



OPERATIONAL FLOOD EMERGENCY RESPONSE PLAN 

6 GRAND AVENUE

ROSEHILL NSW 2142

Prepared for:

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1 INTRODUCTION

Costin Roe Consulting Pty Ltd has been engaged by Vaughan Constructions to prepare this Operational Flood Emergency Response Plan (**OFERP**) for the industrial development located at 6 Grand Avenue, Rosehill, NSW. This **OFERP** has been prepared to address the relevant CoC Items for SSD-55522478.

This plan details the site responses to flooding including predicted flood levels, flood warnings and flood notifications, evacuation and refuge protocols and awareness training for employees and tenants during operation.

The requirements outlined in this report are consistent with the provisions of the *Floodplain Risk Management Guideline (OEH 2007)* and the *NSW Floodplain Risk Management Manual (2023)*.

The subject area of this **OFERP** comprises emergency responses for the operational phase of the development.

This plan addresses the requirements of the Department of Planning, Industry and Environment Development Approval SSD-55522478 dated 25 July 2024, as included in **Table 1** below.

Table 1.

SSD-55522478	CC Condition	How It Is Addressed
B20	Prior to the commencement of operation of the development, the Applicant must prepare an Operational Flood Emergency Response Plan (OFERP) and submit it to the Planning Secretary. The Plan must: (a) be prepared by a suitably qualified and experienced person(s); (b) address the provisions of the Floodplain risk management manual (2023) and Support for emergency management planning (2023); (c) nominate suitable flood free locations accessible from all tenancies for shelter in place scenarios; (d) include details of: (i) the flood emergency responses for the operational phase of the development; (ii) predicted flood levels, including probable maximum flood;	Refer to this report for the Flood Emergency Response Plan. a) this report has been prepared by Costin Roe Consulting, being suitably qualified engineering consultants b) refer to Section 3 of this report for guidelines adopted for the OFERP. c) refer to Appendix A for evacuation plans demonstrating suitable flood free locations for shelter in place scenarios d) refer to Section 7 of this report for the flood emergency responses. d) refer to Section 4 of this report for a discussion on flood behaviour. d) refer to Section 6.3 of this report for the flood education, awareness and preparedness program.

SSD-55522478	CC Condition	How It Is Addressed
	(iii) shelter in place protocols for all relevant flooding events; (iv) awareness training for employees and contractors; (v) protocols for advising site employees and visitors to stay away from the site during flood events; (vi) flood warning time, flood notification, signs and depth indicators; (vii) evacuation protocols including assembly points and evacuation routes (where applicable); and (viii) communication strategies to ensure all potential tenants are aware of flood levels (including probable maximum flood); (e) detail protocols for periodic review and update to the plan at least once every five years as well as (but not limited to): (i) when flood warning systems in the area are updated; (ii) when new flood evacuation routes are made available; and (iii) following a flood event that triggers the OFERP.	e) refer to Section 3.5 for guidelines relating to updates to this OFERP

2 DEVELOPMENT SITE

2.1 Site Description and Locality

The property is located within the Parramatta City Council local government area (LGA). The site is located to the south of Grand Avenue, as shown in **Figure 2.1**.



Figure 2.1. Site Location and Aerial Imagery (Source: Nearmap March 2023)

The existing subject site consists of a main warehouse building and car park in the northeast. Administration buildings, storage buildings and other warehouse buildings are in the central and southeast portions of the site. West portion of the site consists of predominately large outdoor storages and haul roads.

The site generally grades down from west to east. The highest level is RL 6.00m AHD central to the site. The lowest level on the site is located south of the central building at RL 5.10m. Grand Avenue, which the site fronts, falls from west (at RL 6.00) to east (RL 5.20).

The site is located approximately 200m south of the Parramatta River and 1,100m north of Duck River. The site is zoned E5 (Heavy Industrial) and is generally surrounded by similar industrial developments. The Rosehill Racecourse is located approximately 200m west of the site.

Existing attributes of the subject site are noted as follows:

- The subject site is located in the suburb of Rosehill and has a total area of 4.24ha.
- Vehicular access to the subject site is currently facilitated via existing access points on Grand Avenue.

- Several stages of warehouse demolitions and developments have occurred between 1943 and 2015. This is likely to have resulted in a significant number of buried historical structures (e.g. footings, slabs etc.) and services (pipes and pits).
- An approved development is located on the southern boundary with building FFLs of RL 7.57m and RL 7.47m. An existing retaining wall has been constructed along the southern boundary, with top of wall levels above the proposed finished levels of the development site and will be filled against towards the proposed development at 6 Grand Avenue.

2.2 Proposed Development

The proposal involves the construction and operation of a multi-unit warehouse and distribution facility at 6 Grand Avenue, Rosehill, which includes:

- Demolition of all existing buildings and structure
- Site preparation works, including tree clearing
- Earthworks (to achieve an FFL of RL 6.90)
- Infrastructure comprising civil works and utilities servicing
- Construction of associated hardstands and truck circulation areas.
- On-site car parking
- Landscaping and offset planting

The layout of the development prepared by PACE Architects is shown in **Figure 2.2 - Figure 2.5**.

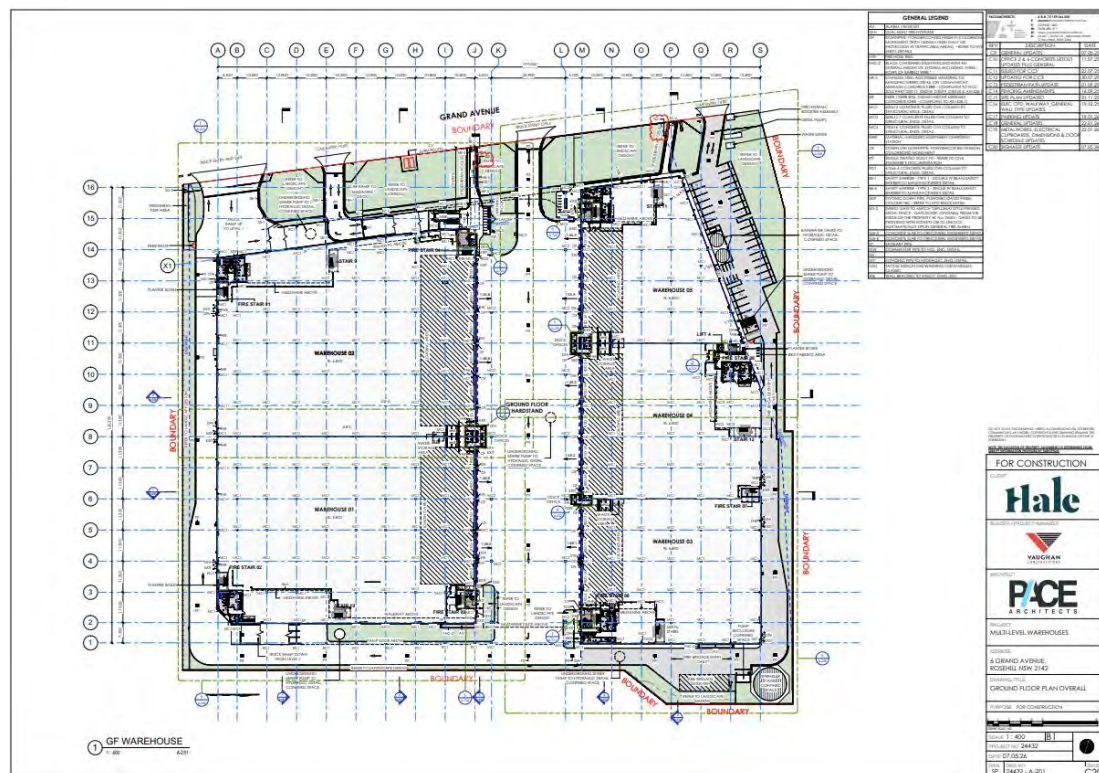
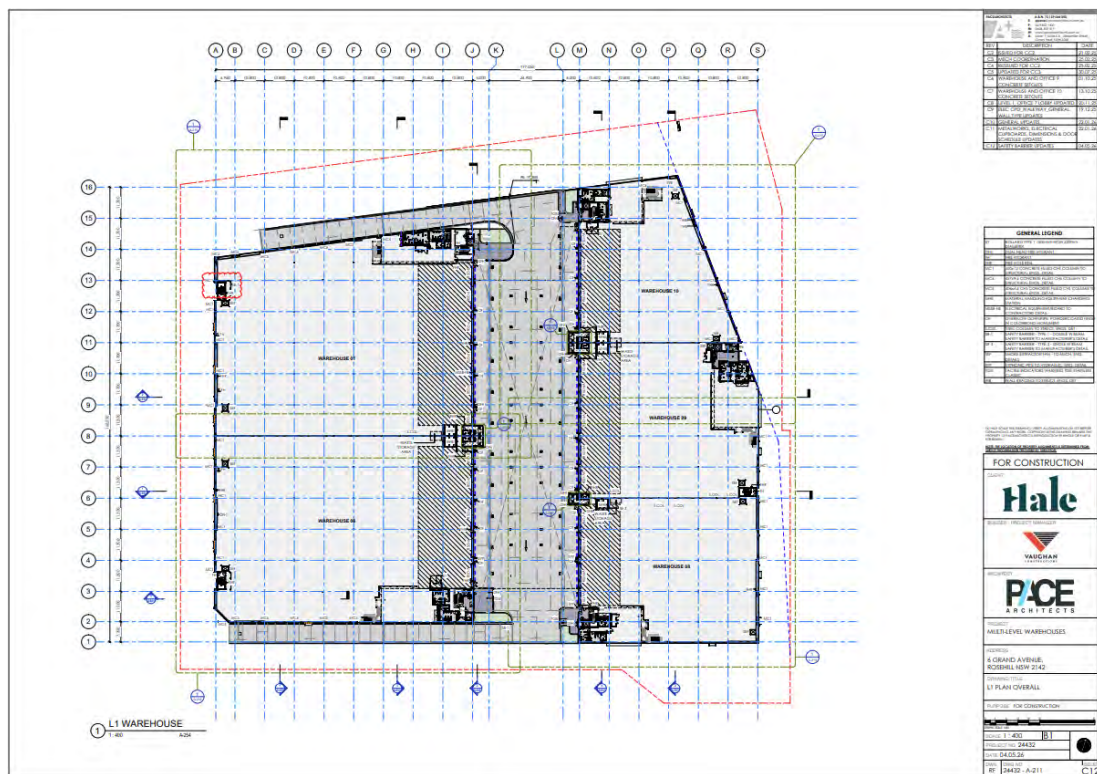
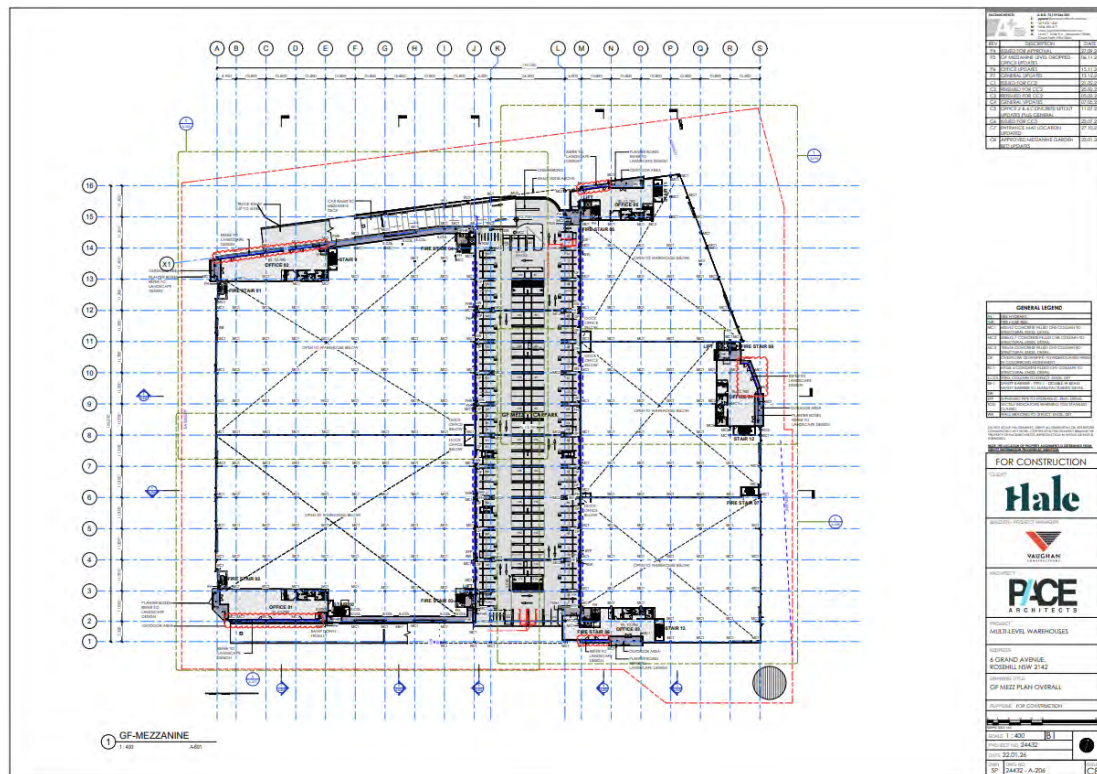


Figure 2.2. Proposed Development (Ground Floor) – Concept Layout Plan



2.3 Climate and Meteorology

Typically, the wettest month (mean rainfall) is February and the driest is usually September.

The annual mean minimum temperature is 12.2°C and the mean maximum temperature is 23.4°C. The hottest month is typically January (mean maximum of 28.6°C), and July is the coldest month (mean minimum of 6.3°C).

Climate statistics and average annual rainfall data and rainfall patterns relevant to this site (as sourced from Australian Bureau of Meteorology (BOM)) are included in reference in **Appendix B** of this **OFERP**.

3 GENERAL REQUIREMENTS

3.1 General Requirements Introduction

This OFERP has been prepared with the purpose of providing an understanding of flood behaviour to the facility owners, management and tenants during operation of the development.

This document has been completed with consideration to the guidelines *NSW Floodplain Risk Management Manual 2023*, the flood study completed by Costin Roe Consulting for the SSDA submission (Ref: Co14955.00-02h.rpt), and other reference documents noted in **Section 3.3**.

The following sections of this FMP provide confirmation of roles and responsibilities, statutory requirements, measures to monitor and report on impacts and performance of the measures implemented, contingency planning and protocols for review and improvement.

3.2 Roles and Responsibilities

- The warehouse owners/ management during operations are the key persons responsible for the implementation of this OFERP and have the responsibility action measures if there is potential for a safety or environmental incident to occur.
- The key roles and responsibilities for the responsible personnel in relation to flood risk management are outlined below in Table 3.1.

Table 3.1 Roles and Responsibilities

Role	Responsibilities
Development Owners and Management	Provide for training in stormwater management for personnel directly involved with the implementation of this plan, as required. Identify and allocate Project resources to implement the requirements of this plan. Oversee the implementation and maintenance of this plan. Ensure all measures are performing adequately throughout the operation of the centre in perpetuity.
Development's Emergency Management (EM)	Ensure maintenance and monitoring of the stormwater management measures are undertaken in accordance with Section 7.
Site Personnel and Tenants	Ensure flood behaviour local to the development is understood. Ensure personnel are educated in the overall OFERP.

3.3 Reference Documents

Guidelines and standards considered in relation to the preparation of the OFERP include:

- NSW Flood Risk Management Manual 2023
- NSW Support for Emergency Planning Flood Risk Management Guideline EM01
- OEH 2007, Floodplain Risk Management Guidelines
- Costin Roe Consulting (2023), Civil Engineering Report (Co14955.00-02h.rpt)
- Parramatta City Council (2023), Flood Enquiry Information dated 21/12/23
- Stantec (2023), Parramatta River Flood Study (ref: 59916074 / 304600102)
- SES (2019). Provision of and Requirements for Flood Warning in New South Wales
- Bureau of Meteorology (2013). Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 2.0"

3.4 General OFERP Requirements

1. This document and associated drawings are subject to further periodic review throughout the operational period to ensure the requirements and measures set out in this **OFERP** are fit for purpose and allow for any changes which might occur not envisaged during the initial preparation of the **OFERP**.
2. All flood management and response measures will conform to the standards and information contained in:
 - This **OFERP**;
 - Conditions of Consent;
 - the latest version of the SES Parramatta Flood Emergency Sub Plan or Parramatta Council flood emergency response plans or other emergency response plans relating to flood management.

3.5 Review and Improvement

During operation, effectiveness of the flood emergency response management measures will be confirmed through regular review of the **OFERP**. It is recommended that this **OFERP** be reviewed every 3 to 5 years once operations commence. Further additional reviews are to be undertaken in response to the following triggers:

- Following any updates to regional flood warning systems
- When new flood evacuation routes are made available; and
- Following a major flood event to confirm real life conditions against baseline conditions and make any necessary adjustments.

Adjustments as required will be made based on confirmed site conditions and effectiveness of the implemented measures. These will need to be made in conjunction with a suitably qualified engineer, or other professional, who specialises in stormwater management and flood management. Adjustments may include but are not limited to the following:

- Timing of regional warning systems and adequacy in providing early warning to flooding events
- Re-evaluation of the evacuation procedure and available evacuation routes

- Confirmation of safe areas on site during significant flooding events
- Procedures regarding protection of site goods during flooding

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

4 FLOOD BEHAVIOUR

4.1 Flood Behaviour Introduction

The site is located approximately 200m south of the Parramatta River, a major tidally influenced watercourse that is a main tributary of Sydney Harbour. Review of the regional flood study by Stantec as well as the flood advice from Parramatta City Council suggests that the site is not subject to overland flow from upstream properties, nor mainstream flooding from the Parramatta River during flood events up to the PMF. During the 1% AEP, the flood level in the Parramatta River is approximately RL 4.00 directly north of the site, well below the existing site level of RL 6.00m and the Grand Avenue road level. Additionally, the ground floor level of the development is proposed to be at RL 6.90m, maintaining adequate freeboard to the 1% AEP flood levels.

In the PMF storm event, the flood level in the Parramatta River directly adjacent to the proposed development is RL7.80m AHD. At this level, the Parramatta River is understood to have broken its banks and spills into the surrounding properties. Additionally, the Duck River (a tributary of the Parramatta River) has also broken its banks. Flows from both rivers flood the Camellia precinct to depths up to 2.5m, and up to 1.0m over the proposed building FFL.

While the flood level during the PMF event inundates the ground floor of the building and its access points to Grand Avenue, the upper level offices and first floor warehouse floors will all be several metres above the PMF flood level.

