NORTHROP
Level 1, 215 Pacific Highway
Charlestown NSW 2290
02 4943 1777
newcastle@northrop.com.au
ABN 81 094 433 100

27 September 2023

SY200410_B05_[E]

Cambridge Unit Developments
C/- Chris Ryan
Ionic Management Pty Ltd
PO Box 165
Cronulla, NSW, 2230

Dear Chris,

Re: 143 Stoney Creek Road, Beverly Hills – Response to EHG and SES Submissions.

Northrop Consulting Engineers have been engaged by Cambridge Unit Developments, care of Ionic Management Pty Ltd to prepare a Flood Risk Impact Assessment for the purposes of the Planning Proposal (Ref: PP-2021-6630) for 143 Stoney Creek Road, Beverly Hills, herein referred to as the "subject site".

Following submission of the Planning Proposal, the NSW Environment and Heritage Group (EHG) and the NSW State Emergency Service (SES) have provided commentary with respect to the proposal (EHG Ref: DOC23/679727 and SES Ref: ID 2065). The purpose of this letter is in response to the EHG and SES submissions, which are dated the 25th of August and 8th of September 2023 respectively.

Reference is made herein to the following report and letters:

- A previous response to an SES submission titled 143 Stoney Creek Road, Beverly Hills – Response to SES submission and dated the 16th of June, 2023, herein referred to as *"SY200410_B04_[A] (Northrop, 2023)"*.
- The Flood Risk Impact Assessment for Planning Proposal submission prepared by Northrop Consulting Engineers and dated the 14th of April 2023 [REV E], herein referred to as the "*Flood Risk Impact Assessment (Northrop, 2023)*".
- The original Flood Impact Assessment prepared for the original Health Services Facility Development Application, dated the 17th of December 2020, herein referred to as the *"Flood Impact Assessment (Northrop, 2020)".*

Executive Summary

A summary of key flood conditions and opportunities for effective management, as presented in this correspondence, is summarised below:

- The Planning Proposal is consistent with the Principles of the Flood Risk Management Manual (2023) and satisfies the alternative requirements where inconsistencies are observed with the Ministerial Direction (4.1 – Flooding).
- The latest Flood Risk Management Manual (2023) highlights that different Flood Planning Levels apply to different types of development. And states (FRM Manual; 2023):

  > *"Determining the FPL for typical residential development should generally start with a DFE of the 1% AEP flood plus an appropriate freeboard (typically 0.5 m)."*

- The Planning Proposal incorporates a conservative approach with respect to setting Flood Planning Levels. This is recognised by the requirement to set the FFL at a minimum of the 1% AEP plus 0.5m or the PMF (whichever is greater).

- Flood behaviour across the site is classified as low flood hazard during the Defined Flood Event (i.e. the 1% AEP design storm event) (refer to Flood Risk Impact Assessment (Northrop, 2023)).

- At least two flood emergency response strategies are available for the subject site in the event of a flood. The primary response is proposed to be evacuation, in accordance with SES recommendations. A secondary response is also available with the opportunity for on-site refuge which is consistent with the *"Guiding Principles for Flood Management for Future Development of the Site"*.

- Evacuation from the site is possible during the peak of the 1% AEP (Annual Exceedance Probability) by continuing west from the site up Stoney Creek Road to a location above the PMF flood event (refer to Figure 1 below).

- Evacuation from the site is also expected to be possible prior to the peak of the PMF with up to 24 hours warning time possible prior to this event. It is important to recognise that the Probable Maximum Flood (PMF) is an extremely rare event with a nominal 10^{-7} AEP (1 in 10 million) chance of occurring. Extended warning time is expected to be available prior to an event of this magnitude. It is likely a PMF event will be associated with significant adverse weather patterns which would be closely monitored by Bureau of Meteorology prior to the event.

- A secondary emergency management strategy (namely, on-site refuge) is available in the event where time does not permit evacuation. Shelter in Place where only limited warning time is available is recognised by the latest Draft Shelter in Place guidelines prepared by the Department of Planning and Environment (2023). Refuge is proposed to be available for all events up to and including the PMF and will be enforced by the requirements set out by the site specific Development Control Plan.

- There are several sources and opportunities for receiving flood warnings at the site prior to a flood event. These include (but are not limited):
    - The Early Warning Network
    - The SES / Federal Government HazardWatch Portal
    - The Hazards Near Me App
    - Direct Bureau of Meteorology Warnings
    - On-site proprietary devices such as a flood sensor / depth indicators.
    - Media platforms (Social, Radio and TV)

- Development at the subject site creates an opportunity to improve available flood warning time for users on the site through the introduction of proprietary devices (such as flood sensors and/or depth indicators). A sensor may be linked to the building alarm system and/or via mobile telemetry to notify users of the flood conditions and emergency responses at the site.

- Development at the subject site has the potential to reduce the time it takes for users of the site to seek refuge in a location away from the flood hazard through with the introduction of on-site flood refuge at a level above the predicted maximum flood levels.

- Residual Risk can be managed on site through the recommendations presented in the *"Guiding Principles for Flood Management for Future Development of the Site"*. Both hard, engineered, and soft, behavioural, measures are recommended by the guiding principles to manage residual risk for future development.

- The Planning Proposal has the potential to reduce the number of people on the subject site when compared to the current Development Approval (reducing the number of people potentially exposed to the hazard, directly reducing the risk to life).

- Development at the subject site has the potential further reduce the flood risk and the risk to life on the site when compared to existing conditions by changing the Flood Emergency Response Classification from a Low Flood Island to a High Flood Island.

- Development at the subject site has the potential to reduce flood depths and hazard conditions in adjacent properties through the introduction of mitigation measures on the subject site.

- Development at the subject site creates an opportunity to also informally reduce the risk to life for nearby flood affected properties by providing a place of refuge.

- Development at the subject site eliminates the requirement for users to enter a potentially compromised road network in order to seek safe refuge away from the hazard further reducing the risk to life.

- Development at the subject site has the capacity to formalise emergency preparation, response and recovery procedures on the subject site. These are presented in the a draft Flood Emergency Response Plan, provided in Attachment 1.

- Development at the subject site creates an opportunity to enhance flood awareness and education through the preparation of a Flood Emergency Response Plan.

The above demonstrates the Planning Proposal has the capability to significantly enhance Disaster Risk Reduction mechanisms at the subject site and presents an opportunity to improve community resilience to the existing flood hazard.

Presented below is a summary of the EHG and SES comments outlined in their letters and a response to each item.

EHG Comments and Response

The Planning Proposal has been assessed previously with respect to the Floodplain Development Manual (2005) and the Ministerial Direction 4.1 (Flooding) with additional commentary presented in the Flood Risk Impact Assessment (Northrop, 2023). The Flood Risk Impact Assessment (Northrop, 2023) highlights that the Floodplain Development Manual (NSW FPDM, 2005; pp J-2):

> *"promotes the use of a merit approach which balances social, economical, environmental and flood risk parameters...", thus "… avoids the unnecessary sterilisation of flood prone land".*

It is noted that the latest Flood Risk Management Manual (DPE, 2023) also recognises these conditions as part of its primary Policy Statement. A merit-based assessment is sought for the Planning Proposal with additional discussion presented in the original Flood Risk Impact Assessment (Northrop, 2023).

Further commentary with respect to the Objectives and Principles of the Flood Risk Management Manual (DPE, 2023) are presented in the discussion section of this letter.

A summary of the EHG comments and a response is presented in the following Table 1.

Table 1 - Response to EHG comments

Item	EHG Comment	Development Response
1	The subject site is located in the upper reaches of the Bardwell Creek Catchment ….. (continues)…. …… Development intensification through rezoning the site to high-density residential development on the site which would become a high flood island should not be supported.	Development of the subject site has the potential to change the Flood Emergency Response Classification (FERC) from a Low Flood Island under existing conditions, to a High Flood Island during the developed. As outlined in the Support for Emergency Management Planning Guideline and in the quote presented by EHG, the opportunity for people to retreat to higher ground within the island directly reduces the risk to life on the site. Development of the subject site provides an opportunity for people to retreat to higher ground which does not currently exist, therefore directly reducing the existing flood risk and risk to life on the subject site. The requirement for the provision of on-site refuge above the 1% AEP and PMF is outlined in the *"Guiding Principles for Flood Management for Future Development of the Site"* as presented in the Flood Risk Impact Assessment (Northrop, 2023). These requirements are expected to be adopted and enforced for the site through the creation of the site-specific Development Control Plan.
2	Fig D1[D] of the FRA shows that, the site is impacted in the 1% with depth >1.5m in the developed scenario. There are discrepancies throughout the mapping of flood depth for the developed scenario.	Depths in excess of 1.5m are observed below ground level, within the flood storage chamber. As outlined in the Flood Impact Assessment (Northrop, 2020) this area is to be cordoned off with louvres (or equivalent) which are proposed around the flood storage chamber to prevent access. The aim with the flood modelling prepared for the original Flood Impact Assessment (Northrop, 2020) was to permit high depths within the chamber (to facilitate increased flood storage on the site) but to limit flood hazard in trafficable areas to a maximum of H2 during the 1% AEP. As a result, hazard conditions within the chamber of approximately H4 during the 1% AEP and H5 during the PMF are observed. Some isolated patches of H5 and H6 are observed within the chamber during the 1%

Item	EHG Comment	Development Response
		AEP and PMF, respectively, however, these are expected to be due to localised increases in flow velocities created by the modelling methodology (i.e. Rainfall-on-Grid), which can be future reviewed at Development Application Phase. As mentioned above, the modelling is expected to be updated for future Development Applications. We trust the above explains the discrepancies EHG are referring to in their correspondence.
3	The areas adjoining the subject site would act as flood ways and flood storage with hazard levels of H3 to H5 and flood depth 0.3m-0.5m. Whilst it would be in the order of 0.9m-1m under the PMF Event. EHG notes that the submitted flood report from the proponent does not include the relevant details on the flood modelling including the works undertaken by the proponent in regard to the model inputs, parameters and assumptions.	Adverse flood behaviour in adjoining areas has been recognised with the requirement to provide refuge on-site outlined by the *"Guiding Principles for Flood Management for Future Development of the Site"*. As noted by the Flood Emergency Response Summary presented in the Flood Risk Impact Assessment (Northrop, 2023), leaving the site during the peak of a flood event is not recommended. Future development of the site reduces the risk to life on the site by providing the opportunity for users to seek refuge away from the hazard within the subject site. This eliminates the requirement for users at the site to enter a potentially compromised road network during a flood event and reduces the time it takes for users to access flood free refuge. Council's adopted Hurstville, Mortdale and Peakhurst Wards Overland Flow Flood Study and models (SMEC, 2016) was used for the analysis. Updates to Council's model including model inputs, parameters and assumptions are outlined in the Flood Impact Assessment (Northrop, 2020) under "Regional Flood Model Updates" section of the report. Additional model parameters remain unchanged from Council's Study and can be reviewed in the Hurstville, Mortdale and Peakhurst Wards Overland Flow Flood Study Report (SMEC, 2016). It is noted this modelling is expected to be updated for future Development Applications and additional details can be provided at that time, if required.

