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Project:	<i>Sydney Biomedical Accelerator SSD, Flood Assessment</i>
Project ID:	<i>220100</i>
Date:	<i>9th May 2025</i>
To:	<i>Warren Smith Consulting Engineers, James Georgiades</i>
Subject:	<i>Sydney Biomedical Accelerator SSD – EMP with CFEMSP update</i>
Version:	<i>Version 7.1 (Final)</i>
Author:	<i>Tomas Steele</i>
Reviewer:	<i>Stephen Gray</i>
Authorised by:	<i>Stephen Gray</i>

RE: Emergency Management Plan for the Sydney Biomedical Accelerator SSD Flood Assessment and Construction Flood Emergency Management Sub-Plan update

An Emergency Management Plan (The Plan) has been prepared for the proposed Sydney Biomedical Accelerator (SBA) building as part of the development at the site located at the University of Sydney’s Camperdown Campus Health Precinct. This Plan includes relevant details from Version 7 of the main report (GRC Hydro, 27/3/2024) on flood levels, finished floor levels, duration of inundation and flood warning time.

As of Version 7.1 The Plan comprises two parts.

- Section 1 is The Plan for the operational stage of the SBA. This is unchanged from Version 7.0 of this document dated 27th March 2024 and was supplied for the SSDA.
- Section 2 includes the new Construction Flood Emergency Management Sub-Plan (CFEMSP) which details the recommended emergency procedures during the construction phase. This reflects the main update to Version 7.1. This addresses condition B23 given in Table 1 below:

SSDA Condition	Item Description	Addressed By	Section and page where the item is addressed
B23	The Construction Flood Emergency Management Sub-Plan must address, but no be limited to, the following:	Updates to this document to Version 7.1	Section 2 (pg 6)
a)	Be prepared by a suitably qualified and experienced person(s);	Steve Gray has over 20 years experience within the flooding industry and is accredited by Engineers Australia through the National Engineering Register (NER# 2435438)	
b)	Address the provisions of the Floodplain Risk Management Guidelines;	The CFEMSP has been prepared using information from a flood impact and risk assement conducted inline with the Floodplain Risk Management Guidelines, in particular the LU01 Flood Impact and Risk Assessment. For the CFEMSP particular attention to Principle 9 of the Floodplain Risk Management Manual has been taken to recommend responses that minimise risk to users of the site by minimising personel onsite during risky weather conditions and actions to take to move people out of areas impacted by hazardous floodwater.	Flood behaviour summarised in Section 2.1 Risks and responses to minimise risk in Section 2.3 and 2.4

c)	Include details of:		
(i)	The flood emergency responses for construction phases of the development;	The overall response strategy is unchanged during the entire construction phase of the development where the primary response is to not attend site, or for employees to return home, if a Severe Weather Warning is issued by the Bureau of Meteorology. A secondary response should floodwater be impacting the site is to totally evacuate the site and shelter at buildings to the east of the site which are not flood liable.	Section 2.4 (pg 9) or the summary CFEMSP (pg12)
(ii)	Predicted flood levels;	The PMF is expected to flood everything below 23.7m AHD	Section 2.1 (pg7)
(iii)	Flood warning time and flood notification;	No formal warning for flooding occurring on the site, and flooding can occur at the site within 30 minutes of high intensity rainfall impacting the local area	Section 2.3 (pg 8)
(iv)	Assembly points and evacuation routes;	The evacuation zone is recommended to be east of the site, by crossing Western Ave at the north-east or north-west corners of the site. This CFEMSP recommends Wesley College as the evacuation zone due to its immediate proximity however, any of the buildings east of Western Ave and west of St Pauls Oval are also suitable locations	Section 2.4 (pg 9) or the summary CFEMSP (pg12). page 3 (pg 11) for evacuation route from the site to recommended evacuation zones
(v)	Evacuation and refuge protocols; and	See the Emergency Response Strategy #2 (pg 10) Protocols for different warning times and conditions are provided.	Section 2.4 (pg 9) or the summary CFEMSP (pg12)
(vi)	Awareness training for employees and contracts, and users/visitors	Employees, contracts and visitors to be made aware of emergency procedures in the site induction. Site managers and foreman to fully understand the CFEMSP and emergency procedures through training and regular updates as the construction progresses.	Section 2.2 (pg 8)

Yours Sincerely



Steve Gray

Director

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1. Emergency Management Plan – Operational Phase

The Emergency Management Plan detailed here is to provide a recommended procedure to enact in the event of a flood to minimise the risk to people using the proposed development site. It is immediately superseded by advice from emergency combat authorities, which include the NSW Police force and NSW State Emergency Service. This plan is a preliminary emergency response plan, which is to be incorporated with existing emergency plans for the University of Sydney.

Relevant flood, ground and floor levels for the SBA site are:

- 1% AEP Flood Level (Subfloor) = 22.0m AHD
- Probable Maximum Flood Level = 23.7m AHD
- Finished Floor Level = 23.0m AHD
- Second Floor Level = 27.5m AHD

The above levels give an indication of how the various floods will impact this site and what level of protection is provided. Finished floor levels are designed to be a minimum of 0.5m above the 1% AEP Flood Level and with the building's second floor providing protection for all flood events up to and including the Probable Maximum Flood (PMF), which is the largest event which can occur at this location.

