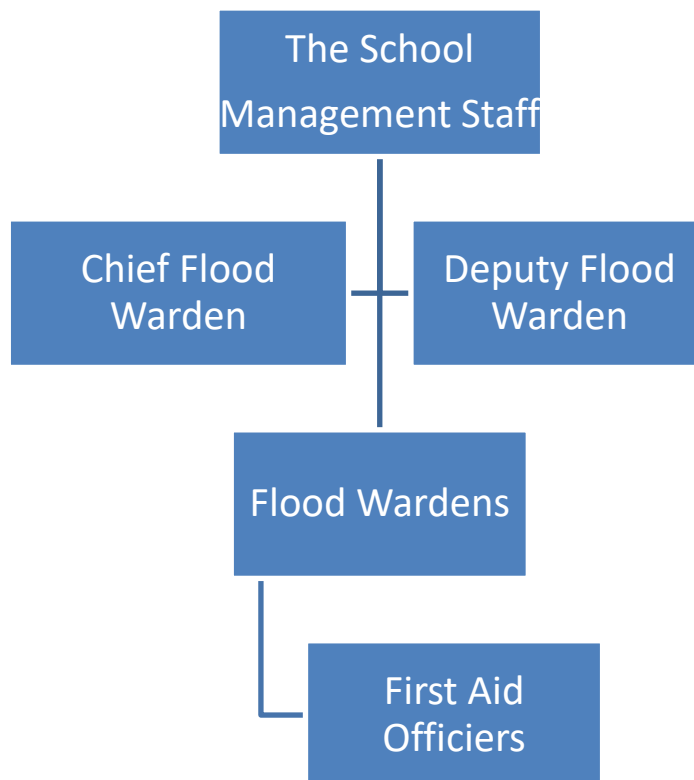


Figure 6 – Flood Preparation and Response Team

The School Management Staff shall appoint the Chief Flood Warden, a Deputy Flood Warden from the facility staff. Once these wardens have been selected, the Chief Flood Warden shall seek out assistance from other staff to join the team as Flood Wardens and First Aid Officers.

It is standard industry practice to have 2 fire wardens per 20 people (<https://www.evacservices.com.au/fire-warden-training/>). It is recommended that the same personnel who are fire wardens are also flood wardens.

SafeWork NSW recommends a minimum of one first aid officer for every 50 workers. The first aid officers are to assist with minor injuries during the flood evacuation procedure or liaise with emergency services for more serious incidents.

Once the Flood Preparation and Response Team has been established, the Chief Flood Warden shall be responsible for managing the team.

5.2 Flood Preparation & Response Team Responsibilities

The roles and responsibilities of the members of the Flood Preparation and Response Team are listed in Table 2 below:

Table 2 – Flood Preparation and Response Team Responsibilities	
ROLE	RESPONSIBILITY
The School Management Staff	<ul style="list-style-type: none"> ▪ Appoint a suitable facility staff as the Chief Flood Warden and appoint a Deputy Flood Warden. ▪ Ensure that the Chief Flood Warden is enacting the Flood Emergency Response Plan. ▪ Ensure all personnel are made aware of The Site's flood risks.
Chief Flood Warden	<ul style="list-style-type: none"> ▪ Brief all flood wardens on the Flood Emergency Management Plan and any changes. ▪ Monitor weather daily on the Bureau of meteorology website. ▪ Activate commencement of Flood Emergency Management Plan in event of the flooding. ▪ Liaise with emergency services if required. ▪ Conduct Flood Emergency Response drills biannually. ▪ Ensure the Flood Preparation and Response team is adequately trained. ▪ Review Flood Emergency Management Plan. ▪ Conduct flood preparation review as per Table 3 – Flood Preparation Review.
Deputy Flood Warden	<ul style="list-style-type: none"> ▪ Undertake the Chief Flood Warden's duties in the event that the Chief Flood Warden is away/unavailable. ▪ Assist Chief Flood Warden in enacting Flood Emergency Management Plan. ▪ Provide support to the Chief Flood Warden where required.
Flood Wardens	<ul style="list-style-type: none"> ▪ Ensure the Chief Flood Warden is notified in the event of a flood emergency. ▪ Receive text messages or emails from the Early Warning Network. ▪ Direct all building personnel to the nominated evacuation assembly location and ensure they remain calm. ▪ Undertake the required training as instructed. ▪ Ensure the Flood Emergency Kit is up to date.

