SEEC

Strategic Environmental & Engineering Consulting

Flood Risk Management and Emergency Response Plan

Prepared for:

Visy
112 Euston Road, Alexandria

17 April 2020

Strategic Environmental and Engineering Consulting

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Document Certification

This report has been developed based on agreed requirements as understood by SEEC at the time of investigation. It applies only to a specific task on the nominated lands. Other interpretations should not be made, including changes in scale or application to other projects.

Any recommendations contained in this report are based on an honest appraisal of the opportunities and constraints that existed at the site at the time of investigation, subject to the limited scope and resources available. Within the confines of the above statements and to the best of my knowledge, this report does not contain any incomplete or misleading information.

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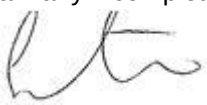

Jason Armstrong AMIEAust
Senior Civil Designer
SEEC

17 April 2020

Copyright

Version	Date	Author	Reviewer	Notes	Other
Draft 0A	13/03/20	JA	BJ	Issued as a working draft for review	
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1 INTRODUCTION

SEEC have been commissioned by VISY to provide this Flood Evacuation and Emergency Plan for their proposed Recycling Facility located at 112 Euston Road, Alexandria for both the construction and operational phases of the development. This report is a requirement of the development consent and forms part of the flood risk management strategy for the site.

The proposed facility is to be developed over two stages within the sites existing 7,700m^2 warehouse and separate office block. Stage 1 will comprise the relocation of an existing Visy recyclable Material Transfer Facility (TRF) and cardboard and paper baling (Baling) operation from 6-10 Burrows Road South, St Peters to the site. Stage 2 of the proposed facility will comprise a Materials Recovery Facility (MRF) anticipated to occur within a few years as dictated by market and business needs.

The Soil, Water and Flooding Assessment prepared as part of the Environmental Impact Statement for the proposed development identified that the site is affected by flooding from the adjacent stormwater drainage canal with the majority of the site located within a Low Risk flood precinct. Sections of the site along and within the stormwater drainage canal are categorized as Medium Risk and High Risk flood precincts.

This plan has been written in accordance with Development Conditions B39 to B42 (below) and the guidelines set out in the City of Sydney Councils *'Sydney Development Control Plan (2012)'*, *Interim Floodplain Management Policy (2014)'* and generally in accordance with the
NSW Governments *'Floodplain Management Manual: The Management of Flood Liable Land' (January 2001)*.

"Flood Management"

B39. Prior to the commencement of construction, the Applicant must ensure the Flood Emergency Response Plan submitted as part of the EIS forms part of the CEMP required by Condition C2.

B40. Prior to the commencement of operation, the Applicant must ensure the Flood Emergency Response Plan submitted as part of the EIS forms part of the OEMP required by Condition C5.

B41. The Applicant must implement the most recent version of the Flood Emergency Response Plan for the duration of the development.

B42. Any risk and hazard areas or hazardous materials stored on site must be raised above the 1% AEP flood level plus 0.5m freeboard or have a bunding system that is no lower than the 1% AEP flood level"

2 Project Features and Site Description

2.1 Development

The Stage 1 construction includes all works for the proposed facility except the installation of the MRF and new substation kiosk on Euston Road. Works that are relevant to this assessment will include:

Stage 1

- Replacement of three existing roller doors that will no longer be used for access with fixed weather proof acoustic shielding louvres (two facing Euston Road and one facing Burrows Road);
- Remove one existing driveway that will no longer be used for access on Burrows Road and landscape and reinstate kerb and gutter;
- Install new inbound driveway from Burrows Road;
- Install rapid doors to truck entry and exit doors on Burrows Road;
- Install inbound and outbound weighbridges in pits with excavation to about 1 m deep and including sump pits; Install upgraded fire services, including ring main and hydrant system, fire hose reels, fire services sprinkler system including internal sprinkler tank, sprinklers, fire water containment; and
- Flood protection measures including all electrical equipment which must remain waterproof is located above the 1%Annual Exceedance Probability (AEP) level and all materials below the 1%AEP are flood compatible;
- Install pallet racking above 1% AEP along eastern wall for hazardous waste storage; and
- Seal all stormwater pits located within existing large building.

Stage 2

- Installation of a mezzanine level including support foundations and footings; and
- Installation of L Type substation on Euston Road.