In addition to the above, the predicted warning time and duration of inundation from the "Sydney Biomedical Accelerator SSD, Flood Assessment, Version 7 – Final" (GRC Hydro, March 2024) have been provided below:

- Predicted flood warning time = < 30 minutes from the onset of the storm
- Duration of inundation = < 6 hours for all events up to and including the PMF

1.1 Preparation and Planning

Education of both visitors and staff of the emergency procedures in the event of a flood should be made available during the induction of staff members. The final Emergency Management Plan should be made available to all new staff, contractors and site visitors as part of the site induction. Clear signage helps reinforce the information presented during the induction and assists people when making decisions during an emergency.

Emergency kits should be available on all floors of the proposed building. The contents are usually standardized and used for all emergency situations but typically include:

- Bottled water
- Non-perishable food and energy bars
- First aid kit
- Light sources (preferably flashlights) with batteries
- Dust mask
- Emergency contact numbers

Ideally access to a radio and the recommended frequencies to tune into for more information from emergency combat authorities should also be part of this kit. The emergency kits need to be maintained and checked regularly as a part of a staff members responsibilities, such as a Floor Warden.

Clearly deciding on staff responsibilities before an emergency and providing these during the staff induction so all users of the proposed building are aware. These can be tested and reinforced through regular evacuation drills, at a minimum frequency of every 12 months.

1.2 Regional weather warnings and preliminary evacuation

It is recommended that a designated staff role be required to sign up for BoM warnings for access to regional severe weather and thunderstorm warnings. Ideally a Chief of Staff who can coordinate the distribution of warnings for both the proposed SBA building, but also the established SWHB.

In the event of a severe weather warning, it would be their responsibility to see to the cancellation of all non-essential work and if sufficient weather warning is given, see that all non-essential staff and visitors return home, or to a safe location. Ideally the decision to evacuate should be made prior to warnings from emergency combat authorities, such as the SES, as the flash flooding behaviour limits their capacity to provide warning (EM01). Advice from combat authorities to evacuate or stay are to be heeded as a priority.

In the potential event of a storm a NSW SES coordination centre maybe established. Local SES units can be contacted to assist with the decision to evacuate, with the City of Sydney having its own unit.

1.3 Emergency response strategy

Should people be isolated at the building due to the onset of a flood inducing storm or be unsure of how safe it is to evacuate, the recommended strategy is to adopt a shelter in place strategy. The proposed building is expected to be flood free for events up to and including the 0.5% AEP, may have minor flooding in the lower levels in the 0.2% AEP and be flooded in the first level in the PMF but there are several storeys to provide a vertical refuge to rising floodwater.

It is recommended that it be made clear to people seeking refuge in the building that the local floodwater is expected to be too hazardous to evacuate in for both small and large vehicles, to leave any possessions in their cars as most exits from the building to cars are likely to be subject to high hazard flooding and meet at the emergency assembly point. It is too early to designate the recommended location for the emergency assembly point, however it should be located at or above Level 2, ideally with clear access to the proposed sky bridges to the Gloucester House and RPAH when the internal layout is finalised in later stages of the project.

When assembling it is recommended to not use elevators unless the building has an emergency power supply. Allowances in the proposed assembly approach should include procedures for assisting people with limited mobility or who might be injured to the assembly location. If it is safe to do so, emergency kits should also be collected.

Once assembled it should be made clear to not leave the building until permission has been granted by the local combat authority. Based on the expected duration of inundation, this is going to be within a timeframe under 6 hours. Evacuation to the RPAH as the local evacuation centre is recommended, but should be done only after sufficient time at the emergency assembly point, so as to give all residents time to assemble and to allow time to organise an orderly evacuation to the RPAH.

In summary when a flood warning is issued:

1. Clearly communicate the order for assembly at the emergency assembly point through all possible channels
2. Collect the nearest emergency evacuation kit, if safe to do so.
3. Have an authorised staff member liaison with the local SES unit to notify them of the decision to shelter in place, so that they can provide additional advice.
4. Listen to the local radio station for updates on the severe weather warning.
5. Call emergency services immediately for life threatening emergencies.
6. Liaison with RPAH to organise evacuation to the RPAH as it is the local evacuation centre.

Flood Management Plan

Sydney Biomedical Accelerator
University of Sydney, Camperdown Campus, Health Precinct

Preparedness

- Education of both visitors and staff of the emergency procedures in the event of a flood should be made available during the induction of staff members.
- The final Emergency Management Plan should be made available to all new staff, contractors and site visitors as part of the site induction.
- Emergency kits should be available on all floors of the proposed building and clearly signed.
- The emergency kits to be maintained and checked regularly.
- Clearly decide on staff responsibilities before an emergency and providing these during the staff induction so all users of the proposed building are aware.
- Test and reinforce the plan through regular evacuation drills, at a minimum frequency of every 12 months

Response

During a flood the actions to be taken by the site’s management are:

1. Clearly communicate the order for assembly at the emergency assembly point through all possible channels.

It has to be made clear to people seeking refuge in the building that the local floodwater is expected to be too hazardous to evacuate in for both small and large vehicles, to leave any possessions in their cars as most exits from the building to cars are likely to be subject to high hazard flooding and meet at the emergency assembly point.