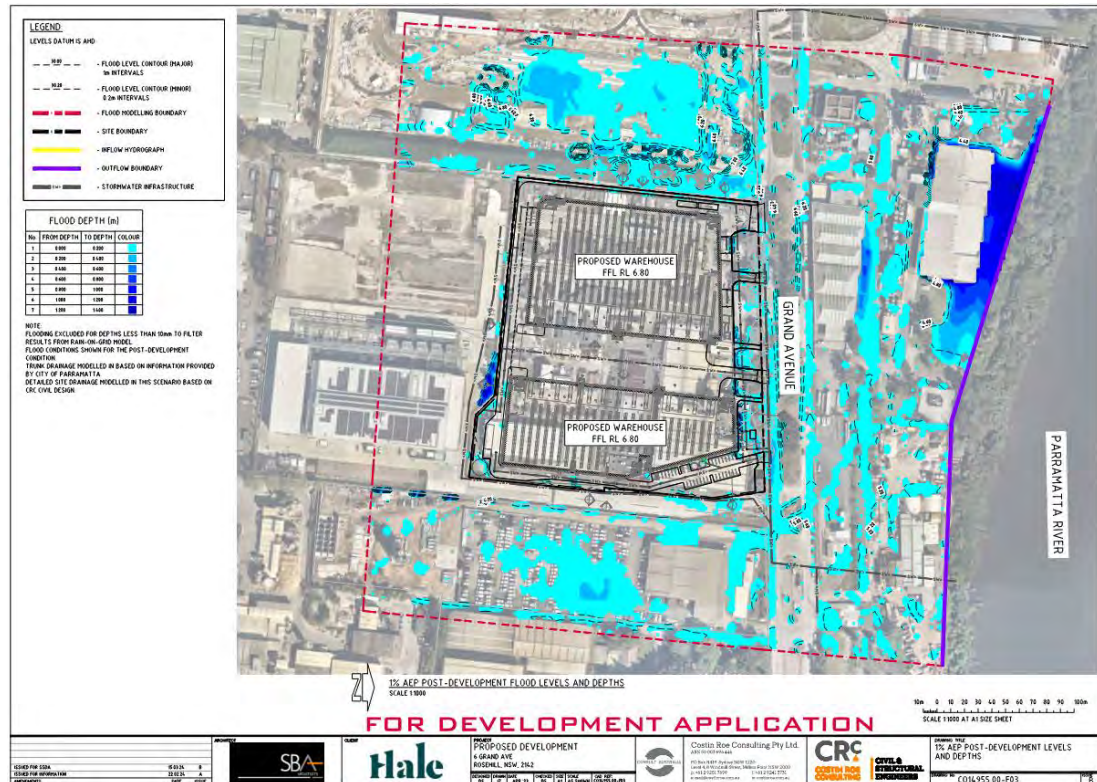
Section 2.3 discusses climate and rainfall. The wettest month is noted to be in February, however we note that the meteorologic conditions in which overland flows could be expected would be when either an East Coast Low, or similar low pressure conditions are present. These conditions are more predominant during February through June, however occurrences outside of these months could also be expected.

4.2 Flood Extent

Flood modelling has been completed by Costin Roe Consulting to determine the exact extent of flood affectation on the site in the 1% AEP and PMF storms. Refer to **Figures 4.1 & 4.2** below for flood mapping showing the flood levels and depths in the 1% AEP storm for pre and post developed conditions, and **Figures 4.3 & 4.4** for the PMF flood mapping.

In the pre-development state, the site experiences localised ponding in drainage sag points and is not affected by any major overland flow paths from upstream catchments. The ponding is attributed to minor tailwater influence from the Parramatta River as well as the limited capacity of surface inlets within the site. Flooding of this nature is experienced to a depth of up to 0.25m.

In the post-development state, the design of the drainage network improves the capacity for floodwater conveyance and reduces the ponding experience on site. Minor ponding is experienced in the landscaping zones along the Grand Avenue frontage, where levels have been kept lower than the adjacent ramps. Flood levels in the Grand Avenue frontage reach a maximum of approximately RL 6.00m AHD. Allowing for the council required of freeboard of 500mm, the corresponding flood planning level for habitable areas of the development is RL 6.50m AHD. It is noted that



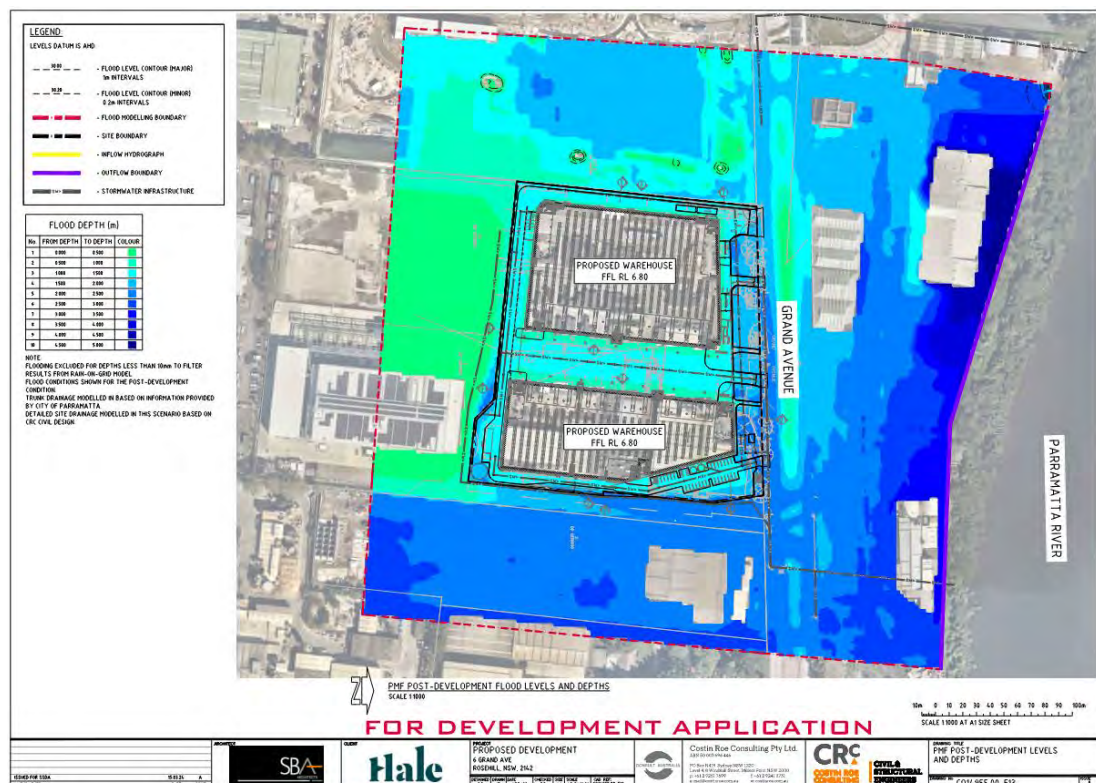


Figure 4.4 PMF Post-developed Level and Depth Output

4.3 Rate of Rise and Flood Timing

The recommended flood measures and triggers to be adopted on site will be dependent on the rate of rise of flood waters within the Parramatta River and how they relate to levels within the development site.

As the contributing catchment is relatively large, the rate of rise will generally occur over a prolonged period for most flood events.

Costin Roe Consulting has conducted a review of the detailed flood study prepared for the Veolia Camellia Recycling Centre by CH2M in 2015 (ref: 476707.D4.001 & 476707.D4.002). This flood study provides information relating the flood rate of rise in both the 1% and PMF flood events.

In relation to **River Flooding**, in the event a in the event a major flood warning is issued for the Parramatta River by the BOM, Council or any other authority, evacuation procedures and routes will be described in a Flood Emergency Response Plan for the site. From the available flood information (CH2M), it is understood that peak major floods in the river is reached in approximately 10 hours for a 1% AEP storm, and 5 hours for a PMF storm. Per CH2M, the indicative Rate of Rise of river flooding is understood to be 0.9m/hr during a 1% AEP Flood, and 1.3m/hr during a PMF Flood. It is therefore noted that at least 2.5hrs of evacuation time would be available before the Parramatta River breaks its banks and inundates the evacuation route along Grand Avenue during a PMF Event.

In relation to **Local Storm Flooding**, in the event a severe weather warning has been issued for the Camellia precinct by the BOM, Council or any other authority, and sufficient time is available prior to the onset of severe weather, then evacuation can

be made from the site. It is acknowledged that flashy flooding in Grand Avenue occurs in frequent storm events such as the 20% AEP storm. In the event early evacuation does not occur prior to the onset of rainfall, and visual flood indicators such as ponding in Grand Avenue up to the kerb level are observed, shelter-in-place procedures should be followed in the upper levels of the site. In these “flashy” and more frequent flood events, the duration of inundation is expected to be around 20-30mins following the cessation of rainfall.

5 HAZARD CATERGORIES & MAPPING

5.1 Introduction

Flood hazard categories are broken down into H1 to H6 categories depending on depth and velocity, and their interaction with each other as set out in **Figures 5.1a** and **5.1b**.

High hazard areas (H5-H6) are defined as those where there is a possible danger to personal safety and the potential for significant structural damage. Able-bodied adults would have difficulty in wading to safety. With low hazard areas (H1-H2), should it be necessary, a truck could evacuate people and their possessions, and able-bodied adults would have little difficulty in wading to safety.

Refer **Section 5.2** for hazard mapping.

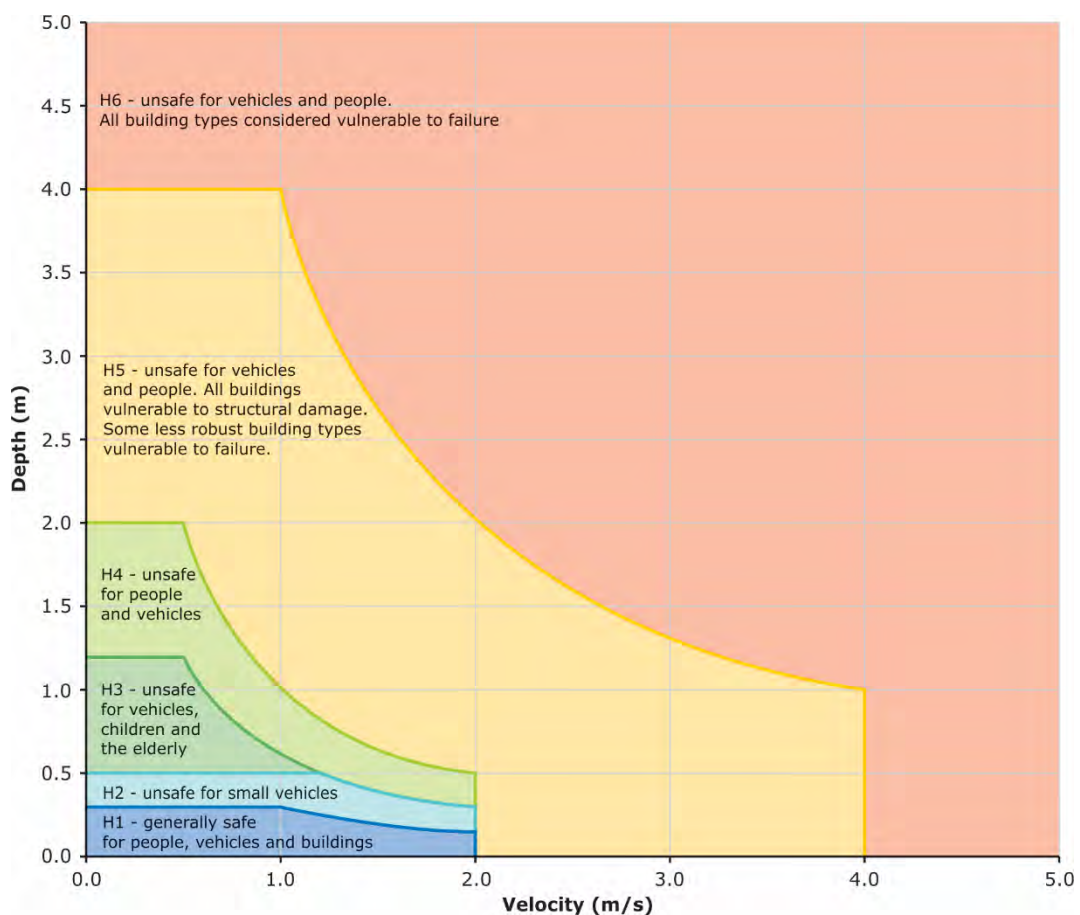


Figure 5.1a. Provisional Flood Hazard Chart (AR&R 2019)

Table 6.7.3. Combined Hazard Curves - Vulnerability Thresholds (Smith et al., 2014)

Hazard Vulnerability Classification	Description
H1	Generally safe for vehicles, people and buildings.
H2	Unsafe for small vehicles.
H3	Unsafe for vehicles, children and the elderly.
H4	Unsafe for vehicles and people.
H5	Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust buildings subject to failure.
H6	Unsafe for vehicles and people. All building types considered vulnerable to failure.

Table 6.7.4. Combined Hazard Curves - Vulnerability Thresholds Classification Limits (Smith et al., 2014)

Hazard Vulnerability Classification	Classification Limit (D and V in combination)	Limiting Still Water Depth (D)	Limiting Velocity (V)
H1	$D \cdot V \leq 0.3$	0.3	2.0
H2	$D \cdot V \leq 0.6$	0.5	2.0
H3	$D \cdot V \leq 0.6$	1.2	2.0
H4	$D \cdot V \leq 1.0$	2.0	2.0
H5	$D \cdot V \leq 4.0$	4.0	4.0
H6	$D \cdot V > 4.0$	-	-

Figure 5.1b. Adopted Hazard Criteria (AR&R 2019)

5.2 Hazard Mapping

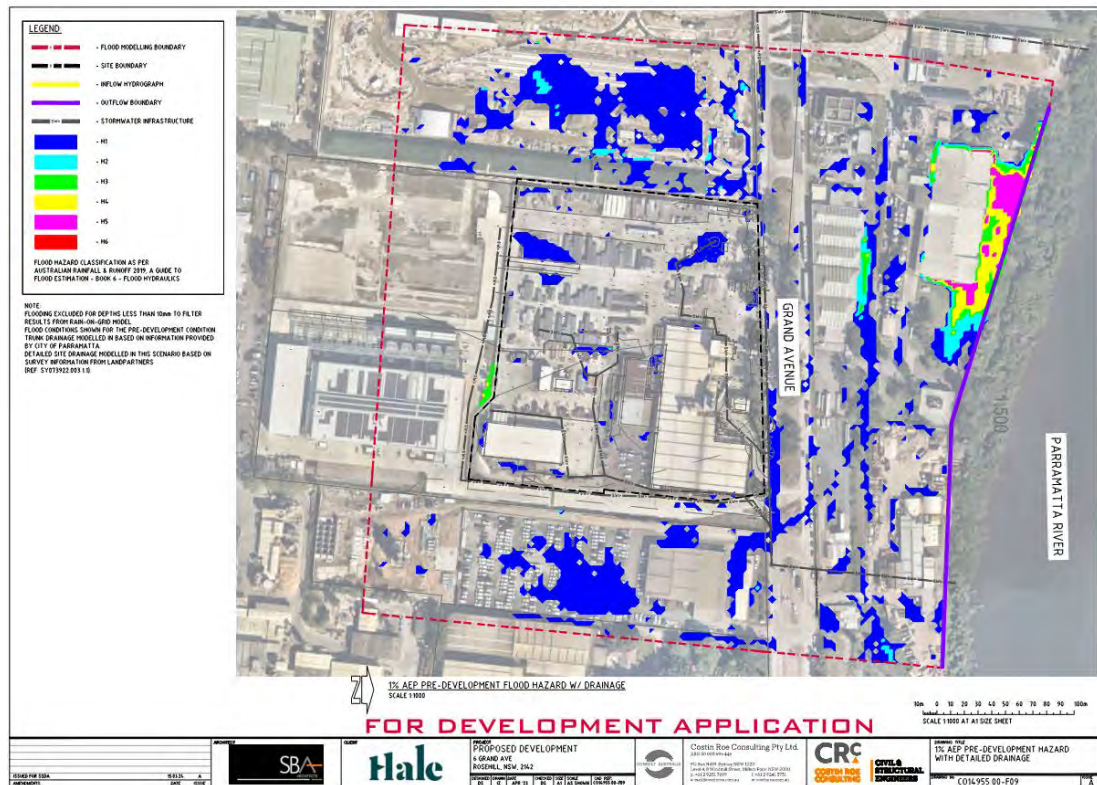
Flood hazard categorisation for the site and its surrounds has been assessed as part of the flood study undertaken for the Development Application. Refer to **Figure 5.2 & Figure 5.3** below for flood mapping showing the flood hazard in the 1% AEP storm for pre and post developed conditions.

In the pre-developed condition, all ponded site water generally maintains the H1 categorisation. The Grand Avenue frontage, which is largely flood free, experiences some inundation of H1 categorisation as a result of gutter flow around the north-eastern site corner. An isolated spot of H3 flooding is observed at the site boundary to the south on the neighbouring site.

In the post-developed condition, the flooding hazard area remains consistent with the pre-development condition. Low hazard flooding is expected in the Grand Avenue frontage, primarily around the site's north-eastern driveway.

In both the pre and post conditions, the flooding in Grand Avenue is sporadic at H1 levels.

Flood hazard criteria and mapping has been completed for the pre- and post-development conditions for both the 1% AEP and PMF floods as per criteria set out in the *Australian Rainfall and Runoff (2019), A Guide to Flood Estimation – Book 6 – Flood Hydraulics* and Figure 6.7.9 as included as **Figure 5.2 to Figure 5.5** below.



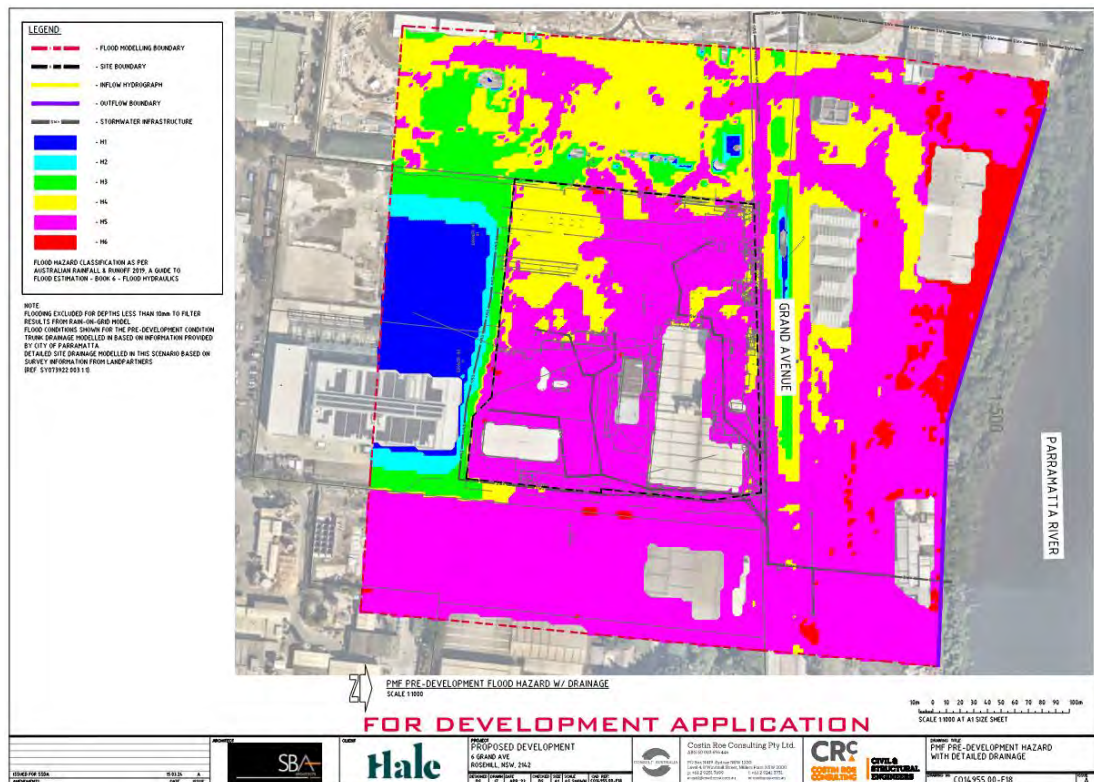


Figure 5.4 PMF Pre-Developed Flood Hazard Categorisation

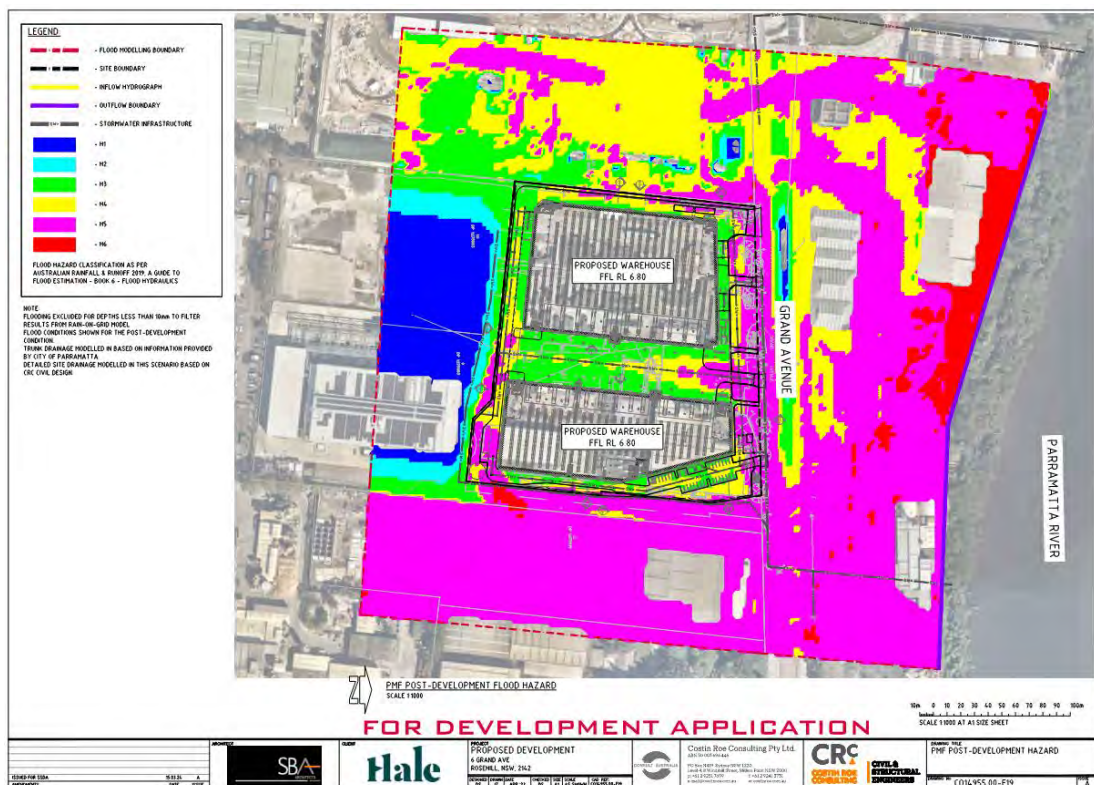


Figure 5.5 PMF Post-Developed Flood Hazard Categorisation

5.3 Flood Damage Assessment

Damage caused by floods is generally categorised as either tangible or intangible. Tangible damages are financial in nature and can be readily measured in monetary terms. They include direct damages such as damage or loss caused by floodwaters wetting goods and property, and indirect damages such as lost wages incurred during cleanup periods after the flood event. Intangible damage includes emotional stress and even mental and physical illness caused by the flood. It is difficult, if not impossible to quantify intangible damages in financial terms.