Figure 1 - Site location and layout

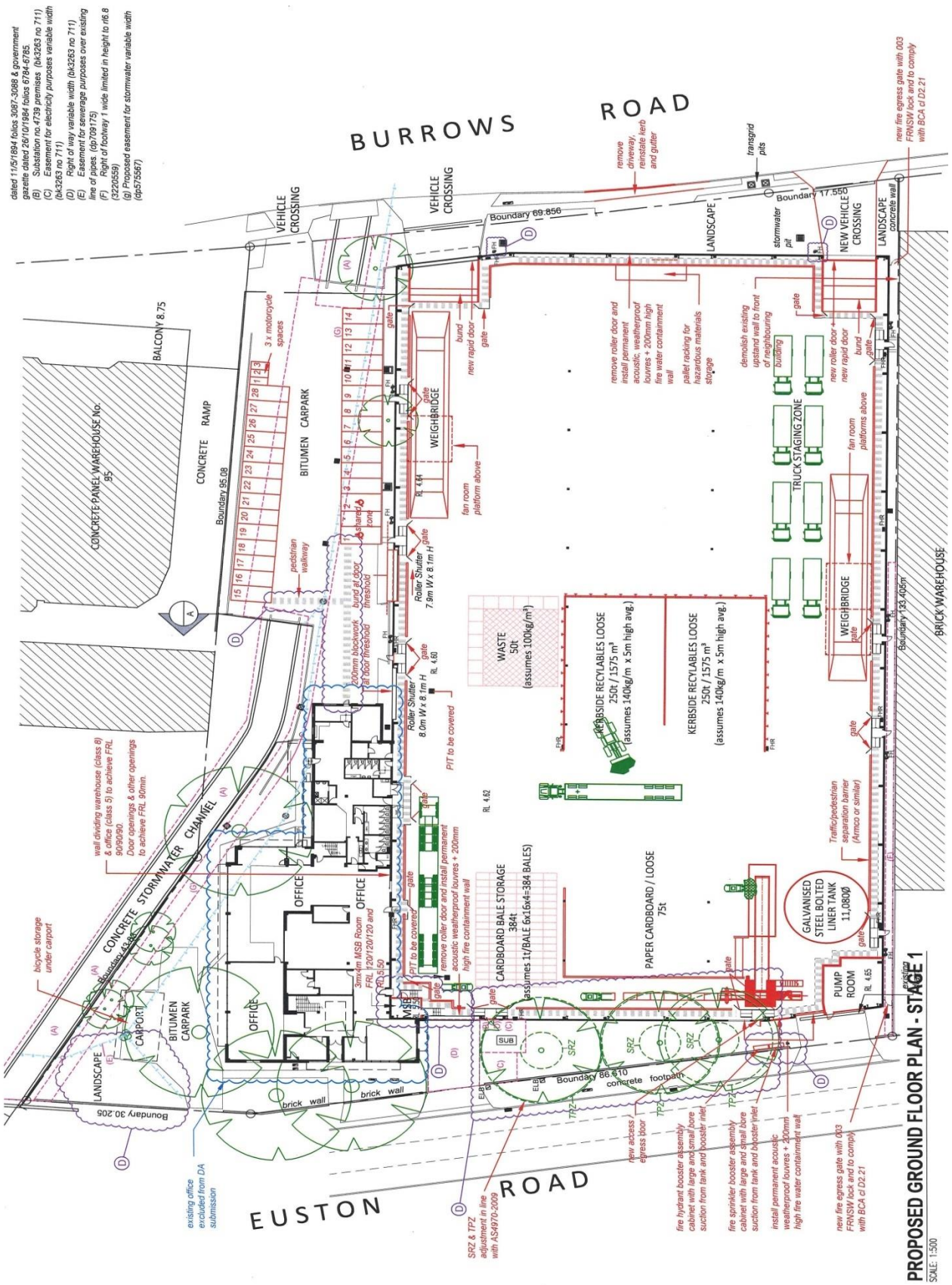

Figure 2 - Stage 1 Development Plan

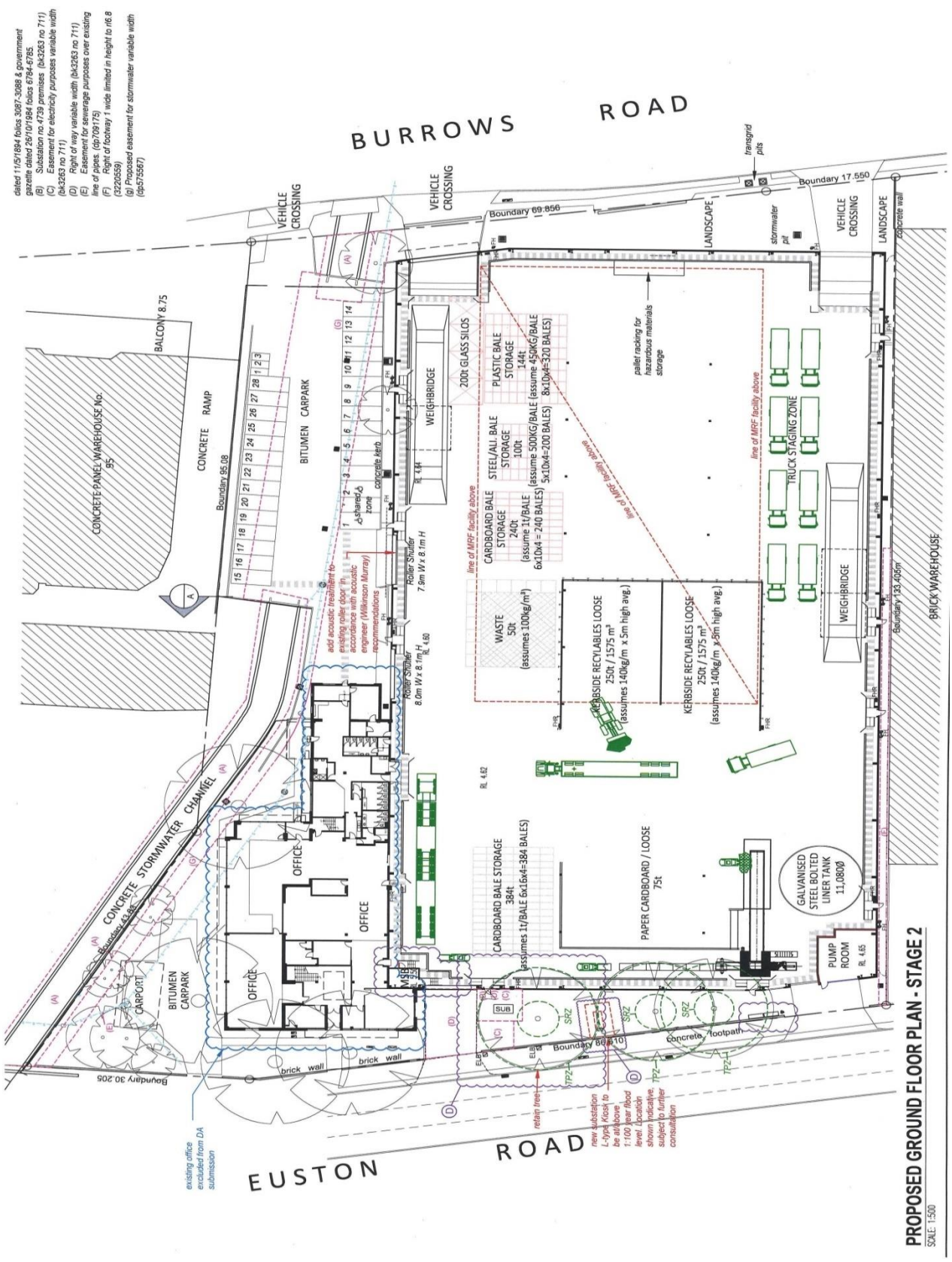

Figure 3 - Stage 2 Development Plan

2.2 Site Visit

A site visit was undertaken by Jason Armstrong of SEEC on the 9th of September 2019. At the time of inspection the site was not in operation and with no visible signs of erosion or flooding. Euston Road was currently undergoing construction works for an upgrade as part of the WestConnex transport development plan.

The majority of the site is covered by the building and carpark (approx. 85% impervious). The roof and carpark stormwater drainage system were in good working condition at the time of inspection. The stormwater drainage canal that is located along the northern boundary and culverts under the carpark were clear of debris with some minor flow in the canal at the time of inspection.

3 EXISTING ENVIRONMENT

3.1 Topography, Catchment Area and Natural Drainage

The site is located within the Alexandra Canal catchment (**Figure 4**). This catchment was included as part of an overall Flood Study, Flood Risk Management Study and subsequent Flood Risk Management Plan developed for the Alexandra Canal Floodplain by the City of Sydney discussed in further detail in **Section 3.2** below.

The total catchment area to the Alexandra Canal is approximately 1,141ha and includes the suburbs of Alexandria, Rosebery, Erskineville, Beaconsfield, Zetland, Waterloo, Redfern, Newtown, Eveleigh, Surry Hills and Moore Park. It is generally bounded by the Eastern Distributor and Moore Park in the east, Gardeners Road in the south, Sydney Park and Newton in the west and Albion Street in the north-east. The majority of the trunk drainage system is owned by Sydney Water, while the feeding drainage systems are primarily owned by the City of Sydney Council.

Sydney Park is located to the west of the site on the opposite side of Euston Road. An existing watercourse flows through the north eastern corner of Sydney Park and then into box culverts under Euston Road. These box culverts discharge stormwater from Sydney Park into the stormwater canal located within the site from the west. The existing concrete stormwater canal is owned by Sydney Water and runs adjacent to the northern boundary before transitioning to culverts under the bitumen carpark and continuing under Burrows Road. The concrete channel is approximately 4m wide and 2.2m deep. The existing box culvert under the carpark is 4m wide x 2.4m high and is located within a drainage easement. The box culverts continue from the site under Burrows Road until they connect in with the Alexandra Canal approximately 65m past the site to the east. Alexandra Canal flows south-west into the Cooks River a further 3.9km downstream and then ultimately into Botany Bay, approximately 2.1km beyond this point.

As previously discussed, Euston Road is currently under construction works as part of an upgrade for the WestConnex Transport Plan. It is understood that the stormwater drainage within Euston Road had also been upgraded which will have a beneficial impact with regard to reducing stormwater inundation of the subject site. It is also understood that a future detention basin is planned in Sydney Park and amplification of trunk drainage upstream in Macdonald and Coulson Streets to further help mitigate localised flooding issues around Euston Road. This is described in the Flood Risk Management Plan prepared by Cardno (2014).

The site itself falls from the north-west from an elevation of 4.92m AHD towards the south east at an elevation of 3.39m AHD approximately. 86% of the site is roof area or concrete hardstand/carpark. The remaining 14% is landscaping in the northern corner and two street frontage grassed setbacks. There is no exposed soil on site.

The site has a number of field inlets/grates that collect stormwater and direct flows to the adjacent culvert and open canal. Roofwater is collected via roof gutters, downpipes and a piped drainage system and discharges directly into the culvert or open canal.