First Aid
Officer

- Implement first aid treatment as required.
- Liaise with emergency services as required.
- Auditing and maintaining the first aid kit and fire extinguishing equipment.
- Assist building personnel with medical conditions and/or mobility restrictions.
- Undertake the required training as instructed.

5.3 Flood Emergency Kit

The NSW SES website provides a list of recommended items in a flood emergency kit, this includes:
<https://www.ses.nsw.gov.au/floodsafe/prepare-your-home/emergency-kit/>

Emergency kit contents:

- Portable radio with spare batteries
- Megaphone
- Torch with spare batteries
- First aid kit
- Candles and waterproof matches
- Important papers including emergency contact numbers
- Ensure emergency kit is in a waterproof storage container

If evacuating the personnel, place in your emergency kit:

- A good supply of required medications
- The sign-in book for visitors
- Fresh food and drinking water

On a regular basis, check your emergency kit (remember to check use-by dates on batteries and gloves) and restock items if you need to. Also, keep a list of emergency numbers in the emergency kit.

5.4 Flood Signage

Flood signage shall be installed at the frontage of The Site especially the eastern corner of The Site to advise staff, customers / visitors of the risk of flooding and provide details on the flood emergency response plan. The signage shall be located in visible areas and include the flood emergency egress plans.

5.5 Flood Awareness Training

Flood awareness training is required for the Flood Preparation and Response Team and all staff. It is strongly recommended that flood emergency response drills occur a minimum of twice annually. This will ensure flood wardens know how to respond in a flood emergency and that building personnel are aware of the flood hazard. After the drill has been carried out, the flood emergency response procedure should be reviewed to identify any room for improvement and amended as necessary.

5.6 Flood Monitoring

The Chief Flood Warden is to monitor storm activity/weather in the afternoon daily via the BoM website and/or radio. Storm warnings for next day events triggering riverine flooding should be monitored carefully. It is up to the discretion of the Chief Flood Warden to The Building for the following day if deemed appropriate.

5.7 Flood Preparation Review

The Flood Emergency Management Plan and associated tasks need to be reviewed on a regular basis to ensure their effectiveness. Table 5 below lists the tasks, who is responsible for reviewing them and when the review should occur.

Table 3 – Flood Preparation Review		
TASK	RESPONSIBILITY	DATE
Review of flood emergency management plan	Chief Flood Warden	<ul style="list-style-type: none"> ▪ Every 6 months minimum ▪ After a flood event ▪ If there are any changes that impact the ability of the plan to be implemented
Flood Awareness Training	Chief Flood Warden	<ul style="list-style-type: none"> ▪ Every 6 months minimum ▪ After a flood event for debrief
Audit and test flood alarm system	Chief Flood Warden	<ul style="list-style-type: none"> ▪ Every 6 months minimum ▪ After a flood event for debrief
Audit, maintain and test emergency electrical lighting	Electrical contractor under the supervision of Chief Flood Warden	<ul style="list-style-type: none"> ▪ Every 6 months minimum ▪ After a flood event - if problems occurred
Audit and maintain flood emergency kit	Flood Wardens	<ul style="list-style-type: none"> ▪ Every 6 months ▪ After a flood event for re-stocking
Audit and maintain first aid kit	First Aid Officer	<ul style="list-style-type: none"> ▪ Every 6 months ▪ After a flood event for re-stocking
Audit and maintain fire fighting equipment	Fire Warden	<ul style="list-style-type: none"> ▪ Every 6 months ▪ After a fire event
Check for Flood Study updates	Chief Flood Warden	<ul style="list-style-type: none"> ▪ Annually: Contact Liverpool City Council for any updates to the Flood Study

5.8 Flood Response

The Site is affected by riverine/creek flooding caused by intense rainfall events, the flood response operations for The Site will begin on receipt of the Bureau of Meteorology advice, or when other evidence leads to an expectation of flooding as detailed below.