From a flood planning perspective, it is important to consider the following direct damage categories:

- Contents Damage – refers to damage to the contents of buildings, including carpets and furniture etc.;
- Structural Damage – refers to damage to the structural fabric of buildings, such as foundations, walls floors, windows, and built-in fittings; and
- External Damage – includes damage to all items external to buildings, including cars, landscaping etc.

The NSW Flood Damage Assessment Tool available on the NSW SES Flood Data Portal ([NSW Flood damage assessment tool - Datasets - NSW Flood Data Portal](#)) can be utilised to calculate damages associated with flooding and facilitate cost benefit assessments of potential floodplain risk management measures on the development site.

The tool should be used in conjunction with the Flood Risk Management - Management Measures guideline (MM01) associated with the Flood Risk Management Manual (DPE, 2023).

Additionally to the completion of the Flood Damage Assessment tool prior to operation of the facility, routine and triggered (by heavy rainfalls) inspections need to be completed and recorded during operation of the facility, as discussed below.

Routine and Triggered Inspections

Routine Inspections

It would be recommended that routine inspections of the infrastructure and structures located within the dedicated overland flow area is carried out after significant storm events. Compiling and implementing a comprehensive *Flood Damage Inspection process and procedure* is essential to safeguard the longevity of structures, ensure the safety of occupants, and protect the individuals performing the flood damage assessment.

These routine inspections are to assess the need for maintenance and are primarily concerned with checking the condition of the suspended structure and the functionality of the stormwater drainage and treatment facilities; items such as columns, footings, retaining walls, drains, drainage pits, box culverts, culverts and headwalls. Maintenance of these items is vitally important for the integrity of the suspended structure and the ongoing drainage and treatment of stormwater.

Should the inspection reveal that maintenance of any item is required, this is to be reported to the building management for action.

Inspection Frequency

Routine Inspections for Maintenance shall be carried out over the life of the development.

The inspections shall occur on a yearly basis in perpetuity.

In addition to the normal inspection frequency nominated inspections should also be carried out following heavy rain events (**triggered inspections**). Event heavy rain inspections should be carried out as soon as practicable following an intense period of rainfall (i.e. greater than 100mm over 24 hours). A process to establish when periods of high rainfall occur should be put in place with Building Management.

Records

Records detailing each of the routine inspections for maintenance should be completed during the inspection, and describe in detail any required maintenance. The inspection records are to be provided to Building Management for action and then filed appropriately. Records of any maintenance carried out as a result of the inspection should be completed immediately after the works have been finalised, and filed appropriately.

Personnel

Routine inspections for maintenance are required to establish the need for basic maintenance, as described above. On this basis, such inspections do not require professional engineering knowledge and may be carried out by any responsible person, including property management staff or maintenance staff. It is, however, recommended that a structural engineer conduct the investigation of the conditions of the structures after a heavy rainfall event (i.e. greater than 100mm over 24 hours).

Alternatively, professional engineering staff may be employed to complete the routine inspections for maintenance concurrently with the engineering inspections for maintenance.

Inspection Safety

General

As described earlier in this document, regular inspections and maintenance of structures and drains are essential for their ongoing stability. However, carrying out inspections and maintenance activities will place those personnel involved with the inspections and maintenance at varying levels of risk. Therefore, to reduce the risk, certain minimum procedures and activities must be carried out before, during and after the inspections.

Inspections/ Maintenance

In order to reduce the risk, any inspections or maintenance activities should be carried out under the following protocols:

- Inspections/Maintenance teams must comprise a minimum of two, preferably three people, in order to prevent inspection personnel working alone;
- Inspections/Maintenance must be carried out within 48 hours of a rain event, preferably within 24 hours;
- Personnel completing inspections/maintenance must be able to communicate and be contactable, eg by carrying mobile phones or UHF radios; and

- For entry to confined spaces, the Contractor should establish if relevant training is required to enter these spaces, as well as provision of appropriate equipment to carry out the inspections.

Prior to Inspection/ Maintenance

It is the responsibility of the Building Management to appoint the appropriate personnel to carry out the inspections and maintenance, and to nominate appropriate times for the inspections to occur, according to the frequencies recommended above.

Prior to any inspection/maintenance commencing, the Building Management or representative shall:

- Review and sign off an Inspection/Maintenance Safety Plan provided by the personnel completing the inspection or carrying out the maintenance. Sufficient time should be allowed to review the plan, request changes/alterations, and approve the updated document.

The Inspection/Maintenance Safety Plan must include:

- A list of personnel and backup personnel completing the inspections/maintenance, along with their qualifications and experience. The qualifications should include a list of tertiary education (if applicable), "green card" status or equivalent (e.g. Occupational Health and Safety Induction Training for Construction Work – General Course), and any required licences such as drivers licence/Bobcat operators licence;
- A list of the items and areas to be inspected/maintained;
- The procedures to be undertaken during the inspections/maintenance;
- The methodology proposed to complete the inspections/maintenance;
- A Job Safety Analysis (JSA)/Health and Safety Plan (HASP), or equivalent, that documents the following:
 - o Each Inspection/Maintenance Activity and associated Hazard.
 - o An initial risk assessment;
 - o Control measures to be implemented to reduce unacceptable risks; and
 - o A second risk assessment that re-assesses the risk considering the control measures suggested for implementation in Point "iii" above.
- Details of evacuation procedures and muster points in the event of an emergency;
- A list of safety equipment to be taken, including a radio, first aid kit; and
- Where appropriate ablutions and wash facilities are located.
 - o Ensure the inspection and maintenance personnel entering the site have filled in a dedicated Sign In/Sign Out register. This register can be located at the Building Management office. Location to be confirmed to all parties involved. The register should also record which personnel have custody of any keys that provide access through locked gates/barricades. Any keys should be signed back in at the end of each days work; and
 - o Be present during a Tool Box talk that summarises the JSA/HASP, highlighting the main hazards and risks. If Building Management is aware of any hazards

and risks not mentioned in the JSA/HASP, they are to be raised during the Tool Box Talk and the JSA/HASP amended accordingly.

Following the completion of these activities, the Inspections and or Maintenance may commence.

During Inspections/ Maintenance

During the inspection and maintenance activities, it is the responsibility of those personnel carrying out the works to ensure that the requirements of the Inspection/Maintenance Safety Plan are adhered to. Safety whilst completing the inspections/maintenance is as important as the functionality of the drains themselves.

Whilst working within the drain pits, overland flow area or through intermediate access points, the inspection and maintenance work teams shall:

- Complete visual inspections of the drain and pits for signs of shifting and or damage;
- Check for accumulations of scale or sedimentation within the pipes/drains;
- Be vigilant with regard to loose items that could fall from the suspended slabs above;
- Be vigilant with regard to rock falls from the batters;
- Work in minimum groups of two people, preferably three;
- Perform inspections during period of forecast dry weather;
- Ensure that sufficient PPE is worn and utilised. As a minimum (subject to the maintenance activity), the following PPE is required:
 - o High Visibility Safety Vest;
 - o Steel Capped Boots;
 - o Helmet;
 - o Safety glasses;
 - o Mobile Phone/UHF Radio (or other means of telecommunication);
 - o First Aid Kit; and
 - o Long pants and long sleeve shirts.

Subsequent to Inspection

At the completion of each days work, all members of the inspection/maintenance parties must complete the Sign In/Sign Out register to note that they have left the site. Any keys issued to provide access through locked gates/barricades must be returned and signed for.

The completed Inspection/Maintenance Records must be handed over to the Building Management for actioning. If a report needs to be furnished, it must be finalised and submitted within 2 weeks of inspection/maintenance works being completed.

6 FLOOD SAFETY AND EVACUATION

6.1 Introduction

This section of the report presents the relevant information in relation to egress and evacuation during the approach of a significant flood event. The information in this report can be used as a framework for the development and for more detailed emergency response plans for individual tenants.

This framework has been completed with consideration to the State Emergency and Rescue Management Act 1989 (NSW), the State Emergency Service Act 1989 (NSW), and the SES Parramatta Flood Emergency Sub Plan 2021 (refer **Appendix C**).

6.2 Flood Extent

The flood behaviour, including flood levels and extents (refer **Figure 4.5**), during the 1% AEP storm is included in **Section 4** of this plan.

As discussed in earlier sections of the report, the site is unaffected by any major overland flow paths and only minor ponding is observed on local sag points on the site and the Grand Avenue frontage in all storms up to the PMF. In the post-developed 1% AEP flood, flood depths generally range from 0-0.2m, with localised increases to the 0.2-0.4m range. Floodwater velocity is within the 0-0.25m/s range, maintaining a H1 hazard categorisation through the main travel routes to and along Grand Avenue.

In the PMF, the site and the Camellia/Rosehill precinct experiences significant inundation due to water overtopping the banks of the Parramatta River. The site and the Grand Avenue frontage experience flooding of depths up to 3.0m and flow velocities of up to 2.0m/s. A significant portion of the site and the general vicinity falls under the H5 hazard category and is unsafe for people or vehicles.

Further discussion on site specific effective warning measures and triggers are included in the following sections.

Affectation of surrounding roads and areas does not form part of this plan. Consultation with SES or Local Council would be necessary to confirm egress from the site to other areas surrounding the site.

6.3 Flood Education, Awareness and Preparedness

Development of Warning Systems

In addition to preparing an emergency evacuation procedure, it is recommended that a flood education, awareness, and preparedness program is implemented on site. The purpose of this program is to ensure that tenants and staff members on the development site are aware of the site flood risk and measures to be taken for the safety of staff and visitors in the event of an emergency. Each tenant should have a tenant specific plan which sets out flood warden, evacuation zones and responsible persons. This flood plan should:

- Provide an overview / summary of the flood risk on site;
- Explain and demonstrate emergency evacuation procedures;

- Outline that the site should not be evacuated by foot or vehicle once Grand Avenue is flooded.

This flood awareness program should be incorporated into the induction process for new and existing staff members of on-site personnel on the development site during operation and is to be repeated annually as part of any “refresher” training. The program is to be reviewed when new tenants move into the building. Management should consider installing signage in around the site which outlines the flood evacuation procedure.

Visitors are to be briefed on the basics of the flood evacuation procedure upon arrival to the site. This training may include identification of the Flood Warden on site during the duration of their stay and showing visitors the designated refuge areas and evacuation pathways.

As noted, the advice in this report can be used as a framework for these site-specific plans, in conjunction with Parramatta City Council and SES sub plans as required. During operation, the warehouse site should have a responsible person (EM or site manager) who understands the flood behaviour of this area, is familiar with this report and flood management responses set out in the **OFERP**.

The NSW SES Parramatta Local Controller is responsible for monitoring the flood risk over the area and for issuing flood warnings to the community. Any person or group occupying the precinct at the time of flood danger should adhere to any warnings issued. The warning message will normally be issued via SMS (phone text) by the SES, and flood alerts would also be provided by the BOM prior to SES flood warning. During periods of heavy or forecast heavy rainfall it is important that one or some of the occupants of a facility should be able to receive such messages. The occupants must then immediately follow the flood evacuation plan in this report or the instructions of the SES controller in the area.

As described in **Section 6.4** below, the SES Warning System is based on predicted rainfall and gauges in the Springvale Drain. This includes identification of potential flooding areas, estimated impacts of flooding at different heights and action time.

The BOM/ SES warning system will provide good initial guidance for triggering of flood measures, however in addition to the SES flood warning system, it is recommended that a site-specific warning system is employed to supplement the BOM gauges. Such a warning system could consist of a series of flood depth markers or responders placed around the overland flow path and within the flood storage basin. A suitable response/trigger methodology has been outlined in **Section 6.4** which can be utilised to inform users of the site to prepare their own site-specific flood management response plans.

Flood warning and emergency response for the development site will be based on the rainfall within the adjoining catchments.

Real-time data (updated at 15-minute intervals) for these sites can be accessed through the BoM website via the following hyperlink:

<http://www.bom.gov.au/nsw/flood/sydney.shtml>

6.4 Emergency Response Planning

Flood Emergency Management planning refers to the preparation of a formal community-based plan of action to deal with the threat, onset and aftermath of flooding. It involves planning for an event equal to, or greater than the event used to derive the FPL.

The plan of action should include an on-site response plan that addresses what measures should be undertaken once the threat of a flood is determined to be imminent. A flood evacuation strategy should also be included so that all persons within the precinct are familiar with the processes required if a flood occurs.

In summary, the review shows that safe access/egress (Hazard Categorisation <H2) is available to and from all site entrances to Grand Avenue in the 1% AEP storm event as shown in **Figure 6.1** below.

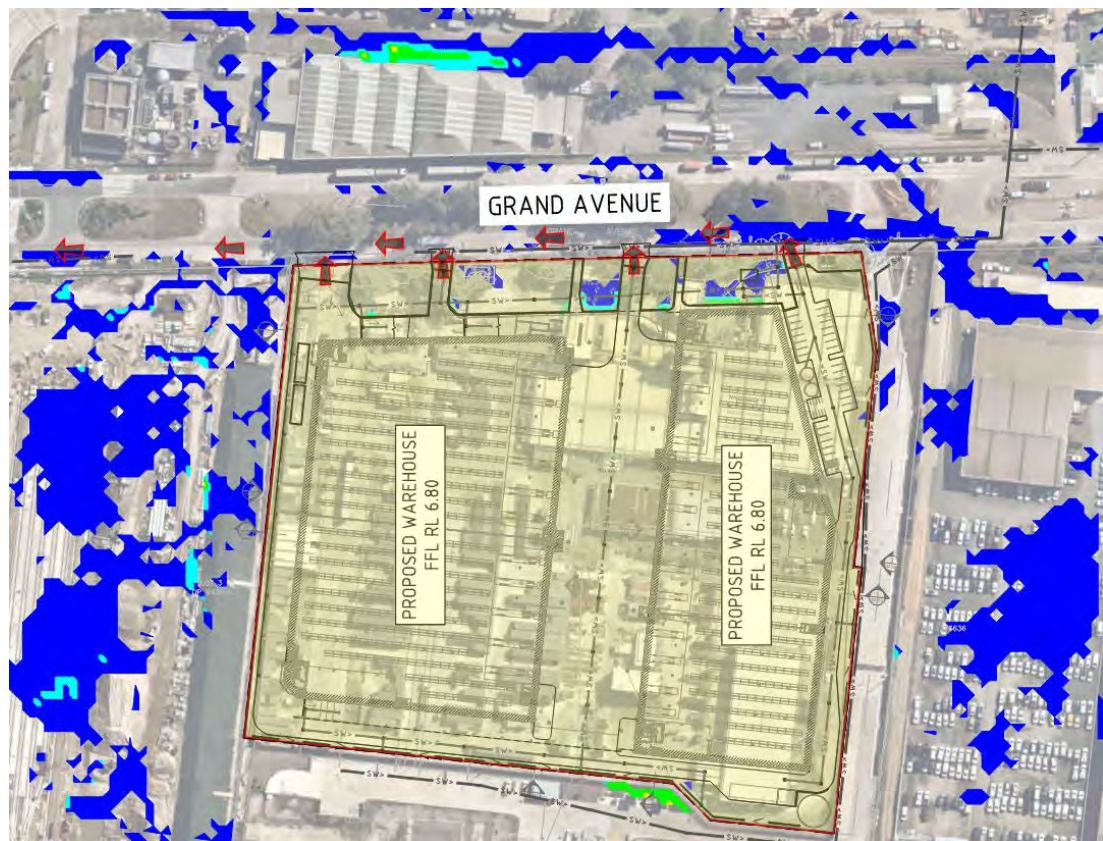


Figure 6.1 Safe access and egress to Grand Avenue during the 1% AEP storm event

A safe evacuation route to the site's north-west is available through the site's northern access points to Grand Avenue. Evacuees would be able to move to flood free areas via the M4 Motorway at the direction of the SES or other appropriate authority. The possible evacuation route is shown in **Figure 6.2** below.



Figure 6.2 Potential Emergency Evacuation Route

As the proposed evacuation route passes through an area which experiences hazardous inundation during the 1% AEP flood event, it is noted that evacuation is a viable option **ONLY** prior to the onset of flood-causing rainfall. In all storm events up to the PMF, refuge outside of significant flooding is available on site during all stages of works and should be sought in place of a delayed evacuation response. In this event, shelter in place measures should be used in lieu of evacuation.

6.5 Preparation Steps

It is the responsibility of Management to understand the risks and dangers of flooding relating to the development site, and the need to restrict access to the flood management basin (subject to flooding) in such an event.

It is recommended that key persons within Management are registered to be able to receive flood warning messages via SMS from the NSW SES. This should include a specific Flood Warden, as well as upper management personnel. Using the contents of this report, in conjunction with property specific information such as resident details and key contact person/s, the designated Flood Warden is to prepare an NSW SES Emergency Business Continuity Plan using the following website:

<https://www.sesemergencyplan.com.au/business/>

It is recommended that Emergency Flood Kits are prepared and stored in a safe and accessible location on site, nominally tenants are to prepare one for each building. This kit is to contain items such as a first aid kit, torches, batteries, bottled water, non-perishable food items, medication, blankets, spare clothes, important documents, etc. Adequate supplies are to be provisioned for in the event that all expected site occupants are to shelter in place.