Item	EHG Comment	Development Response
4	The report indicates that, the existing site provides a flood storage of 600m3 during major events, and the site under post development scenario would have a storage volume of 2000m3, through inclusion of an underground storage tank.	This demonstrates the capability of future development on the subject site to improve flood conditions in adjacent properties by increasing available flood storage on the site, reducing flood depths elsewhere. These benefits are presented in Figures E1 [E] and E2 [E] of the Flood Impact Assessment (Northrop, 2020) with decreases across Stoney Creek Road and downstream properties of up to 299mm during the 1% AEP and PMF design storm events.
5	A Flood Emergency Response Plan (FERP) is provided in Appendix B in the FRA for the management of flooding risks during major and extreme events of the post-development scenario of the site. The proponent indicates that the development site would be used as a refuge for residents of the adjoining properties during major flooding events. EHG considers that this would result in exposing more local residents to isolation during rarer flood events. The FERP also proposes that a site manager would be responsible for coordinating the emergency conditions by communicating with responsible persons at tenements (residential and commercial) of the development site. It is not clear, based on the extent and scale of development, whether it would be practicable and sustainable to have a full-time site manager (24/7). Again, the site may be managed by a strata manager and the responsibilities' level may be different. It is also not clear how the communications would be made to residents of adjoining properties to use the development site as a local refuge. Evacuating the site during major and extreme events by residents and visitors would pose safety risks since the floodwater depth would be high.	Only residents within the immediate vicinity of the site that are already exposed to hazardous flood behaviour would be encouraged to seek refuge within the facility. It is noted that Appendix B referred to by EHG is a Flood Emergency Response Summary for the originally proposed Health Services Facility. The summary was not intended to be a Flood Emergency Response Plan which typically includes much more information. The summary was appropriate for the level of submission (Development Application) and for the type of development proposed. It is anticipated that the Flood Emergency Response Summary will be updated for future Development Applications at the site with a more detailed Flood Emergency Response Plan also expected to be prepared prior to Construction Certificate Phase. A draft Flood Emergency Response Plan for the proposed residential development has been prepared for Department review and is included as Attachment 1. The requirement to have a site manager and communication within and external to the facility can be determined once a site layout and site use is recognised. This is expected to be reviewed at Development Application Phase.

Item	EHG Comment	Development Response
	It would not be possible to set up an automated warning system at the development site possibly due to lack of predictive and forecast information and the flooding nature and characteristics. EHG's view is that there would be considerable uncertainties for the development and implementation of the proposed FERP and its efficient operations in addressing and managing flooding risks. There would also be deviations between the planned versus actual emergency response management activities at the development site, which may pose risks to residents and visitors. The FERP in its current form does not outline how these uncertainties would be addressed and managed in order to eliminate potential flooding risks to residents and visitors of the development site. EHG emphasises that, site specific flood response plans are not considered by the NSW SES to be an effective measure to strategically and effectively manage emergency management risks to the community during flooding. For further guidance please refer to Section 2.4 of the Support for Emergency Management Planning guideline.	An opportunity exists for alternative measures such as a strategy for users to make observations on-site, or to install on-site flood sensors to notify users that evacuation or refuge within a future facility is required. Flood alerts from on-site sensors can be linked to the building alarm and mobile telemetry to notify users of the site flood conditions. This strategy is presented in the draft Flood Emergency Response Plan included as Attachment 1. The introduction of a flood sensor that activates when flood behaviour on-site does not enable evacuation, introduces a mechanism to manage uncertainty and variability due to weather patterns and available warning time. The strategy presented in the draft Flood Emergency Response Plan recommends residents remain on-site when the alarm is triggered. This strategy does not rely on BoM warnings or SES advice and can be triggered independent to external assistance. The Site-Specific Flood Emergency Response Plan has the capability to better educate future users at the site of the expected flood risk and behaviour at the site, the likely available warning time, the necessary emergency response measures and the flood resilience of the facility. This information provides greater clarity for residents who would likely otherwise have very little knowledge of these conditions without the preparation of the Plan. It is noted that future development at the site does not rely solely on the preparation of the Site-Specific Flood Emergency Response Plan to manage flood risk on the site. The *"Guiding Principles for Flood Management for Future Development of the Site"* and the site-specific Development Control Plan outlines additional land-use and planning measures to manage the flood risk on the site.

Item	EHG Comment	Development Response
	EHGs view is that the planning proposal is inconsistent with the Ministerial Direction 4.1 (2) and 4.1 (3) (c). As specified in Ministerial Direction 4.1 (2), 'a planning proposal must not rezone land within the flood planning area from Recreation, Rural, Special Purpose or Conservation Zones to a Residential, Employment, Mixed Use, W4 Working Waterfront or Special Purpose Zones. The site is included within the FPA (flood planning area) as it is under the DFE (defined flood event), which is 1% AEP as per the FRM (flood risk management) process and the principles of the Flood Risk Management Manual (2023). As specified by Direction 4.1 (3) (c) 'a planning proposal must not contain provisions that apply to the flood planning area which permit development for the purposes of residential accommodation in high hazard areas'. The modelling works undertaken by the proponent as well as the modelling results from Georges River Council indicate that the site would be subject to H2 hazard under an 1% AEP Event, which would become H3 to H5 under the PMF Event.	A response to the Ministerial Direction 4.1 including the NSW Floodplain Development Manual (DPE, 2005) and Georges River Council Local Environmental Plan (LEP) has been prepared in the Flood Risk Impact Assessment (Northrop, 2023). As mentioned above, a merits-based assessment is recognised by the NSW Floodplain Development Manual (2005) and is sought by the Planning Proposal submission. Development on the subject site has been identified have the capability to introduce a number of improvements from a floodplain risk management perspective. An updated analysis of the planning proposal has been performed with respect to the latest Floodplain Risk Management Manual (DPE, 2023) and anticipated revised Ministerial Direction 4.1. The Direction highlights a planning proposal can be inconsistent with the direction provided it is consistent with the principles of the Manual (2005 / 2023) and the adopted Council flood study, Additional commentary is presented in the discussion section of this letter providing justification for the inconsistency. It is noted that a low flood hazard categorisation was determined for the site during the 1% AEP (i.e. the Defined Flood Event) as outlined in the additional Council correspondence presented in the Flood Risk Impact Assessment (Northrop, 2023). It is important to note that the Probable Maximum Flood (PMF) is an extremely rare event with a nominal 10-7 AEP (1 in 10 million) chance of occurring. It is not typically used to guide development design and generally, the greatest concern during an event of this nature is how the residual risk to life can be managed. In this case, strategies have been

Item	EHG Comment	Development Response
		incorporated into the “Guiding Principles for Flood Management for Future Development of the Site” to manage this residual risk with both hard engineered and soft behavioural measures recommended for future development. Future development of the subject site has the capacity to reduce flood risk both on the subject site and for nearby properties when compared to existing conditions. These benefits are discussed in the Flood Risk Impact Assessment (Northrop, 2023) and further analysed herein.

SES Comments and Response

A response to each Principle from the Support for Emergency Management Planning Guideline (DPE, 2023) and additional SES comments is presented below.

Principle 1 - Any proposed Emergency Management strategy should be compatible with any existing community Emergency Management strategy.

The Georges River Council Flood Emergency Sub Plan (SES, 2021) outlines the community Emergency Management Strategy. The Sub Plan (LEMC, 2021) highlights that the SES will consider a number of elements when deciding on the appropriateness of evacuation. These are summarised on pages 16-17 of the Sub Plan (LEMC) and highlights consideration to the "Time Available for Evacuation".

Evacuation, if time permits is recommended in the previous correspondence (REF: SY200410_B04_[A], dated 16 June 2023) and includes early closure and evacuation of the facility, up to a day in advance, if warning time permits. In the event where time is not available, development at the subject site presents an opportunity for vertical evacuation and on-site refuge which does not currently exist under existing conditions.

Further to the above, development of the subject site has the potential to reduce the amount of time it takes for people exposed to the hazard to seek refuge away from the hazard. Similarly, refuge on-site eliminates the requirement to evacuate through a potentially compromised road network in the event where heavy rainfall has commenced.

It is understood that Shelter In Place (SIP) is not a strategy that is endorsed by the SES. This is recognised by the draft Flood Emergency Response Plan presented in Attachment 1 with the recommendation for early evacuation as the primary response to adverse flood events.

Shelter-In-Place (SIP) is recognised by the NSW Department of Planning and Environment (DPE) for Flash Flood Events and is proposed by the draft Flood Emergency Response Plan as a secondary measure when evacuation is no longer possible. During a flash flood event, flood water is expected to rise and fall quickly over the subject site, as such, isolation is not expected to occur for a prolonged period of time. As such, SIP is considered reasonable emergency response measure in the event where evacuation is no longer possible.

Further to the above, the subject site has an active approval that enables the construction of a Health Services Facility with the capacity for 114 parking spaces. This enables approximately 228 people to be on the site during operation. The use presented by the Planning Proposal suggests 38 residential units may be proposed on the subject site. If an average of up to 2.8 people per unit is assumed (ABS 2021 census average for GRC), approximately 107 people may be on site post development. This demonstrates the potential for the proposal to reduce the number of people on the site, when compared to the current approval.

In this regard, with the recommendation for early evacuation, the introduction of on-site refuge, and formalisation of emergency procedures, future development on the site;

- Has the potential to "Enhance Evacuation"
- Is unlikely to "affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood" and
- Has the capacity to "ensure the safe evacuation of people in the event of a flood"

Further discussion on the potential impacts on evacuation routes is presented in the response to Principle 3.

It is noted that future building/s on the subject site are not proposed to be a major community evacuation centre. The intent is to protect the users of the facility from the existing flood hazard and future building/s may therefore be used (informally) by occupants of adjacent private properties if they find themselves in a potential life-threatening situation. This will of course, depend on the final use of the facility and will be subject to a feasibility assessment during Development Application phase.

Principle 2 - Decisions should be informed by understanding the full range of risks to the community.

As discussed in the previous correspondance (REF: SY200410_B04_[A], dated 16 June 2023) the Flood Behaviour section of the Flood Risk Impact Assessment (Northrop, 2023) includes consideration to events ranging from the 50% AEP (i.e., 2yr ARI) to the PMF.

Attachment 3 of the Flood Risk Impact Assessment (Northrop, 2023) also presents additional flood Figures for the 50%, 20%, 10%, 5% AEP and the 1% AEP plus climate change.

If required, further exploration of the frequency of the site becoming flooded and/or isolated can be reviewed at Development Application phase when the site layout and use is recognised. It is noted that a rising road evacuation path from the site does exist to a location above the PMF if travelling in a westerly direction, up Stoney Creek Road. This opportunity for evacuation to be triggered before flood depths on the site become un-safe, and if time permits, is presented in the draft FERP and can be further reviewed at Development Application phase, if required.

Fire suppression can be further reviewed when a site layout and use is recognised. Opportunities may exist to isolate sections of the building or alternatively, consideration for refuge above the PMF at a location outside the building may be investigated at Development Application phase. Fireproofing typically has a time rating in design. This may be reviewed with respect to potential isolation of the site at future project phases.

Principle 3 - Development of the floodplain does not impact on the ability of the existing community to safely and effectively respond to a flood.

As discussed in the previous correspondance (REF: SY200410_B04_[A], dated 16 June 2023) the Flood Emergency Response Summary presented in the Flood Risk Impact Assessment (Northrop, 2023) highlights a strategy for early closure and evacuation of the facility, up to a day in advance, if warning time permits. Evacuation well in advance of the event occurring is not expected to significantly increase demand on existing access / egress routes.

Where sufficient time for evacuation is not available (e.g. the warning occurs on the same day or rainfall has already commenced), on-site refuge is recommended. The requirement for future development to facilitate on-site refuge is also outlined in the *"Guiding Principles for Flood Management for Future Development of the Site"* presented in the Flood Risk Impact Assessment (Northrop, 2023). On-site refuge is also not expected to increase evacuation demand on existing access / egress routes as occupants are expected to remain on-site.

Evacuation of the site, once heavy rainfall has commenced, is not recommended due to the potential for the regional road network to be compromised by flood water and the potential for flood water to rise and fall quickly. Early evacuation or on-site refuge as outlined herein are recognised emergency response measures as outlined by the Draft Shelter-In-Place guidelines (DPE, 2023).

Principle 4 - Decisions on development within the floodplain does not increase risk to life from flooding.

