

Flood Emergency Detailed Response Plan

125 – 129 Arthur St, Harris Park

AWE200226

Prepared for
Anthill Construction

11 November 2021



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Executive Summary

This Report details a Flood Emergency Detailed Response Plan (FEDRP) for the 125-129 Arthur Street, Parramatta.

The Report describes:

- Flood behaviour at the site in floods up to a Probable Maximum Flood (PMF),
- A Flood Emergency Detailed Response Plan for the development, including:
 - A Flood Warning System;
 - Evacuation strategy, measures, procedures and plan; and
 - A FloodSafe Plan

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1 Introduction

1.1 Background

This Report details a Flood Emergency Detailed Response Plan (FEDRP) for the development located at 125-129 Arthur Street, Parramatta.

The subject site is located on the Clay Cliff Creek floodplain about 400m upstream of its confluence with the Parramatta River (refer **Figure 1**).



Figure 1 Location of 125-129 Arthur Street, Parramatta in relation to Parramatta CBD

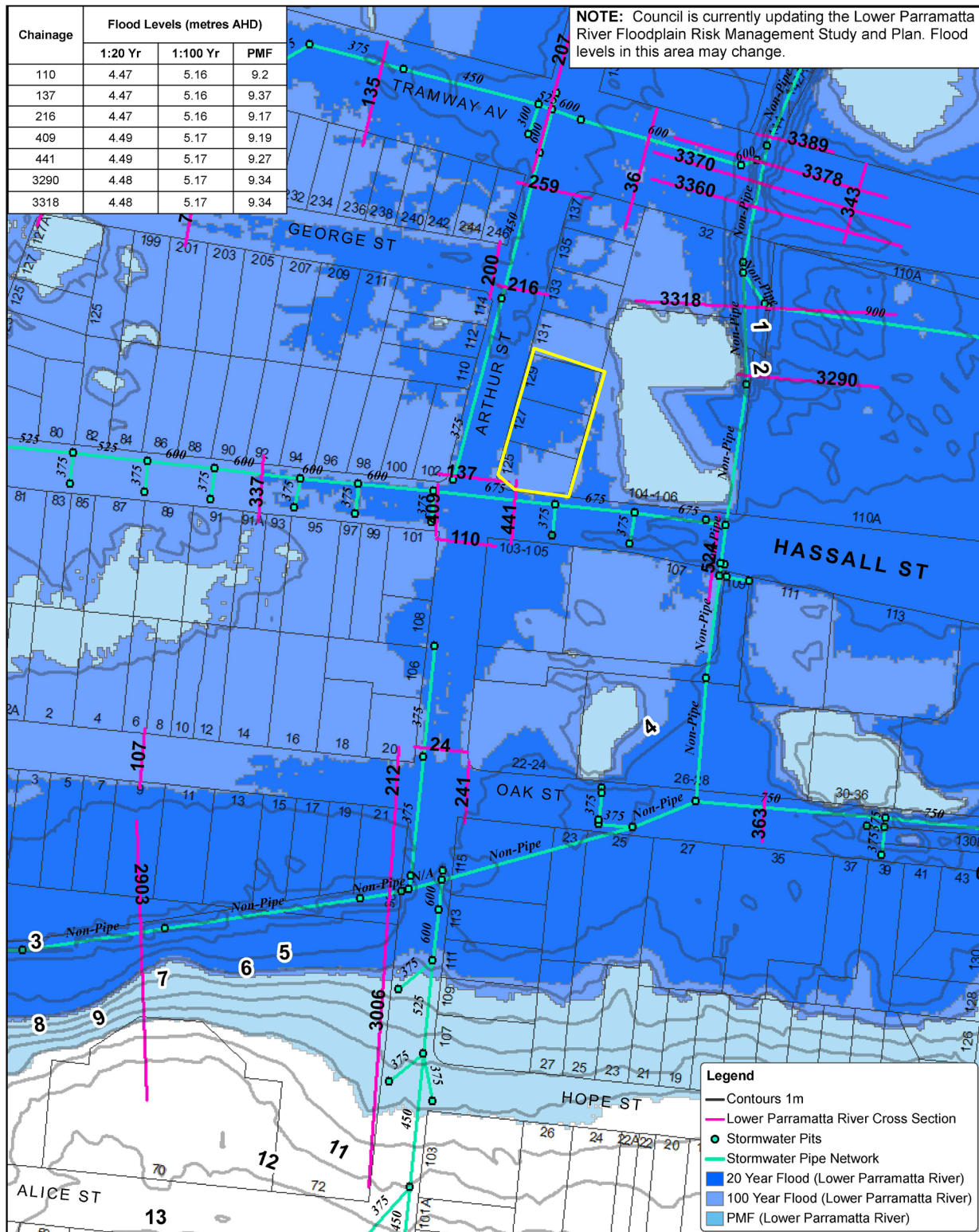
(Source: nearmap, accessed 25 May 2021)

1.2 Flooding Considerations

It is noted that flooding investigations have been previously completed for the for the lower Parramatta River and Clay Cliff Creek floodplains in the past.

The flooding context for the site is provided in the flood maps prepared by Parramatta City Council and given in **Figures 2 and 3**.

Flood behaviour at the site in 2014 (Cardno, 2014). In 2021 the 2014 model of Future Conditions was modified to represent the modifications to the development approved in 2015. The estimated 20 year ARI, 100 year ARI and PMF level differences under updated Future Conditions in comparison with Existing Conditions showed that the planned updated development has a negligible impact on 20 year ARI, 100 year ARI and PMF levels. (Cardno, 2021)