2. Collect the nearest emergency evacuation kit, if safe to do so.
3. Have an authorised staff member liaison with the local SES unit to notify them of the decision to shelter in place, so that they can provide additional advice.
4. Listen to the local radio station for updates on the severe weather warning.
5. Call emergency services immediately for life threatening emergencies.
6. Liaison with RPAH to organise evacuation to the RPAH as it is the local evacuation centre.

Recovery

If evacuated to the RPAH, listen and follow recommended procedures once floodwaters subside. For the SBA building, if electrical or gas services have been inundated do not turn these appliances on until they have been checked by a qualified electrician or gas fitter.

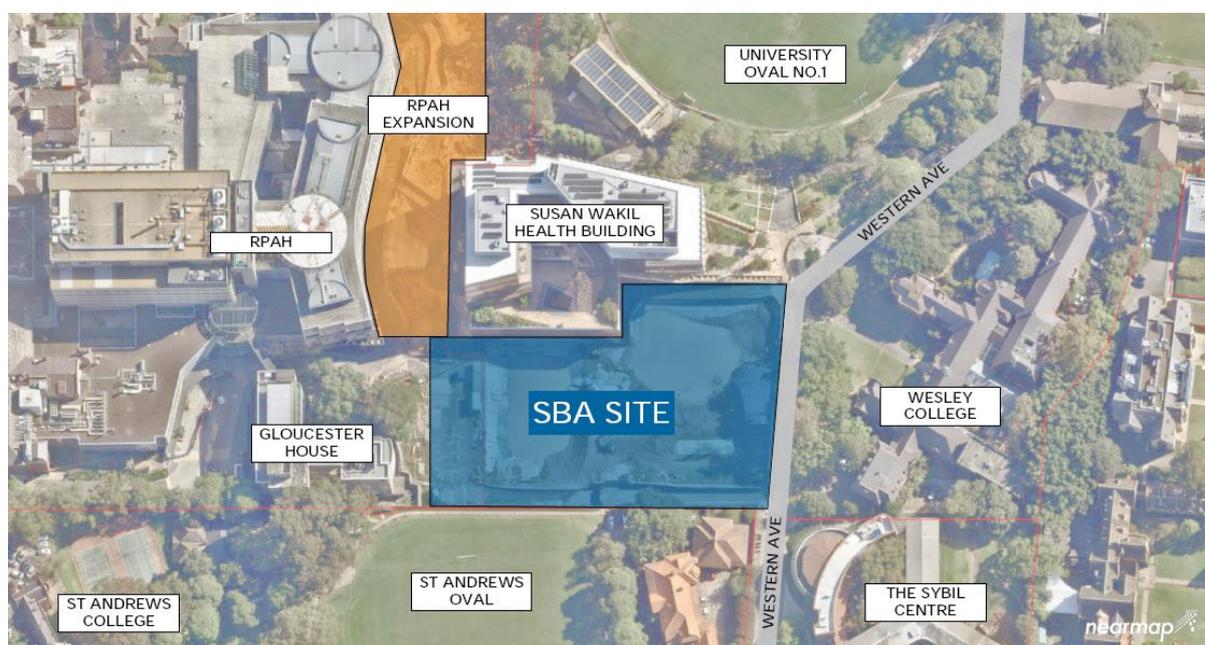
<u>Important phone numbers</u>		
NSW State Emergency Service:	Emergency – 132 500	General enquiries – 4251 6111
Police, Fire, Ambulance	Emergency – 000	
Bureau of Meteorology	Website: http://www.bom.gov.au/nsw/warnings/ , p: 1300 659 218	

2. Emergency Management Plan – Construction Phase

Proposed construction activities at the University of Sydney, Camperdown Campus Health Precinct for the Sydney Biomedical Accelerator (SBA) building require a Construction Flood Emergency Management Sub-Plan (CFEMSP). The CFEMSP describes flood behaviour at the site and the required actions to manage the flood risk during the construction phase. The CFEMSP has been prepared in accordance with the NSW Floodplain Risk Management Guidelines.

The proposed construction area is the 'SBA Site' in Image 1. Notable surrounding landmarks are St Andrews Oval to the south, Gloucester House to the west, the Susan Wakil Health Building to the north and Wesley College to the east. Western Ave runs along the eastern boundary of the SBA Site, whilst Cadigal Lane is located within the site with access from Western Ave and runs along the southern boundary. Prior to construction an underground carpark located under St Andrews Oval is accessible from Cadigal Lane. Concurrent works are occurring at the 'RPAH Expansion' area in Image 1 which do not impact on the CFEMSP for the SBA Site and will have their own emergency management procedures.