As discussed above, development at the subject site has the potential to enhance flood risk management through the introduction of hard engineered solutions (such as refuge on-site, etc) but also through soft behavioural measures (such as the preparation of a FERP). As such, development at the subject site has the capability to reduce the risk to life on the subject site.

Structural capacity of future facilities to withstand flood forces will be reviewed at later project phases when the building extents and use are recognised. Structural design is typically performed prior to Construction Certificate phase and is not considered appropriate at rezoning phase as site layout and use is not yet recognised. Additional information is discussed in the below Principle 6.

Principle 5 - Risks faced by the itinerant population need to be managed.

The future site Flood Emergency Response Plan can recommend strategies to manage itinerant populations. Strategies may include (but are not lmited to) the following:

- Encourage users of the facility that may not be on-site at the time of a flood to not return to the facility and to wait it out elsewhere until the event concludes. As mentioned above, flooding is expected to rise and fall quickly during flash flooding and isolation is not expected to occur for a prolonged period of time.
- Recommend residents / operators contact expected visitors following notification of a predicted flash flood event and advise them not to attend the site.
- Link on-site flood sensor with telemetry to notfiy future users of the flood conditions at the site.
- Early closure of retail / commercial facilities following notification of a predicted flood event to prevent vistors attending the site.
- Education and awareness that the site is flood prone and to be cautious when heavy rainfall is predicted.

These strategies can be identifed in the future operational Flood Emergency Response Plan, which is expected to be prepared prior to Construction Certifcate Phase.

Principle 6 - Recognise the need for effective flood warning and associated limitations.

Due to the flash flood nature of the expected flood event, it is possible effective warning may not be available prior to the event. This is recognised by the SES who highlights that there is *"no formal flood warning system available for the area".* Severe Weather and Thunderstorm Warnings are expected to be issued by the Bureau of Meterology with lead-times that can range from just an hour or two, up to 24 hours (SES, 2023). This highlights the significance for future development to provide safe refuge and veritcal evacuation on the subject site.

An opportunity exists for future development to use the flood behaviour at the subject site as a means to trigger necessary flood emergency response measures. This may involve the introduction of automated sensors or observations that can be made by users on the site as previously discussed. An example of this opportunity is presented in the draft FERP in Attachment 1 which can be further reviewed during Development Application phase, when a site layout and use is recognised.

There are more significant challenges associated with flood risk managemnt and planning for the exisitng site. Review of the results presented in the Flood Impact Assessment (Northrop, 2020), the existing facility is likely vulnerable to overfloor flooding during a 20% AEP, with an unknown capabilty of the exisitng facility to withstand flood forces. This creates significant risk to the exisitng users of the facility and to emergency services who may need to perform the rescue.

Development at the subject site provides an opportunity to reduce flood risk on the site through the introduction of appropriate Disaster Risk Reduction counter-measures. This includes (but is not limited to) the introduction of safe refuge above the worst case PMF flood levels on the subject site. This provides users of future development the opportunity to remove themselves from the hazard relatively quickly and reduces the requirement for emergency services to put themselves at risk. In additon, the preparation of the Flood Emergency Response Plan will further enhance community awareness and education of the existing flood risk (as mentioned above).

The proposed *"Guiding Principles for Flood Management for Future Development of the Site"* ensures future devlopemnt appropriately considers these requirements.

Discussion

Evacuation Paths

An anaylsis of flood hazard conditions and evacuation paths from the site has been performed using the developed case results presented in the Original Flood Impact Assessment (Northrop, 2021).

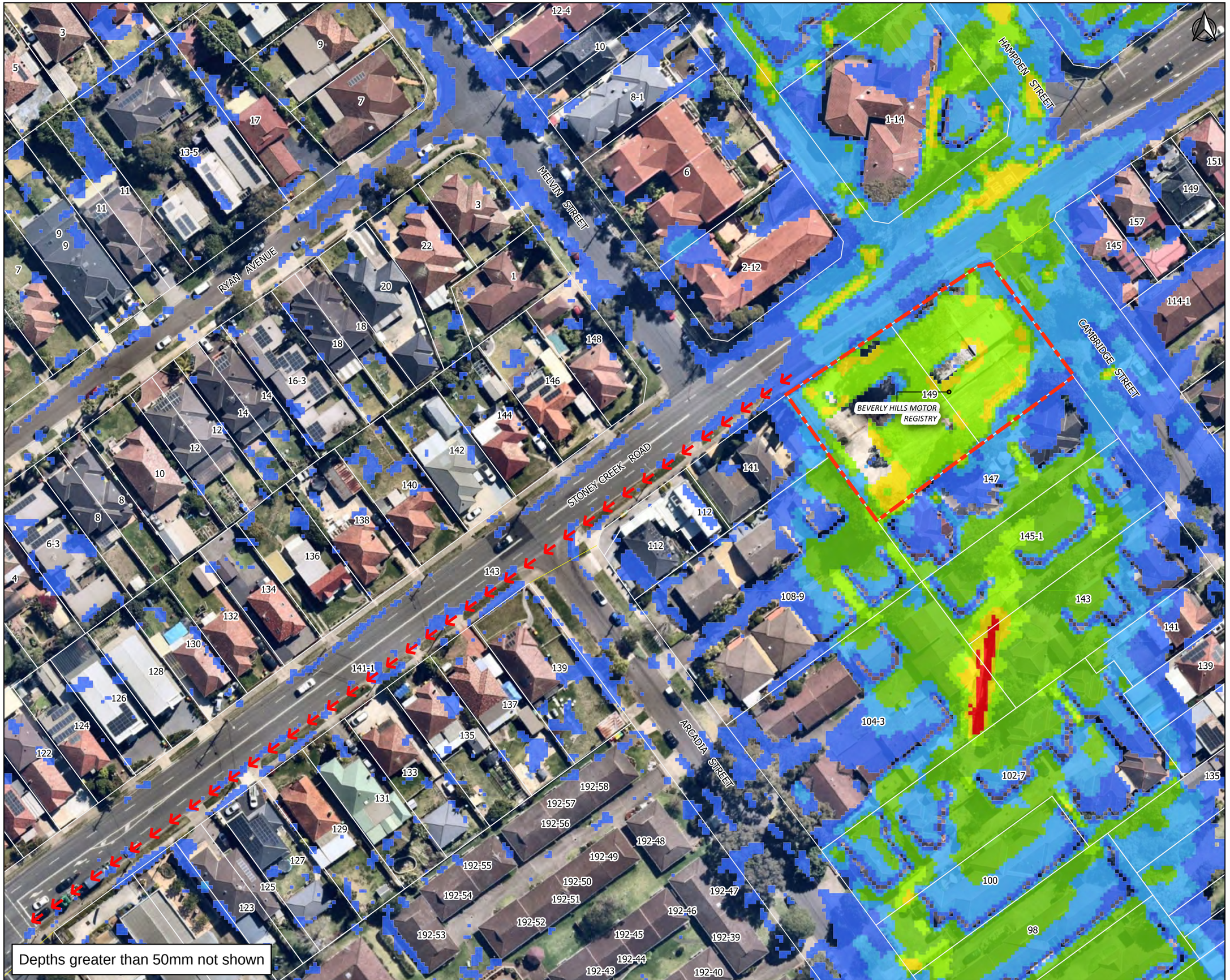
A rising route evacuation path is available from the site during the 1% AEP. This is demonstrated in Figure 1 with the opportunity to proceed from the north-western corner of the site and continue in a westerly direction up Stoney Creek Road. Flood hazard conditions along this path remain up to a maximum of H1 and depths are largely less than 50mm as presented in Figure 1.

Figure 2 presented overleaf shows flood hazard conditions during the PMF with up to H3 observed in the North-western corner of the site. An analysis of the duration where flow conditions exceed H1 and H2 has been performed with a period of 48 minutes and 26 minutes observed respectively. This suggests there is relatievly short period of time, up to 26 minutes, where access for large vehicles and pedestrians may be limited during the PMF design storm event. During this time, refuge on the site is expected to be required, and is made available through future development of the site.

An opportunity exists for the future site layout to consider this evacuation path from the site with the potential to provide a gate / driveway at this location to facilitate evacuation. An investigation to further reduce flood risk by improving flood hazard conditions at this corner, with an aim to enable evacuation during the full duration of the PMF, can also be performed at future Development Applciation Phase.

Noting that isolation of the site due to flooding is expected to occur for a short period of time, an off-site evacation location has been identified in the event where an evacuation shelter has not yet been nominated by the SES during a flood event. The Olds Park carpark (Olds Park Lane, Penshurst) is noted in the draft Flood Emergency Response Plan provided in Attachment 1 as a secondary off-site refuge location. It is anticipated that residents will proceed via vehicle to this location and wait out the flood event.

The evacuation path to the Olds Park carpark has been reviewed with respect to potential flood affectation as presented in Figure 3. The evacuation route is expected to experience a maximum of H1 hazard conditions for the length of the route during storm events up to and including the PMF deisng storm event.



Legend

- Evacuation Path
- Subject Site

ARR 2019 Hazard

- H1
- H2
- H3
- H4
- H5
- H6

0 10 20 Metres

1:900

Figure 1

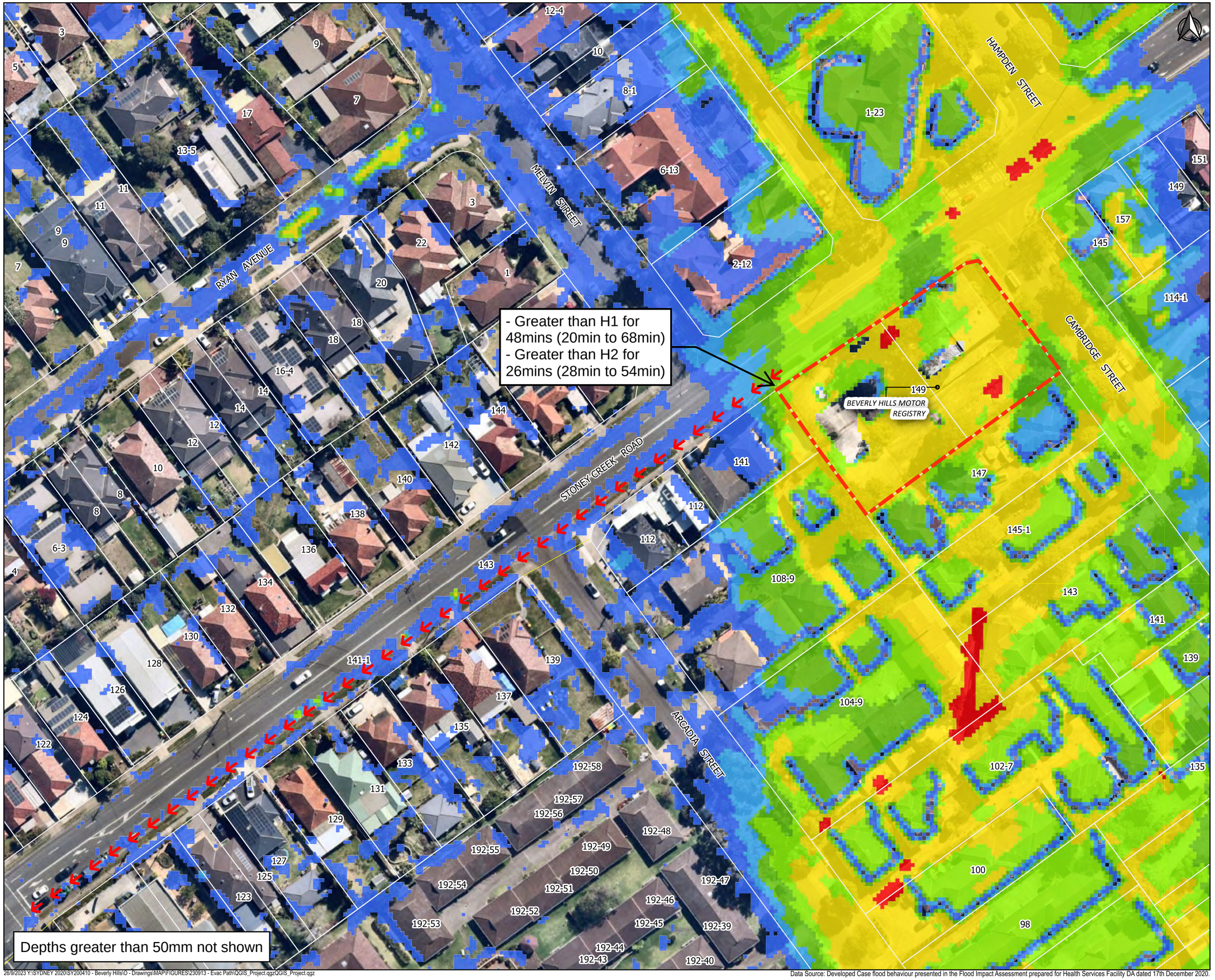
Developed Case
1% AEP Flood Hazard and Evacuation Path

143 Stony Creek Road,
Beverly Hills, NSW
(SY200410)

NORTHROP

26/9/2023 Y:\SYDNEY 2020\SY200410 - Beverly Hills\O - Drawings\MAP\FIGURES\230913 - Evac Path\QGIS_Project.qgzQGIS_Project.qgz

Data Source: Developed Case flood behaviour presented in the Flood Impact Assessment prepared for Health Services Facility DA dated 17th December 2020.