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5/08/2014

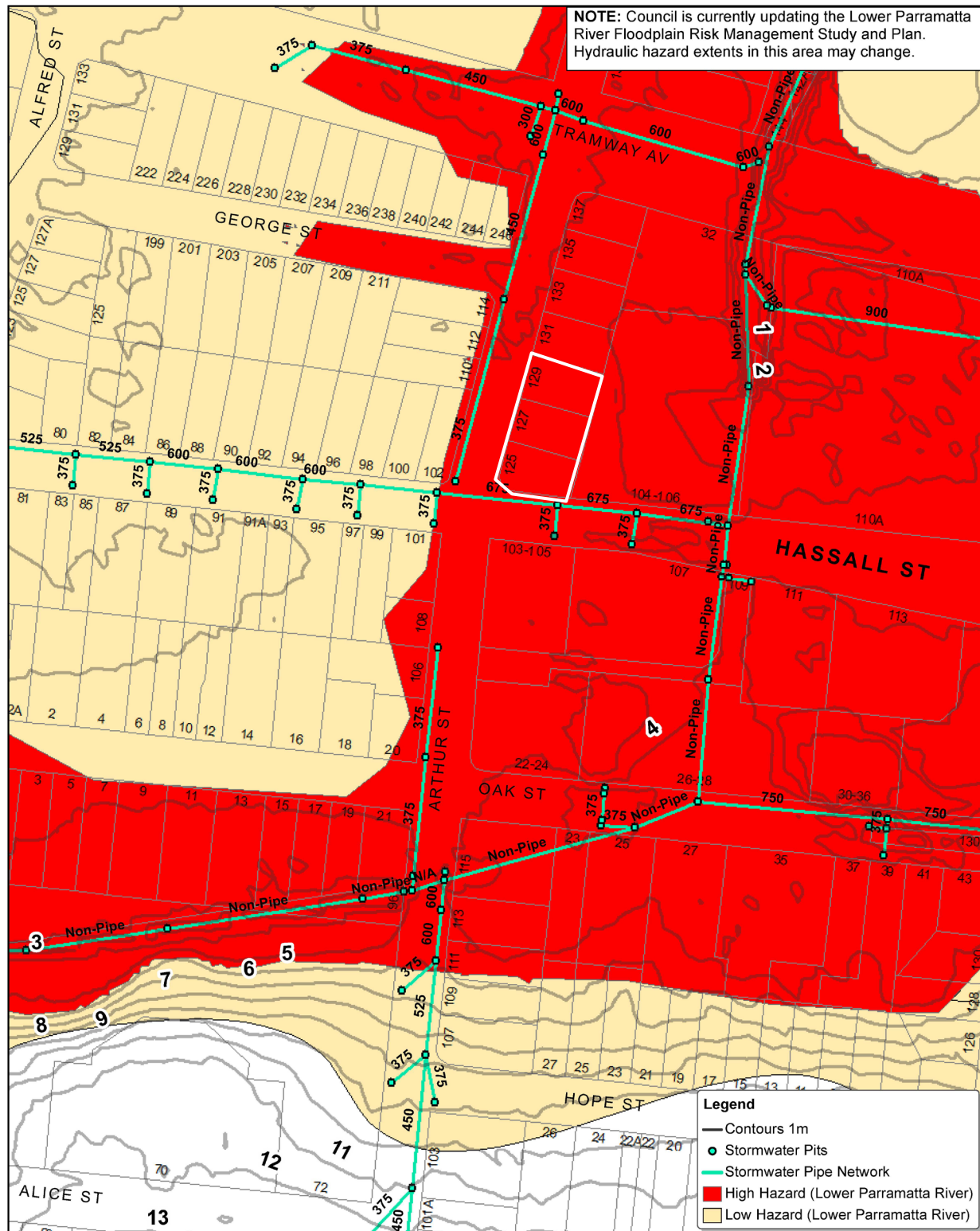
Parramatta City Council Flood Map

1:2,000



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. The information provided on this document is presented in good faith. It is the responsibility of each individual using this information to undertake their own checks and confirm this information prior to its use. Parramatta City 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.

Figure 2 20 yr ARI, 100 yr ARI and PMF Flood Extents
(Source: Parramatta City Council)





Parramatta City Council Hydraulic Hazard Map

1:2,000

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. The information provided on this document is presented in good faith. It is the responsibility of each individual using this information to undertake their own checks and confirm this information prior to its use.

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Figure 3 Low and High Flood Hazards
(Source: Parramatta City Council)

1.3 Emergency Contacts

Emergency contact numbers are as follows:

Agency	
Ambulance	Emergency Telephone: 000
Bureau of Meteorology (BoM)	http://www.bom.gov.au/nsw/warnings/ Telephone: 1300 659 219 (for flood warnings)
Police	Parramatta Station, 95 Marsden St, Parramatta Telephone: (02) 9633 0799 Emergency Telephone: 000
Fire & Rescue NSW	Emergency Telephone: 000
Parramatta City Council (PCC)	Telephone: (02) 9294 8586 (Wet Weather Line)
State Emergency Services (SES)	Emergency Telephone: 132 500 General enquiries: (02) 4251 6111

2 Flood Risks

The flood risks at and in the vicinity of 125-129 Arthur St, Harris Park are discussed as follows.

2.1 Flood Levels and Hazards

Council's Flood Map (see **Figure 2**) indicated the following peak flood levels:

- 20 year ARI: 4.49 m AHD;
- 100 year ARI: 5.17 m AHD; and
- PMF: 9.27 m AHD (noting that the flood level listed at Chainage 137 is anomalous).

Figure 4 is a plot of the indicative water level variations at the confluence of Clay Cliff Creek and the Parramatta River generated by Probable Maximum Precipitation of 3, 4, 6, 12 and 24 hour durations.

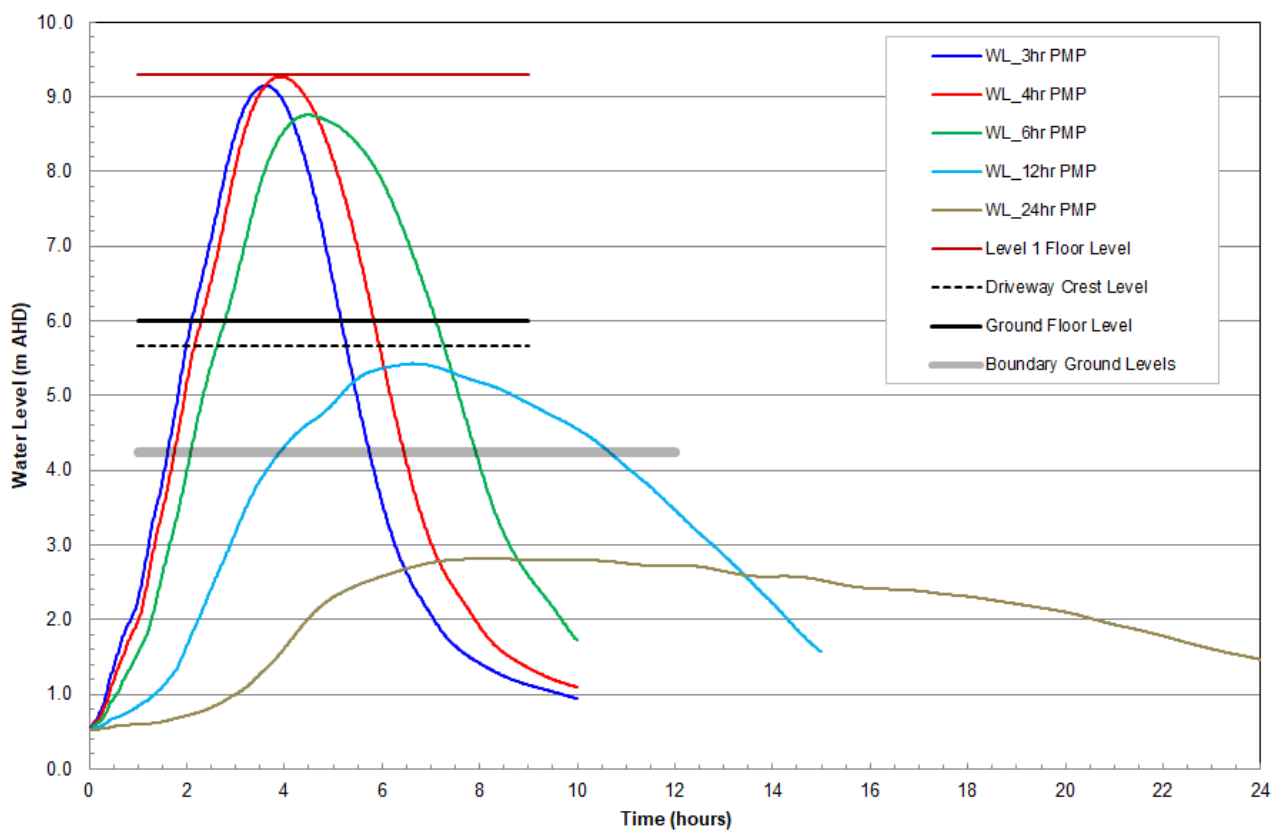
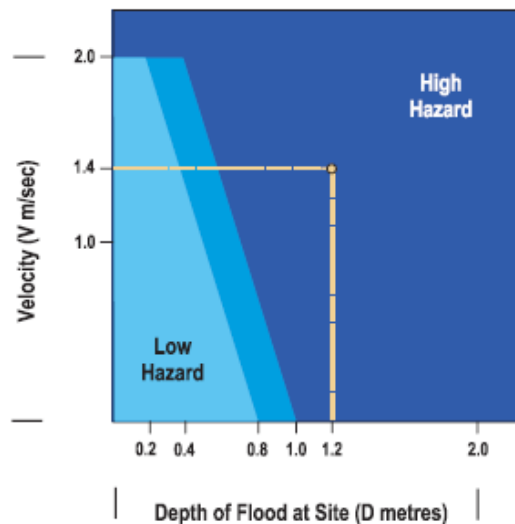