Image 1: The SBA Site and locale



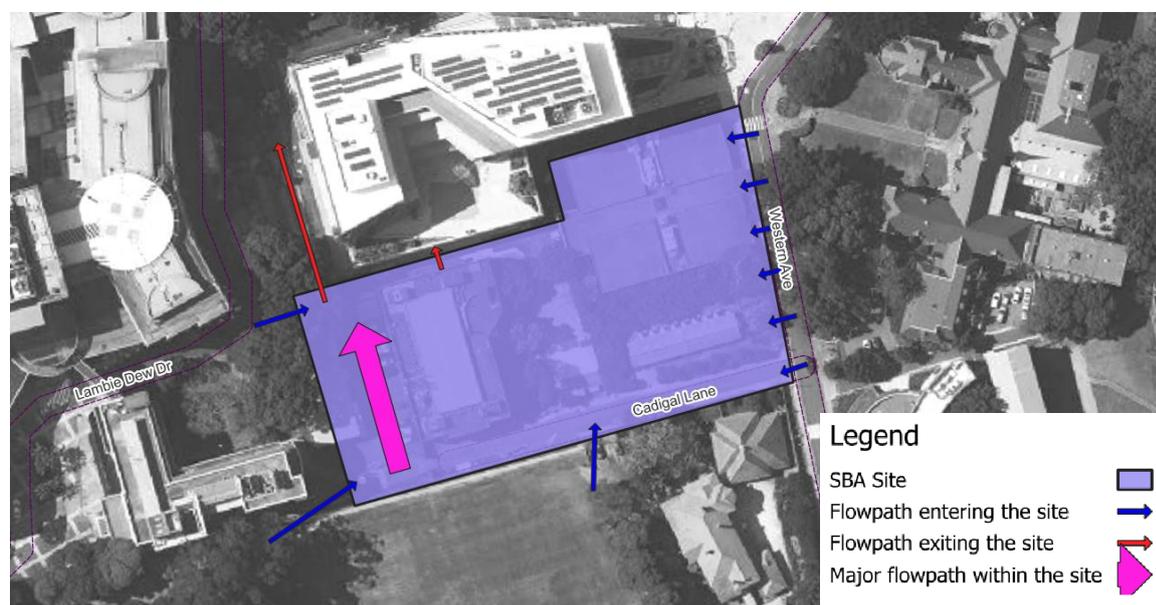
2.1 Flood Behaviour at the Site

There is no creek or waterbody located within the SBA Site, but rather the site is subject to overland flow flooding from the catchment area to the south. This overland flow enters the site from four locations as shown in Image 2, which are:

- From St Andrews Oval. In all but the most extreme flooding events this will be through the staircase access between the oval and Cadigal Lane. In extreme events floodwater may also drop over the wall between the oval and into Cadigal Lane.
- From the southside of Gloucester House. A flowpath off St Andrews Oval is diverted by Gloucester House into the south-western corner of the SBA Site.
- From Western Ave. Floodwater moving north along Western Ave towards University Oval 1 can enter the site at Cadigal Lane, or anywhere along the eastern boundary of the site when floodwater exceeds the kerbs.
- From between Gloucester House and the RPAH. A small flowpath enters the west of the site from the road. This is a very small flow compared to the other three.

The overland flow naturally gathers to the west of the SBA Site and moves north either through the Susan Wakil Health Building subfloor or along the west side of the Susan Wakil Health Building.

Image 2: Overview of overland flooding flowpaths for the SBA Site



Overland flow flooding that is dangerous to people can impact the site in frequent events, such as those due to heavy rainfall that occurs on average every few years. In the most extreme flood events, which are due to very heavy rainfall that may only occur on average every several thousand years, the SBA Site is also subject to risks due to rising floodwater when the capacity of the basin at University Oval 1 is exceeded. As per the NSW Floodplain Risk Management Guidelines, emergency planning needs to consider all events up to and including the most extreme flooding event that can occur at a location, which is known as the Probable Maximum Flood (PMF). The PMF is expected to flood everything below 23.7m AHD.

Flooding at the SBA site will not be preceded by any formal warning. Flooding will typically occur during or immediately after short rainfall events with high intensity rainfall lasting up to 6 hours. These rainfall events can cause ‘flash flooding’, which is the main flood risk for the site. These intense bursts of heavy rainfall over a short duration are difficult to predict and the Bureau of Meteorology will likely only make a warning for heavy rainfall leading to flash flooding over a wide area (e.g. inner Sydney) rather than a specific suburb. These Severe Weather Warnings (or Severe Thunderstorm Warnings) are typically issued by the Bureau of Meteorology several times a year and the large majority will not be followed by flooding at the site. The severity of the flood event will not be known until it is occurring.

Flooding is expected to last a matter of minutes or at worst, several hours. The site is not liable to flooding over a long period of time such as days or weeks.

Existing buildings within the site are not safe locations for refuge from floodwater. The Susan Wakil Health Building, Gloucester House, RPAH and Wesley College surrounding the site are suitable refuges from flooding as they are unlikely to be inundated. The use of Western Ave or Cadigal Lane by vehicles, including any heavy vehicles, is not recommended during a flood as floodwater can reach depths and velocities dangerous to all vehicles in some locations on both roads.

Construction activities at the SBA Site will involve significant excavation works. Any area below surrounding ground levels should be assumed to be liable to flooding during, or following, very heavy

rainfall and evacuated as a priority. If temporary construction buildings are used, these are not recommended for use as refuge areas. It is also not recommended to shelter in the SBA building under construction until the building has been cleared by a suitably qualified engineer as structurally sound to withstand the forces expected during a flood.