Legend

- Evacuation Path
- Subject Site

ARR 2019 Hazard

- H1
- H2
- H3
- H4
- H5
- H6

0 10 20 Metres

1:900

Figure 2

Developed Case PMF Flood Hazard and Evacuation Path

143 Stony Creek Road,
Beverly Hills, NSW
(SY200410)

NORTHROP

Data Source: Developed Case flood behaviour presented in the Flood Impact Assessment prepared for Health Services Facility DA dated 17th December 2020.

Depths greater than 50mm not shown

Legend

- Evacuation Path
- Subject Site

ARR 2019 Hazard

- H1
- H2
- H3
- H4
- H5
- H6

0 60 120 Metres

1:3,500

Figure 3

Evacuation Route to Olds Park Carpark

143 Stony Creek Road,
Beverly Hills, NSW
(SY200410)

NORTHROP

Data Source: Developed Case flood behaviour presented in the Flood Impact Assessment prepared for Health Services Facility DA dated 17th December 2020.

Objectives and Principles of the Floodplain Risk Management Manual (2023)

The Floodplain Development Manual (2005) has recently been updated with the Floodplain Risk Management Manual (2023) gazetted in June this year. The objectives and principles outlined in the latest Floodplain Risk Management Manual (2023) have reviewed to confirm the planning proposal remains consistent with the latest policy and guideline.

The Objectives of the Floodplain Risk Management Manual (2023) have been assessed in the following Table 2 while the Principles are presented in Table 3.

The analysis presented in Table 2 and Table 3 demonstrates the planning proposal is consistent with the Objectives and Principles of the latest Floodplain Risk Management Manual (2023).

Table 2 - Compliance with the Objectives of the FRM Manual (2023)

Objective	Response
	Primary Objective
To reduce the impacts of flooding and flood liability on communities and individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods wherever possible.	The planning proposal satisfies this objective and has the capacity to reduce the impacts of flooding and flood liability on the subject site and in adjacent properties. Opportunities for site improvements generated by the Planning Proposal are discussed in the Executive Summary above.
	Archived Through:
Use a merit-based approach in preparing and implementing flood risk management (FRM) plans to address riverine and local overland flooding.	A merit-based approach is presented herein and by the Flood Impact and Risk Assessment (Northrop, 2023). The Planning Proposal demonstrates an opportunity to reduce flood risk on the subject site when compared to existing flood conditions. Opportunities for site improvements generated by the Planning Proposal are discussed in the Executive Summary above.
Reduce the impact of flooding and flood liability on existing developed areas identified in FRM plans through flood mitigation works and measures including ongoing emergency management (EM) measures, the raising of houses where appropriate and by development controls.	The Original Flood Impact Assessment (Northrop, 2020) demonstrates the capacity for future development to reduce flood impacts on the subject site and in adjacent properties. Raising of the Ground Floor Finished Floor Level is expected to be required for future development and enforced by the site-specific Development Control Plan. Additional development controls are also enforced by the site-specific Development Control Plan which has been prepared by Georges River Council. Similarly, additional emergency management measures are available for the subject site. A draft operational Flood Emergency Response Plan has been prepared to convey the likely flood emergency response strategy on the site. This strategy has the capacity to sufficiently manage residual flood risk on the subject site.

Objective	Response
Adopt a merit-based approach for all development decisions in the floodplain, taking into account social, economic and ecological factors, as well as flooding considerations.	The Flood Impact and Risk Assessment (Northrop, 2023) discusses site improvements with respect to social and economic factors. A merit-based approach is sought for the Planning Proposal with a significant reduction in existing flood risk generated by future development of the site. Opportunities for site improvements generated by the Planning Proposal are discussed in the Executive Summary above.
Limiting the potential for flood losses in all areas proposed for development or redevelopment by the application of ecologically sensitive planning and development controls.	The findings of the Flood Impact and Risk Assessment (Northrop, 2023) highlight the capacity for future development to reduce flood losses on the subject site through appropriate hard, engineered, and soft, behavioural, mitigation and management measures.

Table 3 - Compliance with the Principles of the FRM Manual (2023)

Principle	Definition	Response
1	Establish sustainable governance arrangements	Governance arrangements as discussed by the Manual (2023) are largely with respect to providing all levels and disciplines of government the opportunity to provide advice and commentary with respect to the proposal. This has been achieved through the planning proposal assessment and review process. A response to the latest comments received from the SES and EHG are presented herein. This Principle also highlights that Local Government Councils are primarily responsible for Flood Risk Management in their Local Government Area. Georges River Council (GRC) have provided commentary for the proposal (see Attachment 2). The GRC response (refer to Page 3 of Attachment 2) recognises the benefit the planning proposal introduces and agrees that future development on the subject site can improve the existing flood conditions. These comments are in reply to the Ministerial Direction (4.1 flooding) demonstrating Council acceptance for inconsistencies with this Direction.
2	Think and plan strategically	Significant work has already been performed with respect to planning for and managing flood risk for Future development on the subject site. These investigations have led to the creation of the *"Guiding Principles for Flood Management for Future Development of the Site"* and the site-specific Development Control Plan. In addition, a draft Flood Emergency Response Plan has been prepared to convey potential future Flood Emergency Response Measures for future development.

Principle	Definition	Response
		Strategically, future development on the subject site has the potential to reduce flood risk and enhance flood readiness for the users.
3	Be consultative	Similar to Principle 1, this principle has been achieved through the planning proposal assessment and review process. Various government departments and agencies have been engaged and a public exhibition period has been performed. Further liaison with required authorities is expected to occur during future a Development Application at the site.
4	Make flood information available	Flood information for the purposes of the Planning Proposal is presented in the Flood Impact and Risk Assessment (Northrop, 2023) and Original Flood Impact Assessment (Northop, 2020) for the subject site. This flood information will also be provided to future occupants of the site through the preparation of a Site-Specific Flood Emergency Response Plan (FERP). An draft FERP is presented in Attachment 1. The preparation of a FERP directly responds to this Principle by: • informing users about flooding and subsequently influence their decision making. • Making users aware of how to respond to a flood threat and to heed the advice of relevant government and EM personnel during floods • Informs users of site flood behaviour so they can take out appropriate insurances to cover their risks. The draft FERP also highlights the requirement to notify users of the existing flood risk on the site prior to signing a lease agreement.
5	Understand flood behaviour and constraints	Flood behaviour for the full range of events has been assessed and presented in the Flood Impact and Risk Assessment (Northrop, 2023). Flood behaviour across the site has been classified as low flood hazard during the Defined Flood Event (i.e. the 1% AEP design storm event) (refer to Flood Risk Impact Assessment (Northrop, 2023)). Impacts relating to development on the site have been assessed previously with the Flood Risk Impact Assessment (Northrop, 2023) highlighting the potential for improvements on the site and in adjacent properties. Flood behaviour for the future site layout and use is expected to be updated during future development approval phases.
6	Understand flood risk and how it may change	Flood behaviour for the full range of events has been assessed and presented in the Flood Impact and Risk Assessment (Northrop, 2023). Changes in flood behaviour due to climate change are not expected to significantly alter design outcomes for the site with the

Principle	Definition	Response
		Ground Floor Finished Floor Level noted in the previous approval (and by the DCP) to be raised to the worst case, PMF level. Climate Change conditions can be further reviewed during a future Development Application submission, as necessary.
7	Consider variability and uncertainty	Cumulative impacts created by changing catchment conditions, such as development, is typically assessed by Local Government Council's as development occurs. Council will then typically assess development impact on a case-by-case basis and review cumulative impacts based on their knowledge of other nearby development at the time of approval. The Flood Impact and Risk Assessment (Northrop, 2023) demonstrates the capability for development at the site to improve flood conditions in adjacent properties and has been previously approved by Council. This demonstrates a feasible solution with respect to potential cumulative impacts and changing catchment conditions. The NSW Flood Prone Land Policy (2023) outlines a number of additional provisions that are necessary to achieve the aforementioned primary objective. Included in the policy provisions is the below statement: *"a merit-based approach to the selection of risk-based flood planning levels (FPLs). This recognises the need to consider the risks associated with the full range of flooding, up to and including the probable maximum flood (PMF)"* The Manual (2023) also highlights that different Flood Planning Levels apply to different types of development. And states: *"Determining the FPL for typical residential development should generally start with a DFE of the 1% AEP flood plus an appropriate freeboard (typically 0.5 m)."* The Planning Proposal and future development on the subject site incorporates a conservative approach with respect to setting Flood Planning Levels. This is recognised by the requirement to set the FFL at a minimum of the 1% AEP plus 0.5m or the PMF (whichever is greater). This demonstrates the capacity for future development at the subject site to exceed typical design requirements set out by the Manual (2023) and highlights an enhanced account for uncertainty and variability due to modelling assumptions and a changing climate.
8	Maintain natural flood functions	There are no natural or classified watercourses across the subject site. An existing Sydney Water owned box culvert passes beneath the site, which coveys flows from the upstream urban catchment. Existing site conditions include a carpark and commercial facility with hardstand throughout.