Figure 4 Indicative PMF Levels at the confluence of Clay Cliff Creek and the Parramatta River

As described in the 2005 NSW Floodplain Development Manual, experience from studies of floods throughout NSW and elsewhere has allowed authorities to develop methods of assessing the hazard to life and property on floodplains. This experience has been used in developing the 2005 NSW Floodplain Development Manual to provide guidelines for managing this hazard. These guidelines are shown schematically below.

To use the diagram, it is necessary to know the average depth and velocity of floodwaters at a given location. If the product of depth and velocity exceeds a critical value (as shown below), the flood flow will create a **high hazard** to life and property. There will probably be danger to persons caught in the floodwaters, and possible structural damage. Evacuation of persons would be difficult.



(after Figure L2, NSW Government, 2005)

By contrast, in **low hazard** areas people and their possessions can be evacuated safely by trucks. Between the two categories a transition zone is defined in which the degree of hazard is dependent on site conditions and the nature of the proposed development. This calculation leads to a provisional hazard rating. The provisional hazard rating may be modified by consideration of effective flood warning times, the rate of rise of floodwaters, duration of flooding and ease or otherwise of evacuation in times of flood.

The flood hazards under current conditions are plotted in **Figure 3**.

2.2 Rate of Rise of Floodwaters

To understand the likely warning times and associated response times during extreme flood events it is necessary to estimate the expected rate of rise of floodwaters. At 125-129 Arthur St, Parramatta the estimated rate of rise of flooding in a PMF event is around 2.5 m/hr.

Features of the development include:

- Ground floor level of 6.0 m AHD which provides greater than 500 mm freeboard above the 100 year ARI flood level;
- Level 1 floor level of 9.3 m AHD which is higher than the PMF level;
- Floor levels on Levels 3, 4, 5 and 6 apartments are all higher than the PMF level;
- Proposed floor levels of 2.35 m AHD and 0.47 m AHD – 1.01 m AHD – 1.2 m AHD for car parking on the lower basement and upper basement car parking levels respectively;
- A crest level of 5.67 m AHD on the driveway access from Arthur Street to the multi-storey car parking levels which provides 500 mm freeboard above the 100 year ARI level.
- Further protection is provided by a flood-proof roller shutter located on the driveway ramp down to the basement which when closed protects the basement levels from flooding; and
- Installation of shutters and/or flood-proof doors on the Ground Floor to protect the basement levels from floodwaters attempting to circumvent the roller shutter on the driveway.

It is estimated that inundation of the ground floor would commence in around a 600 year ARI event.

It is concluded that while the ground floor apartments have a freeboard of 500 mm or more over the 100 year ARI flood level, that this freeboard would be rapidly overwhelmed in a PMF event (within around 10 - 15 minutes). The PMF is estimated to reach a level of around 9.2 m AHD.

Modifications to the development approved in 2015 include:

- Installation of a flood-proof roller shutter to protect the basement levels from flooding; and
- Installation of shutters and/or flood-proof doors on the Ground Floor to protect the basement levels from flooding circumventing the roller shutter on the driveway.

Consequently, basement car parking levels are protected against flooding in all floods up to the PMF.

2.3 Duration of Inundation

As indicated in **Figure 4**, the estimated duration of inundation of the Ground Floor is between around 3 hours and 4 hours and 30 minutes depending on PMP duration.

In any PMF event that exceeds the Ground Floor level and other extreme floods it is expected that there would be insufficient time to evacuate any residents and/or visitors from the site and that instead residents and/or visitors will need to shelter in place.

3 Flood Warning

Discussions with the NSW SES have previously identified the following status of flood warnings for the Parramatta CBD:

- The Bureau of Meteorology does not prepare flood predictions for the Parramatta River;
- Only a Draft Flood Warning Plan has been prepared to date by the NSW SES. This draft was prepared a number of years ago and while it is planned that it will be updated this does not have a high priority in view of the level of flood protection in the Parramatta CBD that has been achieved by various works undertaken in the upper catchment including the Loyalty Road basin.
- Trigger levels for flood warning have not been identified for the Parramatta CBD

3.1 FloodSmart Parramatta

As described on Council's website:

FloodSmart Parramatta now provides flood risk information for the Upper Parramatta River which includes the upstream areas from Parramatta CBD. This will allow you to understand if your property is at risk of flooding and how frequent or significant floods could be.

Other areas will be made searchable as new data becomes available

FloodSmart Parramatta offers a free flood warning service that provides early warning messages, to residents and businesses, when we think flooding is likely.

You can choose to receive warning messages in any combination of text, email, or automated voice message.