2.2 Preparation and Planning

Emergency procedures in the event of a flood should be planned and determined before the project commences. This CFEMSP will provide an overview strategy for the site which will not change over the course of the Construction Phase. However, as the site will change regularly over the construction period, it is recommended to review and update the procedures regularly and to do so at a minimum upon commencement of a major construction phase. These major construction phases can include:

1. Stormwater, earthworks and demolition.
2. Structure and façade
3. Fit out and landscaping.

All employees, contractors and visitors should be made aware of the emergency procedures in the event of a flood as part of a site induction or on the onset of the project. At a minimum this will comprise of a short summary of the flood behaviour and flood risks for the site, actions to take when evacuating, and the designated evacuation zone. A summary of this is included in the CFEMSP at the end of this document. Providing access to the full CFEMSP is also recommended for those who wish to be better informed. Updates to any of the procedures need to be clearly communicated to all existing staff.

Site managers and supervisory positions on the site should have read and understood the full CFEMSP, in addition to the more general emergency procedures given to employees, contractors and visitors mentioned above. This should be enforced by dedicated training of the emergency procedures and an evacuation drill to practice the evacuation route. Particularly for managers overseeing the excavation works, it must be understood that at all times there should be easy access to higher ground from the excavation work as there is a very serious flood risk for these areas and very little warning (a matter of minutes) of high risk flooding in these areas when flooding starts occurring on the site.

The Senior Site Manager will have the responsibility to sign up for weather warnings from the Bureau of Meteorology and instigate emergency procedures as recommended by the CFEMSP upon receiving Severe Weather or Severe Thunderstorm warnings from the Bureau of Meteorology. It is recommended a second person in a senior position also sign up for the weather warnings should the Senior Site Manager be unavailable or offsite.

2.3 Regional weather warnings and evacuation

A regional weather warning such as a Severe Weather Warning or Severe Thunderstorm Warning for the suburb from the Bureau of Meteorology indicates there is a high risk of dangerous floodwater impacting the construction site during that event. These warnings begin as a generalised forecast of flood inducing rainfall but the actual flooding at the site could occur both before and after the warning as local conditions can vary. Quite often these warnings will result in no flooding for the site, but there is no way to accurately predict that from the available information, and flooding should be planned for every time a warning is issued.

As noted in the flood behaviour in Section 2.1, there is:

- No formal warning for flooding occurring on the site, and flooding can occur at the site within 30 minutes of high intensity rainfall impacting the local area.
- The first sign of floodwater at the site may only provide minutes for people to act before exposing evacuees to risk due to dangerous floodwater during the evacuation.
- There is no safe refuge on the site during most construction phases.

- Flooding for the site will likely last less than 6 hours.

Given the above, the recommendations upon receiving a warning in order of priority are:

- Actions and responses that minimise the number of personnel onsite.
- Actions and responses that minimise the number of personnel in high floodrisk zones of the site.

As such emergency procedures should focus on evacuating people away from the site, preferably sending them home or to a safe location, upon receiving a Severe Weather Warning. Should there be insufficient warning time, or flooding is already occurring at the SBA Site, the emergency procedures should be to move people out of high hazard areas to higher ground and ultimately towards a designated evacuation zone offsite.

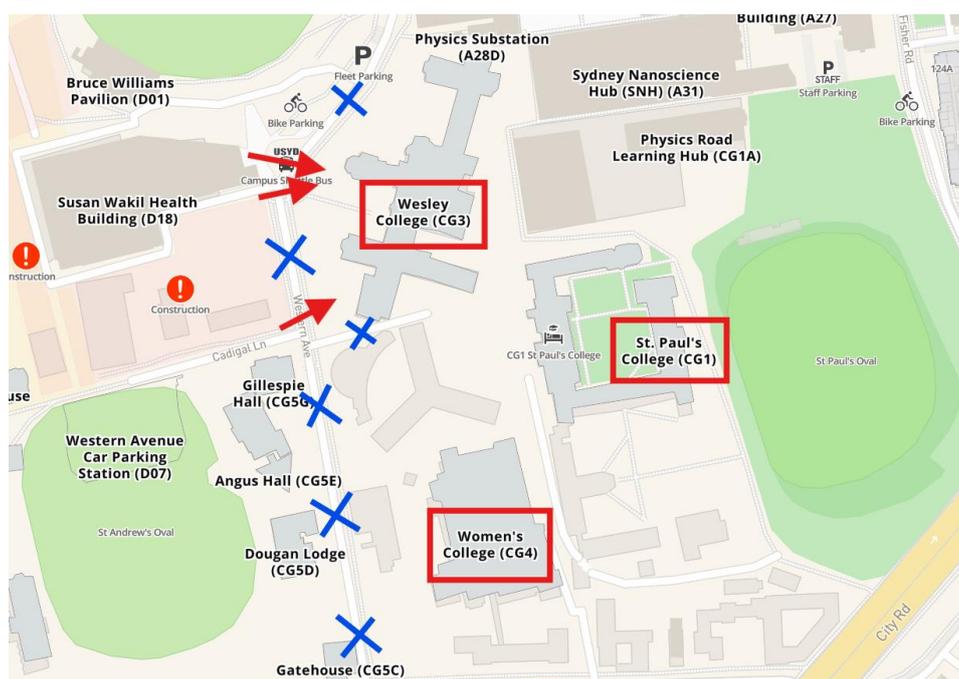
2.4 Recommendations for the Emergency Response Strategy