3.2 Flooding

A detailed flood assessment of the Alexandra Canal catchment has been undertaken on behalf of the City of Sydney by BMT WBM. The study estimated the extent, depth and velocity of flood waters for various design events up to the Probable Maximum Flood (PMF) (the largest flood that could conceivably occur). The 1% Annual Exceedance Probability (AEP) event is used for purposes such as the setting of design standards for new dwellings, habitable floor levels and business or commercial floor levels while the PMF is used for emergency management purposes. The study also reviewed the potential Flood hazard which is a function of flood depth and velocity and it is used to aid in evaluating areas where floodwaters pose a greater risk to life and property.

The estimated areas of inundation for the 1% AEP 100 year Average Recurrence Interval (ARI) and the 50% AEP (2 year ARI) are provided in **Figure 5** and **Figure 6** respectively.

The BMT WBM flood assessment concluded that the adjacent channel had a high-medium provisional hydraulic flood hazard however the flow of water around the building has been categorized as a low flood hazard for the 1% AEP flood. This is due to the relatively shallow flood depths of 0.3-0.4m and the low flood velocities of around 0.2 – 1.0m/s as shown in **Figure 7** and **Figure 8** respectively.

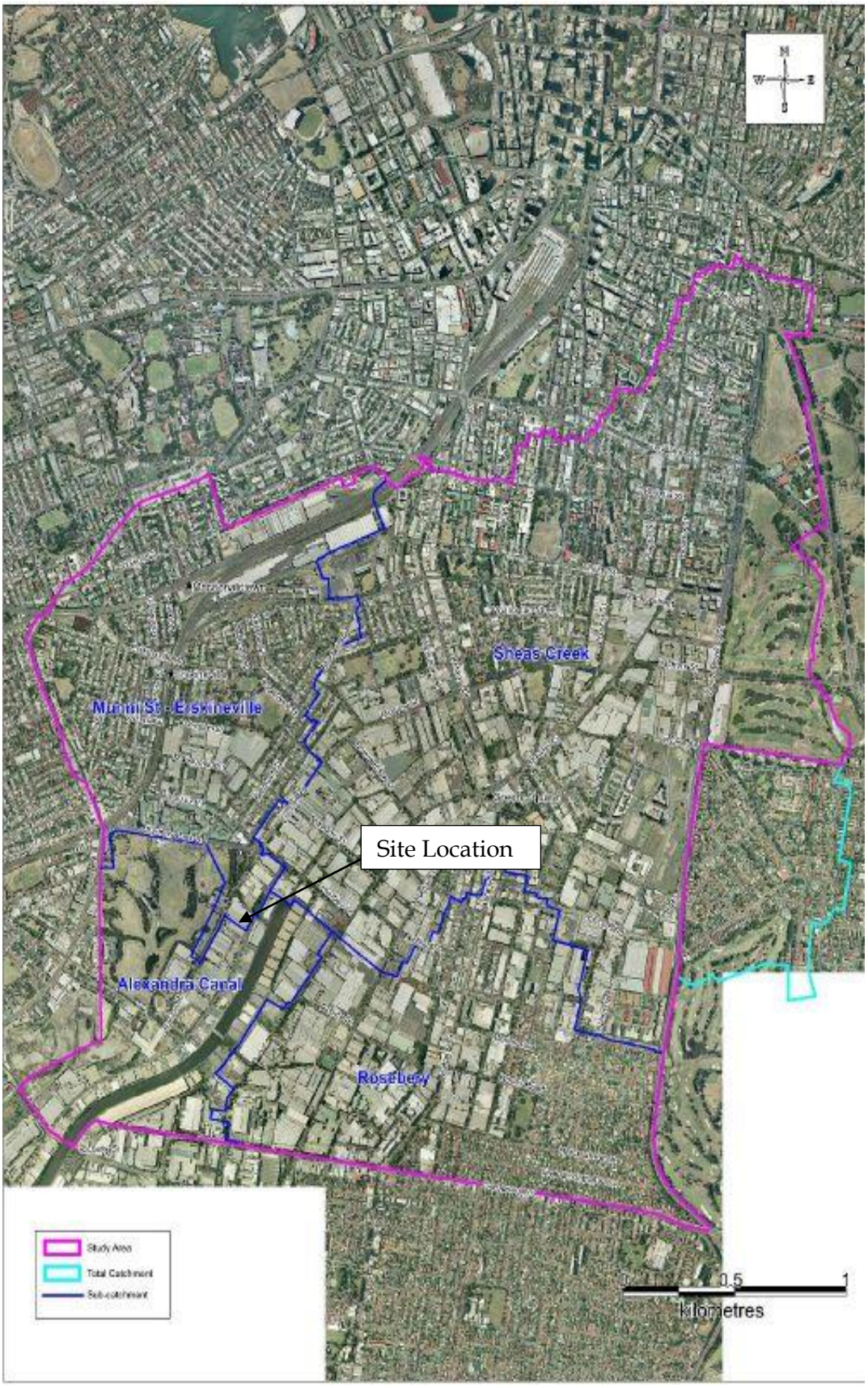

Figure 4 – Flood Study Area and Catchment Plan

Figure 5 – Flood Extents – 1% AEP (100 year ARI)

Figure 6 – Flood Extents – 50% AEP (2 year ARI)