There are seven warning areas that cover different communities in the City of Parramatta. Each warning area will receive its own individual warning message in the event of a possible flood. This allows communities to know that the predicted flooding is relevant to them.

You can sign up to warnings for your home, workplace, children's school or any area that interests you in the City of Parramatta local government area. You can also sign up to more than one warning area.

The flood warning areas are identified in **Figure 5**.

The system design is outlined in **Figure 6**.

- While it is noted that the 125-129 Arthur Street is not included currently in any Warning Area it is possible to utilise warnings issued for the Parramatta CBD Warning Area given that:
- the Clay Cliff Creek confluence is located only around 2 km downstream of the Marsden Street Weir; Parramatta River flood levels are the dominant flood levels on the lower Clay Cliff Creek floodplain including at the property.

More details on the flood warning service can be found at:

<https://www.cityofparramatta.nsw.gov.au/recreation-environment/floodsmart-parramatta/flood-warning-service>

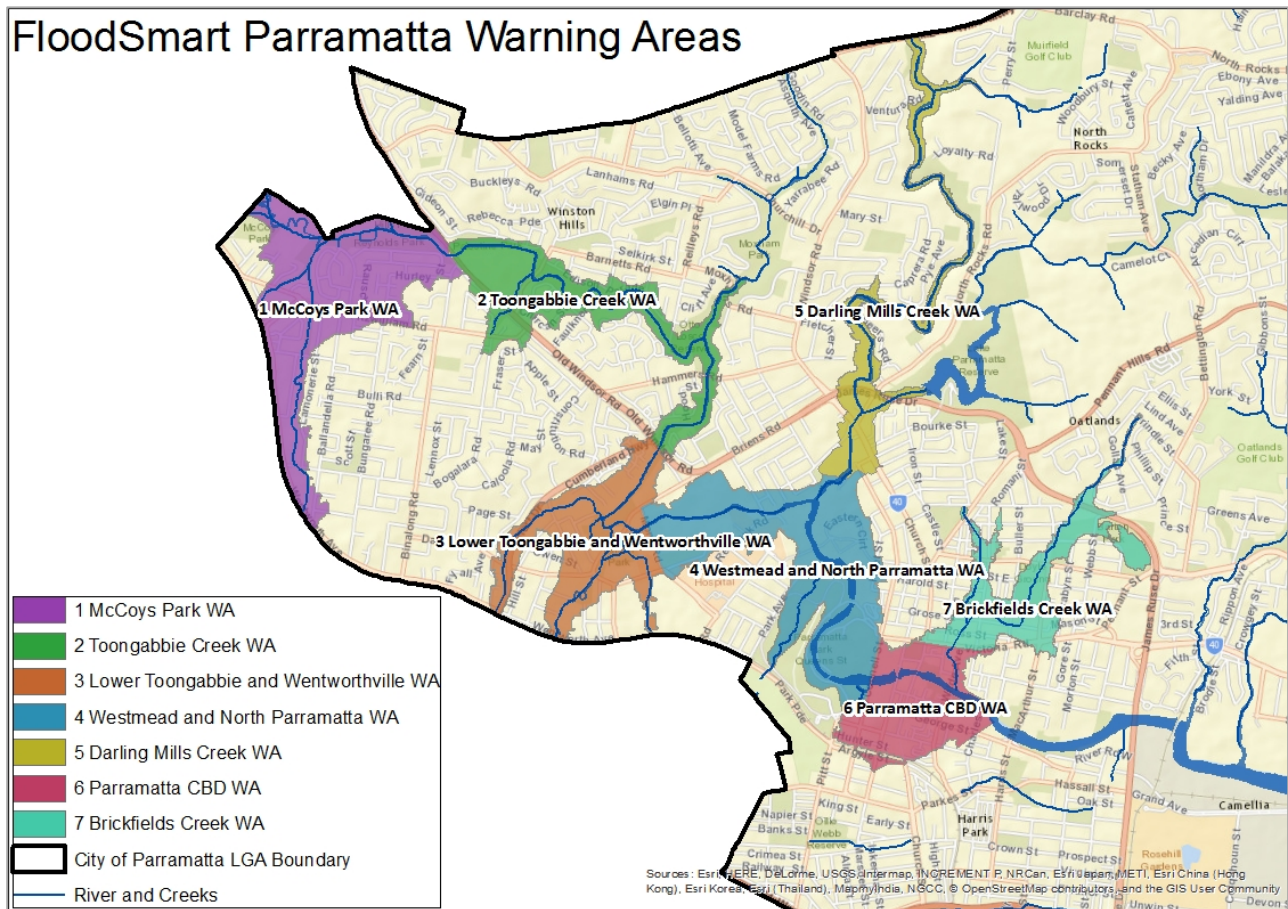


Figure 5 Parramatta FloodSmart Warning Areas

System Design

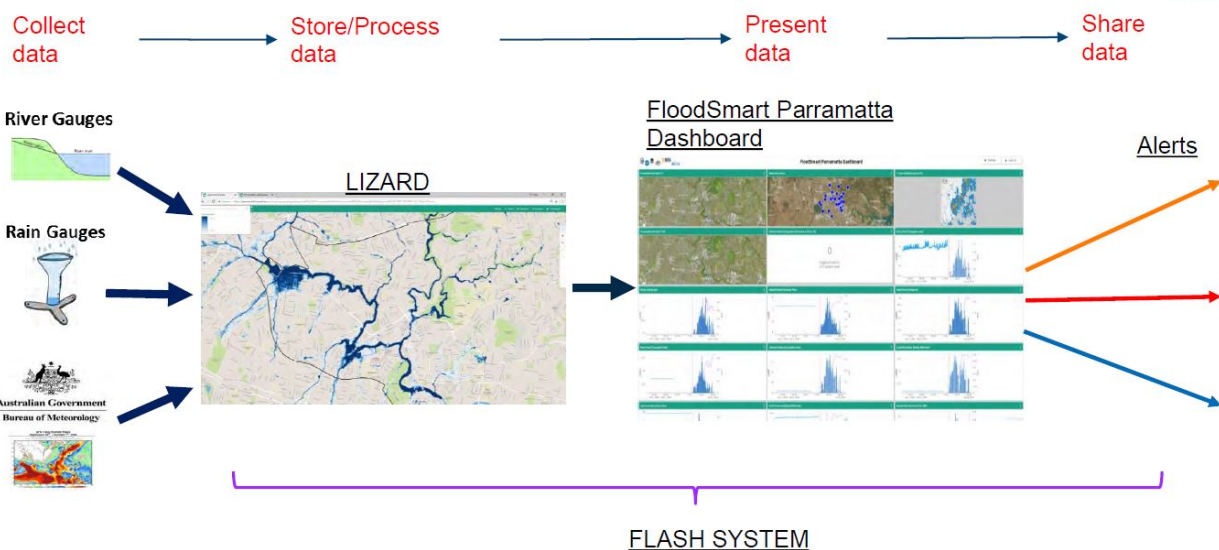


Figure 6 System Design (Source: Presentation by Royal Haskoning DHV given on 23 August 2019)

3.2 Flood Warning System for 125-19 Arthur Street, Parramatta

3.2.1 Primary Warning System

It is proposed that the Body Corporate enrol with FloodSmart Parramatta *to receive warning messages in any combination of text, email, or automated voice message.*

Flood warnings will be issued by the Early Warning Network.