Two actions are recommended for the sitewide emergency response strategy. These are:

1. Evacuate everyone from the SBA Site and allow them to return to their home, should there be sufficient time to achieve this. This is the main response to minimise risk to life due to flooding.
2. Evacuate everyone from the SBA Site to the designated evacuation zone by foot. This is the secondary response to enact when emergency response (1) is unachievable.
 - a. The recommended evacuation zone is Wesley College, to the east of the site. However, any of the buildings east of Western Ave and west of St Pauls Oval are also suitable refuge locations as indicated on Image 3.
 - b. This will require evacuees leaving behind possessions and not moving or accessing cars beforehand.
 - c. The two evacuation paths which avoid hazardous floodwater in Western Ave even during the peak of the extreme events would be to cross Western Ave at either the south-eastern or north-eastern corners of the SBA Site. Evacuating to the Susan Wakil Health Building, then crossing Western Ave at the north-eastern corner of the site is also possible. These are indicated with red arrows in Image 3. Avoid walking within the roadway as much as possible as indicated by blue crosses in Image 3.
 - d. If floodwater is present in Western Ave, the designated locations are expected to be low hazard (shallow and low velocity), however moving in groups across Western Ave can help minimise risk and it is recommended to avoid stepping in the gutter where floodwater would be deepest.
 - e. Once evacuated, organise shelter within a pre-determined building.
 - f. Contact the emergency combat authority NSW SES on 132 500 to notify of the evacuation and for further advice.
 - g. Only leave the shelter once the flood event has passed. NSW SES can assist with the judgement of this.

These strategies should be implemented depending on the situations below with a priority for enacting emergency strategy (1).

Image 3: Recommended locations to cross Western Ave (red arrows), locations to avoid (blue crosses) and suitable offsite buildings for refuge (red squares) from the construction site.



If a regional weather warning is received before the working day commences, it is recommended all non-essential work should be cancelled for the site and it communicated to everyone to not attend the SBA Site. The priority is to minimise the number of people located on the site as all attendees are at risk, so non-essential work will include most construction activities. This instruction should extend to site deliveries, as Western Ave and its connections onto Parramatta Rd or Carillon Ave become hazardous to all vehicles in several flood events.

Any people who are required onsite should avoid working in any excavated areas, any areas at ground level to the west of the site where the main flowpath through the site is located (pink arrow in Image 2), any work near the Susan Wakil Health Building subfloor inflow location (red arrow in Image 2), or any area without quick and easy access to the designated evacuation zone.

For those who are necessary to be onsite - any indication of floodwater at the site, especially from any of the flowpaths entering the site (shown in Image 2) or rising floodwater in excavated areas, should be responded to with a full evacuation of the site to the evacuation zone as per evacuation strategy (2) from above.

If a regional weather warning is received during the working day, it is recommended to prepare the site for closure. The specific actions depend on the amount of warning time received.

More than 6 hours warning. Actions should be taken to postpone or cancel any activities that would cause more people to attend the site, such as visitors. The warnings need to be continuously monitored as they can change suddenly, and the severe weather can occur before the predicted time. Work up to the evacuation time should be minimised in any excavated areas, any areas at ground level to the west of the site where the main flowpath through the site is located (pink arrow in Image 2), any work near the Susan Wakil Health Building subfloor inflow location (red arrow in Image 2), or any area without quick and easy access to the designated evacuation zone. It should be planned to cancel all non-essential work with sufficient time to allow enact evacuation strategy (1) from above. That is to have attendees

onsite to travel home and be home a few hours before the Severe Weather Warning is predicted to occur.

Less than 6 hours warning. This situation should be avoided as much as reasonably possible as it puts evacuees at risk of needing to drive through or traverse floodwater. Should it occur, actions should be taken to immediately start the evacuation of the site as per strategy (1). The priority should be to allow attendees onsite to travel home and be home a few hours before the Severe Weather Warning is predicted to start. For those that this cannot be achieved within the timeframe, staying at a safe place, such as a colleague or friends place, should be organised for the event or until it is safe to return home. Should there be insufficient time for people onsite to get home, or to a safe place, then the Senior Site Manager should proceed with evacuation strategy (2) from above, whilst contacting the emergency combat authorities NSW SES on 132 500 for further advice. Under no circumstances should floodwater be driven through.

Any indication of floodwater at the site, especially entering the site from the south, or rising water levels in excavated areas, should be responded to with a full evacuation of the site to the evacuation zone as per evacuation strategy (2) from above.

In an emergency where people are trapped by floodwater onsite.

The priority is to not have anyone onsite during a flood, and to shelter onsite is not an appropriate strategy for managing flood risk for the site. However, this has been included as a means to minimise risk to life should the worse-case scenario occur and it could also assist people who are injured who might not be able to evacuate the site.