Principle	Definition	Response
		Flood behaviour across the site is recognised as low flood hazard during the Defined Flood Event (i.e. the 1% AEP design storm event) (refer to Flood Risk Impact Assessment (Northrop, 2023)). Development on the subject site has the potential to increase flood storage and improve the overall management of overland flow across the site and in adjacent properties.
9	Manage flood risk effectively	This principle identifies five elements that lead to informed decisions. These are summarised below, with a response to each element also provided. **1. Managing flood risk to the existing community** A range of flood risk management measures have already been recognised for future development on the site. These are outlined by the *"Guiding Principles for Flood Management for Future Development of the Site"* and are enforced by the Site-Specific Development Control Plan. **2. Limiting increases in flood risk related to new and modified development.** Development on the subject site has been recognised in the response to the EHG comments to have the potential to reduce flood risk on the subject site by changing the site from a Low Flood Island to High Flood Island. Similarly, and as mentioned above, the original Development Approval for the Health Services Facility has a potential capacity for approximately 228 people on the site during operation. The use presented by the Planning Proposal suggests a reduction may be observed with up to approximately 114 people may be on site post development. These elements highlight the potential for reduced risk due by reducing the number of people on-site at the time of a predicted flood. Risk will be further reduced through site modifications that consider the flood risk and are enforced by the site specific DCP and future Development Applications. **3. Establishing or improving EM arrangements and planning for floods** A draft FERP is presented in Attachment 1 which conveys likely site Emergency Management measures including preparation, response and recovery measures for flooding on the site. The preparation of the FERP and construction of future buildings on the site, at or above the PMF, enhance available Emergency Management arrangements when compared to existing conditions on the site. This is achieved by reducing the time and distance for users to find safe refuge, educates users of the risks and formalises response measures. **4. Considering flood risk when constructing or upgrading infrastructure**

Principle	Definition	Response
		This has been recognised by previous Development Applications on the site and through the creation of the Site-Specific Development Control Plan. Future development will have a heightened requirement to review flood risk when compared to previous Development Applications, due to the development of the Site-Specific Development Control Plan and the "Guiding Principles for Flood Management for Future Development of the Site". **5. Considering the influence of existing and proposed infrastructure on community flood resilience** As mentioned above, the existing facility is expected to be located beneath the 20% AEP design storm event. As such, the vulnerability of the existing facility is high with the potential for over-floor flooding and damage to building materials. In addition, the capacity of the existing facility to withstand flood forces is also unknown and may be susceptible to failure during a major or extreme flood event. Development on the subject site will raise the minimum FFL above worst-case flood levels, significantly reducing the site vulnerability to flood damage. Similarly, to enable refuge on-site, the proposed building will be designed to withstand flood forces during the worst case PMF event. Both of these elements demonstrate a significant improvement with respect to infrastructure and community flood resilience. In addition to the above, development on the site provides an opportunity to improve warnings available for users (i.e. water level gauge/s and improved communication) and provides an informal place of refuge for the nearby vulnerable community.
10	Continually improve management of flood risk	As previously mentioned, development on the site presents an opportunity to improve existing site flood conditions with enhanced hard, engineered, and soft, behavioural, flood mitigation and management measures. Further improvements may be recognised during future Development Applications as a final site use and layout is recognised.

Response to Ministerial Direction

Following liaison with the Department of Planning and Environment, we understand there are plans to update the terminology in the Ministerial Direction to consider the latest Floodplain Risk Management Manual (2023).

A response to the Ministerial Direction has been provided in the previous Flood Risk Impact Assessment (Northrop, 2023) and an updated review of these requirements with respect to the latest Floodplain Risk Management Manual (2023) is presented in Table 4 overleaf.

Table 4 - NSW Ministerial Direction 4.1 (Flooding) Controls

Item	Development Control	Response
4.1.1	**A planning proposal must include provisions that give effect to and are consistent with:**	
(a)	The NSW Flood Prone Land Policy	The latest NSW Flood Prone Land Policy presented in the Floodplain Risk Management Manual (2023) promotes a merits-based approach and highlights flood prone land as a valuable resource, with rezoning to involve an objective assessment and review of local considerations. An objective assessment and merits-based assessment is sought for the Planning Proposal with the proposal demonstrating an opportunity to improve flood conditions and reduce flood risk on the site through future development.
(b)	The principles of the Floodplain Development Manual 2005 (2023).	The principles of the Floodplain Risk Management Manual (2023) are discussed in Table 3 above. The assessment concludes the planning proposal satisfies the principles of the latest Manual (2023).
(c)	The Considering Flooding in Land Use Planning Guideline 2021	The full range of flood events, up to and including the PMF have been presented in the Flood Risk Impact Assessment (Northrop, 2023). Additional Special Flood Considerations outlined in the Considering Flooding in Land use Planning Guideline 2021 have not been adopted in the Georges River Local Environmental Plan (2021) and are therefore not applicable.
(d)	Any adopted flood study and/or floodplain risk management plan prepared in accordance with the principles of the Floodplain Development Manual 2005 (2023) and adopted by the relevant council	The Flood Impact Assessment (Northrop, 2020) was prepared using Council's Adopted HMPW Overland Flow Flood Study (SMEC, 2016). The HMPW Overland Flow Flood Study (SMEC, 2016) discusses Flood Planning Levels (FPL) of the 1% AEP + 500mm for residential and 1% AEP + 300mm for commercial / industrial. The Flood Impact Assessment (Northrop, 2020) suggests a FPL of the PMF is feasible for the subject site, exceeding the recommendations presented in Council's adopted flood study. The principles of the Floodplain Risk Management Manual (2023) are discussed in Table 3 above. The assessment concludes the planning proposal satisfies the principles of the latest Manual (2023).
4.1.2	A planning proposal must not rezone land within the flood planning area from Recreation, Rural, Special Purpose or Conservation Zones to a	The Flood Impact Risk Assessment (Northrop, 2023) demonstrates that development of the subject site is feasible and that flood impacts, the liability of owners and occupiers, and losses during

Item	Development Control	Response
	Residential, Business, Industrial or Special Purpose Zones.	a flood event can be minimised through appropriate flood mitigation and adaption measures. The Flood Impact Assessment (Northrop, 2020) also demonstrates the capacity to incorporate flood mitigation and adaption measures in accordance with the Georges River Stormwater Management Policy (2020). Additional Flood Emergency Response measures can also be introduced to manage the residual site risk during an extreme event. This includes the incorporation of on-site refuge, definition of evacuation / refuge procedures, site preparation as well as education and awareness programs. A draft Flood Emergency Response Plan has been prepared and is presented as Attachment 1. It is recognised the planning proposal is not strictly compliant with this requirement however, provision is made by the Direction for assessment where compliance is not possible. This has been reviewed further by Table 5 below.
4.1.3	**A planning proposal must not contain provisions that apply to the flood planning area which:**	
(a)	Permit development in floodway areas	Flood behaviour across the site is classified as low flood hazard during the Defined Flood Event (i.e. the 1% AEP design storm event) (refer to Flood Risk Impact Assessment (Northrop, 2023)). The approved development footprint presented in the Flood Impact Assessment (Northrop, 2020) demonstrates no significant impact compared to the existing case. As such, a feasible solution exists on the site to manage the intent of this requirement.
(b)	Permit development that will result in significant flood impacts to other properties,	As demonstrated by the Flood Impact Assessment (Northrop, 2020), flood impacts created by the development of the subject site can be managed using appropriate on-site flood mitigation measures.
(c)	Permit development for the purposes of residential accommodation in high hazard areas	Flood behaviour across the site is classified as low during the Defined Flood Event (i.e. the 1% AEP design storm event) (refer to Flood Risk Impact Assessment (Northrop, 2023)). In addition, the Flood Impact Assessment (Northrop, 2020) demonstrates appropriate flood mitigation measures can be introduced to make the

Item	Development Control	Response
		site suitable for future use and to manage any remaining residual flood risk on site. A draft Flood Emergency Response Plan has been prepared to convey measures to appropriately manage the residual risk. The draft FERP is presented in Attachment 1.
(d)	Permit a significant increase in the development and/or dwelling density of that land	Flood behaviour across the site is classified as low flood hazard during the Defined Flood Event (i.e. the 1% AEP design storm event) (refer to Flood Risk Impact Assessment (Northrop, 2023)). As mentioned above, the Planning Proposal has the potential to reduce the number of people on the subject site when compared to the current Development Approval (reducing the number of people potentially exposed to the hazard, directly reducing the risk to life). Development at the subject site has the potential further reduce the flood risk and the risk to life on the site when compared to existing conditions by changing the Flood Emergency Response Classification from a Low Flood Island to a High Flood Island.
(e)	Permit development for the purpose of centre-based childcare facilities, hostels, boarding houses, group homes, hospitals, residential care facilities, respite day care centres and seniors housing in areas where the occupants of the development cannot effectively evacuate.	Rezoning of the land is not expected to enable development of the subject site for these purposes during the interim case. It is anticipated, any future change in use will be reviewed at Development Application phase as discussed in the below “Interim Case” section of this letter.
(f)	Permit development to be carried out without development consent except for the purposes of exempt development or agriculture. Dams, drainage canals, levees, still require development consent	Rezoning of the land is not expected to enable development to be carried out on the land without development consent.
(g)	Are likely to result in a significantly increased requirement for government spending on emergency management services, flood mitigation and emergency response measures, which can include but are not limited to the provision of road infrastructure, flood mitigation infrastructure and utilities	Rezoning and future development of the subject site is not expected to result in a significant increase in government spending. Future development of the subject site has the potential to enhance existing emergency management procedures for the area by formalising emergency procedures and by providing a common place for flood refuge if required.

Item	Development Control	Response
(h)	Permit hazardous industries or hazardous storage establishments where hazardous materials cannot be effectively contained during the occurrence of a flood event	Placement of hazardous materials in accordance with the Georges River Stormwater Policy (2020) is not expected to be a site limitation.

As mentioned in Item 4.1.2 above, strict compliance with this item is not possible, however provision is made by the Direction for further assessment where compliance is not possible.

Inconsistencies with the Direction are assessed based on the findings of Council's adopted flood study as well as the Principles of the Floodplain Risk Mangement Manul (2023). This has been reviewed in Table 5 below

Table 5 - Assessment where strict consistency with the Direction is not possible

Principle	Definition	Response
A planning proposal may be inconsistent with this direction only if the planning proposal authority can satisfy the Planning Secretary (or their nominee) that:		
(b)	where there is no council adopted floodplain risk management study or plan, the planning proposal is consistent with the flood study adopted by the council prepared in accordance with the principles of the Floodplain Development Manual 2005 (2023)	Flood modelling presented by the Flood Risk Impact Assessment (Northrop, 2023) was prepared using Council's adopted flood study namely the HMPW Overland Flow Flood Study (SMEC, 2016). The HMPW Overland Flow Flood Study (SMEC, 2016) discusses Flood Planning Levels (FPL) of the 1% AEP + 500mm for residential and 1% AEP + 300mm for commercial / industrial. The Flood Impact Assessment (Northrop, 2020) suggests a FPL of the PMF is feasible for the subject site, exceeding the recommendations presented in Council's adopted flood study. The principles of the Floodplain Risk Management Manual (2023) are discussed in Table 3 above. The assessment concludes the planning proposal satisfies the principles of the latest Manual (2023).

Conclusion

A response to the NSW Environment and Heritage Group (EHG) and the NSW State Emergency Service (SES) (EHG Ref: DOC23/679727 and SES Ref: ID 2065) submissions is presented herein.

A summary of key flood management conditions is presented in this correspondence and is summarised below:

- The Planning Proposal is consistent with the Principles of the Flood Risk Management Manual (2023) and satisfies the alternative requirements where inconsistencies are observed with the Ministerial Direction (4.1 – Flooding).

- The latest Flood Risk Management Manual (2023) highlights that different Flood Planning Levels apply to different types of development. And states (FRM Manual; 2023):

  > *"Determining the FPL for typical residential development should generally start with a DFE of the 1% AEP flood plus an appropriate freeboard (typically 0.5 m)."*

- The Planning Proposal incorporates a conservative approach with respect to setting Flood Planning Levels. This is recognised by the requirement to set the FFL at a minimum of the 1% AEP plus 0.5m or the PMF (whichever is greater).

- Flood behaviour across the site is classified as low flood hazard during the Defined Flood Event (i.e. the 1% AEP design storm event) (refer to Flood Risk Impact Assessment (Northrop, 2023)).

- At least two flood emergency response strategies are available for the subject site in the event of a flood. The primary response is proposed to be evacuation, in accordance with SES recommendations. A secondary response is also available with the opportunity for on-site refuge which is consistent with the *"Guiding Principles for Flood Management for Future Development of the Site"*.

- Evacuation from the site is possible during the peak of the 1% AEP (Annual Exceedance Probability) by continuing west from the site up Stoney Creek Road to a location above the PMF flood event (refer to Figure 1 below).