While FloodSmart Parramatta will outline the expected level of flood severity which could be minor, moderate or major this system is focussed on major floods not extreme floods. It is expected that warnings are more directed at residents and businesses at risk in major floods eg. 20 yr ARI – 100 yr ARI. 125-129 Arthur Street is only vulnerable to severe and extreme floods greater than a 100 yr ARI flood and approaching a Probable Maximum Flood (PMF). Initiating evacuation of residents from the ground floor based on a “major” flood warning alone would likely trigger evacuations on a more frequent basis than warranted by the severity of the flood.

Once a warning of a major flood is received then the Flood Warden or his/her designated representative(s) will monitor the Marsden Weir gauge through the “Check Your River and Rain Gauge levels” facility on the FloodSmart website in order to decide when an evacuation needs to be triggered.

This service gives the Flood Warden or his/her designated representative(s) access to live river and rain monitoring data near the property.

This can be accessed at: <https://www.cityofparramatta.nsw.gov.au/recreation-environment/floodsmart-parramatta/check-your-river-and-rain-gauge-levels>

The river gauge it is proposed be monitored is the Marsden Weir gauge.: The locations of this gauges is disclosed in **Figure 7**.

Based on a correlation between the PMF levels at the confluence of Clay Cliff Creek and at the Marsden Weir and to provide at least 20 minutes warning prior to PMF floodwaters reaching the ground floor level, it is proposed that two water levels be monitored at Marsden Weir as follows:

- (i) When the water level at the Marsden Weir gauge reaches 9.0 m then residents and any visitors on the ground floor are to be warned that they may need to evacuate to Level 1;
- (ii) If the water level at the Marsden Weir gauge reaches 10.0 m then evacuation of residents and any visitors on the ground floor to Level 1 is to commence;
- (iii) The indicative time available to evacuate residents and any visitors on the ground floor to Level 1 is expected to be around 1.5 times the time it takes for water levels at the Marsden Weir gauge to rise from 9.0 m to 10.0 m.

At any time in the future when Council adopts new flood levels including PMF levels from any catchment flood study update, it will be necessary to review the trigger levels at the Marsden Weir gauge based on any updated flood behaviour in the vicinity of the Clay Cliff Creek confluence and, if appropriate, to amend the trigger levels.

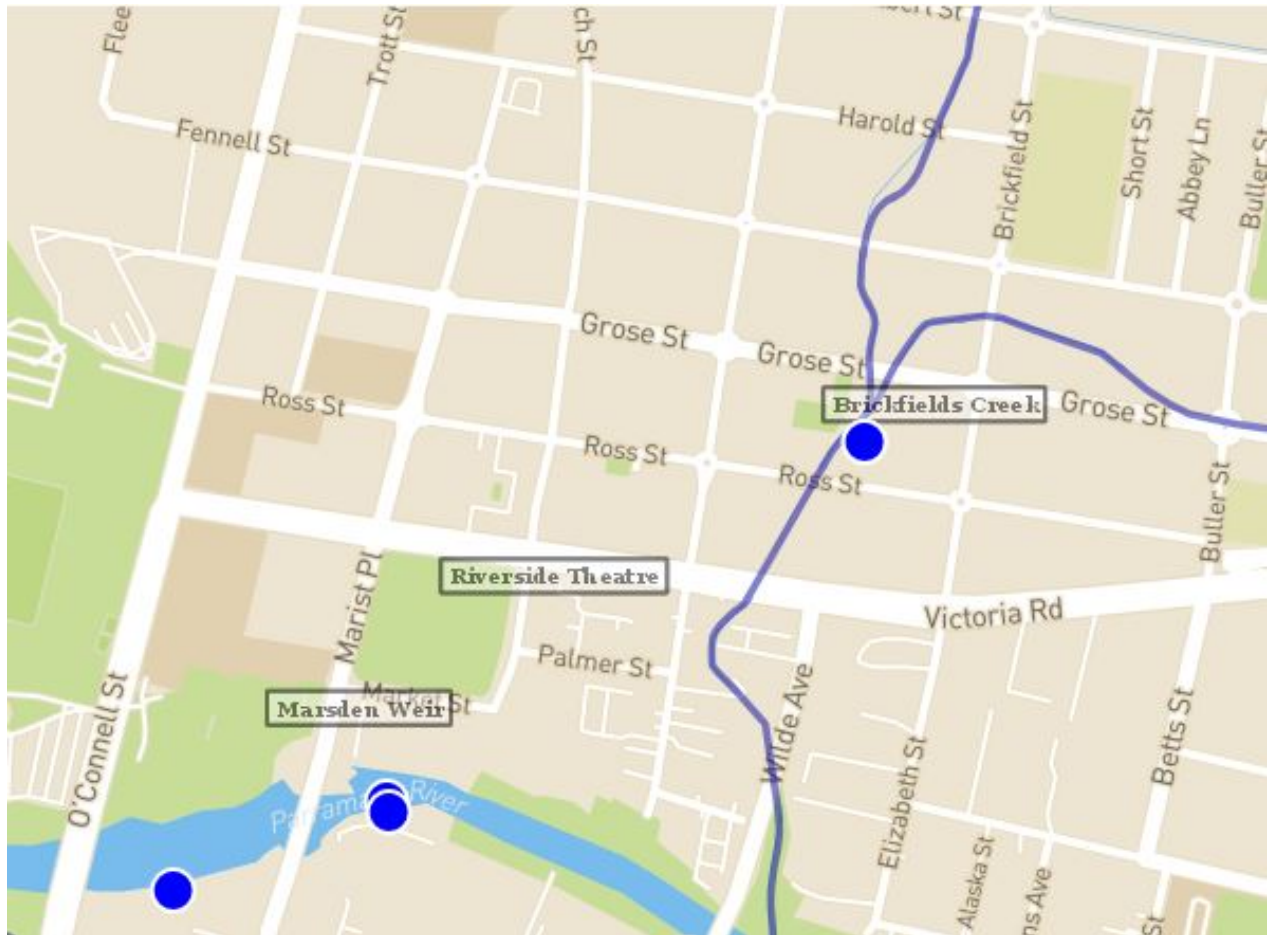


Figure 7 Parramatta FloodSmart Gauge Locations

(Source: <https://www.cityofparramatta.nsw.gov.au/recreation-environment/floodsmart-parramatta/check-your-river-and-rain-gauge-levels>)

In relation to this service the following qualifications have been advised by Council:

- *The data provided here is real time gauge data and has not been reviewed for accuracy.*
- *Many of the gauges used for this service are not owned or maintained by City of Parramatta.*
- *There is no guarantee that all gauges will be working at any one time.*
- *This data should be used as a guide of catchment conditions and may not provide an accurate indication of flooding in your area.*

3.2.1 Secondary Warning System

A secondary warning system will be to visually monitor the progressive inundation of the external Hassall Street entry steps.