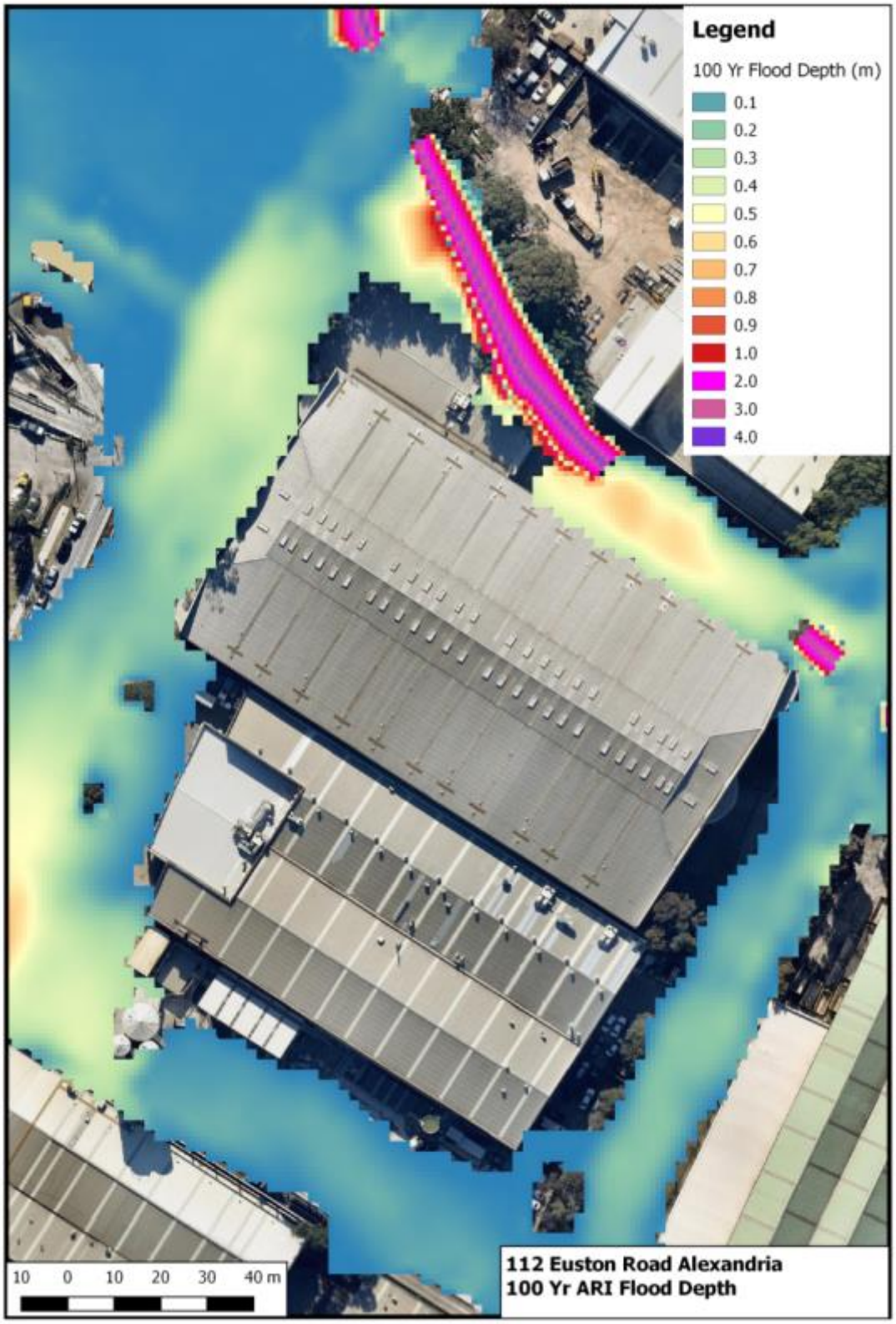

Figure 7 – Flood Depth – 1% AEP (100yr ARI)

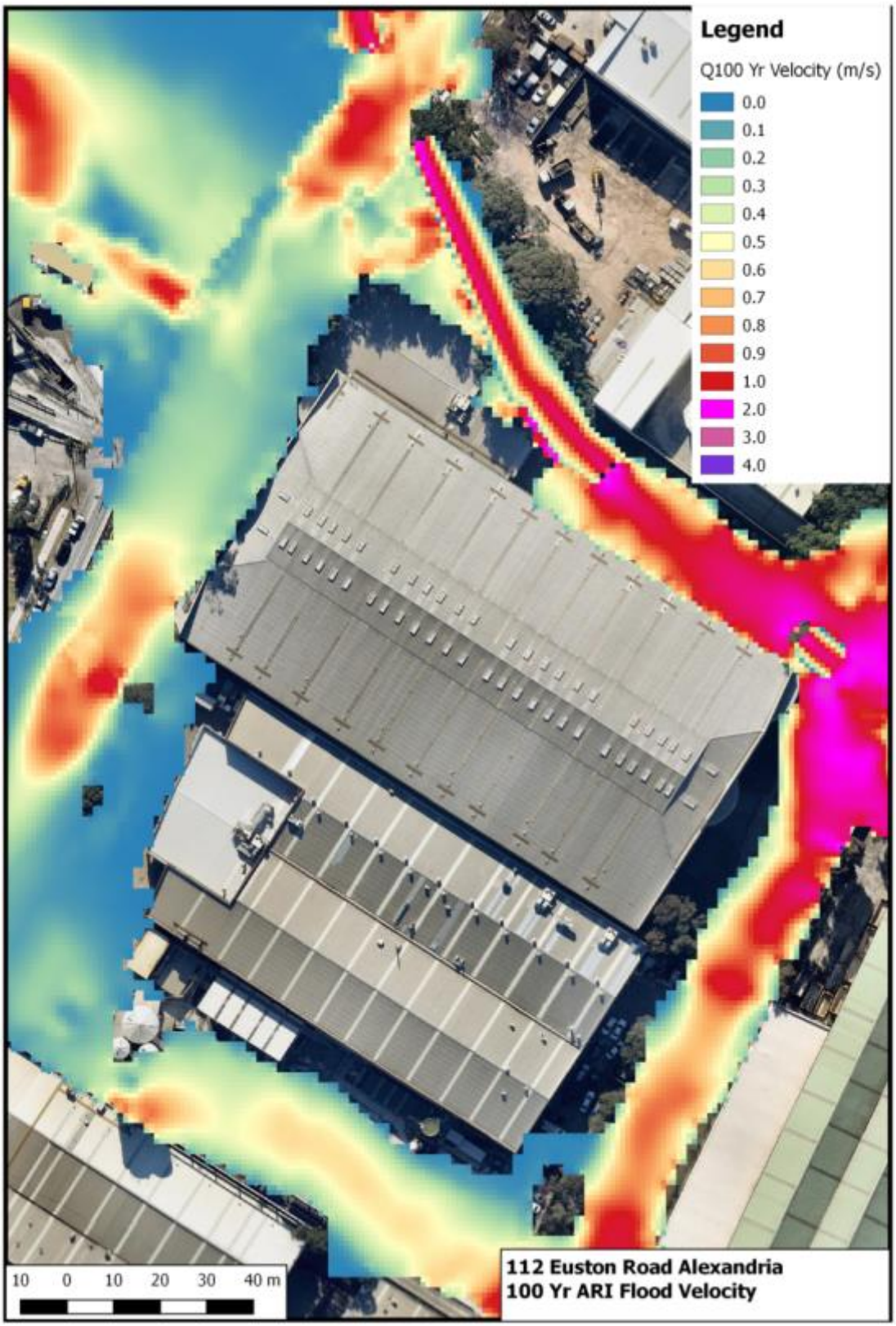

Figure 8 – Flood Velocities – 1% AEP (100 year ARI)

The flood modelling highlights that the 1% AEP flood is expected to inundate the existing office to 0.09 m and the warehouse from Euston Road to 0.34 m. The office is protected in the 50% AEP however the warehouse is expected to be inundated from Euston Road to 0.25 m. Inundation from Burrows Road is not expected. A summary of the results is provided in **Table 1**.

Table 1 - Summary of flood modelling results

Location	Existing Floor Level (m AHD)	50% AEP Flood Level (m AHD)	50% AEP Depth of Inundation (m)	1% AEP Flood Level (m AHD)	1% AEP Depth of Inundation (m)
Office - Euston Road	4.91	4.9	N/A	5.0	0.09
Warehouse - Euston Road	4.66	4.9	0.24	5.0	0.34
Warehouse - Burrows Road	4.61	4.2	N/A	4.3	N/A

(Source: City of Sydney)

3.3 Stormwater Network

The site is serviced by an existing stormwater drainage system consisting of the following:

- Roof gutters and downpipes collecting roof water and connecting directly into a below ground stormwater drainage system
- The stormwater drainage system consists of a series of surface inlets at select locations around the existing building
- The site stormwater drainage system discharges directly into the existing drainage canal located along the northern boundary of the site, which is part of the trunk drainage system owned by Sydney Water
- There are some drainage pits located within the warehouse area which are presumed to discharge to the stormwater drainage system but this has not been confirmed. These pits will be sealed off to ensure no connection between the internal processing area and the stormwater system.

There are no rainwater collection tanks or detention basins located within the development area. This will remain the case as it is not proposed to undertake any external modifications to the existing building that will increase roof area or increase the total impervious area of the site. The development of a new inbound driveway on Burrows Road is expected to be offset by the removal of an existing driveway and concrete apron on Burrows Road which will be landscaped.

Refer to **Figure 9** for a plan showing the existing stormwater drainage infrastructure.