- Evacuation from the site is also expected to be possible prior to the peak of the PMF with up to 24 hours warning time possible prior to this event. It is important to recognise that the Probable Maximum Flood (PMF) is an extremely rare event with a nominal 10^{-7} AEP (1 in 10 million) chance of occurring. Extended warning time is expected to be available prior to an event of this magnitude. It is likely a PMF event will be associated with significant adverse weather patterns which would be closely monitored by Bureau of Meteorology prior to the event.

- A secondary emergency management strategy (namely, on-site refuge) is available in the event where time does not permit evacuation. Shelter in Place where only limited warning time is available is recognised by the latest Draft Shelter in Place guidelines prepared by the Department of Planning and Environment (2023). Refuge is proposed to be available for all events up to and including the PMF and will be enforced by the requirements set out by the site specific Development Control Plan.

- There are several sources and opportunities for receiving flood warnings at the site prior to a flood event.

- Development at the subject site creates an opportunity to improve available flood warning time for users on the site through the introduction of proprietary devices (such as flood sensors and/or depth indicators). A sensor may be linked to the building alarm system and/or via mobile telemetry to notify users of the flood conditions and emergency responses at the site.

- Development at the subject site has the potential to reduce the time it takes for users of the site to seek refuge in a location away from the flood hazard through with the introduction of on-site flood refuge at a level above the predicted maximum flood levels.

- Residual Risk can be managed on site through the recommendations presented in the *"Guiding Principles for Flood Management for Future Development of the Site"*. Both hard, engineered, and soft, behavioural, measures are recommended by the guiding principles to manage residual risk for future development.

- The Planning Proposal has the potential to reduce the number of people on the subject site when compared to the current Development Approval (reducing the number of people potentially exposed to the hazard, directly reducing the risk to life).

- Development at the subject site has the potential further reduce the flood risk and the risk to life on the site when compared to existing conditions by changing the Flood Emergency Response Classification from a Low Flood Island to a High Flood Island.

- Development at the subject site has the potential to reduce flood depths and hazard conditions in adjacent properties through the introduction of mitigation measures on the subject site.

- Development at the subject site creates an opportunity to also informally reduce the risk to life for nearby flood affected properties by providing a place of refuge.

- Development at the subject site eliminates the requirement for users to enter a potentially compromised road network in order to seek safe refuge away from the hazard further reducing the risk to life.

- Development at the subject site has the capacity to formalise emergency preparation, response and recovery procedures on the subject site. These are presented in the a draft Flood Emergency Response Plan, provided in Attachment 1.

- Development at the subject site creates an opportunity to enhance flood awareness and education through the preparation of a Flood Emergency Response Plan.

The above demonstrates the Planning Proposal is consistent with the Principles of the Flood Risk Management Manual (2023) and satisfies the alternative requirements where inconsistencies are observed with the Ministerial Direction (4.1 – Flooding)

Future development has the capability to significantly enhance Disaster Risk Reduction mechanisms at the subject site and presents an opportunity to improve community resilience to the existing flood hazard.

These elements are expected to be reviewed at future Development Application phase with the *"Guiding Principles for Flood Management for Future Development of the Site*" and site-specific Development Control Plan ensuring these elements are considered.

We commend our findings to the Department for their review. Should you have any queries regarding this correspondence, please feel free to contact the undersigned on (02) 4943 1777.

Prepared by:

Laurence Gitzel
Associate | Flood Engineer
BEng (Env) MProfEng(Env) MIEAust CPEng (Civil) NER

Limitation Statement

Northrop Consulting Engineers Pty Ltd (Northrop) has been retained to prepare this report based on specific instructions, scope of work and purpose pursuant to a contract with its client. It has been prepared in accordance with the usual care and thoroughness of the consulting profession for the use by Cambridge Unit Developments.

The report is based on generally accepted practices and standards applicable to the scope of work at the time it was prepared. No other warranty, express or implied, is made as to the professional advice included in this report except where expressly permitted in writing or required by law, no third party may use or rely on this report unless otherwise agreed in writing by Northrop.

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Attachment 1 – Draft Flood Emergency Response Plan

NORTHROP

CIVIL

Flood Emergency Response Plan

for

Beverly Hills

for Cambridge Unit Developments

Contents

Report details

Project: Residential Development

143 Stoney Creek Road, Beverly Hills

Project Ref: NL200410_E02

File Location: Y:\SYDNEY 2020\SY200410 - Beverly Hills\E - Reports\NL200410_E02_Flood_Emergency_Response_Plan_1.docx

Revision History

Revision	Report Status	Prepared	Reviewed	Issue Date
1	Draft	L Gitzel	L Gitzel	26/09/2023

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Flood Response Summary

The following provides a summary of the findings of this Flood Emergency Response Plan including a summary of the flood behaviour, floor levels with respect to the flood behaviour, the recommended flood response actions, and the recommended on-site flood refuge locations.

Flood behaviour presented herein is based on the developed case results presented in the Flood Impact Assessment (Northrop, 2020)

Flood Levels

Table 1 – Summary of Flood Behaviour (subject site and vicinity)

Event	1% AEP	PMF
Flood Level (mAHD)	29.92m – 30.38m AHD	30.40 – 30.94 m AHD (approx).
Flood Depth (m)	0.1m - 0.3m	0.7m - 0.9m
Hazard Category	H2	H5

Floor Levels

Table 2 - Internal Floor Levels

Floor	Level (m AHD)	Relationship to Flood Levels
Basement Levels (B1-B2)	23.0 – 26.0	Below 1% AEP and PMF
Ground Floor	31.0	Above the 1% AEP and PMF
Upper Levels	34.1 – 40.3	Above 1% AEP and Below PMF

Table 3 - Potentially Hazardous Rainfall Depths

Depth	Timescale	Depth	Timescale	Depth	Timescale	Depth	Timescale
62.5mm	30-mins	86.7mm	1-hour	113.8mm	2-hours	166.2mm	6-hours

Flood Response Actions

Table 4 – Flood Response Actions Summary

WHEN	WHAT	BY WHO
Prior to Flooding	Assemble **Emergency Kit**	Residents
	Check Floodsafe Kit every three months	Residents
	Coordinate **Evacuation Drills** twice per year (minimum)	Building Manager
	Sign up and maintain **Early Warning Network** and **Floods Near Me App** subscription	Building Manager Residents
	Monitor weather situation at 9am and 4pm every afternoon	Building Manager Residents
	Install and Maintain Flood Signage and Sensors.	Building Manager
	Inductions for new residents to include flood risk associated with the subject site and refuge procedure.	Building Manager
Evacuation	**Receive Text / Email from the Early Warning Network / Hazards Near Me of with rainfall predicted to be greater than:** • **62.5mm over 30 minutes** • **86.7mm over 1 hour** • **113.8mm over 2 hours** • **166.2mm over 6 hours**	Building Manager Residents
	If heavy rainfall has not yet commenced and the on-site alarm has not yet been triggered, evacuate the facility and proceed to the nearest SES nominated Evacuation Centre. **If a nominated evacuation centre has not been defined by the SES, proceed to the Secondary off-site refuge location.**	Residents
	Communicate decision to evacuate the site to all users. This may be through activation of the PA alarm system	Building Manager
	Notify expected visitors that may attend the site not visit and to remain where they are / seek refuge in accordance with emergency services.	Building Manager Residents
	Notify the SES / Police of the decision to evacuate the facility and to where.	Building Manager
	Collect Floodsafe Kit and any additional items.	Residents
	Leave signage notifying any responders attending the site that evacuation has been undertaken and to where	Residents
	Evacuate to **Nominated Primary** or Secondary Evacuation facility and remain until given all clear.	Residents
	If off-site, seek refuge in accordance with emergency services advice and never **attempt to drive or walk through floodwater.**	Residents

On-site Refuge	**Receive Text / Email from the Early Warning Network / Hazards Near Me of with rainfall predicted to be greater than:** • **62.5mm over 30 minutes** • **86.7mm over 1 hour** • **113.8mm over 2 hours** • **166.2mm over 6 hours** **AND** **heavy rainfall has commenced / Flood Sensor alarm has been activated.**	Building Manager Residents
	Communicate decision to remain on-site to all users. This may be through activation of the PA alarm system	Building Manager
	Notify expected visitors that may attend the site not visit and to remain where they are / seek refuge in accordance with emergency services.	Building Manager Residents
	Remain within the building and wait it out until flood water subsides.	Residents
	Maintain regular communication with residents.	Building Manager
	If off-site, seek refuge in accordance with emergency services advice and never **attempt to drive or walk through floodwater.**	Residents
	Do not attempt to drive or walk through floodwater. If stranded on-site and water inundates floor level, call 000 immediately.	All
Once Risk has Passed / After a Flood	Check all services and structural stability of building.	Qualified persons
	Return to operation.	Building Manager

Key Personnel

Table 5 – Key Personal Summary

Person Organisation	Name	Number
Building Manager		
SES	-	132 500
Police / Fire / Ambulance	-	000

Onsite Refuge Location

As the project is still in concept design and planning proposal phase, exact on-site refuge locations are yet to be determined, however preliminary architectural concept drawings indicate the ground floor and above will be suitable locations for onsite refuge above the PMF flood levels as presented in Figure 1.

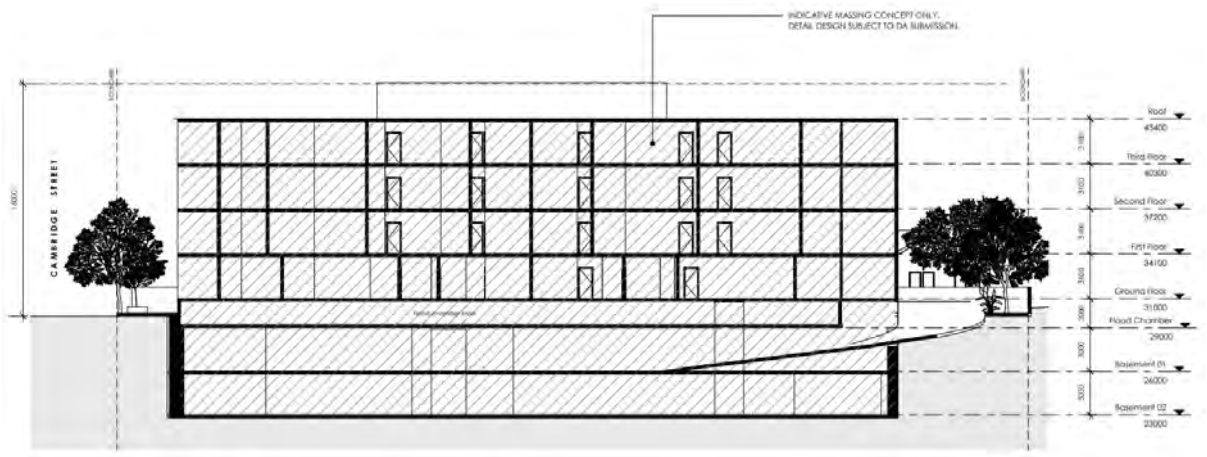

Figure 1 - Preliminary Architectural Section

Introduction

Northrop Consulting Engineers have been engaged by Cambridge Unit Developments to prepare a preliminary Flood Emergency Response Plan for the proposed residential development located at 143 Stoney Creek Road, Beverly Hills (the subject site).

This report has been prepared to for the purposes of the Planning Proposal to convey possible emergency response measures available for the site. This plan recommends early evacuation as a first response to a flood emergency with shelter-in-place (or vertical evacuation) as a secondary measure where time does not permit evacuation.

It is noted that this plan has been prepared as a preliminary plan for the purposes of the approval. It is anticipated that this plan may change and will be updated during subsequent approval phases. Future revisions will incorporate additional available information including an updated detailed site layout and flood modelling.

Flood results presented herein is based on the results prepared for the Flood Impact Assessment (Northrop, 2020 and is expected to be updated at Development Application Phase.

Subject Site

The subject site is located at 143 Stoney Creek Road, Beverly Hills and consists of Lots 2 and 3 of DP1205598.