This secondary system is proposed to respond to three possible scenarios, namely:

- a major storm generates significant rainfall in the Clay Cliff Creek catchment without generating major rainfall across the upper Parramatta River catchment ie. flooding is generated primarily by runoff from the Clay Cliff Creek catchment not the Parramatta River catchment; or

- (ii) the Marsden Weir continues operate but communication with the gauge is lost and it is not possible to access water level readings at the gauge; or
- (iii) the Marsden Weir fails during a major storm and it is not possible to monitor water levels at the gauge.

It is proposed that water levels be monitored visually from the Hassall Street entry be as follows:

- (i) If floodwaters are observed in the vicinity of the Hassall Street/Arthur Street intersection and these floodwaters reach the level of the bottom step (ie. 0.15 m – 0.18 m above the ground level which is around 4.6 m AHD), then residents and any visitors on the ground floor are to be warned that they may need to evacuate to Level 1;
- (ii) If floodwaters in the vicinity of the Hassall Street/Arthur Street intersection continue to rise and reach the level of the fourth step (ie. around 5.0 - 5.1 m AHD), then evacuation of residents and any visitors on the ground floor to Level 1 is to commence;
- (iii) The indicative time available to evacuate residents and any visitors on the ground floor to Level 1 is expected to be around 1.3 times the time it takes for floodwaters at the entry to rise from the bottom step to the fourth step.

3.2.1 Summary

In summary, the actions are:

- When a warning of a major flood is received from the Early Warning Network (FloodSmart Parramatta) then commence monitoring the water level and the rate of rise of the water level at the Marsden Weir gauge;
- Also monitor any flooding of the Hassall Street/Arthur Street intersection;
- If the water level at the gauge reaches 9.0 m (or if floodwaters reach the level of the bottom step at the Hassall Street entry), then warn ground floor residents and any visitors of possible need to evacuate to Level 1 and prepare to implement actions listed in the FloodSafe Plan,
- Continue to monitor the gauge and at the Hassall Street entry and check if the water levels at the gauge and/or in Hassall Street are rising consistently; and
- When the water level at the gauge reaches 10.0 m (or if floodwaters reach the level of the fourth step at the Hassall Street entry), then commence the evacuation of residents and any visitors from the ground floor to Level 1.

3.3 Other Sources

An important indication of likely imminent flood activity would be intense local rainfall. During any severe storms which occur designated staff should monitor the designated river gauge on the FloodSmart Parramatta website.

3.3.1 The Bureau of Meteorology

The Bureau of Meteorology does not prepare flood predictions for the Parramatta River, but does issue Severe Thunderstorm Warnings and Severe Weather Warnings for Sydney.

Severe Thunderstorm Warnings are issued together with maps indicating the current location and predicted path of thunderstorms. Severe Weather Warnings are for severe weather not related to thunderstorms, cyclones or fire, such as “east coast lows” or other causes of intense rainfall or storm surge.

These warnings are available at:

<http://www.bom.gov.au/nsw/warnings/>.

BoM also provides real time rain radar coverage for Sydney at:

<http://www.bom.gov.au/products/IDR713.loop.shtml>.

3.3.2 The NSW SES

The local SES unit is Parramatta (<http://parramatta-ses.com>).

The applicable region is the Northern Region, which operates a Facebook page for informing members of the public (<https://www.facebook.com/NSWSESSNR>).

The SES issues Local Flood Advices. These are issued on the basis of localised valley watch information for locations for which the BoM does not issue Flood Warnings. They normally predict which class of flooding (minor, moderate or major) will occur, and must not contradict any Flood Warnings provided by the BoM for other gauges on the same river. Local Flood Advices are to be clearly identified as being issued by the SES.

For the subject area, only a Draft Flood Warning Plan has been prepared to date by the NSW SES. This draft was prepared a number of years ago and while it is planned that it will be updated this does not have a high priority in view of the level of flood protection in the Parramatta CBD that has been achieved by various works undertaken in the upper catchment including the Loyalty Road basin.

3.3.3 Local Emergency Management

Parramatta City Council's Local Emergency Management Officer maintains the Parramatta Local Disaster Plan (DisPlan), provides executive support to the Local Emergency Management Committee and Emergency Operations Centre and co-ordinates public education.

In the event of a local emergency, a Police Officer may be appointed by the District Emergency Operations Controller as the Local Emergency Operations Controller for the Parramatta City Council area. Local Emergency Operations Controller is responsible for emergency response operations.

3.3.4 Local television and radio stations

Local television and radio stations would disseminate warnings from the Bureau of Meteorology, SES and other relevant sources.

4 Flood Evacuation

Consideration of the limited warning times in extreme floods led to a decision to adopt a “shelter-in-place” strategy based on relocating the evacuation of residents and any visitors from the ground floor to Level 1.

4.1 Persons at Risk

The maximum number of persons at risk on the ground floor in a PMF is around 20. The time weighted Persons at Risk (PAR) in the basement car parking levels and the ground floor during the PMF is 14.6.

It is estimated that up to 20 persons who would need to retreat from the ground floor to Level 1 when an evacuation is triggered.

The maximum number of persons indirectly at risk on Levels 1-6 in a PMF is 127. The time weighted Persons at Risk (PAR) in the basement car parking levels and the ground floor during the PMF is 100.

4.2 System to Protect the Car Parking Levels

The crest level of 5.67 m AHD on the driveway access from Arthur Street to the multi-storey car parking levels which provides 500 mm freeboard above the 100 year ARI level. Further protection is provided by a flood-proof roller shutter located on the driveway ramp down to the basement which when closed protects the basement levels from flooding.

The Basement car parking is also protected by shutters and/or flood-proof doors installed on the Ground Floor to protect the basement levels from floodwaters attempting to circumvent the roller shutter on the driveway.

5 Flood Response

5.1 Flood Awareness

The manager and any designated residents will be made aware of the flood hazard and evacuation procedures through a combination of measures.

Evacuation plans detailing the evacuation procedures will be provided in key locations on the ground floor and Level 1.

Flood warning signs may be provided to raise awareness of flooding during dry times, but also to alert visitors and staff to the depth of floodwaters during extreme flood events.