The recommendation under this circumstance is to try to find shelter on higher ground and avoid excavated areas, any areas at ground level to the west of the site where the main flowpath through the site is located (pink arrow in Image 2), and avoid the Susan Wakil Health Building subfloor inflow location (red arrow in Image 2). The safest locations on, or immediately accessible from, the site are:

- Sheltering on Level 2 of the Susan Wakil Health Building, or
- Sheltering in the underground carpark located off of Cadigal Lane under St Andrews Oval

Both locations are a flood free refuge from floodwater even during the most extreme events.

Gloucester House to the west of the site is a safe refuge from floodwater with access to the RPAH via the skybridge, however floodwater is hazardous to the west of the site (pink arrow in Image 2) and is not recommended unless access can be found without traversing floodwater. As noted in Section 2.1 the existing buildings and temporary structures onsite are risky areas to shelter. The SBA building under construction is risky for shelter before it has been assessed by a suitably qualified engineer to be able to withstand the forces during a flood. If this has been received, sheltering on Level 2 of the SBA building will provide a flood free refuge.

Emergency authorities should be contacted on 000 once some shelter has been found, especially if anyone is injured. Under no circumstances should vehicles be used to exit the site during a flood as the floodwater is hazardous for vehicles in Cadigal Lane and Western Ave.

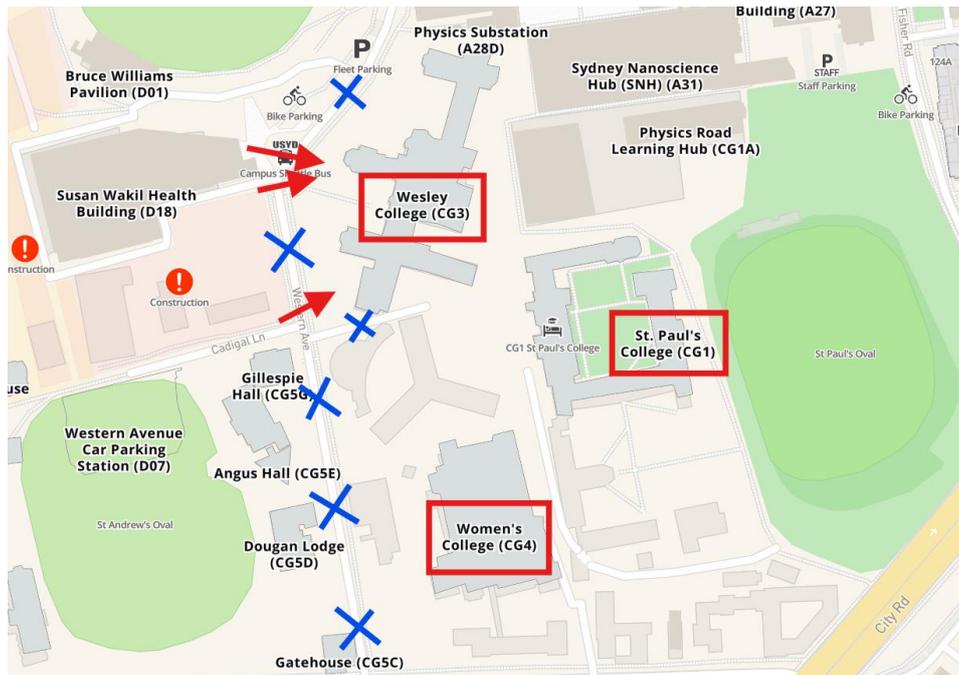
Construction Flood Emergency Management Sub-Plan

Construction site for the Sydney Biomedical Accelerator
University of Sydney, Camperdown Campus, Health Precinct

- During most flooding events the SBA Site will be subject to overland flooding rather than rising floodwaters. There is no creek located at or near the site.
- During the Probable Maximum Flood (PMF), the largest flood that can conceivably occur at this location, the SBA Site could be subject to floodwater up to 23.7 mAHD.
- From the onset of flood inducing rainfall in the local area, flooding at the site can occur within 30 minutes.
- No formal warning system covers the site. The Bureau of Meteorology provides forecasts of Severe Weather Warnings and Severe Thunderstorm Warnings which are general indicators that flood inducing rainfall could impact a large area.

Preparedness

- Clearly decide on the emergency procedures and staff responsibilities before an emergency. This should include communication channels before, during, and after an evacuation.
- Update the emergency procedures regularly to adapt to changing site conditions over the construction phases.
- All attendees to the site, including visitors, should be made aware of the following:
 - The SBA Site is subject to high hazard flooding, which can occur with no warning.
 - Floodwater will likely enter the site from the southern site, in particular from Western Ave, St Andrews Oval or near Gloucester House.
 - Floodwater observed entering the site, or floodwater building up in excavated areas should immediately prompt a site evacuation to the designated evacuation zone.
 - The emergency procedures for the site.
- The evacuation zone is recommended to be east of the site, by crossing Western Ave at the north-east or north-west corners of the site (red arrows in Image overpage below). This CFEMSP recommends Wesley College as the evacuation zone due to its immediate proximity however, any of the buildings east of Western Ave and west of St Pauls Oval are also suitable locations.
- The Senior Site Manager should sign up for weather warnings from the Bureau of Meteorology and prioritise actions and responses to Severe Weather Warnings that:
 - minimise the number of personnel onsite.
 - minimise the number of personnel in high floodrisk zones of the site.