The site is bound by Stoney Creek Road to the north, Cambridge Street to the east, and existing residential and commercial developments to the south and west. Existing land use consists of a commercial / retail facility and associated carparking and landscaped facilities.

A subject site locality plan is presented below in Figure 2.

This Flood Emergency Response Plan (FERP) has been prepared to:

- Promote satisfactory awareness of expected flood behaviour and flood risks associated with the subject site.
- Nominate roles and responsibilities when preparing for and responding to a flood emergency.
- Identify measures to monitor weather forecasts and highlight warning systems available.
- Provide education and awareness material for training programs with respect to flooding of the subject site.
- Identify potential evacuation and evasion procedures including evacuation routes if appropriate and flood refuge opportunities.

Contained herein is a description of the methodology and information used to prepare this report, a summary of the likely flood behaviour, recommendations for flood preparation and recommended response actions during a flood event.

Figure 2 - Locality Plan (obtained from SIX Maps www.maps.six.nsw.gov.au)

Methodology and Available Data

This plan was developed based on the flood information contained within the Flood Impact Assessment prepared for the subject site, dated the 17th of December 2020, herein referred to as the “Flood Impact Assessment (Northrop, 2020)”.

The Georges River Council Flood Emergency Sub Plan, prepared by the NSW State Emergency Service and dated November 2021 was reviewed in the preparation of this plan.

The expected flood behaviour for the subject site is based on the above flood information and is summarised in the **Flood Behaviour** section of this plan.

A review of the Bureau of Meteorology (BoM) and State Emergency Service (SES) guidelines has been undertaken to report on the likely warning types described in the **Flood and Evacuation Warnings** section of this plan.

Consideration has been given to the personnel most likely to be on-site and responsible for flood emergency response. This is outlined in the **Flood Response Personnel** section of this plan.

Analysis of the site and nearby topography, in combination with the likely flood behaviour has informed the assembly points and on-site refuge points nominated in the **Assembly Point, Floor Levels and On-site Refuge** sections of this plan.

Contact numbers for relevant emergency response agencies and the proposed local evacuation centre are noted in the **Emergency Contact** section of this plan.

Finally, a review of the Georges River Council Flood Emergency Sub Plan, the NSW State Flood Plan and the Department of Planning and Environment Draft Shelter In Place Guideline has contributed to the recommended preparation and response actions outlined in the **Flood Response Preparation** and **Flood Response Actions** sections of this plan.

Flood Behaviour

Flood Source and Behaviour

Flooding of the subject site is expected to be the result of overland surface flow generated by local catchment run-off during extreme rainfall events. This flood event is detailed in the Flood Impact Assessment (Northrop, 2020).

The Flood Impact Assessment (Northrop, 2020) suggests critical storm durations at the site are relatively short, with durations ranging from 120 minutes during the 1% Annual Exceedance Probability (AEP) and as short as 60 minutes in more extreme rainfall events such as the Probable Maximum Flood (PMF) storm event. These storm systems are often typical of a flash flood event and as such, flood water is expected to rise and fall relatively quickly.

Peak Flood Levels and Depths

Figure 3 and Figure 4 overleaf presents the 1% AEP and PMF peak flood depth and elevation for the site, as presented in the Flood Impact Assessment (Northrop, 2020).

From the below Figure 3 and Figure 4 it can be observed that the flood depths on the site are expected to range from 0.1 - 0.3m during the 1% AEP while, depths of up to 0.5 - 0.9m are expected during the PMF. Greater depths of up 1.5m and 2.0m are expected within the flood chamber during the 1% AEP and PMF design storm events respectively. These flow conditions are hazardous and no attempt to enter the flood chamber should be made during a flood event.

Table 6 - Reporting Point 1% AEP Flood Elevation (mAHD)

Reporting Point	1% AEP Flood Elevation (mAHD) (Refer to Figure 3)	PMF Flood Elevation (mAHD) (Refer to Figure 4)
North-Eastern Corner	29.92	30.40
North-Western Corner	30.25	30.66
South-Eastern Corner	30.22	30.73
South-Western Corner	30.38	30.94

It is important to note that the events discussed herein are rare to extreme events which are not expected to occur every time it rains. The 1% AEP is commonly referred to as the “100-year flood event” while, the PMF is defined at the Probable Maximum Flood and has a nominal Annual Exceedance Probability of up to approximately 1 in 10 million.

Legend

- Subject Site
- Water Levels
- Ramp
- Building Flow Constriction
- Cadastre

Depth(m)

- 0.00 - 0.05
- 0.05 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 0.7
- 0.7 - 0.9
- 0.9 - 1.1
- 1.1 - 1.3
- 1.3 - 1.5
- 1.5 - 1.7
- 1.7 - 2

Design Surface (mAHD)

High : 32.0

Low : 28.7

0 5 10 20

Meters 1:750

Figure 3

Developed Case
1% AEP Depth and
Elevation Contours

Data Source: LPI

143 Stoney Creek Road, Beverly Hills

NORTHROP

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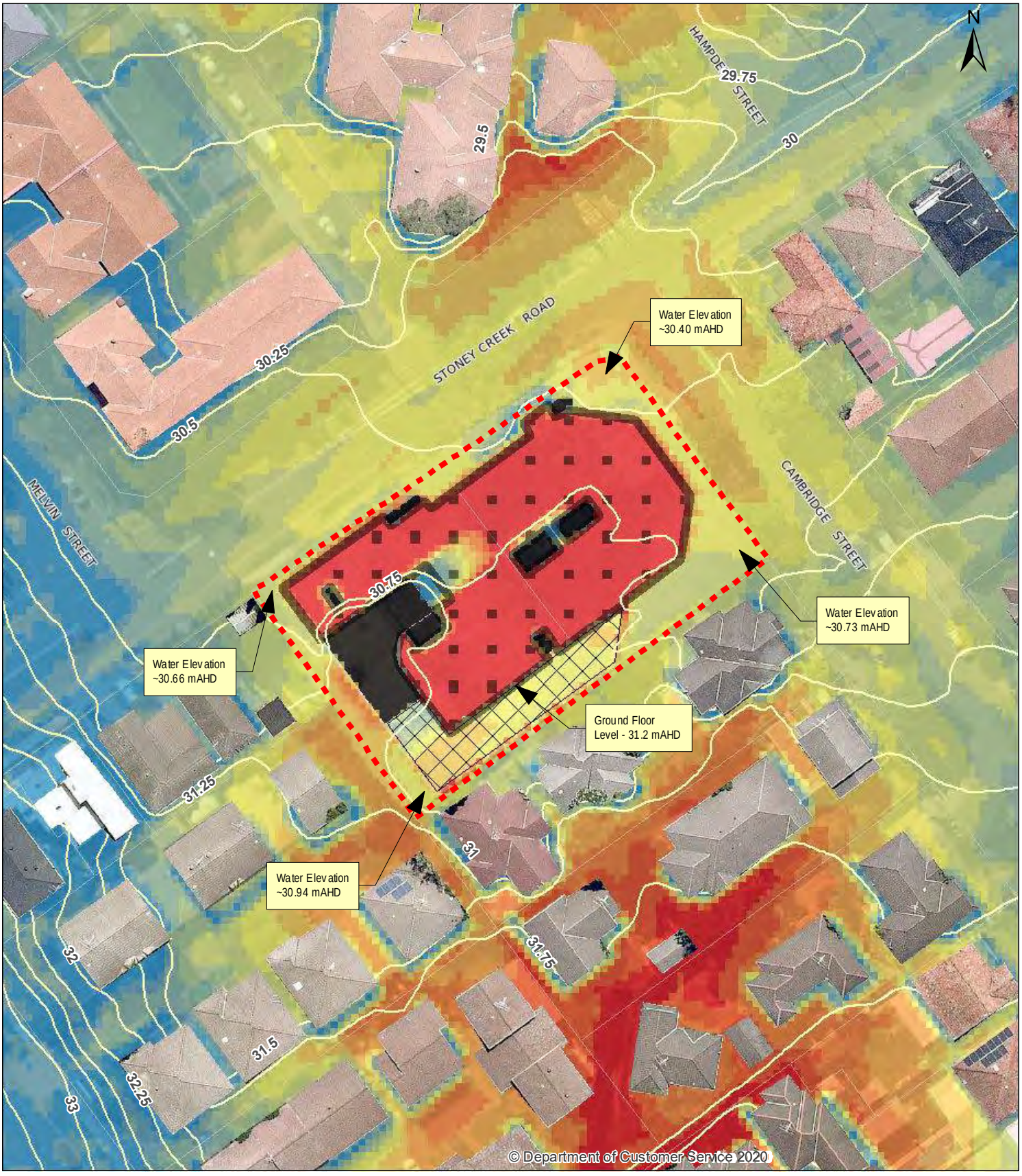

Legend

- Subject Site
- Water Levels
- Ramp
- Building Flow Constriction
- Cadastre

Depth(m)

- 0.00 - 0.05
- 0.05 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 0.7
- 0.7 - 0.9
- 0.9 - 1.1
- 1.1 - 1.3
- 1.3 - 1.5
- 1.5 - 1.7
- 1.7 - 2

Design Surface (mAHD)

High : 32.0

Low : 28.7

0 5 10 20

Meters 1:750

Figure 4

Developed Case PMF Depth and Elevation Contours

Data Source: LPI

143 Stoney Creek Road, Beverly Hills

NORTHROP

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Flood Hazard and Risk to Property and Life

Flood hazard conditions are based on the latest Australian Rainfall and Runoff (2019) guidelines with a summary of hydraulic behaviour and accessibility during each H1-H6 category presented by the following Figure 5.