Lastly, the evacuation framework contained in this report must be understood and adapted, as necessary. It is recommended that a copy or copies of this report are kept at several locations on site such as the maintenance manager, and office administrator. A thorough understanding of *Councils Local Flood Plan* should also be made.

It is noted that significant lead warning time would not be required to enable effective flood response plans to be initiated for this site to address safety of persons, however,

lead warning would be necessary for removal of vehicles from the site, or understanding when restriction of vehicles from entering the site should be made.

7 FLOOD RESPONSE

7.1 Flood Response Introduction

The following sub-sections of the report provide information on potential flood triggers that could be utilised by site management during operation to be able to prepare their own flood response plans.

The site management may install site flood depth gauges along Grand Avenue to understand inundation risks at key areas. During the operational stage, a shelter-in-place strategy is to be implemented in the building's upper levels for tenants and staff.

The following items are to be read in conjunction with the flood management plan drawing included in **Appendix A**.

7.2 Emergency Response Planning

Flood Emergency Management planning refers to the preparation of a formal community-based plan of action to deal with the threat, onset and aftermath of flooding. It involves planning for an event equal to, or greater than the event used to derive the FPL.

The review of flood conditions shows that safe access (Hazard Categorisation <H1) would be available to the site up to the PMF with sufficient early warning. However, it is noted that early warning systems are not well defined in the Camellia/Rosehill peninsula, and that this is a current consideration for the Department as documented in the Camellia-Rosehill Place Strategy. This document identifies several flood-related actions to be undertaken at the precinct level, including development of warning systems, shelter-in-place and evacuation opportunities.

Further to the above, it is understood that the entire Camellia/Rosehill precinct is prone to flash flooding in frequent storm events that render some evacuation routes unsafe. The SES has recalled several recent floods in which rescues were needed to be carried out for persons trapped in flood waters in the precinct.

With the above in mind, the plan of action should include an on-site response plan that addresses what measures should be undertaken once the threat of a flood is determined to be imminent. A flood evacuation strategy should also be included so that all persons within the precinct are familiar with the processes required if a flood occurs, and the trigger warning systems available to enable safe evacuation of the site. The two main types of responses to a flood emergency are to either:

- **Evacuate** to an area above the reach of floodwaters in the PMF. The NSW SES lists this as a preferred flood response given the risks of evacuating are considered acceptable. For this project, evacuation without the appropriate warning systems in place may expose site users to risk of entrapment given the proliferation of flash flooding through the precinct. An evacuation strategy should be considered through the life of the project as part of the ongoing review of flood responses, particularly if/when flood warning technology is updated as part of the greater Camellia-Rosehill Place Strategy;
- **Shelter in Place** within the site and wait until floodwaters have receded and the emergency has passed. Shelter in Place may be considered an alternative to evacuation only if the risks of evacuating are higher than the risks of sheltering on

site. SIP requires flood-free access to a shelter above the PMF level, which is available on the proposed development in the suspended warehouse floors or mezzanine-level offices. These shelters would be protected from the weather, have sufficient floor area for all people likely to be on site at any one time, and would be structurally stable in a PMF.

7.2.1 Evacuation

For all pluvial floods and a PMF fluvial event, both evacuation and SIP are considered as possible flood emergency response strategies for the development. The preferred emergency response strategy for this project is for early evacuation. However, the evacuation strategy would need to be developed in consultation with the SES, Parramatta Council and DPHI once flood warning alerts are made available for the Camellia Rosehill precinct to enable safe evacuation of the site prior to the onsite of flooding. Thus, it is recommended that site personnel and the designated Flood Warden are particularly vigilant regarding flood warnings and are prepared for evacuation prior to the onset of flooding.

7.2.2 Shelter in Place

In the absence of more developed flood warning systems, shelter in place shall be provisioned as part of the development. The extensive mezzanine office, the car park, the covered hardstand on the first floor and office/ warehouse amenities would provide sufficient shelter opportunities. All tenancies will be delivered with mezzanine offices which will be set to a level of RL13.170, which is approximately 5m above the PMF flood Level.

All tenancies will be able to safely seek refuge on the site should visual indicators of flooding (such as ponding in the gutter at Grand Avenue) be evident. Furthermore, provisions shall be made in the flood emergency plan to ensure sufficient emergency rations are available for extended periods of isolation. Appropriate flood preparedness training is proposed for all users of the site to ensure occupant safety in all severe weather scenarios.

The proponent will work with future tenants to adopt the appropriate measures to make these shelter opportunities available.

7.3 Response Triggers & Site Specific Measures During Operation

1. **Trigger 1 - A flood alert/watch/advice is issued by the BOM.**

- The BOM alert will be issued if flood producing rain is predicted. This provides an early warning that flooding may occur, however is not confirmation that flooding will occur. If this alert is issued then the designated Flood Warden should be on alert for further BOM, SES or site-specific Triggers.

2. **Trigger 2 – General flood alert issued by the BOM.**

- A generalised flood warning would be issued when flooding is expected to occur in a given area. These would generally be provided by the BOM with three hours warning time is expected from issue of warning to peak flood level as per the “Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 2.0” (Bureau of Meteorology, 2013).
- Any personnel should make the necessary preparations for site evacuation. Site visitors should be notified that inundation of the adjacent roads could potentially restrict egress from the site. The Flood Warden may take measures to prepare the Emergency Flood Kit for use. Occupants of the upper level tenancies should make the necessary preparations to accommodate occupants from the ground floor tenancies.
- It is noted that Trigger 3 may occur prior to Trigger 2 and the Flood Warden is required to consider this eventuality.

3. **Trigger 3 - Site flood level marker achieves flood depth of 0.1m-0.2m and/or adjacent streets are visibly inundated.**

- Flood Warden at this point should immediately evacuate any persons and machinery from the flood affected area. The Flood Warden should direct individuals in the vicinity to seek refuge within the Level 1 hardstand, warehouse and office areas, and restrict access to the Grand Avenue exits.
- Flood warden to contact SES for additional updates, if required.

End of Response Operations

Once the flood levels recede below the trigger level and the danger posed by flooding has passed, the NSW SES Parramatta Local Controller will issue an “all clear” message which will be conveyed in the same format as the warning message, via SMS. The site occupiers can then leave the industrial precinct if on site refuge was undertaken, or return to the precinct if evacuated.

8 CONCLUSION

Costin Roe Consulting Pty Ltd has been commissioned to develop this **OFERP** for the industrial development at 6 Grand Avenue, Rosehill, NSW.

The report provides a summary of flood behaviour of local flooding which affects the site, and the different conditions which cause flooding on the site.

Flood preparedness and response techniques have been clarified, including warning triggers and distribution of the flood response procedures during the operational stage of the development. During flooding events, the flood affected area is to be evacuated as early as possible and closed for all personnel and vehicles and access to the adjacent roads is to be restricted. Upon completion of the warehouse and if evacuation is not viable, staff and visitors should be directed to seek refuge within the upper levels of the site's warehouse building until flooding recedes.

Further the report provides the framework for the preparation of the flood egress plans as required throughout the operational phase of the development.

We trust this report meets your current requirements and should you wish to discuss the matter further please do not hesitate to contact the undersigned.

Yours faithfully,
Costin Roe Consulting Pty Ltd

Nelson Zeng
Design Engineer – Civil

Daniel Soliman
Associate Director - Civil

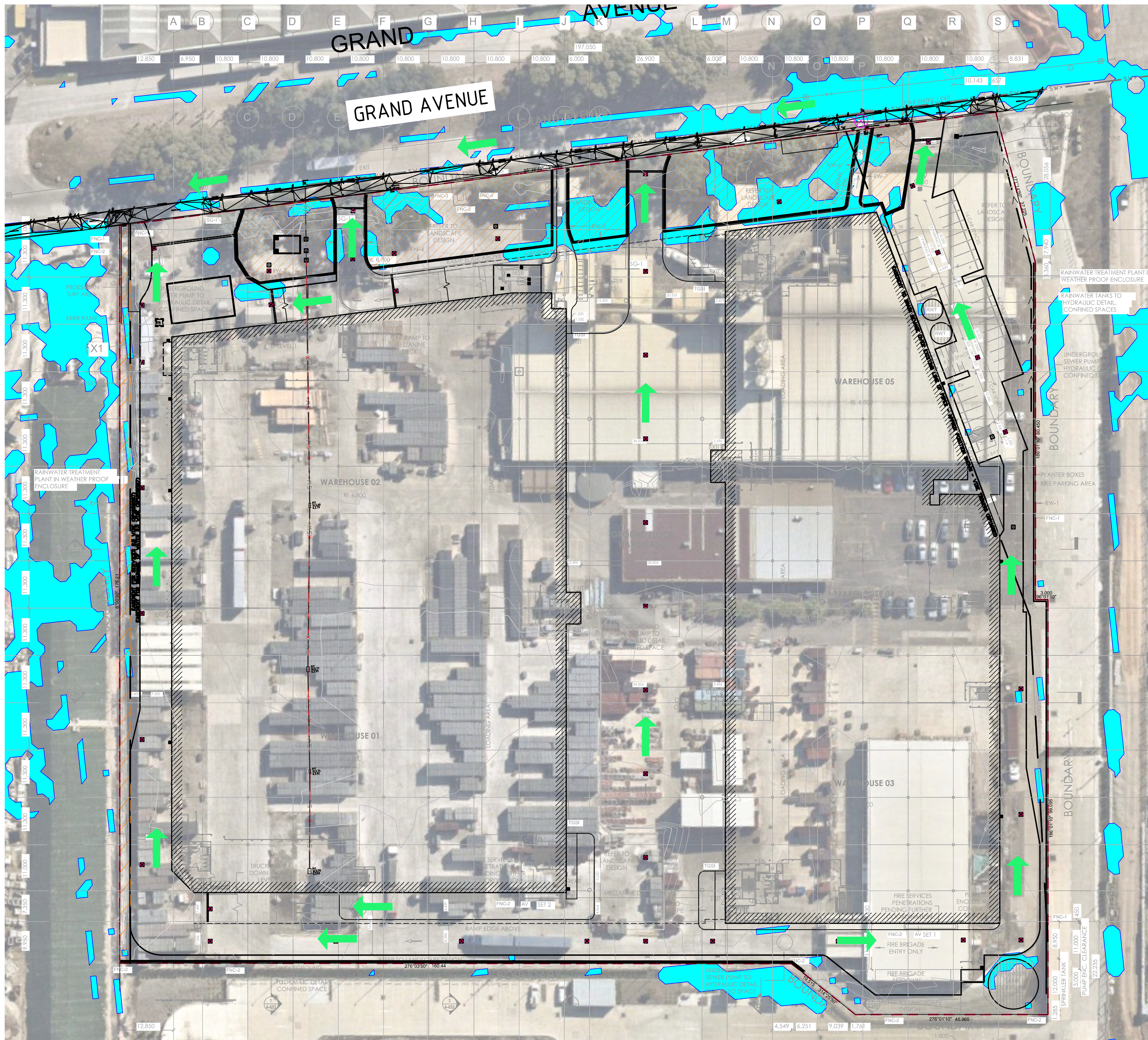
9 REFERENCES

- NSW Flood Risk Management Manual 2023
- NSW Support for Emergency Planning Flood Risk Management Guideline EM01
- OEH 2007, Floodplain Risk Management Guidelines
- Costin Roe Consulting (2023), Civil Engineering Report (Co14955.00-02h.rpt)
- Parramatta City Council (2023), Flood Enquiry Information dated 21/12/23
- Stantec (2023), Parramatta River Flood Study (ref: 59916074 / 304600102)
- SES (2019). Provision of and Requirements for Flood Warning in New South Wales
- Bureau of Meteorology (2013). Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 2.0"
- SES (2021), Parramatta LGA Flood Emergency Sub Plan

10 APPENDICES

Appendix A

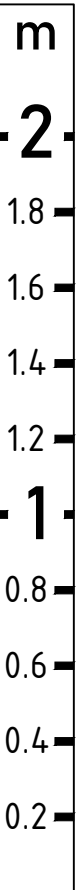
FLOOD RISK MANAGEMENT PLANS



FLOODWAY WARNING SIGN
NTS
SUGGESTED SIZE 600mm x 450mm
TO BE PROVIDED AROUND THE FLOOD
AFFECTED ZONE IN SUITABLE AREA
T.B.C ON SITE

TYPICAL WATER DEPTH BOARD
SCALE 1:20

WATER DEPTH NOTE:
WATER DEPTH BOARDS ARE PLACED IN THE FLOOD
AFFECTED AREA AND ENTRY/EXIT LOCATIONS.



EVACUATION NOTES:

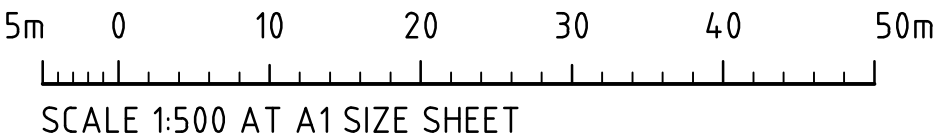
1. USING ONE OF THE ROUTES SHOWN, MOVE TO THE BUILDING QUICKLY - **DO NOT RUN & WATCH OUT FOR VEHICLES**
2. ASSIST OTHERS, IF IT IS SAFE TO DO SO
3. NOTIFY ANY STAFF ON THE PREMISES
4. DO NOT ACCESS ANY AREAS WHERE FLOOD DEPTH MARKERS SHOW DEPTH GREATER THAN 100mm

IN AN EMERGENCY:

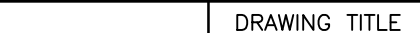
- CALL 000 AND ASK FOR THEIR APPROPRIATE EMERGENCY SERVICE. WHEN ASKED, PROVIDE THE FOLLOWING INFORMATION:
1. ADDRESS: 6 GRAND AVENUE, ROSEHILL NSW
 2. NEAREST CROSS STREET: CORNER OF GRAND AVENUE AND COLQUHOUN STREET
 3. TYPE OF EMERGENCY
 4. INFORMATION ABOUT THE EMERGENCY
 5. YOUR NAME AND CONTACT NUMBER

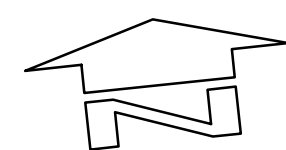
LEGEND:

- PEDESTRIAN EVACUATION ROUTE
- DENOTES APPROXIMATE 1% AEP FLOOD EXTENT
- NOMINAL LOCATION OF FLOOD SIGN & DEPTH BOARD
- OVERLAND FLOW DIRECTION

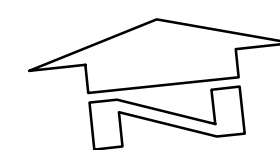
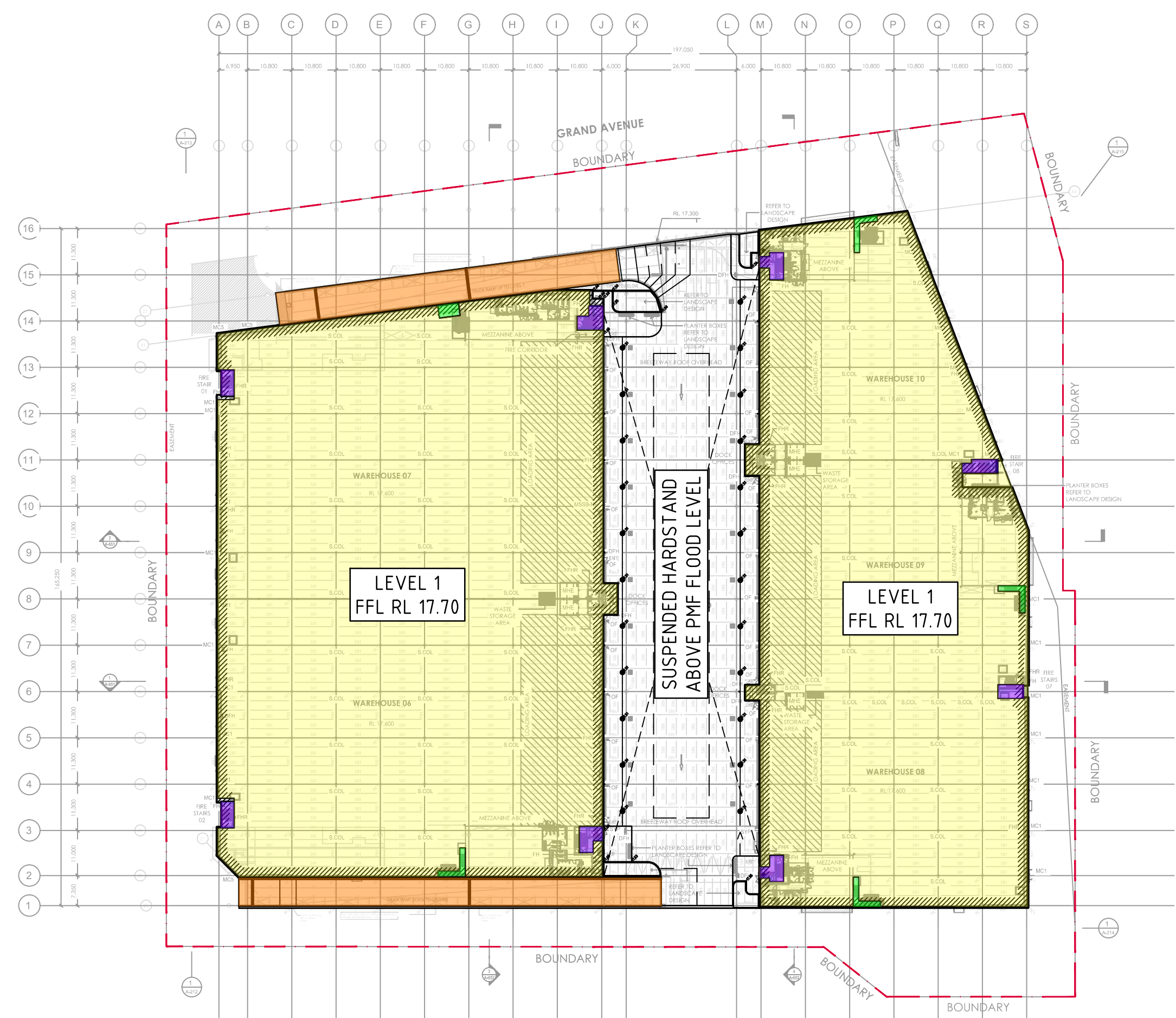


FOR INFORMATION

			ARCHITECT 	CLIENT 	PROJECT PROPOSED DEVELOPMENT 6 GRAND AVE ROSEHILL, NSW, 2142								Costin Roe Consulting Pty Ltd. ABN 50 003 696 446		 CIVIL & STRUCTURAL ENGINEERS	DRAWING TITLE FLOOD EVACUATION PLAN				
ISSUED FOR INFORMATION					12.05.26	B	PO Box N419 Sydney NSW 1220							Level 4, 8 Windmill Street, Millers Point NSW 2000						
ISSUED FOR INFORMATION					12.09.24	A	p: +61 2 9251 7699							e: mail@costinroe.com.au						
AMENDMENTS			DATE	ISSUE	DESIGNED NZ							DRAWN JB	DATE AUG '24	CHECKED DS	SIZE A1	SCALE AS SHOWN	CAD REF: C014955.01-FMP001	DRAWING No C014955.01-FMP001		ISSUE B



SHELTER IN PLACE ACCESS PLAN - GROUND FLOOR
SCALE 1:500



SHELTER IN PLACE ACCESS PLAN - LEVEL 1
SCALE 1:500

SHELTER IN PLACE NOTES:

1. SHELTER IN PLACE TO BE PROVISIONED FOR IN THE EVENT THAT EARLY EVACUATION OF THE SITE IS NOT POSSIBLE PRIOR TO A SIGNIFICANT FLOODING EVENT
2. IF PONDING DEPTHS IN GRAND AVENUE EXCEED 100mm, SITE OCCUPANTS ARE TO SHELTER IN PLACE
3. USING ONE OF THE ACCESS POINTS SHOWN, MOVE TO THE BUILDING QUICKLY - **DO NOT RUN & WATCH OUT FOR VEHICLES**
4. SEEK REFUGE IN ONE OF THE AREAS ABOVE THE PMF FLOOD LEVEL SHOWN.
5. ASSIST OTHERS, **IF IT IS SAFE TO DO SO**
6. NOTIFY ANY STAFF ON THE PREMISES

LEGEND:

- DENOTES APPROXIMATE 1% AEP FLOOD EXTENT
- DENOTES INTERNAL ACCESS BETWEEN LEVELS (STAIRS, LIFTS)
- DENOTES STAIRS TO ELEVATED MEZZANINE OFFICES
- DENOTES RAMPING BETWEEN LEVELS
- DENOTES INTERNAL FLOOR AREA ABOVE PMF FLOOD LEVEL (RL 7.80)
- DENOTES GROUND FLOOR PEDESTRIAN ACCESS DOOR

5m 0 10 20 30 40 50m
SCALE 1:500 AT A1 SIZE SHEET

FOR INFORMATION

ARCHITECT		CLIENT		PROJECT		COSTIN ROE CONSULTING PTY LTD.		DRAWING TITLE	
P/ACE ARCHITECTS		VAUGHAN CONSTRUCTIONS		PROPOSED DEVELOPMENT 6 GRAND AVE ROSEHILL, NSW, 2142		ABN 50 003 696 446		SHELTER IN PLACE PLAN	
ISSUED FOR INFORMATION		DESIGNED		DRAWN		PO Box N419 Sydney NSW 1220		DRAWING No	
ISSUED FOR INFORMATION		NZ		JB		Level 4, 8 Windmill Street, Millers Point NSW 2000		C014955.01-FMP002	
AMENDMENTS		DATE		AUG '24		p: +61 2 9251 7699		ISSUE	
		DATE		AUG '24		e: mail@costinroe.com.au		B	
		DATE		AUG '24		f: +61 2 9241 3731			
		DATE		AUG '24		w: costinroe.com.au			

Appendix B

MONTHLY RAINFALL AND CLIMATE STATISTICS

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	Plot Map
Temperature															
Mean maximum temperature (°C)	28.6	27.9	26.3	23.8	20.6	17.8	17.5	19.2	21.8	24.1	25.5	27.6	23.4	57	1987 2024
Mean minimum temperature (°C)	17.7	17.7	18.0	12.9	9.8	7.5	6.3	7.2	9.4	12.1	14.1	18.3	12.2	57	1987 2024
Rainfall															
Mean rainfall (mm)	105.2	127.3	121.9	89.9	68.8	89.4	50.1	54.6	49.9	69.2	83.7	71.8	978.7	59	1985 2024
Decile 5 (median) rainfall (mm)	90.7	107.3	92.4	58.5	45.0	62.4	33.8	32.0	35.6	47.4	68.6	85.4		60	n/a n/a
Mean number of days of rain ≥ 1 mm	9.1	9.2	10.0	7.2	6.9	7.5	5.6	5.2	5.9	7.6	8.6	7.7	90.5	59	1985 2024
Other daily elements															
Mean daily sunshine (hours)															
Mean number of clear days	7.0	5.0	7.3	9.3	9.9	9.8	12.1	13.6	11.5	8.5	6.1	6.5	106.6	43	1987 2010
Mean number of cloudy days	13.7	12.7	12.6	9.6	10.3	10.1	8.2	7.0	8.0	10.9	12.5	11.8	127.4	43	1987 2010
9 am conditions															
Mean 9am temperature (°C)	22.5	22.0	20.5	18.0	14.5	11.7	10.8	12.5	15.8	18.6	19.7	21.7	17.4	43	1987 2010
Mean 9am relative humidity (%)	74	79	80	76	79	78	75	67	63	62	69	70	73	23	1987 2010
Mean 9am wind speed (km/h)	7.3	6.4	6.4	6.7	6.7	7.2	7.7	9.1	9.8	9.8	8.4	8.1	7.8	42	1987 2010
9am wind speed vs direction plot															
3 pm conditions															
Mean 3pm temperature (°C)	26.8	26.3	24.7	22.3	19.2	16.6	16.2	17.8	20.0	21.9	23.6	25.7	21.8	43	1987 2010
Mean 3pm relative humidity (%)	57	59	59	58	60	59	55	48	46	49	54	55	55	23	1987 2010
Mean 3pm wind speed (km/h)	14.5	13.0	12.2	10.8	9.3	10.4	10.6	13.2	15.2	14.9	15.6	15.4	12.9	42	1987 2010
3pm wind speed vs direction plot															

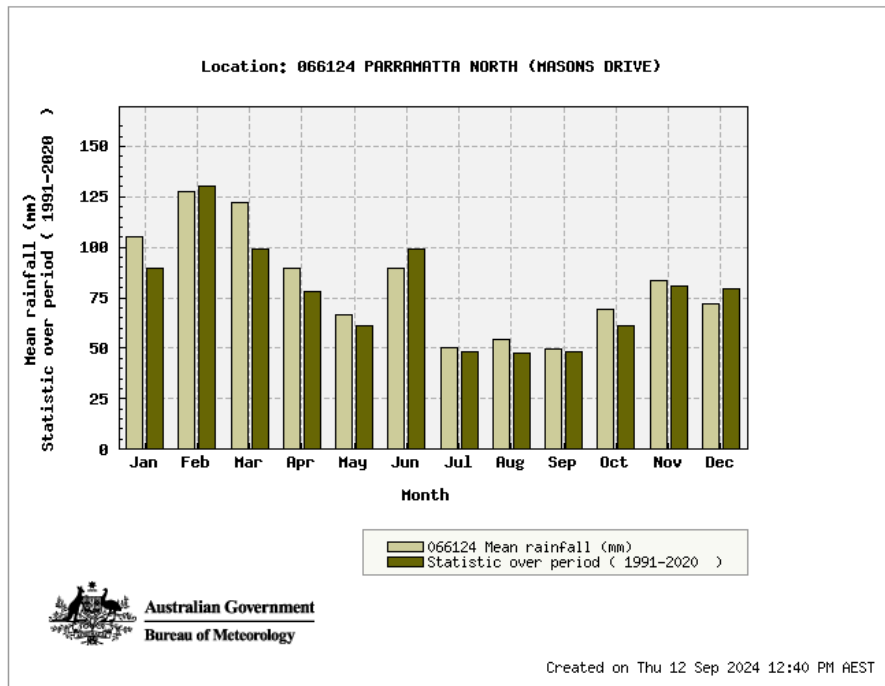
red = highest value blue = lowest value

PARRAMATTA NORTH (MASONS DRIVE)

Mean rainfall (mm)

Site details			
Site name: PARRAMATTA NORTH (MASONS DRIVE)		Site number: 066124	Commenced: 1965
Latitude: 33.79 S	Longitude: 151.02 E	Elevation: 55 m	Operational status: Still Open

Yearly data	30 year statistics	Comparison site	First statistic	Second statistic	Note: Only one option can be redrawn at a time
Compare with statistics for the 30 year period: 1991-2020					Redraw >>



Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years
Mean rainfall (mm) for years 1965 to 2024	105.2	127.3	121.9	89.9	66.8	89.4	50.1	54.6	49.9	69.2	83.7	71.8	978.7	59
Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years
Mean rainfall (mm) for years 1991 to 2020	89.9	130.3	99.1	78.3	61.3	99.0	48.0	47.4	48.5	61.3	80.8	79.6	921.6	30

12.3 = Not quality controlled

Appendix C

PARRAMATTA LOCAL SES FLOOD PLAN



PARRAMATTA LGA FLOOD EMERGENCY SUB PLAN

A Sub Plan of the Local Emergency Management Plan (EMPLAN)

Volume 1 of the Parramatta LGA Local Flood Plan

Endorsed by the Parramatta Emergency Management Committee

November 2021

AUTHORISATION

The Parramatta LGA Flood Emergency Sub Plan is a sub plan of the Parramatta Local Emergency Management Plan (EMPLAN). It has been prepared in accordance with the provisions of the ***State Emergency Service Act 1989 (NSW)*** and is endorsed by the Local Emergency Management Committee in accordance with the provisions of the ***State Emergency and Rescue Management Act 1989 (NSW)***.

Authorised



NSW SES Unit Commander

Date: **15/12/2021**

Endorsed



Chair, Local Emergency Management Committee

Date: 16/12/2021

VERSION HISTORY

Version Number	Description	Date

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

Community Planning and Engagement

NSW State Emergency Service

PO Box 6126, Wollongong NSW 2500

nswses.communityplanning@ses.nsw.gov.au

Amendments in the list below have been entered in this plan.

Amendment Number	Description	Updated by	Date

DISTRIBUTION LIST

Available for general use and distribution on the NSW State Emergency Service website

www.ses.nsw.gov.au

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1 OUTLINE AND SCOPE

1.1 PURPOSE

- 1.1.1 The purpose of this plan is to set out the multi-agency arrangements for the emergency management of flooding in the Parramatta Local Government Area (LGA).

1.2 AUTHORITY

- 1.2.1 This plan is written and issued under the authority of the *State Emergency and Rescue Management Act 1989* (NSW) ('SERM Act'), the *State Emergency Service Act 1989* (NSW) ('SES Act') and the NSW State Emergency Management Plan (EMPLAN).
- 1.2.2 This plan is a sub plan to the Parramatta Local Emergency Management Plan (EMPLAN) and is endorsed by the Parramatta Emergency Management Committee (LEMC).

1.3 ACTIVATION

- 1.3.1 This plan does not require activation. The arrangements set out in this plan are always active.
- 1.3.2 The Parramatta Emergency Management Plan (EMPLAN) is active at all times in anticipation of the need to coordinate support and resources requested by combat agencies, including the NSW State Emergency Service (NSW SES).

1.4 SCOPE

- 1.4.1 The area covered by this plan is the Parramatta LGA. The Parramatta LGA and its principal towns, villages, rivers and creeks are shown in Appendix A.
- 1.4.2 The council area is in the NSW SES Metro Zone and for emergency management purposes is part of the North West Metro Emergency Management Region.
- 1.4.3 The plan sets out the Parramatta local emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the Parramatta LGA.
- 1.4.4 In this plan a flood is defined as a relatively high water level which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves (including tsunamis) overtopping coastline defences.
- 1.4.5 This plan outlines the local level arrangements for the management of downstream consequences of dam failure.

1.5 GOALS

- 1.5.1 The primary goals for flood emergency management in NSW are:
 - a. Protection and preservation of life.

- b. Establishment and operation of flood warning systems.
- c. Issuing of community information and community warnings.
- d. Coordination of evacuation and welfare of affected communities.
- e. Protection of critical infrastructure and community assets essential to community survival during and emergency incident.
- f. Protection of residential property.
- g. Protection of assets and infrastructure that support individual and community financial sustainability and aid assisting a community to recover from an incident; and
- h. Protection of the environment and conservation values considering the cultural, biodiversity and social values of the environment.

1.6 KEY PRINCIPLES

- 1.6.1 The protection and preservation of human life (including the lives of responders and the community) is the highest priority.
- 1.6.2 Evacuation is the primary response strategy for people impacted by flooding.

1.7 ROLES AND RESPONSIBILITIES

- 1.7.1 General responsibilities of emergency service organisations and functional areas are set out in the NSW State EMPLAN and NSW State Flood Plan.
- 1.7.2 Specific roles and responsibilities for agencies, functional areas and organisations in relation to flooding within the Parramatta LGA are detailed within this plan, Appendix B and Appendix C.
- 1.7.3 Any agency with agreed responsibilities in this plan that are temporarily, or no longer able to fulfil their responsibilities must as soon as possible notify the:
 - a. NSW SES Incident Controller (for local or zone level responsibilities during response operations).
 - b. NSW SES Zone Duty Commander (for regional level responsibilities outside of response operations).

1.8 PLAN MAINTENANCE AND REVIEW

- 1.8.1 The NSW SES will maintain the currency of this plan by:
 - a. Ensuring that all supporting emergency services and functional areas, organisations and officers mentioned in it are aware of their roles and responsibilities.
 - b. Conducting exercises to test arrangements.
 - c. Reviewing the contents of the plan:
 - When there are changes which alter agreed plan arrangements.
 - When changes to land use strategic plans and policies increase the population at risk.

- After a flood including from after action reviews, reports, or inquiries; and
 - As determined by the NSW SES Commissioner.
- d. The plan is to be reviewed no less frequently than every five years or after a significant flood event.

1.9 SUPPLEMENTARY DOCUMENTS

- 1.9.1 Supplementary material published in previous versions of the Local Flood Plan is now maintained on the NSW SES website at:
<https://www.ses.nsw.gov.au/about-us/flood-storm-and-tsunami-plans/>
 including:
- a. Flood Plan Glossary.
 - b. NSW SES Dam Failure Notification Flowchart.
 - c. NSW SES Resupply Flowchart.

2 OVERVIEW OF NSW FLOOD HAZARD AND RISK

2.1 THE FLOOD THREAT

- 2.1.1 The NSW SES maintains information on the nature of flooding and effects of flooding on the community in the Parramatta LGA.
- 2.1.2 Declared dams in or upstream of the Parramatta Local Government Area.

Dam Name	Owner
Lake Parramatta	City of Parramatta Council
McCoy park retarding Basin	City of Parramatta Council
Loyalty Road Retention Basin	Hawkesbury - Nepean CMA
Sierra Place Retarding Basin	The Hills Shire Council
Fox Hills Retarding Basin	Cumberland Council
Murfield Golf Club	Muirfield Golf Club Limited
Muirfield Golf Course Det. Basin	Muirfield Golf Club Limited
Northmead Reserve Det. Basin	The Hills Shire Council
Gooden Reserve	The Hills Shire Council
CSIRO Retarding Basin	Cumberland City Council
Pied Piper Playground	Blacktown City Council
West Epping Park	City of Parramatta

3 PREVENTION/ MITIGATION

3.1 INTRODUCTION

- 3.1.1 The Floodplain Development Manual outlines the NSW Government's Flood Prone Lands Policy which details the framework for managing flood prone land in New South Wales. Incorporation of floodplain risk management into land use

planning is one of the key means to limit the exposure to flood risks to our communities and help build long term resilience to future flood events.

3.2 LAND USE PLANNING

3.2.1 Strategy: Work with landuse planning and consent authorities to advocate that the risks arising from floods are considered so as to prevent the creation of intolerable impacts of these hazards on the community.

Actions:

- a. NSW SES will provide strategic input about land use planning matters which have or will create significant flood risk.
- b. NSW SES will provide responses to land use planning proposal referrals that have or will create significant flood risk.

3.3 FLOODPLAIN RISK MANAGEMENT

3.3.1 Strategy: NSW SES advocates for the recognition of emergency management considerations through participation in the floodplain risk management program.

Actions:

- a. NSW SES will provide coordinated and consistent emergency management advice to councils and other agencies in relation to the management of land that is subject to flooding or coastal inundation; and
- b. NSW SES will provide advice, support and technical resources for NSW SES representatives to contribute effectively to local Floodplain Management Committees.

4 PREPARATION

4.1 INTRODUCTION

4.1.1 Preparation includes arrangements or plans to deal with an emergency or the effects of an emergency.

4.2 FLOOD EMERGENCY PLANNING

4.2.1 Strategy: NSW SES develop, review and maintain Flood Sub Plans

4.2.2 Actions:

- a. Develop and review this NSW SES Local Flood Plan as required. Local Flood Plans outline the specific arrangements for management of flood events within an LGA, and may include cross boundary arrangements; and
- b. Review plans as per [Section 1.8](#).

4.2.3 Local EMPLAN Consequence Management Guides for flood are not required for communities covered by NSW SES Local Flood Plans.

4.3 FLOOD INTELLIGENCE SYSTEMS

- 4.3.1 **Strategy:** NSW SES develop and maintain a flood intelligence system to identify flood behaviour, its impact on the community and required response actions.

Actions:

- a. Gather and assess flood information for the full range of flood types and severities.
- b. Collect, collate, and assess information on the characteristics of communities at risk and the potential effects of flooding on communities at risk; and
- c. Share flood intelligence information with supporting agencies.

4.4 DEVELOPMENT OF WARNING SYSTEMS

- 4.4.1 **Strategy:** Develop, maintain and prepare systems for the provision of flood warnings and associated warning services.

Actions:

- a. All levels of government work in partnership to develop and maintain flood warning infrastructure.
- b. NSW SES maintains a list of the requirements for flood warnings for flood gauges in NSW (including flood classifications, warning times required and key statistics) and can be found in the supplementary document to the NSW State Flood Plan (see Section 1.9)..
- c. The NSW SES will recommend new warning services and changes to warning alert levels for gauges to the NSW Flood Warning Consultative Committee.
- d. The State Government, in partnership with Local Government, is responsible for developing and maintaining flash flood warning systems for local catchments where required.
- e. City of Parramatta Council has developed and maintains a flash flood warning system for Parramatta CBD .
- f. Dam Owners will provide Dam Failure Warning Systems (where required) and consult NSW SES on alert levels and messaging. Alert level definitions are listed in Dam Emergency Plans.
- g. NSW SES maintains a dedicated dam failure hotline and procedures to ensure priority dissemination of dam failure warnings.
- h. NSW SES develops and maintains warning and flood information products by:
 - Utilising flood intelligence data.
 - Developing pre-written warning and flood information products.
 - Continuously reviewing warning and flood information products; and
 - Consulting with affected communities, key stakeholders, Dam Safety NSW and the NSW Flood Warning Consultative Committee; and maintain Operational Readiness.

4.5 BRIEFING, TRAINING AND EXERCISING

- 4.5.1 **Strategy:** Ensure NSW SES, supporting agencies, functional areas and the community are prepared and familiar with the strategies and arrangements within the Flood Sub Plan and supporting documents.

Actions:

- a. NSW SES will consult stakeholders throughout the development of plans.
- b. NSW SES will inform stakeholders of content changes after revisions.
- c. NSW SES will ensure their facilities and resources are maintained and operationally ready.
- d. NSW SES will train personnel for their expected flood operation roles; and
- e. NSW SES will regularly brief stakeholders on the exercise arrangements contained in the NSW Flood Sub Plan.

4.6 COMMUNITY RESILIENCE TO FLOODING

- 4.6.1 **Strategy:** NSW SES provides and maintains a flexible volunteer workforce to support community resilience.

Actions:

- a. Ensure ongoing recruitment and training of a diverse range of volunteers.
- b. Ensure pre-planning to facilitate the management of spontaneous volunteers and community members during a flood.

- 4.6.2 **Strategy:** NSW SES works with individuals, communities, businesses and government agencies to build flood resilience.

Actions:

- a. Work with communities to understand and manage the risks associated with floods, including providing business continuity guidance (NSW SES Business Floodsafe), family preparedness (NSW SES Home Floodsafe) and other engagement strategies.
- b. NSW SES will collate, assess and disseminate flood information to the community.
- c. Collaborate with individuals, businesses, government agencies and communities when developing flood intelligence, preparedness and response information.
- d. Plan for floods collaboratively with communities through community and stakeholder participation and engagement.

5 RESPONSE

5.1 INTRODUCTION

- 5.1.1 Flood response operations will begin:

- a. On receipt of a Bureau of Meteorology (BoM) Severe Weather Warning or Thunderstorm Warning that includes heavy rain or storm surge; or
- b. On the receipt of a BoM Flood Watch or Flood Warning; or
- c. On receipt warnings for flash flood; or
- d. On receipt of a dam failure alert; or
- e. When other evidence leads to an expectation of flooding.