Annual evacuation drills will be carried out.

5.2 FloodSafe Plan

A preliminary FloodSafe Plan has been prepared and supplied as **Appendix A**. This preliminary Plan will need to be finalised to include evacuation procedures developed by staff and management prior to occupation.

The FloodSafe Plan will need updating at regular intervals in the future in response to evolving operations and the needs of different resident profiles over time.

5.3 Hazardous Materials

Possible hazardous materials that may be stored in basement car parks include:

- Cleaning chemicals eg pool chlorine, chlorine bleach; and
- Petrochemical fuels eg petrol, oil, diesel.

5.4 Critical Infrastructure

The following items have been identified as infrastructure relevant in flood emergencies: electricity, telephone, gas and water.

During significant storms, interruptions may be experienced to electricity and telephone services due to lighting strikes, fallen trees and high winds, which affect the networks.

Water and gas may also become unavailable during severe flood events due to offsite network issues.

Any back-up measures in the event that there is a disruption to the provision of utilities should also be documented in the FloodSafe Plan.

5.5 Operations and Responsibilities

Flood Wardens will be present on site and able to co-ordinate emergency response at all times. There will be up to 4 designated flood wardens for the building, plus the building manager, who is the Chief Flood Warden. An organisational chart is shown in **Figure 8**.

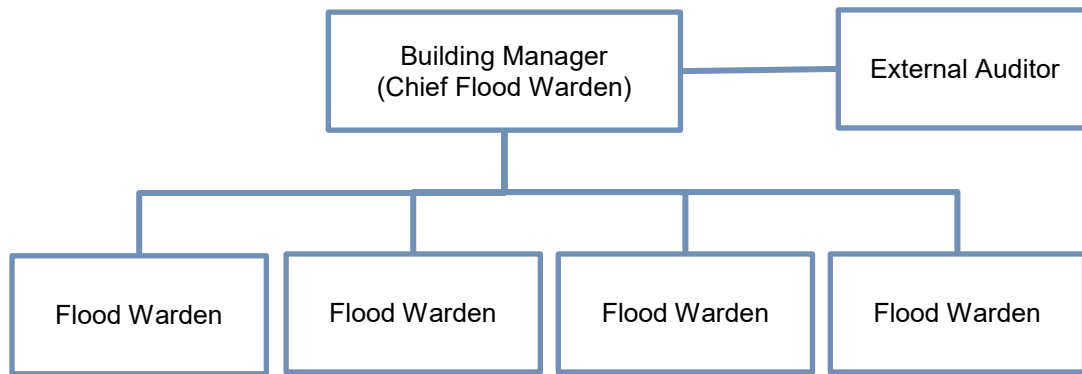


Figure 8 Emergency Response Organisational Chart

Flood Wardens will be trained by the building manager or another suitable person. A training register will be maintained by the building manager with annual audits to ensure that sufficient flood wardens are trained in the procedures. An external auditor will review the documentation to ensure compliance with requirements.

Notwithstanding warnings and orders given by the SES, police or other authorities, Flood Wardens are responsible for issuing directions and warnings to residents and visitors.

A copy of this FEDRP or (a) future version(s) will be stored on site in hardcopy in a weather proof, easily accessible location that is clearly marked and available to emergency services. Additional copies will be available for staff training and reference in an emergency.

5.5.1 Auditing

A schedule will be implemented to ensure appropriate auditing of the flood protection system.

Evacuation drills will also be required.

5.5.2 Operations & Maintenance

Details on any installed equipment will be included as well as recommended schedules for testing and maintenance of the equipment. The report must clearly delineate responsibilities, timing and tasks to ensure compliance will be readily achieved.

Details on all flood barriers will be appended to this report as well as recommended schedules for testing and maintenance each of the measures as appropriate. The responsibilities for and timing of maintenance to be undertaken in accordance with requirements detailed by suppliers will be clearly identified.

5.6 Emergency Procedure

5.6.1 Informal Monitoring

Weather conditions and on river water levels can be monitored informally through FloodSmart Parramatta and at the websites listed in **Section 3.3**.

5.6.2 Automated Actions

Flood warnings will be issued automatically by the Early Warning Network (FloodSmart Parramatta).

5.6.3 Flood Warden Actions

In accordance with the trigger level set out in **Section 3.2** the following actions must be co-ordinated by the Flood Wardens.

- When a warning of a major flood is received from the Early Warning Network (FloodSmart Parramatta) then commence monitoring the water level and the rate of rise of the water level at the Marsden Weir gauge;
- Also monitor any flooding of the Hassall Street/Arthur Street intersection;
- If the water level at the gauge reaches 9.0 m (or if floodwaters reach the level of the bottom step at the Hassall Street entry), then warn ground floor residents and any visitors of possible need to evacuate to Level 1 and prepare to implement actions listed in the FloodSafe Plan,
- Continue to monitor the gauge and at the Hassall Street entry and check if the water levels at the gauge and/or in Hassall Street are rising consistently; and
- When the water level at the gauge reaches 10s.0 m (or if floodwaters reach the level of the fourth step at the Hassall Street entry), then commence the evacuation of residents and any visitors from the ground floor to Level 1.

5.7 Recovery

The On-site Manager, Flood Wardens and State Emergency Service will advise when it is safe to:

- Return to apartments on the ground floor;
- Enter the basement carpark; and/or
- Leave the site.

Re-entry and clean-up of the areas that are inundated is to take account of the storage of any hazardous materials as noted above and/or any surface ponding of water which may be hazardous.

6 References

Parramatta Local Emergency Management Committee (2010) "*Parramatta Local Disaster Plan*".

125 – 129 Arthur St, Harris Park

APPENDIX A

DRAFT FLOODSAFE PLAN

FloodSafe Plan for 125-129 Arthur Street, Parramatta

Potential impacts of flooding on Residents, Staff and any Visitors	Severity level
People's health and safety are compromised	Very High
Frail and elderly resident evacuation	Very High
Property is damaged or destroyed	High
Cars and other property in basement be damaged	High
Electric substation may be flooded and stop working	High
Profits are lost or service provision stopped	Medium
Domestic pets health and safety	Medium
Lift wells may be flooded and lifts may stop working	Medium
Paperwork and records are ruined	Low