Table 4 – Flood Emergency Response Alert and Activation Levels

Response Item	Action	Procedures	Responsibility
Monitor	Daily weather (intense heavy rainfall) / precipitation forecast monitoring	Monitor the Bureau of Meteorology (BOM) on a daily basis.	Chief Flood Warden
Flood Alert	Increase the level of alert	Notify all facility staff of flood alerts, watch or advice. Monitor the Bureau of Meteorology (BOM) website.	Chief Flood Warden
Flood Watch	Increase the level of alert and prepare for activation of FEMP.	Notify all facility staff of flood alert, watch or advice.	Chief Flood Warden
Severe weather warning for riverine flooding	Increase level of alert, prepare for activation of FEMP.	Notify all facility staff of flood alerts, watch or advice.	Chief Flood Warden
Severe thunderstorm warning for riverine flooding	Increase the level of alert and prepare for activation of FEMP.	Notify all facility staff of flood alerts, watch or advice. Monitor the Bureau of Meteorology (BOM) website.	Chief Flood Warden
Activation: Occurrence of localised intense rainfall with associated observation of rising water levels on-site or adjacent waterways.	Mobilise all customers/visitors and staff to designated emergency assembly areas (The Places). Close The Site to external visitors.	Immediately notify all staff and customers of the activation of flood emergency response plan.	Chief Flood Warden

When the flood response operation is activated, the following actions should be taken:

- The chief flood warden should activate the flood emergency alarm.
- Instruct all visitors, staff and student.
- Turn off the electricity and/ or any machinery and gas (if applicable) at the mains before leaving and turning off and securing any gas bottles.
- Take the emergency kits.
- Never enter or travel through floodwater.
- Confirm occupancy numbers.
- Keep listening to the local radio station for information, updates, and advice.
- Follow all instructions given by the chief flood warden and emergency services.

Monitoring of the BoM will continue throughout this process to ensure updated information is available.

5.9 Early or Pre-emptive Facility Closure

The decision for the facility closure should be made based on the severe thunderstorm warnings and severe weather warnings from the Bureau of Meteorology in the metropolitan area to give an indication of possible overland flow flooding.

5.10 Post-flood Response

Once a flooding event has occurred, the priority will be to determine if it is safe to reopen the facility. A safety walk-through will need to be undertaken with the facility management involved such as the chief flood warden and the deputy warden. A qualified electrician will also accompany the management team, to identify danger areas. The team will review the below:

- Flood damage to pavements within The Site and surrounding roads.
- Determine if flood waters have subsided.
- Inundated or water-affected power boxes and electrical equipment to be checked by the electrician. The power is to remain off until reviewed.
- Equipment or debris that was moved by flood waters should be returned to the correct location or disposed of if necessary.

All hazards are ensured to be identified and eliminated prior to reopening the facility.

5.11 Monitoring and Reviewing Control Measures

A formal review of the risks identified within this report is undertaken on a regular basis. This review shall ensure that appropriate action is taken should the likelihood, impact or identified risks change and to ensure that any emerging risks are appropriately dealt with.

6.0 Conclusion

Woolacotts have been engaged by NSW Department of Education to undertake a Flood Emergency Management Plan (FEMP) for the co-educational buildings at 18 Forbes St, Liverpool NSW 2170.

The proposed development is located within the Liverpool City Council Local Government (LGA) and includes [REDACTED] construction a 6-story building (for combined co-education use) situated at the northwest corner with associated library and gymnasium.

The Georges River Flood Study Final Draft Report, January 2020 (BMT 2020) indicates that The Site is impacted by Georges River riverine flooding, where water overflows its banks. However, due to a combination of flood depths and velocities, the flooding is classified as Low Flood Risk Category.