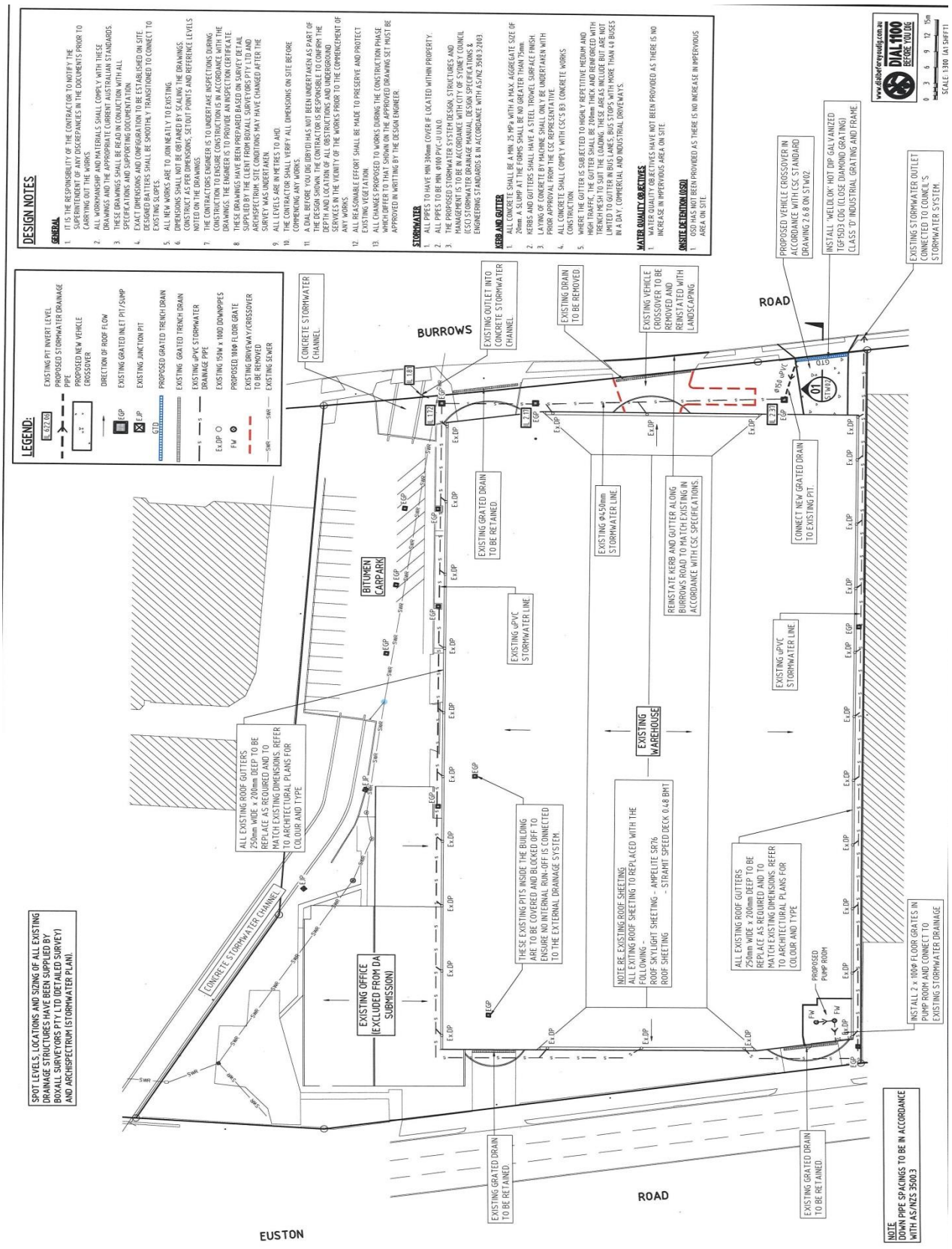

Figure 9 – Site Stormwater Drainage Plan

4 FLOOD RISK ASSESSMENT

4.1 Existing Flood Risk Assessment

The development has been assessed in accordance with City of Sydney Councils '*Interim Floodplain Management Policy'*. The Floodplain Management Policy provides direction with respect to how floodplains are managed within the Local Government Area. The Policy provides controls to facilitate a consistent, technically sound and best practice approach for the management of flood risk within the City's LGA. In forthcoming years the City will complete Floodplain Risk Management Plans and then integrate outcomes from these plans into planning controls. Once this process is completed this interim policy will be withdrawn.

As discussed in **Section 3.2**, BMT WBM undertook a flood assessment that predicted, flood levels, velocities and hazard categories (BMT 2016). The site is located mainly within a Low Risk Flood Precinct, with the areas either side of the drainage canal being within Medium Hazard. The Alexandria canal is a High Hazard Flood Precinct. The flood risk map is shown in **Figure 10**.

It is also noted that the stormwater drainage infrastructure within Euston Road had also been upgraded as part of the Westconnex Transport Upgrade works that will have a beneficial impact with regard to reducing stormwater inundation of the subject site. It is also understood that a future detention basin is planned in Sydney Park and amplification of trunk drainage upstream in Macdonald and Coulson Streets to further help mitigate localised flooding issues around Euston Road. This is described in the Flood Risk Management Plan prepared by Cardno (2014).

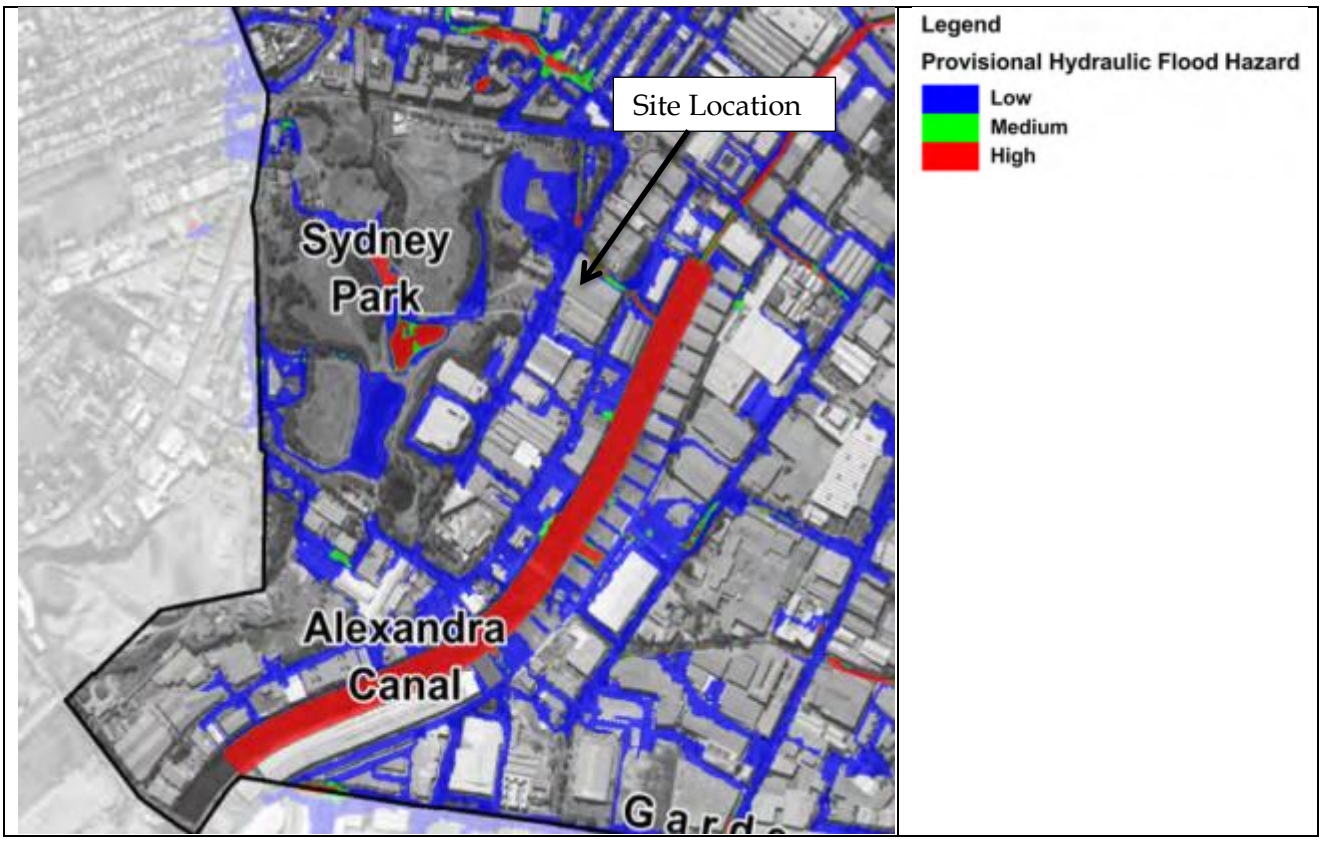

Figure 10 – Provisional Hydraulic Hazard 1% AEP (100 yr ARI) (BMT 2016)

4.2 Building Components

The existing building is constructed in accordance with the following –

- The Main Warehouse – Steel portal frame construction with horizontal pebblecrete reinforced concrete infill panels for the external walls and reinforced concrete slab floor. The roof material is colorbond steel
- The Office Building – Double brick walls on reinforced concrete slab with colorbond steel roof
- Fencing – Chain wire fencing is provided around the existing drainage canal so as not to impede flood flow. Brick and steel fencing is provided along the Euston Road frontage
- Electrical Equipment – raised above the flood level where required.