Response

Two actions are recommended for the general emergency response strategy. These are:

1. Evacuate everyone from the SBA Site to their home, should there be sufficient time to achieve this. This is the main response to minimise risk to life due to flooding.
2. Evacuate everyone from the SBA Site to the designated evacuation zone by foot. This is the secondary response to enact when emergency response (1) is unachievable.
 - a. The recommended evacuation zone is Wesley College, to the east of the site. However, any of the buildings east of Western Ave and west of St Pauls Oval are also suitable refuge locations.
 - b. This will require evacuees leaving behind possessions and not moving or accessing cars beforehand.
 - c. The two evacuation paths which avoid hazardous floodwater in Western Ave even during the peak of the extreme events would be to cross Western Ave at either the south-eastern or north-eastern corners of the SBA Site. Evacuating to the Susan Wakil Health Building, then crossing Western Ave at the north-eastern corner of the site is also possible. Avoid walking within the roadway as much as possible.
 - d. If floodwater is present in Western Ave, the designated crossing locations are expected to be low hazard (shallow and low velocity), however moving in groups across Western Ave can help minimise risk, and avoid stepping in the gutter.
 - e. Once evacuated, organise shelter within a pre-determined building.
 - f. Contact the NSW SES on 132 500 to notify of the evacuation and for further advice.
 - g. Only leave the shelter once the flood event has passed. Emergency combat authorities can assist with the judgement of this.

Specific triggers for each emergency response strategy are given below.

If a Severe Weather Warning or Severe Thunderstorm Warning is received before the working day commences

- Cancel all non-essential work on the SBA Site for the day, including all construction work, deliveries and visitors.
- Ensure the information is communicated through the pre-arranged methods and that the communication has been received by all.

Any people required onsite should:

- Avoid working in any excavated areas, any areas at ground level to the west of the site where the main flowpath through the site is located, any work near the Susan Wakil Health Building subfloor inflow location, or any area without quick and easy access to the designated evacuation zone.
- Monitor for any indication of floodwater at the site. If floodwater is observed the site should respond to with a full evacuation of the site to the evacuation zone.

If a Severe Weather Warning or Severe Thunderstorm Warning is received during the working day with more than 6 hours warning

- Postpone or cancel any activities that would cause more people to attend the site.
- Continue to monitor the Weather Warnings for updates as they can change suddenly and can occur earlier than predicted.
- Prepare to cancel all non-essential work with sufficient time to allow people onsite to return home a few hours before the Weather Warning.
- Be on alert to evacuate the site to the evacuation zone should floodwater be observed on site.

If a Severe Weather Warning or Severe Thunderstorm Warning is received during the working day with less than 6 hours warning

- Postpone or cancel any activities that would cause more people to attend the site.
- Continue to monitor the Weather Warnings for updates as they can change suddenly and can occur earlier than predicted.
- Cancel all other non-essential work, including all construction work.
- Assess whether there is sufficient time to allow people onsite to travel home and be home a few hours before the Weather Warning.
 - For those who can return home safely, immediately evacuate the site and return home.
 - For those who cannot return home within the timeframe, try to organise staying at a friends or colleagues place who is closer and can be reached within the safe timeframe.
 - For those with insufficient time to achieve either of the above, or when there is a Weather Warning of less than 2 hours warning, then immediately evacuate the site personnel to the evacuation zone. Notify the NSW SES on 132 500 that you have evacuated the site in response to a Weather Warning and follow their advice.

Any indication of floodwater at the site

- Floodwater on the site should immediately trigger an evacuation of the site to the evacuation zone.

In an emergency where people are trapped by floodwater onsite.

- Move towards higher ground and avoid the high hazard areas which are: excavated areas, any areas at ground level to the west of the site where the main flowpath through the site is located, or the Susan Wakil Health Building subfloor inflow location.
- Try and find shelter in the Susan Wakil Health Building on level 2 or above, or within the underground carpark off of Cadigal Lane under St Andrews Oval. Both locations are free from flooding.
- Gloucester House is an appropriate refuge if it can be reached without traversing floodwater. Assume any floodwater in the west of the SBA Site is hazardous and not to be traversed.
- Existing buildings and temporary buildings should be avoided as they are at high risk of flooding.
- Emergency authorities should be contacted on 000 once some shelter has been found.

Recovery

Only return to site once the Severe Weather Warning or Severe Thunderstorm Warning has passed. Preferably contact and confirm with the NSW SES that flood conditions have passed. Upon returning, if the site was subject to floodwater:

- Do not traverse flooded areas on foot or in a vehicle.
- Observe for any site hazards that may produce ongoing danger. This could include fallen power lines.
- Do not interact with power lines, generators, or electronics that were flooded without having suitably qualified person assess for safety first.

For those who evacuated to the evacuation zone and sheltered in a building on campus:

- Do not traverse flooded areas on foot or in a vehicle.
- Only end the sheltering upon confirmation with the NSW SES.
- Prioritise organising safe transport for evacuees to the hospital if needed.

Important phone numbers

NSW State Emergency Service:	Emergency – 132 500	General enquiries – 4251 6111
Police, Fire, Ambulance	Emergency – 000	
Bureau of Meteorology	Website: http://www.bom.gov.au/nsw/warnings/ , p: 1300 659 218	