Liverpool City Council (referred to as "The Council") recommended using the PMF flood level for the lowest habitable floor for the proposed development. Consequently, a minimum habitable floor level of 10.80m AHD must be adopted to meet council requirements.

Triggers based on the Flood Height at Liverpool Weir have been implemented to activate protocols for evacuation due to rising flood levels. Due to the flood levels within the primary school, the flood emergency assembly point for the primary school is proposed to be in the gymnasium within the high school. Refer to Section 3 for details. Although this capacity may not accommodate all primary and high school occupants, it is anticipated that most children will have already left for home before flooding begins, leaving only a small number to be relocated. However, in the event of the gymnasium's maximum occupancy being exceeded, the remaining school building areas (classrooms, offices, etc) are safe to be utilised as additional assembly areas.

To ensure the safety of the customers/visitors and staff during a flood emergency, a Flood Preparation and Response Team is required. This team will consist of Liverpool High School Chief Flood Warden, Deputy Flood Warden, Flood Wardens and First Aid Officers. The team are responsible for implementing, monitoring and reviewing control measures that need to be put in place to ensure that appropriate actions are taken during a flood event.

Mitigation Measures Table

Project Stage	Mitigation Measures	Relevant Section of Report
<i>Design (D)</i> <i>Construction (C)</i> <i>Operation (O)</i>		
D / C / O	<i>All construction personnel and staff attending LBGHS are to be made aware of flood risks and evacuation routes.</i>	<i>Section 3.0</i>
D / O	<i>Flood response preparation to be undertaken the staff of LBGHS</i>	<i>Section 5.0</i>
C	All works will be scheduled outside forecasted heavy rainfall and apply flood response preparation to construction management plans.	<i>Section 5.0</i>

Appendix A

Important Phone Numbers

EMERGENCY NUMBERS	
Emergency Contact	Number
Police, Fire or Ambulance	000
NSW State Emergency Service	132 500
NSW Roads and Maritime	132 701
Liverpool City Council	1300 362 170

FLOOD EMERGENCY RESPONSE TEAM (TO BE FILLED OUT BY FACILITY MANAGER)		
Role	Contact Name	Number
The School Staff		
Chief Flood Warden		
Deputy Flood Warden		
Flood Warden 1		
Flood Warden 2		
Flood Warden 3		
First Aid Officer		

Appendix B

Council Flood Advice Level

Yolandi Cooper

From: Zeaul Hoque <HoqueZ@liverpool.nsw.gov.au>
Sent: Tuesday, 15 August 2023 9:34 AM
To: Yolandi Cooper
Subject: Liverpool Boys High School & Girls High School (18-20 Forbes Street, Liverpool)

Hi Yolandi

Please find the flood level of the subject site below.

PMF level = 10.8m AHD

Kind Regards

Zeaul Hoque
Acting Senior Floodplain Engineer



02 8711 7747 | | HoqueZ@liverpool.nsw.gov.au

Customer Service: 1300 36 2170 | 3 Hoxton Park Road Liverpool, NSW 2170, Australia



www.liverpool.nsw.gov.au



We acknowledge the traditional custodians of the land that now resides within Liverpool City Council's boundaries, the Darug and Dharawal peoples.

This email (including any attachments) may contain confidential and/or legally privileged information. If you are not the intended recipient please delete this email and do not disseminate or otherwise use the information contained herein.

From: Zeaul Hoque
Sent: Monday, August 14, 2023 6:40 PM
To: YOLANDI.COOPER@MEINHARDPGROUP.COM
Subject: Liverpool Boys High School & Girls High School (18-20 Forbes Street, Liverpool)

Hello Yolandi

I hope this email finds you well.

I have been informed by Council's Customer Service team that you are interested in obtaining information regarding flooding. Kindly provide me with the details of your request, and I will respond with the relevant information you are seeking.

Thank you for reaching out, and I look forward to assisting you further.

Kind Regards

Zeaul Hoque
Acting Senior Floodplain Engineer



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Appendix C

Evacuation Access Routes