Triggers for Actions now and always					
Actions that can be done immediately and maintained to reduce the potential impact of flooding are:					
Actions					
Action	How to do it	Who will do it	What you will need	Estimated time needed	Completed
Inform residents that flooding is a real but small risk	Train flood wardens	Building Manager, Flood Wardens	Training procedures and policies, this plan	1 hour for training	[]
Make the FloodSafe Plan and the Flood Emergency Detailed Response Plan readily available	Store copies of the FloodSafe Plan Flood Emergency Detailed response Plan in locations readily available to the Flood Wardens and manager	Building Manager	Copies of the FloodSafe Plan and the Flood Emergency Detailed Response Plan	30 minutes	[]
Encourage flood wardens to participate in development & implementation of this plan	Meeting	Building Manager, Flood Wardens	FloodSafe Plan and computer	2 hours	[]
Ensure OH&S procedures cover specific risks associated with floods	Management to formulate/update evacuation procedures where necessary	Building Manager	Copies of the FloodSafe Plan and the Flood Emergency Detailed Response Plan	2 hours	[]
Maintain an up to date list of emergency contact numbers for staff and services	Review contact details	Building Manager	Various updated contact details and maintain data base	30 minutes	[]
Train flood wardens in flood procedures	Training session(s)	Building Manager	Copies of the FloodSafe Plan and the FEDRP	1 hour	[]
Incorporate flood awareness in building management and	Staff induction manual	Building Manager	Staff induction manual	1 hour	[]

staff induction training					
Prepare Emergency Kits	Gather items and store in suitable location on-site and accessible.	Building Manager	Emergency kits ¹	2 hours	[]
Ensure flood wardens know flood evacuation routes	Staff training and emergency drills	Building Manager	Copy of the FloodSafe plan	2 hours	[]
Awareness of which residents will require assistance	Keeping a log of residents that would require assistance	Building Manager	Log contained with the emergency kits	1 hour	[]
Action plan for evacuation of these residents if needed	Identify special needs as required	Building Manager	Knowledge of particular needs of residents	2 hours	[]
Store backups of important computer files and critical paper records off-site and out of floodplain.	Create computer backups and paper copies of critical documents and store off-site.	Building Manager	Off-site storage location	1 hour	[]
Ensure staff know flood evacuation routes	Display plan of evacuation routes	Building Manager	Evacuation plan	30 minutes	[]

¹ Emergency kit to contain torch with spare batteries, portable radio with spare batteries, first aid kit, candles, waterproof matches, waterproof bag for valuables and mobile phone, and a copy of the emergency contacts list

Triggers for actions when flooding is likely

- Heavy rainfall
- Parramatta FloodSmart Warning
- If the water level at the Marsden Weir gauge reaches 9.0 m; or
- Floodwaters reach the level of the bottom step at the Hassall Street entry.
- The Bureau of Meteorology issuing a Flood Watch
- The Bureau of Meteorology issuing a Severe Weather Warning or Severe Thunderstorm Warning indicating a likelihood of flash flooding
- The State Emergency Service issuing a Flood Bulletin

Actions

Action	How to do it	Who will do it	What you will need	Estimated time needed	Completed
Notify flood wardens, residents and any visitors of any warnings	In person and using wardens	Building Manager, Flood Wardens	Flood warden list and Visitor list	30 minutes	[]
Prepare for evacuation if the water level at the Marsden Weir gauge reaches 8.0 m; or floodwaters reach the level of the bottom step at the Hassall Street entry	Undertake actions identified by flood wardens to prepare residents to evacuate to Level 1..	On-Site Manager and flood wardens	Checklist of actions identified by staff to prepare residents for evacuation	Time available varies – see below	[]
Keep radio tuned to local radio station, keep in contact with SES and monitor relevant websites	Tune radio to Alive 90.5 mHz FM; http://www.bom.gov.au/nsw/warnings/ http://www.bom.gov.au/products/IDR713.loop.shtml http://new.mhl.nsw.gov.au/Site-213435	Building Manager	Radio, 3G enabled device and spare batteries	While flooding is likely	[]

Triggers for Actions during a Flood					
- A warning of a major flood is received from the Early Warning Network (FloodSmart Parramatta) - The water level at the Marsden Weir gauge reaches 10.0 m; or - Floodwaters reach the level of the fourth step at the Hassall Street entry					
Actions					
Action	How to do it	Who will do it	What you will need	Estimated time needed	Completed
Keep in contact with flood wardens and keep them updated on the situation	Implement contacting strategies using meetings, telephone calls and emails	Building Manager	Radio to obtain up-to-date information and liaison with the SES; computer or 3G device to check websites	Ongoing during event	[]
Do not enter flood water or attempt to leave the protected parts of the building	Ensure manager and flood wardens are trained and providing relevant information to any visitors	Building Manager and flood wardens	Latest information and Flood Safe Plan	Ongoing during event	[]
Keep radio tuned to local radio station, keep in contact with SES and monitor relevant websites	Tune radio to ABC Local Radio 702 AM; http://www.bom.gov.au/nsw/warnings/ http://www.bom.gov.au/products/IDR713.loop.shtml	Building manager and flood wardens	Radio, spare batteries, phone, computer and 3G mobile device	During event	[]
The water level at the Marsden Weir gauge reaches 10.0 m; or floodwaters reach the level of the fourth step at the Hassall Street entry	Evacuate residents and manager to the Level 1 communal area..	Building Manager and flood wardens	Checklist of actions identified by staff for the orderly evacuation of affected residents	Time available varies – see below	[]
Back up important computer files and critical paper records and store these on Level 1 or on a higher level					[]

Triggers for Actions after a Flood

- On-Site Manager or flood wardens issue all clear
- The NSW State Emergency Service issuing an all clear

Actions

Action	How to do it	Who will do it	What you will need	Estimated time needed	Completed
Before reoccupying the Ground Floor undertake an OH&S risk assessment	Conduct a visual risk assessment of external areas and Ground Floor for structural damage, damage to services, dangerous debris, etc.	Building Manager and Flood Wardens	Advice from SES that we can return and safety equipment that is deemed necessary		[]
Communicate with residents and assist them in returning					[]
Remove debris and clean, repair and disinfect the Ground Floor as needed	With appropriately skilled personnel	Building Manager to organise			[]
Replace lost furniture, floor coverings and fittings as needed					[]
If needed replace essential plant, equipment as soon as possible					[]
Restore critical records, computer equipment and files					[]

Staff Contact List

Name	Number	Mobile	Flood role / issues
Building Manager (Chief Flood Warden)			
Flood Warden 1 (Ground Floor)			
Flood Warden 2 (Level 1)			
Flood Warden 3			

Emergency Contact List

Name	Number	Mobile
Ambulance	000	
Gas		
SES	132500	
Sydney Water - Faults	13 20 90	
Fire - Emergency	000	
Police - Emergency	000	
Electricity		
Bureau of Meteorology (for flood warnings)	1300 659 219	
Parramatta City Council Wet Weather Line	(02) 9294 8586	
Parramatta Police Station	(02) 9633 0799	
Electrician		

For emergency help in floods and storms phone the SES on 132 500

125 – 129 Arthur St, Harris Park

APPENDIX B

FLOOD BARRIER MANUALS