The current layout is expected to allow floodwater from the 1% AEP to enter the building from Euston Road, flow through the building and discharge to Burrows Road. Any building materials up to 0.3-0.4m high will be inundated. If the materials are not flood compatible, they will be damaged.

4.3 Car Parking and Driveway Access

The existing northern carparking area is located within the flood flow path and its levels set below the existing 1% and 50% AEP flood levels. Parked vehicles could potentially

block the overland flow path if they are not removed early as part of the evacuation procedure from the site prior to a flood event. Parked vehicles, bicycles or outdoor furniture could also be washed downstream potentially blocking drainage structures exacerbating flood levels upstream. The existing car park from Euston Road will not be used for vehicles as there is no access allowed to the site from Euston Road.

4.4 Operations Equipment and Waste

As previously outlined in **Section 5.3** the existing building will be subject to flooding due to the floor levels being below the 1% and 50% AEP flood levels. This has the potential to damage any stationary or mobile machinery and electrical equipment. Floodwater flow through the building also has the potential to wash any loose waste materials from within the building outside the building and downstream, depending on their size, weight and buoyancy.

5 FLOOD MANAGEMENT AND MITIGATION MEASURES

The following actions were recommended following the flooding impact assessment and will be implemented for the facility to limit impacts from large flood events:

- All electrical equipment/machinery which cannot withstand water inundation within the warehouse or externally are to be raised above the 1% AEP flood level.
- The materials of any structures below the 1% AEP flood line are to be flood compatible (i.e – Masonry, steel etc).
- Any risk and hazard areas or hazardous materials stored on site must be raised above the 1% AEP flood level plus 0.5m freeboard, bunding is not preferred.
- Ensure that any stockpiled materials do not have an increased risk of being washed off-site.
- Prepare a Flood Evacuation and Emergency Response Plan (FEERP) for the construction and operation phases of the development to ensure all contractors and employees are aware and inducted into the plan. The general requirements for both the Construction and Operation Phase FEERP's are outlined in **Appendix A**.

6 FLOOD EVACUATION & EMERGENCY RESPONSE PLANNING

This section provides generic planning information for floods and storms. A site specific '*Flood Evacuation and Emergency Response Plan'* is provided in **Appendix A**. Note that this plan was prepared prior to any proposed alterations or operation of the site and as such should be reviewed periodically and updated as required during the course of construction and operation of the facility so that it remains relevant for any changed site conditions.

The NSW SES is responsible for the emergency management of floods and storms in NSW.

This Flood Evacuation and Emergency Plan are specifically targeted to these events but the advice can be useful for other hazards.

Being prepared now can significantly reduce:

- Loss of life.
- Loss of property.
- Loss of possessions.
- Being prepared now can also help you respond better and recover faster when these events happen.

6.1 Possible Hazards

- Storms.
- Flash Floods.
- Floods.

These hazards can have devastating impact on people working at the facility and the facility itself. Even if you are not directly impacted by floods or storms you may still be affected by these events, as roads may be damaged or flooded, access to areas may be restricted, amenities may be lost, you may become isolated, areas you are planning to travel to may be impacted and family or friends may be affected.

6.2 We Are Responsible for the Following People

The following people could be attending the facility at any one time:

- People you have employed or construction workers (during the construction phase) that could include;
- People with low or no vision.
- People with low or no hearing.
- People with restricted mobility.
- People having difficulty in learning or understanding.
- People taking medication.
- People from culturally and linguistically diverse (CALD) backgrounds.

6.3 PREPARE NOW

Here are nine things you can do now to prepare for floods and storms, as well as for other disasters:

6.3.1 Know Your Risk

- Know if you could be at risk from floods, storms as well as other disasters.
- Know your flood risk.
- Find out about your local flood history and visit the NSW SES FloodSafe website www.floodsafe.com.au and read the FloodSafe Guides relevant to your area.
- Talk with neighbouring businesses and people who have lived in the area for a while about the local flood history.
- Know the heights to which your area is affected by floods. Refer to **Section 3.2** for local flood heights as provided by CITY OF SYDNEY COUNCIL.
- Be aware of the natural signs of flooding such as heavy rainfall and rushing or pooling water.

6.3.2 Know Where to Go

Familiarise yourself with the evacuation plan attached in **Appendix A**.

6.3.3 Know Your Plan

- Use this Flood Evacuation & Emergency Plan to document what you will do before, during and after flood or storm.
- Practice and update your plan regularly.

6.3.4 Get your kit together

- Put together an emergency kit.

6.3.5 Check your insurance

- Check insurance policies and ensure they are current..

6.3.6 Prepare now to act early

- Know the triggers for what you need to do and when you need to do it..
- Practice this Emergency Plan regularly and keep it up-to-date.
- Maintain a sufficient level of supplies in case you become isolated.
- Know what to do if you have no amenities.

6.3.7 Listen to local radio

- Know the local radio station you need to listen to for information, updates and advice.

- Know the ABC radio frequency in your area (702 AM ABC SYDNEY).
- Know your other local radio stations:

2CH 1170 AM
2DAY FM 104.1 FM
2GB 873 AM
2ME 1638 AM
2SM/GORILLA 1269 AM
2UE 954 AM
702 ABC SYDNEY 702 AM
C91.3 FM 91.3 FM
MIX 106.5 106.5 FM
NOVA 96.9 FM
RADIO 2MORO 1620 AM
RADIO 2RDJ 88.1 FM
SBS RADIO 97.7 FM
SYDNEY'S 95.3 95.3 FM
TRIPLE M 104.9 FM
WFSM 101.7 FM

6.3.8 Know who to call

Keep a list of emergency numbers near your phone, on your mobile or in clearly displayed areas:

NSW SES	132 500
Life-threatening emergencies	000 (triple zero)
NSW SES Facebook	www.facebook.com/nswses
NSW SES twitter	https://www.twitter.com/nswses

Name: CITY OF SYDNEY COUNCIL
Phone: Phone: 02 9265 9333
Website: https://www.cityofsydney.nsw.gov.au/

VISY Alexandria Evacuation Coordinator

Name: Jake Luschwitz
Mobile: 0499 986 272

6.3.9 Emergency Kit

An emergency kit can help save precious time in an emergency situation. It provides items you might need if you lose power or need to leave the facility in a hurry.

Your emergency kit contents

- Portable radio with spare batteries.
- Torch with spare batteries.
- First aid kit.
- Candles and waterproof matches.
- Important papers including emergency contact numbers.
- Copy of any Site Emergency Plans.
- Waterproof bag for valuables.

When leaving or evacuating the property, place in your emergency kit

- A good supply of required medications.
- Any special requirements and supplies for the disabled, infirm and/or elderly
- Appropriate clothing and footwear.
- Fresh food and drinking water .

Keep your emergency kit in a waterproof storage container.

There may be other items you need to place into your emergency kit depending on what risks there are in your area.