5.2 INCIDENT MANAGEMENT ARRANGEMENTS

5.2.1 Strategy: Maintain effective control of flood operations across New South Wales.

Actions:

- a. The NSW SES uses the Australasian Inter-service Incident Management System (AIIMS) to manage the flood response.
- b. Control of flood response will be at the lowest effective level and may be scaled to suit the incident.
- c. The NSW SES State Duty Commander will appoint Incident Controllers and establish Incident Control Centres (see NSW SES facilities on map in Appendix A).
- d. The Incident Controller, in consultation with participating supporting emergency services and Functional Areas will determine the appropriate breakdown of an incident area into Divisions and/or Sectors in accordance with the principles of AIIMS as well as the predefined Divisions and Sectors outlined within the NSW SES Intelligence System

5.2.2 Strategy: Maintain Incident Control Centre(s).

Actions:

- a. NSW SES will operate Incident Control Centre(s) as required.
- b. The NSW SES Incident Control Centre(s) will:
 - Control resources from NSW SES and coordinate resources of supporting emergency services and functional areas.
 - Manage Request for Assistance (RFA) tasking and ensure they are actioned in a timely manner.
 - Undertake response planning and determine future resourcing requirements; and
 - Coordinate information flow, including warnings, public information and social media.

5.2.3 Strategy: Provide effective liaison between the NSW SES and supporting agencies or functional areas in accordance with Local EMPLAN.

Actions:

- a. Supporting emergency services and Functional Areas should provide Liaison Officers to NSW SES Incident Control Centre(s) and/or Emergency Operation Centres as required; and
- b. NSW SES will provide Liaison Officer(s) to Emergency Operations Centres as required.

5.2.4 **Strategy:** Coordinate resources and logistics support to ensure operational effectiveness.

Actions:

- a. The NSW SES Incident Controller will notify agencies of potential access issues between locations, for the consideration of pre-deploying of resources.
- b. The NSW SES may request resources and logistics support directly from a supporting emergency service or Functional Area.
- c. Wherever possible, supporting organisations are to provide their own logistic support in consultation with NSW SES where appropriate.
- d. The NSW SES Incident Controller will control air support operations and may utilise supporting agencies in the management of aircraft.

5.3 USE OF INFORMATION AND COLLECTION OF INTELLIGENCE

5.3.1 **Strategy:** Ensure flood information is effectively communicated and collected during a flood.

Actions:

- a. Information relating to the consequences of flooding, response strategies, situational awareness and operational updates will be distributed by NSW SES to supporting emergency services and Functional Areas listed under this Plan.
- b. All supporting emergency services and Functional Areas will accurately record and report information relevant to their activities and any real time flood information (including road closure information) to the NSW SES Incident Controller. This may be in the form of a combined Emergency Operations Centre (EOC) report, or direct from agencies where an EOC has not been established.
- c. The NSW SES may establish and operate a Joint Intelligence Unit to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information; and
- d. Reconnaissance, mapping, damage assessments, intelligence validation and post flood evaluation will be coordinated by NSW SES. This may occur post impact and continue into the recovery phase.

5.3.2 **Strategy:** Ensure flood intelligence is incorporated into operational decision-making.

Action: The NSW SES will use flood intelligence and official forecasts and warnings, to undertake an assessment of the predicted impact of a flood and to inform operational decision-making.

5.4 PROVISION OF INFORMATION AND WARNINGS TO THE COMMUNITY

5.4.1 **Strategy:** Timely and effective warnings are distributed to the community.

Actions:

- a. The BoM issues public weather and flood warning products before and during a flood. These may include:
 - Severe Thunderstorm Warnings with reference to heavy rainfall
 - Regional Severe Thunderstorm Warnings with reference to heavy rainfall
 - Detailed Severe Thunderstorm Warnings (for Sydney / Newcastle / Wollongong) with reference to heavy rainfall,
 - Severe Weather Warnings with reference to heavy rainfall and/or storm surge,
 - Flood Watches, and
 - Flood Warnings.
- b. City of Parramatta Council will use the following established flash flood warning system for Parramatta CBD to provide warnings and information to NSW SES, key stakeholders and the community. Floodsmart
- c. Dam Owners will utilise Dam Failure Warning Systems to provide warnings and information to NSW SES and communities (where appropriate).
- d. NSW SES Incident Controllers will issue the following NSW SES flood information products incorporating warnings from the above, expected consequences and safety messages:
 - Livestock and Equipment (pump) Warnings
 - Local Flood Advices
 - Flood Bulletins
 - NSW SES Evacuation Warning
 - NSW SES Evacuation Order
 - NSW SES All Clear
- e. NSW SES liaises with the Bureau of Meteorology to discuss the development of flood warnings as required.
- f. NSW SES provides alerts and deliver flood information to affected communities using a combination of the following methods:
 - Mobile and fixed public address systems.
 - Two-way radio.
 - Emergency Alert (SMS and voice message alerting system).
 - Telecommunications (including Auto dial systems).
 - Facsimile
 - Standard Emergency Warning Signal.
 - Doorknocking.

- Mobile and fixed sirens.
 - Variable message signs.
 - Community notices in identified hubs.
 - Distribution through established community liaison networks, partnerships and relationships; and
 - NSW SES social media and website.
- g. NSW SES may request supporting agencies redistribute NSW SES alerts and information, including through the provision of doorknocking teams.
- h. Road closure information will be provided to the community through the following agencies/methods:
- Local Government Council websites; and
 - My Road Info
 - Transport for NSW 'Live Traffic' website: www.livetraffic.com or 'Transport InfoLine': 131 500. VMS messaging on roadways may also be used to advise motorists.
- i. The Public Information and Inquiry Centre will be established by the NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.
- j. The Disaster Welfare Assistance Line will be established by Disaster Welfare Services where required to provide information on welfare services and assistance. Assistance line contact details will be broadcast once Disaster Welfare Services commence.

5.5 PROTECTION OF PROPERTY

5.5.1 **Strategy:** Coordinate the protection of property from destruction or damage arising from floods.

Action: NSW SES, supporting agencies, and community volunteers will assist the community (where resources are available, feasible and safe to do so) in:

- a. The protection of properties through flood protection systems (e.g. sandbagging) to minimise entry of water into buildings; and
- b. The raising or moving of household furniture and commercial stock/equipment.

5.6 ROAD AND TRAFFIC CONTROL

5.6.1 **Strategy:** Coordinate the closing and re-opening of flood affected roads.

Actions:

- a. City of Parramatta Council will coordinate the closure and reopening of council managed roads once inspections have been carried out by the relevant authority.

- b. Transport for NSW will coordinate the closure and reopening of the state road network.
- c. The NSW Police Force may close and re-open roads but will normally only do so (if the City of Parramatta Council or Transport for NSW have not already acted and if public safety requires such action;
- d. NSW SES will assist with erecting road closure signs and barriers when time and resources permit.

5.6.2 **Strategy:** Coordinate traffic control measures in flood affected areas.

- a. The NSW SES Incident Controller may direct the imposition of traffic control measures into flood affected areas in accordance with the provisions of the *State Emergency Service Act, 1989* and the *State Emergency Rescue Management Act, 1989*.
- b. The NSW SES Incident Controller may request the Local Emergency Operations Controller provide suitable personnel to assist with traffic coordination.

5.7 PROTECTION OF ESSENTIAL SERVICES

5.7.1 Local and Region EMPLAN's contain infrastructure inventories.

5.7.2 **Strategy:** Minimise disruption to the community by ensuring protection of infrastructure and supply of essential energy and utility services.

Actions:

- a. Transport Services Functional Area will keep the NSW SES informed of the status of transport network infrastructure.
- b. The Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).
- c. The Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Government Radio Network.
- d. The Engineering Services Functional Area is to coordinate the assessment and restoration of critical public buildings for example hospitals; and
- e. Functional Areas will keep the NSW SES informed of the status of utilities and infrastructure.

5.8 EVACUATION

5.8.1 Evacuation is the NSW SES's primary response strategy for managing the population at risk of flooding.

5.8.2

5.8.3 **Strategy:** Conduct planning to ensure all evacuation constraints are considered.

Actions:

- a. Evacuations will take place when there is a risk to public safety. Circumstances may include:

- Evacuation of people when their homes or businesses are likely to flood.
 - Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access; and
 - Evacuation of people where essential energy and/or utility services are likely to fail or where buildings have been or may be made uninhabitable; and
- b. The NSW SES will consider the following in evacuation decisions:
- Duration of evacuation.
 - Characteristics of the community.
 - Numbers requiring evacuation.
 - Availability of evacuation routes and transport.
 - Time available for evacuation.
 - Evacuee management requirements; and
 - Resources and delivery of evacuation information.
- c. NSW SES Incident Controllers, and flood planners will carefully consider the risks involved in conducting evacuations.
- d. All evacuation decisions will be made as per the current NSW SES policies and procedures, and consistent with the NSW Evacuation Management Guidelines.
- e. Potential Evacuation Centres are located in Local EMPLAN; and
- f. The NSW Police Force will coordinate the provision of overall security for evacuated areas.

5.8.4 **Strategy:** Evacuate people pre-emptively from dangerous or potentially dangerous places and or locations created by the flood hazard to safe locations away from the hazard.

- a. NSW SES will control and coordinate the evacuation of affected communities.
- b. The NSW SES Incident Controller will warn communities to prepare for a possible evacuation, where circumstances allow such lead time.
- c. The NSW SES Incident Controller will order any necessary evacuations and provide information to the community about when and how to evacuate.
- d. Support to evacuation operations may be requested from other emergency services and supporting agencies using arrangements in the local EMPLAN and supporting plans.
- e. Health Services Functional Area will coordinate the evacuation of hospitals, health centres and aged care facilities (including nursing homes) in consultation with the NSW SES and Welfare Services.
- f. School administration offices (Government and Private) will coordinate the evacuation of schools in consultation with the NSW SES and Welfare Services, if not already closed.

- g. Camping Ground proprietors will inform the NSW SES Incident Controller when camping ground evacuations have been completed.
- h. People who are reluctant or refuse to comply with any Evacuation Order will be referred to the NSW Police Force.

5.9 EVACUEE MANAGEMENT AND WELFARE

5.9.1 Research and experience in flood operations shows that most evacuees go to family, friends and commercial accommodation outside the impact area.

5.9.2 **Strategy:** Maintain the welfare of communities and individuals affected by the impact of a flood.

Actions:

- a. NSW SES will provide initial welfare for evacuees where required but will hand the responsibility over to the Welfare Services Functional Area as soon as possible. In these cases, the NSW SES will brief the Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required.
- b. Welfare Services Functional Area will manage evacuation centres for affected residents and travellers in accordance with the Welfare Services Functional Area Supporting Plan.
- c. Schools Administration (Government and Private) will manage the safety of students directly affected by flooding and will work with the NSW SES in the temporary closure of schools and will coordinate with NSW SES Transport and Welfare Services in the management of school evacuees.
- d. Disaster Victim Registration will be controlled and coordinated by the NSW Police Force with the assistance of NSW SES and Welfare Services Functional Area.
- e. NSW SES will provide details of all residents assisted in evacuations to the Welfare Services Functional Area as early as possible.
- f. Where the expected remaining number of evacuees and the duration of evacuation is assessed to be beyond the capability and capacity of the established evacuation centre arrangements the SEOCON may establish Major Evacuation Centres or Mass Care facilities; and
- g. The decision to establish Major Evacuation Centres or Mass Care Facilities will be made by the NSW SES and SEOCON in consultation with members of the State Emergency Management Committee.

5.9.3 **Strategy:** Coordinate available and accessible health services for flood affected communities.

Action: The provision of environmental health advice, assessment of public health risks and coordination of immediate mental health support will be provided by Health Services Functional Area.

5.9.4 **Strategy:** Coordinate maintenance of food supplies for flood affected communities.

Actions: All matters relating to the primary production, manufacturing, processing and handling of all food from primary industries to retail, inclusive of

all restaurants, food services and catering businesses should be referred to the NSW Food Authority through the Agriculture and Animal Services Functional Area.

5.9.5 Strategy: Maintain the welfare of animals impacted by a flood.

Actions:

- a. Agriculture and Animal Services Functional Area will coordinate the welfare of livestock, pets, companion animals and wildlife including support to primary producers, animal holding establishments and community members; and
- b. Agriculture and Animal Services Functional Area role will assist with evacuation, emergency care of animals and assessment, humane destruction and disposal of affected animals, and supply of emergency fodder, water and aerial support where necessary.

5.10 FLOOD RESCUE

5.10.1 Strategy: Control and coordinate flood rescue of people and domestic animals.

Actions:

- a. NSW SES will perform flood rescue, where training and equipment is suitable and where a risk assessment has indicated that the risk to rescuers is acceptable.
- b. Flood rescue operations will be conducted in accordance with the State Rescue Board Land Rescue Policy and the NSW State Rescue Board Flood Rescue Policy which sets out the framework, governance, responsibilities and requirements for the management and conduct of flood rescue in NSW.
- c. NSW SES may request other supporting emergency services to undertake flood rescues on behalf of the NSW SES. Agencies must be authorised/accredited to undertake flood rescue operations in accordance with State Rescue Board requirements, as prescribed by NSW SES. Supporting emergency services must supply information regarding rescues performed to the NSW SES. Notification arrangements with NSW Police Force are outlined in the NSW State Rescue Board Flood Rescue Policy; and
- d. Rescue agencies will conduct rescue of domestic small and large animals as per the State Rescue Board Land Rescue Policy (and may include Large Animal Rescue of family horses and cows at a residence or property). The rescue of livestock (which includes commercial animals found on farming and breeding enterprises) will be coordinated through Animal and Agriculture Services Functional Area.

5.11 RESUPPLY

5.11.1 Strategy: Coordinate resupply to towns and villages isolated by flooding to minimise disruption to the community.

Actions:

- a. NSW SES will advise communities and businesses if flood predictions indicate that areas are likely to become isolated, and indicative timeframes where possible.
- b. Retailers should be advised to ensure sufficient stock is available for the duration of the flood.
- c. When isolation occurs, NSW SES will establish loading points where retailers can instruct suppliers to deliver goods.
- d. NSW SES will endeavour to deliver mail to isolated communities but may not be able to do so according to normal Australia Post timetables.
- e. NSW SES will assist hospitals with resupply of linen and other consumables where able.
- f. NSW SES may request resupply assistance from supporting agencies.

5.12 ALL CLEAR AND RETURN

5.12.1 Strategy: Coordinate the safe return of communities to flood affected areas when the immediate danger to life and property has passed.

Actions:

- a. NSW SES Incident Controller will determine when it is safe to progressively return in consultation with the relevant Emergency Operations Controller and supporting agencies, considering the impact on the following:
 - Access and egress
 - Communications
 - Power supply
 - Gas supply
 - Infrastructure damage
 - Hazardous materials; and
 - Public health risks (including sewerage)
- b. NSW SES Incident Controller will specify the level of access to affected communities as the following:
 - Not suitable for access.
 - Limited access by emergency services and response agencies.
 - Limited access by residents and/or business operators; or
 - Full access
- c. NSW SES Incident Controller will issue an 'All Clear' message when the immediate and forecast danger to life and property has passed for areas assessed as safe; and
- d. The NSW SES will facilitate the return of evacuees to their homes.

5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy:** Conclude response operations.

Actions:

- a. Response operations will conclude when:
 - The physical impact of the flood has ceased.
 - All requests for assistance related to the flood have been completed;
 - The need for warning and evacuation no longer exist.
 - There is no further likelihood of rescuing people.
 - Resupply is no longer required (resupply operations may occur concurrently with the recovery phase).
 - Response to fire and hazardous material incidents have concluded (not including subsequent clean-up of contaminated sites); and
 - All affected areas have had an 'All Clear' issued.

5.14 POST IMPACT ACTIONS

5.14.1 **Strategy:** Learnings from the event are used to inform recovery and future events.

Actions:

- a. NSW SES will continue to engage with communities after significant floods through convening one or more community forums, workshops or other opportunities to provide communities a chance to provide feedback, address any concerns and provide input into the recovery process. These will typically include other agencies such as the Bureau of Meteorology, Welfare Services and City of Parramatta Council representatives.
- b. NSW SES will ensure that damage assessment information is provided to the relevant Emergency Operations Controller to inform the recovery impact assessment.
- c. NSW SES will conduct After Action Reviews, wherever possible, within three weeks of the end of response operations, which will involve all stakeholders. Findings will be shared and incorporated into improved disaster resilience planning.
- d. NSW SES will undertake/coordinate a comprehensive review of intelligence and plans following significant flood events.

5.14.2 **Strategy:** Participate in post flood data collection analysis.

Actions: NSW SES will work with the NSW Department of Planning, Industry and Environment (DPIE) and City of Parramatta Council on post flood data collection analysis including review of flood intelligence where necessary.

6 RECOVERY OPERATIONS

6.1 INTRODUCTION

6.1.1 Recovery is the process of returning an affected community to its proper level of functioning after an emergency. It will generally commence simultaneously with the Response phase.

6.1.2 Recovery operations will be initiated and conducted as outlined in the NSW State EMPLAN and as further detailed in the NSW Recovery Supporting Plan.

6.2 NSW SES RECOVERY ROLE

6.2.1 **Strategy:** NSW SES will support recovery operations and established Recovery Committees.

6.2.2 **Actions:**

- a. NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the Recovery phase.
- b. NSW SES roles on Recovery Committees may include providing information about any continuing response, guidance on mitigation strategies and general advice and assistance to the committee as a subject matter specialist and or expert.
- c. NSW SES will provide information to Resilience NSW to support applications to Treasury for Natural Disaster Relief and Recovery Arrangements.
- d. The NSW SES, in conjunction with a Recovery Committee, will provide a service to support the information needs of a community immediately following a flood; and
- e. NSW SES and where required supporting agencies will assist with clean-up operations after floods, where possible when resources and personnel permit.