Check your emergency kit on a regular basis and remember to check use-by dates on batteries and gloves. Re-stock any items if you need to.

6.4 WHAT CAN BE DONE NOW

6.4.1 Storms

- Maintain your property.
- Trim overhanging trees and branches around your property.
- Clear leaves and other debris from gutters and downpipes and stormwater pits etc.
- Check that walls, eaves and roofs are secure and in good repair.

Storms can also cause flash flooding, which can be very dangerous. It is safer not to be in an area if flash flooding is a possibility. Be aware of the natural indicators of flash flooding:

- Very heavy rainfall.
- Rushing or quickly pooling water.

6.4.2 Floods

- Know the triggers for what you need to do and where you need to go when it floods.
- Talk with your local NSW SES members about being FloodSafe.
- Be aware of the natural signs of flooding such as heavy rainfall and rushing and pooling water.
- Talk with employees about organising a safe place to stay outside flood affected areas.
- Know the safest route to travel if you need to evacuate (Refer to Figure's 1, 2 & 3, Appendix A).

6.4.3 People with low or no vision

- Make audio recordings of emergency plans and provide a method of broadcasting it.

6.4.4 People with low or no hearing

Note these numbers in your plan:

- If you are in a life threatening situation call 106 (a Text Emergency Call or TTY).
- The National Relay Service [133 677 (TTY) or 1300 555 727 (speak and listen)] can connect you to other emergency services.

6.4.5 People with restricted or no mobility

- Consider placing mobility devices in handy locations so that access to them is easier in an emergency.
- Plot an accessible evacuation route(s) Figures 1, 2 and 3.

- Think in advance about what might need to be done if access ramps were unusable or lifts in buildings were not operating.

6.4.6 Employees

- Make sure where you work has a business continuity plan which includes what to do in an emergency situation for flood and storm. The Business FloodSafe Toolkit can help businesses plan for floods www.floodsafe.com.au.
- Practice emergency plans at work.
- Make sure work plans fit with personal plans and talk with employees/employers about this.
- Make sure planning includes people leaving early for personal or safety reasons.

6.4.7 People from Culturally and Linguistically Diverse (CALD) Backgrounds

- Check on the NSW SES websites for translated information on: FloodSafe - www.floodsafe.com.au
- StormSafe - www.stormsafe.com.au

6.5 BEFORE ALL EMERGENCIES

Warnings are issued by the Bureau of Meteorology for floods, severe weather, thunderstorms, tropical cyclones and tsunami through their website www.bom.gov.au . If a warning is issued;

- Activate the emergency plan.
- Listen to your local radio station for information, updates and advice.
- Locate and check your emergency kit(s).
- Follow all advice and instructions given to you by emergency services.

It is safer to be away from areas that are going to be impacted by these events.

When flash flooding is likely, the best action to take is to leave low-lying areas (evacuation) well before it happens, but only if it is safe to do so. If you are trapped by rising floodwater, seek refuge in the highest part of a sturdy building. Stay there and call 000 (triple zero).

Contact care support person(s) if you have previously organised to do this and prepare to respond as you have planned.

6.5.1 BEFORE Storms

When a Severe Weather Warning or a Severe Thunderstorm Warning is issued by the Bureau of Meteorology:

- Secure or put away any loose items from around your facility or property as it could become dangerous in storms.
- Stay indoors away from windows.
- Park vehicles under solid shelter away from trees and power lines where possible.
- If driving, pull over to the side of the road away from gutters, drains, trees and power lines.
- Reconsider non-essential travel.

6.5.2 BEFORE Floods

A Flood Watch may be issued by the Bureau of Meteorology when floods have the possibility of happening. A Flood Warning is issued by the Bureau when flooding is likely. Flood Warnings are issued on rivers that have flood gauges. Sometimes there can be little or no warning of storm activity.

6.5.3 Evacuating

Evacuation Warnings and Evacuation Orders are issued by the NSW SES for floods, storms and tsunami through the NSW SES websitewww.ses.nsw.gov.au and local media.

When an Evacuation Warning is issued:

- Locate important papers and valuables. Put them in your Emergency Kit.
- Keep listening to your local radio station for information, updates and advice.
- Follow instructions given to you by emergency services.

When an Evacuation Order is issued, staying inside the facility, even if you think it is safe, may be dangerous. If you are warned to evacuate it is always safest to move to a location away from the affected area early:

- Turn off the electricity and/ or any machinery and gas (if applicable) at the mains before you leave and turn off and secure any gas bottles.
- Take your emergency kit.
- Never enter or travel through floodwater.
- Keep listening to your local radio station for information, updates and advice.
- Follow the Flood Emergency and Evacuation Plan (Evacuation Plan Appendix A) or Business FloodSafe Plan.
- Follow all instructions given to you by emergency services.
- Wear appropriate clothing.

You should leave well before roads and evacuation routes are cut off or closed. Stay with family or friends away from the affected area. Evacuation centres may also be established by welfare services in your area. Help may include:

- Temporary accommodation.
- Financial help.
- Personal support.
- Refreshments and meals.
- Clothing and personal needs.
- Help in contacting family and friends.
- Take enough medication with you to last at least a week.
- Have clean up supplies including litter bags, paper towels, wipes, sanitisers and garbage bags.

6.6 DURING ALL EMERGENCIES

- For emergency help in floods and storms call the NSW SES on 132 500.
- In life-threatening emergencies, call 000 (triple zero).
- Check that neighboring businesses have received all warnings and advice.
- Keep listening to your local radio station for information, updates and advice.
- Follow all advice and instructions given to you by emergency services.

6.6.1 DURING storms

- Stay clear of creeks, drains, causeways, gutters, streams, fallen trees, power lines and damaged buildings.
- If driving, put on your hazard lights and pull over to the side of the road, keeping clear of drains, causeways, streams, creeks, trees and power lines.
- If outdoors, seek secure shelter away from drains, causeways, streams, creeks, trees and power lines.

6.6.2 DURING floods

A Flood Warning is issued by the Bureau of Meteorology when flooding is about to happen and may be updated during floods.

A Flood Warning provides a predicted flood level on a river gauge and a time at which the river will reach that level.

- Never drive, ride or walk through floodwater.
- Never play in floodwater.
- Keep in contact with your neighbours.
- Be prepared to evacuate if advised.

Floodwater can be deeper and faster flowing than it appears. It can erode roadways and create deep pot holes.

Floodwater can also contain sewerage, debris, dead animals and contaminants such as oil and petrol.

6.7 AFTER ALL EMERGENCIES

If outside the impacted areas, do not enter these areas until an official 'All Clear' has been issued. If inside impacted areas:

- Be aware of health and safety issues.
- Keep listening to your local radio station for information, updates and advice.
- Check to see if your neighbours need help.
- Do not go sightseeing as this may hinder recovery efforts or put yourself and others at risk.

Animals may be distraught, frightened or disoriented after a disaster event.

6.7.1 AFTER storms

- Check your house or property for damage.
- Stay clear of creeks, drains, causeways, gutters, streams, fallen trees, power lines and any damaged buildings.

The NSW SES can assist with temporary measures to make your property safer. Any damage needs to be assessed and repaired by qualified tradespeople.

6.7.2 AFTER Floods

- Ensure the structural stability of your property before entering. Check for damage to windows, walls and the roof and be especially cautious of potential contaminants etc.
- Make sure the electricity and gas is turned off before going inside. Use a torch to carry out inspections inside buildings.
- If power points, electrical equipment, appliances or electrical hot water systems have been exposed to floodwater or are water damaged in any way, they must be inspected by a qualified electrician before use.
- Gas appliances and gas bottles that have been exposed to floodwater should be inspected for safety before use.
- Wear suitable protective clothing, including boots and gloves, when cleaning up.
- Be aware of any slip, trip or fall hazards.
- Never eat food which has been in contact with floodwater.
- Only use clean utensils and personal items.
- Have a supply of fresh drinking water.