7 ABBREVIATIONS

For a full list of abbreviations refer to the NSW State Flood Plan - Abbreviations

8 GLOSSARY

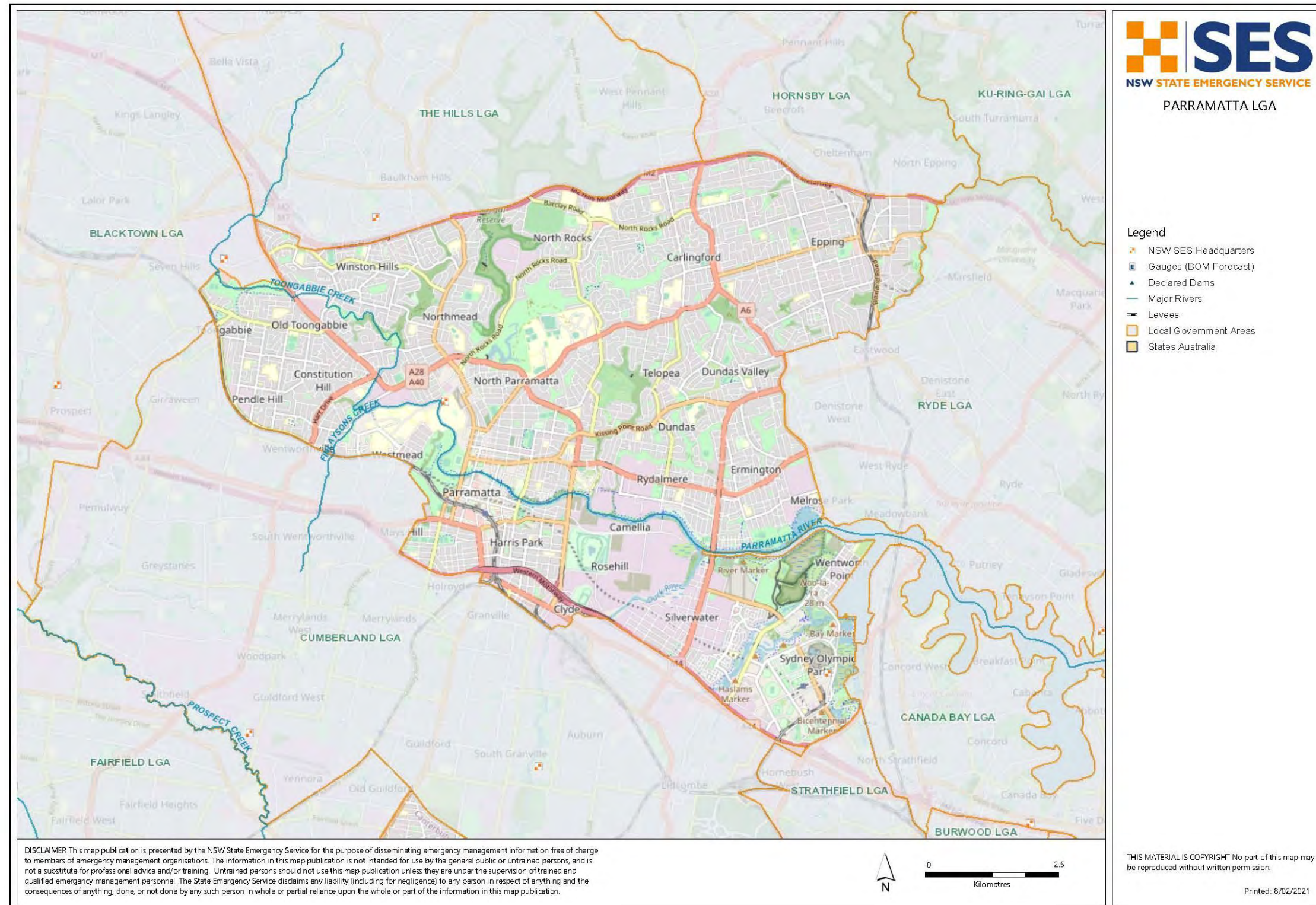
Common emergency service terminology can be found within the Australian Disaster Resilience Glossary.

Readers should refer to EMPLAN Annex 9 – Definitions.

Refer to the NSW State Flood Plan for a complete glossary of terminology used throughout this plan and within NSW SES Flood Plans.

For a full list of definitions refer to the Supporting Document - State Flood Plan Glossary
<https://www.ses.nsw.gov.au/media/2650/glossary.pdf>

9 Appendix A – Map of Parramatta LGA



10 Appendix B – Roles and Responsibilities

AGENCY	RESPONSIBILITIES
NSW State Emergency Service	The NSW SES is the designated Combat Agency for floods, storms and tsunami and controls response operations. NSW SES roles and responsibilities in relation to floods are detailed within the New South Wales State Flood Plan .

AGENCY	RESPONSIBILITIES
Agriculture and Animal Services Functional Area	The roles and responsibilities for Agriculture and Animal Services are outlined in the Agriculture and Animal Services Supporting Plan Roles and responsibilities in addition to the Supporting Plan are: • Disseminate briefing information to participating agriculture and animal services and related stakeholders. • When activated the Agriculture and Animal Services will coordinate the provision of required services which may include: – Coordinate response for animal welfare including pets, livestock and wildlife. – Supply and delivery of emergency fodder. – Emergency water replacement in certain circumstances; and – Financial, welfare and damage assessment assistance to flood affected primary producers. • Support recovery arrangements including: – Administer transport subsidies to primary producers.
Australian Government Bureau of Meteorology	The roles and responsibilities of the Australian Government Bureau of Meteorology are outlined in the NSW State Flood Plan.
City of Parramatta Council	Preparedness • Establish and maintain floodplain and coastal risk management committees and ensure that key agencies are represented. • Develop and implement floodplain risk management plans in accordance with the NSW Government's Flood Prone Land Policy and the Floodplain Development Manual. • Provide levee studies, flood studies and floodplain management studies to the NSW SES. • Maintain Dam Safety Emergency Plans for the City of Parramatta dams and provide copies to the NSW SES. • Provide information on the consequences of dam failure to the NSW SES for incorporation into planning and flood intelligence.

AGENCY	RESPONSIBILITIES
	• Coordinate the development of warning services for catchments prone to flash flooding (small catchments), where appropriate; • Maintain council-owned flood warning networks and flood mitigation works. • Participate in NSW SES-led flood emergency planning meetings, to assist in the preparation of Flood Sub-Plans. • Maintain a plant and equipment resource list for the council area. • Contribute to community engagement activities. Response • Subject to the availability of council resources, assist the NSW SES with flood operations including: – Traffic management on council managed roads. – Provision of assistance to the NSW SES (plant, equipment and personnel where able and requested). – Property protection tasks including sandbagging. – Assist with the removal of caravans from caravan parks – Warning and/or evacuation of residents and other people in flood liable areas. – Provision of back-up radio communications – Resupply of isolated properties; and – Technical advice on the impacts of flooding. – Close and reopen council roads (and other roads nominated by agreement with Transport for NSW) and advise the NSW SES, the NSW Police Force and people who contact the council for road information. – Assist the NSW SES to provide filled sandbags and filling facilities to residents and business in areas which flooding is expected. • Assist with making facilities available for domestic pets and companion animals of evacuees during evacuations. • Operate flash flood warning systems; • Operate flood mitigation works including critical structures such as detention basins and levees and advise the NSW SES regarding their operation. • Manage and protect council-owned infrastructure facilities during floods. • Provide advice to the NSW SES and the Health Services Functional Area during floods about key council managed infrastructure such as sewerage treatment and water supply.

AGENCY	RESPONSIBILITIES
	• Advise the Environmental Protection Agency of any sewerage overflow caused by flooding. • Work with the NSW SES and DPIE to collect flood related data during and after flood events. Recovery • Provide for the management of health hazards associated with flooding including removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition. • Provide services, assistance and advice to State Government in accordance with the State Recovery Plan.
Caravan Park and Camp Ground Proprietor(s)	• Prepare a flood emergency plan for the site; • Ensure that campers, owners and occupiers of movable dwellings are aware that the site is flood liable by providing a written notice to occupiers taking up residence and displaying this notice and emergency management arrangement within the park. • Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should: – Provide the manager of the caravan park with a contact address and telephone number in case of an emergency; and – Leave any movable dwelling in a condition allowing it to be relocated in an emergency (i.e.: should ensure that the wheels, axles and draw bar of the caravans are not removed and are maintained in proper working order). • Ensure that occupiers are informed of Flood Information. At this time, occupiers should be advised to: – Ensure that they have spare batteries for their radios. – Listen to a local radio station for updated flood information; and – Prepare for evacuation and movable dwelling (cabins) relocation. • Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs. • Coordinate the evacuation of people and the relocation of movable dwellings when floods are rising and their return when flood waters have subsided. Movable dwellings will be relocated back to the caravan park(s) by owners or by vehicles and drivers arranged by the park managers. • Secure any movable dwellings that are not able to be relocated to prevent floatation; and

AGENCY	RESPONSIBILITIES
	• Inform the NSW SES of the progress of evacuation and/or movable dwellings relocation operations and of any need for assistance in the conduct of these tasks.
Childcare Centres and Preschools	• When notified of possible flooding or isolation, childcare centres and preschools should. – Liaise with the NSW SES and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures; and – Assist with coordinating the evacuation of preschools and childcare centres.
Dams Safety NSW	The roles and responsibilities of the Dams Safety NSW (formerly NSW Dam Safety Committee) are outlined in the NSW State Flood Plan.
Department of Defence	Arrangements for Defence Assistance to the Civil Community are detailed within the State EMPLAN (section 448).
Department of Industry	The roles and responsibilities for the Department of Industry (Crown Lands and Water Division) are outlined in the NSW State Flood Plan.
Energy and Utilities Services Functional Area	The roles and responsibilities for Energy and Utilities Services are outlined in the Energy and Utility Services Supporting Plan (EUSPLAN). Roles and responsibilities in addition to the Supporting Plan are: • Assist NSW SES with identification of infrastructure at risk of flood damage where resources are available. • Facilitate local utility service distribution providers (electricity, gas, water, wastewater) to: – Provide advice to the NSW SES of any need to disconnect power/gas/water/wastewater supplies or of any timetable for reconnection. – Advise the NSW SES of any hazards from utility services during flooding and coastal erosion/inundation. – Advise the public with regard to electrical hazards during flooding and coastal erosion/inundation, and to the availability or otherwise of the electricity supply. – Clear or make safe any hazard caused by power lines or electricity distribution equipment. – Reconnect customers' electrical/ gas/ water/wastewater installations, when certified safe to do so and as conditions allow. – Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.
Engineering Services Functional Area	The roles and responsibilities for Engineering Services are outlined in the Engineering Services Supporting Plan .

AGENCY	RESPONSIBILITIES
Environmental Services Functional Area	The roles and responsibilities for Environmental Services are outlined in the Environmental Services (ENVIROPLAN) Supporting Plan .
Floodplain Management Australia	The roles and responsibilities of Floodplain Management Australia are outlined in the New South Wales State Flood Plan .
Fire and Rescue NSW (as per NSW State Flood Plan)	Preparedness - Identify and notify the NSW SES of any locations at risk of fire (within Fire Districts (13) or hazardous materials that pose a significant threat to surrounding populations due to the impact of a flood for incorporation into NSW SES flood intelligence and planning; and Response - Meet the agreed arrangements described in the NSW SES and Fire and Rescue NSW Mutual Aid Agreement. - Provide Incident Management personnel and Liaison Officers to the NSW SES where required. - When requested by NSW SES, provide support to the NSW SES in response to flood emergencies across the State. - Assist the NSW SES with the warning and/or evacuation of at-risk communities. - Assist the NSW SES with the monitoring/reconnaissance of flood prone areas. - Provision of Land Based and In Water Flood Rescue Operators as required. - Provision of appropriately trained personnel to perform Down the Wire (DTW) functions as required. - Conduct Hazmat operations including asbestos risks, rising from flood emergencies in coordination with the SES Incident Controller. - Decontamination of Flood Rescue Operators as required. - Assist the NSW SES with the resupply of isolated communities and/or properties. - Assist the NSW SES with property protection tasks including sandbagging. - Provide resources for pumping flood water out of buildings and from low-lying areas. - Assist with clean-up operations, including the hosing out of flood affected properties.

AGENCY	RESPONSIBILITIES
	• Provide trained staff to support a joint intelligence unit, if established by NSW SES, including Remotely Piloted Aircraft System (RPAS) pilots to assist with field observations. • Assist the NSW SES to undertake damage assessment including structural collapse risks. • Coordinate the pre-deployment of fire resources to communities within NSW Fire Districts if access is expected to be lost, in consultation with the NSW SES; and • Coordinate the deployment of the FRNSW High trans Pump to locations in consultation with NSW SES. Recovery • Participate in After Action Reviews as required.
Health Services Functional Area	The roles and responsibilities for Health Services Functional Area are outlined in the Health Services (HEALTHPLAN) Supporting Plan. Roles and responsibilities in addition to the Supporting Plan are: • Ensure that appropriate business continuity plans are developed for essential health infrastructure and are activated during floods.
Local Emergency Operations Controller (LEOCON)	• Monitor flood operations. • If requested, coordinate support for the NSW SES Incident Controller.
Local Emergency Management Officer (LEMO)	• If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations.
Manly Hydraulics Laboratory (MHL)	The roles and responsibilities of Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.
Marine Rescue NSW (as per NSW State Flood Plan)	Response • When requested by NSW SES, assist in flood operations when training and equipment are available and suitable including assistance with: – Warning and/or evacuation of at-risk communities. – Providing communications personnel. – Property protection tasks including sandbagging; and – Flood rescue operations.
NSW Ambulance	The roles and responsibilities for NSW Ambulance are outlined in the Health Services (HEALTHPLAN) Supporting Plan.
NSW Department of Education	Preparedness • Liaise with the NSW SES and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding

AGENCY	RESPONSIBILITIES
	and/or road closures (or where required, for students to be moved to a suitable location until normal school closing time); • Ensure that evacuation plans for flood liable schools have arrangements for flooding; and • Assist NSW SES with community engagement and capacity building programs. Response • Assist with the coordination of the evacuation of schools and the immediate welfare of students until returned to the appropriate carer. • Pass information to school bus drivers/companies and/or school principals on expected or actual impacts of flooding; and • Provide space in schools for evacuation centres where necessary.
NSW Department of Industry, Planning and Environment (as per NSW State Flood Plan)	Prevention • Oversee the delivery of the NSW Flood Prone Land Policy including financial support through the Floodplain Management Program. Provide technical advice to councils and state agencies including assistance with the identification of risks, the preparation and implementation of Floodplain Risk Management Plans and associated mitigation and management actions and understanding flood mitigation schemes including levees. • Work with the NSW SES on the Flood Data Access Program to improve the provision of flood information through the NSW Flood Data Portal. • Assist the Department of Industry-Water in the preparation of rural floodplain management plans under the <i>Water Management Act 2000</i> (NSW); and • Provision of strategic technical advice to support floodplain risk management and environmental water management in rural areas of the Murray Darling Basin. Preparedness • Assist the NSW SES in the exercising of Flood Sub Plans. • Management of the state government's water level gauges for the flood warning network in tidal areas in NSW (Manly Hydraulic Laboratory operates this system as a service provider on behalf of DPIE.). • Advise NSW SES about conditions which may lead to coastal inundation or retarded river drainage near the coast. Response • Provide related advice on flood risks to the NSW SES on request; and

AGENCY	RESPONSIBILITIES
	• Work with the relevant local council and NSW SES to collect flood related data during and after flood events. Recovery Support recovery committees as required.
NSW Food Authority	The roles and responsibilities for NSW Food Authority are outlined in the Food Industry Emergency Sub Plan.
NSW National Parks and Wildlife Services (as per NSW State Flood Plan)	Preparedness • Assist the NSW SES with identification of road infrastructure in National Parks at risk of flooding. Response • Close and reopen National Parks and Wildlife Service roads when affected by flood waters and advise the NSW SES of its status. • Facilitate the safe reliable access by emergency resources on National Parks and Wildlife Service managed roads. • Assist the NSW SES with the communication of warnings and information provision to the public through variable message signs and other appropriate means; and Close and direct people to leave camping grounds at risk of flooding in National Parks and Wildlife Service managed areas.
NSW Police Force (as per NSW State Flood Plan)	Preparedness • Participate in NSW SES briefings, training and exercises as required. Response • Provide a Liaison Officer to the NSW SES Operation Centre if required. • When requested by NSW SES, in flood operations when training and equipment are available and suitable. – Assist with warning and/or evacuation of at-risk communities. – Assist with monitoring / reconnaissance of flood prone areas. – Assist with flood rescue operations. • Conduct road and traffic control operations in conjunction with council and/or Transport NSW. • Coordinate searches for missing people within flood affected areas. • Coordinate security of supply lines evacuated and damaged areas. • Manage Disaster Victim Registration; and • Operate the Public Information and Inquiry Centre, if requested or otherwise needed during flood events.

AGENCY	RESPONSIBILITIES
	Recovery • Participate in After Action Reviews as required.
NSW Rural Fire Service (as per NSW State Flood Plan)	Preparedness • Participate in NSW SES briefings, training and exercises as required; and • Meet the agreed arrangements described in the NSW SES/NSW RFS Memorandum of Understanding. Response • Provide a Liaison Officer to the NSW SES Operation Centre or Emergency Operations Centre as required. • Provide Incident Management Personnel when requested. • Provide trained staff to support a joint intelligence unit, if established by NSW SES. • Provide aviation support, management and advice as requested through the State Air Desk. • Provide speciality aircraft and appropriately trained personnel to perform Down the Wire (DTW) functions as required. • Assist with Damage Assessments; and • Provide Strike Teams during flood operations when requested by NSW SES. This may include assistance with: – Warning and/or evacuation of at-risk communities. – Monitoring / reconnaissance of flood prone areas. – Property protection tasks including sandbagging. – Pumping flood water out of buildings and from low-lying areas. – Back-up radio communications. – Clean-up operations, including the hosing out of flood affected properties. – Deploying resources to communities within Rural Fire Districts where access is expected to be lost in consultation with the NSW SES. – The resupply of isolated communities and/or properties; and – Decontamination of NSW SES Flood Rescue Operators as required. Recovery • Participate in After Action Reviews as required.
NSW Volunteer Rescue Association (as per NSW State Flood Plan)	Response

AGENCY	RESPONSIBILITIES
	- Where requested by the NSW SES, assist in flood operations when training and equipment are available and suitable, including assistance with: - The warning and/or evacuation of at-risk communities. - Flood rescue operations. - Monitoring / reconnaissance of flood prone areas. - Resupply of isolated communities and/or properties; and - Property protection tasks including sandbagging.
Resilience NSW	The roles and responsibilities of Resilience NSW are outlined in the NSW State Flood Plan.
Owners of Declared Dams within or upstream of the LGA (as per NSW State Flood Plan)	Preparedness - Assist the NSW SES with community engagement programs. - Provide NSW SES with information necessary for response planning and warning distribution. - Assist the NSW SES identify correlations between water level and/or discharges at the dam for use in flood response operations (warning and evacuation); and - Consult with the NSW SES State Headquarters in the development of Dam Emergency Plans, including the development of dam failure alerts, in accordance with the Dam Safety Committee Guidelines. Response - Where water level monitoring or other instrumentation allows, provide NSW SES with flood advices as per pre-agreed thresholds for use in downstream flood response operations (warnings). - Notify NSW SES of potential or actual dam failures in accordance with the Dam Emergency Plan and Dam Safety NSW Guidelines. - Close at-risk camping grounds / recreational areas within their managed areas. - In the case of declared dams whose risks are intolerable, assist the NSW SES in planning to warn and evacuate people at risk of dam failure and maintain and operate any special Dam Failure Warning Systems and/or automatic telemetered monitoring devices to assist with early detection of incidents which are installed until such time that the risks have been lowered to an acceptable level; and Owners of gated dams: - Provide all available information to the BoM and the NSW SES on storage levels and actual and prospective water releases and their likely impacts on downstream river levels.

AGENCY	RESPONSIBILITIES
	• Advise the downstream community of prospective and actual water releases, except in those circumstances where the BoM would issue flood warnings; and • Where possible actively work with NSW SES and the BoM to reduce the impacts of flooding on communities through management of water releases within identified safe parameters and within statutory licencing provisions under the <i>Water Management Act 2000</i> and <i>Water NSW Act 2014</i>.
Public Information Services Functional Area	The roles and responsibilities for Public Information Services are outlined in the Public Information Services Supporting Plan. Roles and responsibilities in addition to the Supporting Plan are: • On receipt of advice from NSW SES of any weather event likely to result in significant multi agency operational activity, the Public Information Functional Area Coordinator PIFAC determines if a daily multi-agency teleconference is required to ensure that the information needs of each agency are being met and to address any issues. These teleconferences continue through the response phase into the recovery phase.
Transport for NSW	• Transport for NSW coordinates information on road conditions for emergency services access. • Transport for NSW coordinates the management of the road network across all modes of transport. • Transport for NSW in conjunction will assist the NSW SES with the evacuation of at-risk communities by maintaining access and egress routes. • Transport for NSW will assist the NSW SES with the communication of flood warnings and information provision to the public through Live Traffic and Social Media according to the VMS protocols and procedures. • Assist the NSW SES with identification of road infrastructure at risk of flooding.
SEOCN/SEOC	The roles and responsibilities of the SEOCN/SEOC are outlined in the New South Wales State Flood Plan.
Surf Life Saving NSW (as per NSW State Flood Plan)	Preparedness • Contribute to NSW SES reviews into plans, policies and procedures as required; and • Participate in NSW SES briefings, training and exercises as required. Response

AGENCY	RESPONSIBILITIES
	• Assist the NSW SES with the warning and/or evacuation of at-risk communities. • Provide accommodation in Surf Life Saving facilities for evacuation centres where required; and • Assist the NSW SES with flood rescue operations, where training and equipment are suitable.
Telecommunications Services Functional Area	The roles and responsibilities for Telecommunications Services are outlined in the Telecommunications Services (TELCOPLAN) Supporting Plan .
Transport Services Functional Area	The roles and responsibilities for Transport Services are outlined in the Transport Services Supporting Plan. Roles and responsibilities in addition to the Supporting Plan are: • Participate in risk management studies. • Assist the NSW SES to identify transport infrastructure at risk of flood damage for incorporation into planning and intelligence; and • Coordinate the provision of traffic and transport operations as consistent with the roles of Transport organisations.
Water NSW	The roles and responsibilities for Water NSW are outlined in the New South Wales State Flood Plan .
Welfare Services Functional Area	The roles and responsibilities for Welfare Services are outlined in the Welfare Services Functional Area Supporting Plan.