The NSW SES will issue an 'All Clear' when it is safe to return to an area that has been evacuated.

6.8 RECOVERY

The aftermath of a natural hazard can affect people in different ways. Sometimes we may be exposed to things that are distressing. The NSW SES has developed a Recovery Guide to assist people recover from floods, storms. The guide is available from both the FloodSafe and StormSafe websites - www.floodsafe.com.au and www.stormsafe.com.au

Here are a few tips from the guide:

- If you can, contact family or friends to let them know that you are OK or if you need help.
- Follow all instructions given to you by emergency services.
- Update your plan with what you have learned from this disaster.

Talk to people in your community and help each other where possible. Seek out information and share it with those around you.

As part of the recovery from natural disasters, communities and Government are also supported by the non-Government sector. Community partners such as the Salvation Army, ADRA, Anglicare, St Vincent De Paul and the Red Cross provide a range of assistance to support people and communities in time of need.

Disaster Recovery Centres may be established following some disasters. Recovery centres may provide a range of welfare services including financial assistance, personal support, organising temporary accommodation and providing information and referrals. If you have been affected by floods and require assistance, contact Disaster Welfare Services on 1800 018 444

7 REFERENCES

NSW State Emergency Services Home Emergency Plan & Business Continuity Plan

NSW Government, January 2005. 'Floodplain Management Manual: The Management of Flood Liable Land'

City Of Sydney Council's 'Alexandria Canal Floodplain Risk Management Plan and Study Volumes 1 to 6' 2014.

City of Sydney Council's Development Control Plan 2012.

City of Sydney Council's Flood Level Maps for *112 Euston Road, Alexandria.*

APPENDIX A – FLOOD EVACUATION AND EMERGENCY RESPONSE PLAN

1 Construction Phase

The Construction Project Manager is responsible for implementing this Construction Phase - Flood Evacuation and Emergency Response Plan (FEERP) for the evacuation of construction personnel from the site prior to a flood event. The evacuation of the site should be in accordance with the **Section 3 -** Site Evacuation. The Construction Phase FEERP must also include the following details to be included in the site induction, provided on the notice board and made available to all employees and contractors on the site:

- Name and position of a Flood Evacuation and Emergency Response Coordinator and a Deputy.
- Emergency phone numbers.
- Emergency Exits.
- Location of muster stations and Evacuation Assembly Areas.
- Flood Emergency evacuation routes.
- Flood Emergency sirens etc.

Site preparation should be undertaken if a flood warning is issued (**Section 3.1.3**) and time permits and it is safe to do so. It should include:

- All electrical equipment/machinery used during the construction phase which cannot withstand water inundation within the warehouse or externally are to be removed from site prior to a flood event or alternatively raised above the 1% AEP flood level.
- Any hazardous materials stored on site during the construction phase must be removed from site prior to a flood event or raised above the 1% AEP flood level plus 0.5m freeboard.
- Ensure that any stockpiled building materials do not have an increased risk of being washed off-site.

2 Operation Phase

Given the facilities 24hr operational time and potential risk to staff and employees that would occupy the facilities, The Operation Site Manager is responsible for implementing this Operation Phase - Flood Evacuation and Emergency Response Plan (FEERP) for the evacuation of staff and employees from the site prior to a flood event. The evacuation of the site should be in accordance with the **Section 3 -** Site Evacuation. The Operation Phase FEERP must also include the following details, to be included in the site induction, provided on the notice board and made available to all employees and contractors on the site:

- Name and position of a Flood Evacuation and Emergency Response Coordinator and a Deputy.
- Emergency phone numbers.
- Emergency Exits.
- Location of muster stations and Evacuation Assembly Areas.
- Flood Emergency evacuation routes.

A copy of the FEERP shall be displayed in all buildings, on all levels at appropriate locations.

Site preparation should be undertaken if a flood warning is issued (**Section 3.1.3**) and time permits and it is safe to do so. It should include:

- All electrical equipment/machinery which cannot withstand water inundation within the warehouse or externally are to be raised above the 1% AEP flood level.
- The materials of any structures below the 1% AEP flood line are to be flood compatible (i.e – Masonry, steel etc).
- Any risk and hazard areas or hazardous materials stored on site must be raised above the 1% AEP flood level plus 0.5m freeboard, bunding is not preferred.
- Ensure that any stockpiled materials during operation of the facility do not have an increased risk of being washed off-site if a flood event is expected.

3 Site Evacuation

3.1.1 Early Evacuation of the Site Facility

All site facility employees/contractors and staff are to be adequately trained to facilitate and coordinate the evacuation of personnel in accordance with this plan before and during a flood event. It would be crucial to evacuate the facility early before flooding occurs along the evacuation route. Therefore the site manager and FEERP coordinator should closely monitor and follow instructions from NSW SES broadcasts and the Bureau of Meteorology (BOM) updates on their website if major storm events in the surrounding catchment area are forecast. All cars are to be removed from the site early especially within the northern carparking/ drainage channel are as this is the main flood path through the site.

The most suitable evacuation route by car will be via Burrows Road heading north to Huntley Street. They would then turn left heading west and straight through the roundabout onto Sydney Park Road. This will provide access to the Princes Highway where turning left would provide access to the M5 Freeway. **Figure 1** shows the flood evacuation route.

There may be a small amount of inundation of Burrows Road and Sydney Park Road (approx. up to 0.2m – 1% AEP flood) but is not expected to hinder the evacuation process. Burrows Road heading south towards the Campbell Road is inundated with flood water up to 0.3m deep and, therefore, would not be an acceptable evacuation route.

3.1.2 Evacuation of Site Personnel to Muster Location Above the PMF

As a last resort, if staff/employee's or contractors cannot safely evacuate the building, an evacuation muster location for all personnel will be provided within the first floor level of the office building at approximately 7.95m AHD. This is well above the predicted PMF level of 5.7m AHD.

All personnel should evacuate to this level from the ground floor facilities shown in **Figure 2**. **Figure 3** shows the location of the muster location on the first floor and the evacuation routes to be used.

3.1.3 Effective Warning Time

The Bureau of Meteorology (BOM) operates a flood warning scheme for the Alexandria Canal catchment. The service aims to provide as much warning time as possible of impeding floods, but due to the sites location this could vary from 15 minutes to 2 hours depending on the intensity of the storm event. This will provide the occupants some assistance of when they will need to evacuate the facilities during major storm events that could lead to flooding of the site. If a flood warning is issued then the need for evacuation should be carefully monitored by the Site Manager and the FEERP Coordinator.

Full evacuation of the site including the removal of vehicles from the northern carpark should occur if a major flood is predicated or if visual observations by Site Manager and the FEERP Coordinator indicate that flood levels in the drainage channel are rising quickly.

Figure 1 – Flood Evacuation Route From Site

Figure 2 – Ground Floor Evacuation Route

Figure 3 – First Floor Evacuation Route & Safe Refuge Area

4 Training, Monitoring and Review

Implementation of this FEERP includes the following actions:

- An emergency evacuation drill shall be carried out within one month of handover of the site for the operation phase and then at least annually. The Operation Site Manager shall record details of the drill on the FEERP Drill Register.
- A review of the FEERP shall be undertaken following each evacuation drill to ensure it remains current and provides appropriate advice.
- The results of the emergency drill shall be reviewed by the Operation Site Manager following the drill and lessons learnt recorded on the FEERP Drill Register.
- Lessons learnt shall be communicated to staff and employees on site via a Tool Box talk.
- Emergency equipment, exit signs, paths of travel and alarm systems shall be inspected routinely during the Operation Site Manager's Site Safety Inspections.
- Emergency equipment shall be tested and maintained at regular intervals in accordance with applicable legislation, standards, codes etc.