11 Appendix C – Community Specific Roles and Responsibilities

Community Members	Preparedness • Understand the potential risk and impact of flooding. • Prepare homes and property to reduce the impact of flooding. • Understand warnings and other triggers for action and the safest actions to take in a flood. • Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours. • Have an emergency kit; and • Be involved in local emergency planning processes. Recovery • Assist with community clean-up if required and able to do so. Participate in After Action Reviews if required.
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Appendix D

FLOOD EVACUATION INDUCTION AND SIGNOFF

PROJECT POSITION	NAME	SIGNATURE	REVISIONS			
			<DATE>	<DATE>	<DATE>	<DATE>
Project Director						
Project Manager						
Site Manager / Flood Warden						
Site Supervisor						
Contract Manager						
Contract Administrator						
WHS /Environmental Manager						
Quality Co-ordinator						
Leading Hand						
Add others:						

Appendix E

PARRAMATTA CITY COUNCIL FLOOD ENQUIRY



Our Reference: FL/270/2023
Contact: Peter Sirianni
Telephone: 02 9806 8250
Fax: 02 9806 5906

Costin Roe Consulting
Level 4, 8 Windmill Street
MILLERS POINT NSW 2000

21 December 2023

FLOOD ENQUIRY APPLICATION

Property Details

Address	6 Grand Avenue, ROSEHILL NSW 2142.
<i>This form applies for up to three adjoining sites relating to the same development. A separate Flood Enquiry form and fee will be required for more than 3 or separate lots.</i>	

Delivery Preference

soula.kaldas@costinroe.com.au

Reason for Enquiry

--

Property Type

**** GST not applicable from 1 July 2013****

Flooding Application – Commercial	\$599.00
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Disclaimer: Flood levels and flood extent lines are based on current information held by Council. Council does not accept responsibility for the accuracy of this information. Any pipe sizes and location of pits and pipe lines should be confirmed by site investigation. The flood levels shown on the back of this form are only an approximate guide and have been derived using the current computer simulated model.

The information provided in this document is presented in good faith to assist the public in understanding Council's drainage requirements that apply within the Parramatta Local Government Area. It is the responsibility of each individual using this information to undertake their own checks and confirm this information prior to its use.

City of Parramatta Council, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement, or advice referred to above.

Refer to back of this form for level information issued



Flood Enquiry Information Issued - 21 December 2023

Mainstream Flooding

Is this property affected by mainstream flooding? 6 Grand Avenue, ROSEHILL		☒ Yes ☐ No
Flood Levels	Closest Cross Sections: (Please refer to Flood Study): Refer to Flood Map	
5% AEP	m AHD	Comments: See Note on Flood/Hazard Maps
1% AEP	m AHD	
PMF	RL 7.8 m AHD	
☒ Refer to flood maps provided for detailed flood levels.		
Flood information is obtained from the following flood study report: Lower Parramatta River Floodplain Risk Management Study – Flood Study Review, 2005 (SKM)		

Note: Flood inundation can be verified by detail survey to AHD undertaken by a Registered Surveyor.

Local Flooding

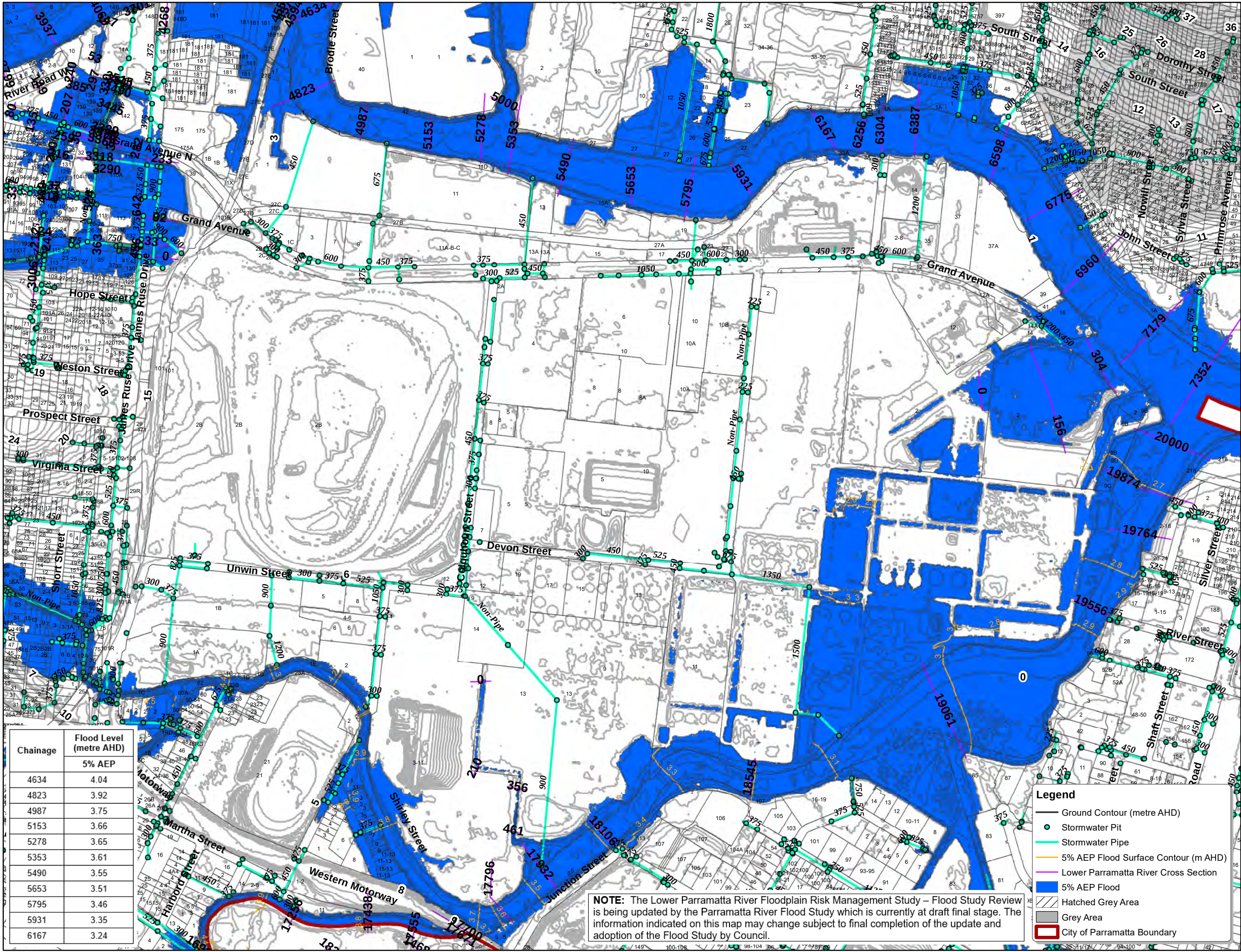
Is the property located within a Hatched Grey Area? <i>Properties located within a Hatched Grey Area are subjected to flooding from the local catchment.</i>	☐ Yes ☒ No
Is the property located within a Grey Area? <i>Properties located within a Grey Area are subjected to additional site drainage controls to manage flooding in the local catchment.</i>	☐ Yes ☒ No
Is the property likely to be affected by overland stormwater run-off from the local catchment?	☒ Subject to Detailed Investigation
<i>Note: You are required to contact Council's Development Service Engineer for any details and requirements relating to development that is affected by local flooding.</i>	

Additional Recommended Actions

☒	The Applicant needs to discuss the proposal to re-develop this site with Council's Town Planner and Development Services Engineer.
☒	The Applicant needs to contact Council's Town Planner and organise a pre-lodgement meeting to discuss any proposal to redevelop this property.
☒	The Applicant needs to refer to Council's Local Floodplain Risk Management policy for details relating to developing a land affected by flooding.

Definitions: (As per NSW Floodplain Development Manual dated April 2005)

- AHD** – a common national surface level datum approximately corresponding to mean sea level.
- ARI** – the long term average number of years between the occurrences of a flood as big as or larger than, the selected event.
- PMF** – is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation.
- AEP** – Annual Exceedance Probability is the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage.



Chainage	Flood Level (metre AHD)
	5% AEP
4634	4.04
4823	3.92
4987	3.75
5153	3.66
5278	3.65
5353	3.61
5490	3.55
5653	3.51
5795	3.46
5931	3.35
6167	3.24

NOTE: The Lower Parramatta River Floodplain Risk Management Study – Flood Study Review is being updated by the Parramatta River Flood Study which is currently at draft final stage. The information indicated on this map may change subject to final completion of the update and adoption of the Flood Study by Council.

- Legend**
- Ground Contour (metre AHD)
 - Stormwater Pit
 - Stormwater Pipe
 - 5% AEP Flood Surface Contour (m AHD)
 - Lower Parramatta River Cross Section
 - 5% AEP Flood
 - Hatched Grey Area
 - Grey Area
 - City of Parramatta Boundary

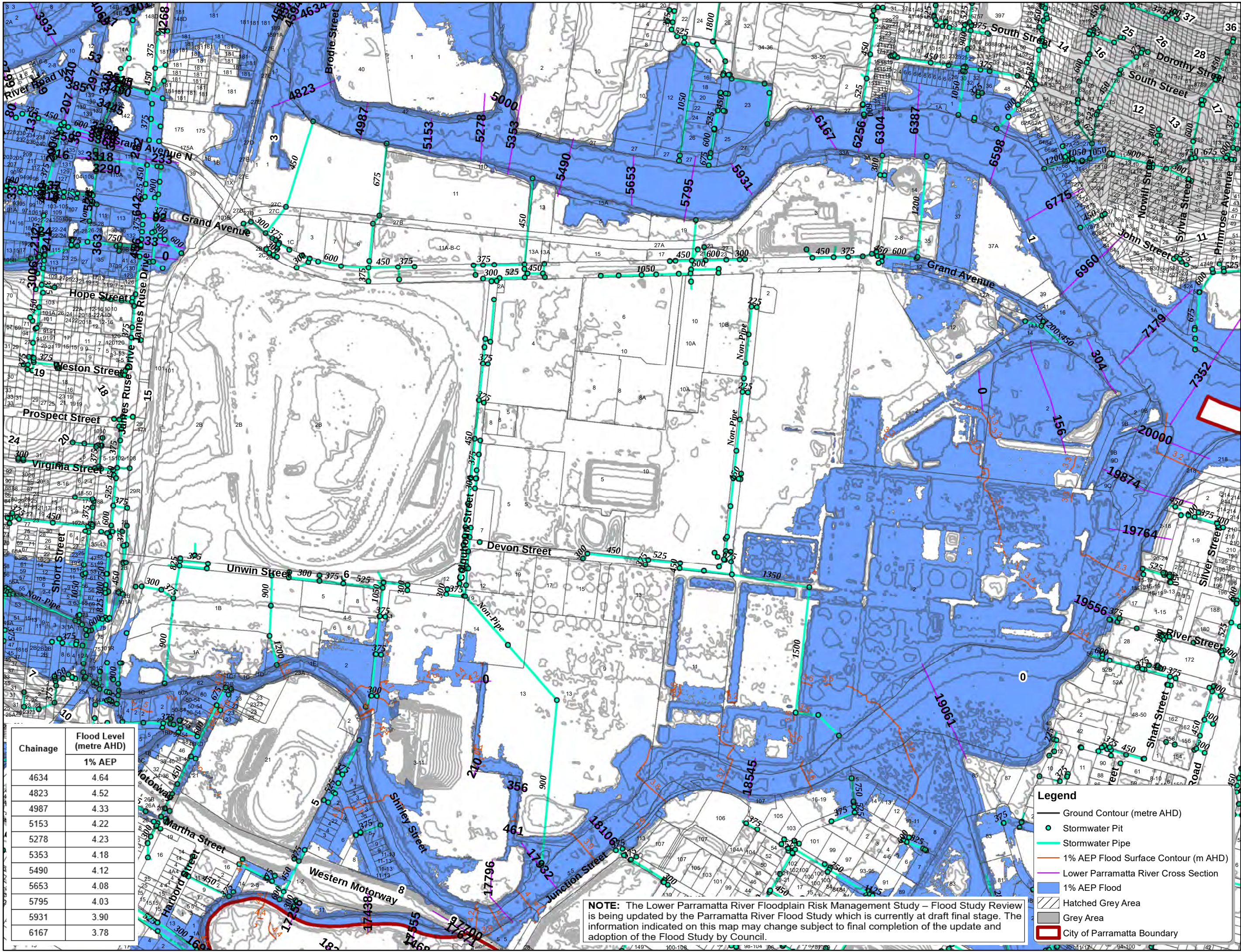
N
1:8,000

City of Parramatta Council Flood Map - 5% AEP

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Chainage	Flood Level (metre AHD)
	1% AEP
4634	4.64
4823	4.52
4987	4.33
5153	4.22
5278	4.23
5353	4.18
5490	4.12
5653	4.08
5795	4.03
5931	3.90
6167	3.78

NOTE: The Lower Parramatta River Floodplain Risk Management Study – Flood Study Review is being updated by the Parramatta River Flood Study which is currently at draft final stage. The information indicated on this map may change subject to final completion of the update and adoption of the Flood Study by Council.

Legend

Ground Contour (metre AHD)

Stormwater Pit

Stormwater Pipe

1% AEP Flood Surface Contour (m AHD)

Lower Parramatta River Cross Section

1% AEP Flood

Hatched Grey Area

Grey Area

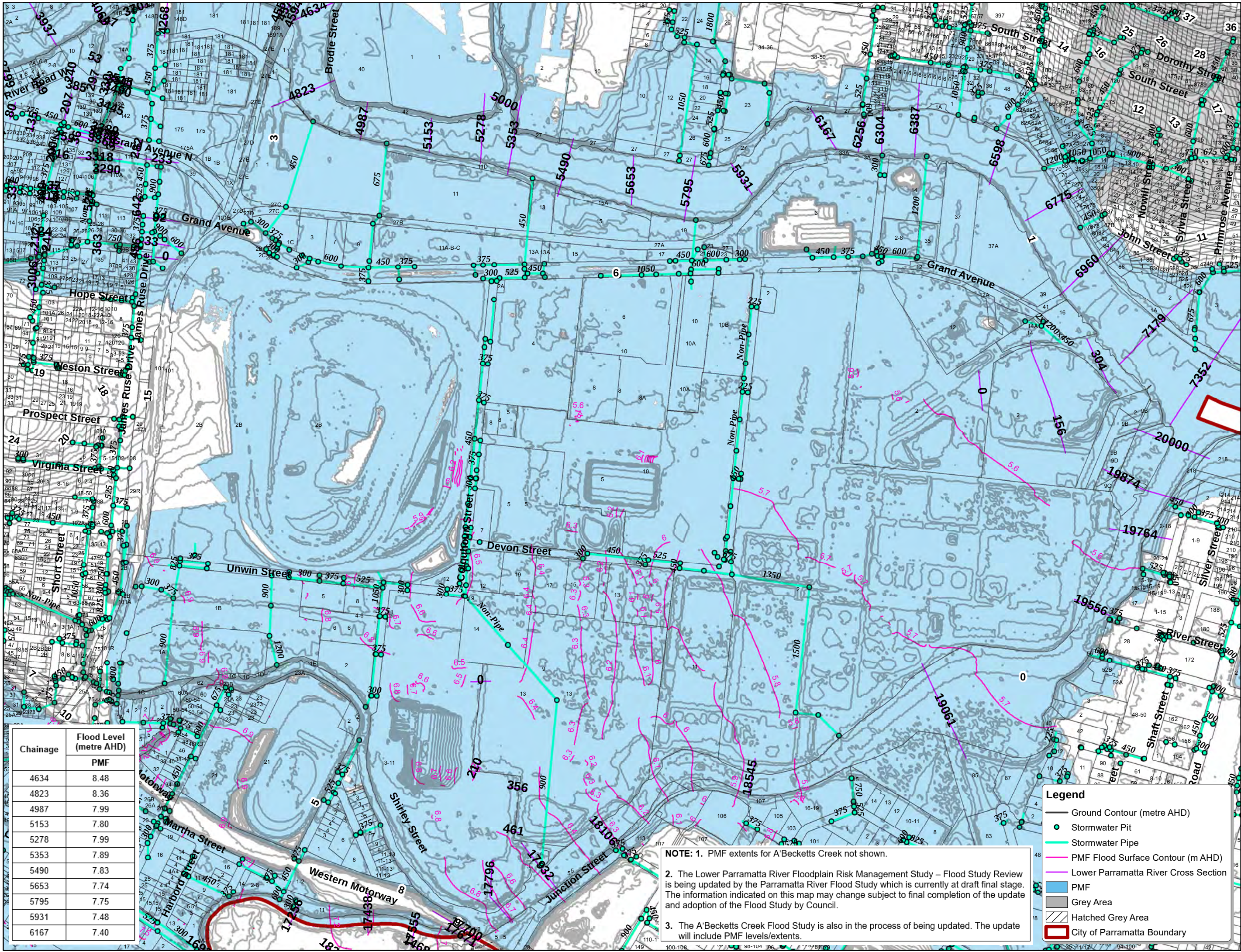
City of Parramatta Boundary

City of Parramatta Council Flood Map - 1% AEP

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Chainage	Flood Level (metre AHD)
	PMF
4634	8.48
4823	8.36
4987	7.99
5153	7.80
5278	7.99
5353	7.89
5490	7.83
5653	7.74
5795	7.75
5931	7.48
6167	7.40

- Legend**
- Ground Contour (metre AHD)
 - Stormwater Pit
 - Stormwater Pipe
 - PMF Flood Surface Contour (m AHD)
 - Lower Parramatta River Cross Section
 - PMF
 - Grey Area
 - Hatched Grey Area
 - City of Parramatta Boundary

NOTE: 1. PMF extents for A'Becketts Creek not shown.

2. The Lower Parramatta River Floodplain Risk Management Study – Flood Study Review is being updated by the Parramatta River Flood Study which is currently at draft final stage. The information indicated on this map may change subject to final completion of the update and adoption of the Flood Study by Council.

3. The A'Becketts Creek Flood Study is also in the process of being updated. The update will include PMF levels/extents.

N
1:8,000

City of Parramatta Council Flood Map - PMF

DISCLAIMER: Flood levels and flood extent lines are based on current information held by Council. Council does not accept responsibility for the accuracy of this information. Any pipe sizes and location of pits and pipe lines should be confirmed by site investigation.

The flood levels provided are only an approximate guide and have been derived using the current computer simulated model.

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21/12/2023

NOTE: 1. Hazard extents for A'Becketts Creek not shown.

2. The Lower Parramatta River Floodplain Risk Management Study – Flood Study Review is being updated by the Parramatta River Flood Study which is currently at draft final stage. The information indicated on this map may change subject to final completion of the update and adoption of the Flood Study by Council.

3. The A'Becketts Creek Flood Study is also in the process of being updated. The update will include hazard extents.



1:8,000

City of Parramatta Council Flood Hazard Map

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