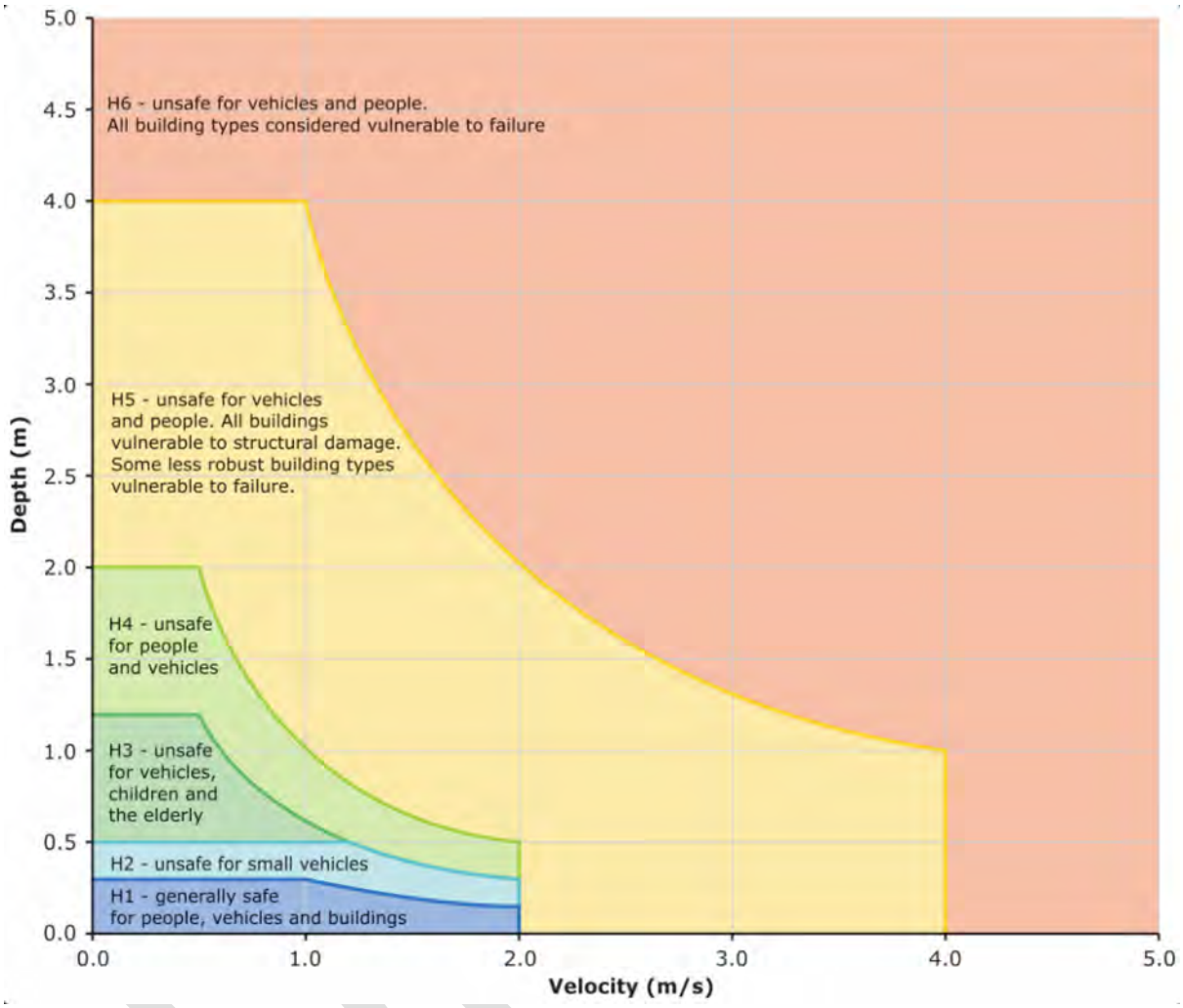
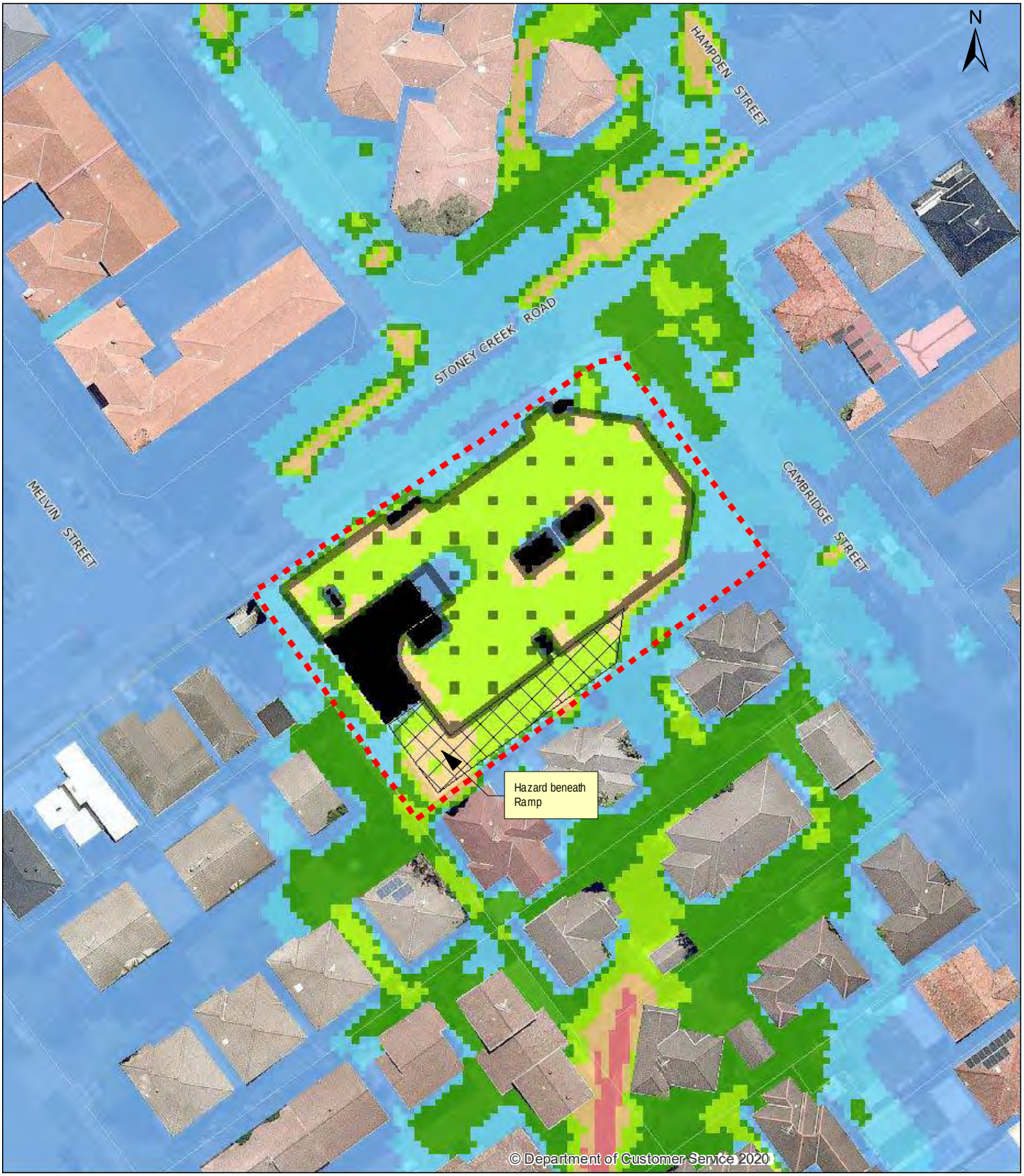


Figure 5 - Australian Rainfall and Runoff (2019) Hazard Categories

Flood hazard across the site during the 1% AEP and PMF design storm events is presented in Figure 6 and Figure 7 respectively. During the 1% AEP, flood hazard within the driveway is limited to a maximum of H2 which Figure 5 suggests access remains trafficable for large vehicles and pedestrians.

Flood hazard within the chamber is generally H4 with some patches of H5 during the 1% AEP and H5 with patches of H6 during the PMF design storm event. The chamber is designed to exclude pedestrian access under normal operations with access permitted only for maintenance purposes. Under no circumstances should anyone attempt to enter the flood chamber during a flood event. Louvres (or similar) restrict access into the flood chamber around the building and are proposed to reduce the risk of someone entering and / or becoming trapped beneath the building during a flood event.

Basement carparking should be evacuated and not accessed during a flood event unless advised otherwise by emergency personnel.



Legend

- Subject Site
- Building Flow Constriction
- Ramp
- Cadastre

Hazard

- H1
- H2
- H3
- H4
- H5
- H6

Design Surface (mAHD)

- High : 32.0
- Low : 28.7

0 5 10 20 Meters 1:750

Figure 6

Developed Case
1% AEP Flood Hazard
(ARR 2019)

Data Source: LPI

143 Stoney Creek Road, Beverly Hills

NORTHROP

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Legend

- Subject Site
- Building Flow Constriction
- Ramp
- Cadastre

Hazard

- H1
- H2
- H3
- H4
- H5
- H6

Design Surface (mAHD)

- High : 32.0
- Low : 28.7

0 5 10 20 Meters 1:750

Figure 7

Developed Case
PMF Flood Hazard
(ARR 2019)

Data Source: LPI

143 Stoney Creek Road, Beverly Hills

NORTHROP

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Flood and Evacuation Warnings

A network of rainfall gauge stations is maintained throughout the greater Sydney region. These provide information to the Bureau of Meteorology (BoM) as one source of information informing their flood warning system.

The Bureau should issue one of five types of warnings through local radio, television and through their website *http://www.bom.gov.au*. In addition, the SES may issue a flood bulletin, evacuation warning or evacuation order.

Due to the sensitive nature of this location, it is recommended the nominated Building Manager and Residents register for automatic text and email notifications from the Early Warning Network Service which filters and passes on BoM warnings. In addition, the Hazards Near Me App and Bureau of Meteorology Weather App / Website provides information for current flood warnings.

Bureau of Meteorology

Severe Weather Warning

Severe weather warnings are issued by the Bureau for potentially dangerous weather conditions. A description of the threat will be included in the warning along with the time for next issue. It is noted that a severe weather warning does not imply that flooding will eventuate. Warnings are generally updated every six hours, or as the event dictates.

This type of warning should be accompanied with predicted extreme rainfall depth as discussed in the **Flood Response** section, as well as observed values from around the state.

Severe Thunderstorm Warning

A severe thunderstorm warning will be issued if there is strong evidence that a severe thunderstorm will develop, or if a severe thunderstorm is reported. Flash flooding may occur during severe thunderstorms. Warnings are generally updated every three hours or shorter as required.

Flood Alert/ Watch/ Advice

A flood alert / watch / advice is one of the earliest warnings that will be issued by the BoM with advice provided up to four days in advance of the expected onset of flooding (BoM). Although four days warning may be available, they are also occasionally issued during and after the rainfall has occurred, depending on the level of maturity of the flood warning systems and services (BoM).

Generalised Flood Warning

A generalised flood warning is typically more specific than the Flood Alert / Watch / Advice and is issued when flooding is expected to occur in a given area. 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 3.13” (Bureau of Meteorology, 2020).

This is the most likely warning type for the subject site should evacuation need to occur.

Minor/ Moderate/ Severe Flood Warning

A more detailed flood warning may be issued based on any additional information available. Three hours warning time is expected from issue of warning to peak flood level.

All warnings will be issued through the SES/BOM website, radio and television.

All public and commercial television stations should broadcast warnings.

SES Flood Bulletins

The SES may issue a flood bulletin providing information of the likely flood consequences and recommended actions.

Advice

The SES will issue flood advice acknowledging that an incident has started and informing people to stay up to date in case the situation changes.

Watch and Act

The SES will issue a Watch and Act warning when flood conditions are changing and the purpose of this warning to prepare for evacuation / isolation or avoid the area that is expected to impact by flooding.

Emergency Warning

The SES will issue an Emergency Warning if evacuation is required. If this occurs **evacuation must be undertaken**. Broadcast will be via radio/ TV, door knock, automated telephone message or SMS.

On-Site Emergency Communication

Onsite Public Address System

It is recommended a Public Address (PA) system be installed as part of the new development. The PA is to be configured to sound an emergency tone/s notifying residents of the impeding or current flood conditions at the site. The tone should be tested every three months as a minimum to ensure it remains in working order.

Flood Sensor

A flood sensor is proposed to be installed on the subject site. This will be connected to the PA system and will sound an alert notifying residents not to leave the site until flood water subsides.

Other Warning Types / Resources

Standard Emergency Warning Signal

This signal may be played over radio and television stations to alert communities to Evacuation Warnings Evacuation Orders or Special Warnings or Dam-Failure Warnings.

Early Warning Network Automated Text and Email Services

The building manager and residents are recommended to register for automatic alerts within the Early Warning Network (www.ewn.com.au) which will filter the above BoM warnings and send texts and emails to notify of the situation.

Hazards Near Me NSW

Recently the NSW SES and NSW Public Works have created a new tool called Hazards Near Me App NSW which is both a webpage and Phone Application. The application filters BoM and RFS warnings relevant to the user and may be used by the building manager and residents as an additional resource. The Application is free and allows the user to input a radius of interest for receiving notifications.

Hazard Watch

The NSW SES and Australian Federal Government have prepared the HazardWatch portal that filters BoM warnings and provides advice on locations and magnitude of predicted hazards. This resource is also free and can be accessed via a smart phone, tablet or laptop.

Flood Response Personnel

Summarised in Table 7 below are the facilities nominated emergency personnel, their location and responsibilities in managing flood response.

Table 7 - Flood Response Personnel

	Location	Responsibilities
Building Manager	Off-site	• Ensure tenants are notified of existing site flood conditions and are trained for evacuation / refuge. • Ensure flood signage and sensors are maintained and are visible / operable • Coordinate flood emergency drills. • Monitor weather daily for upcoming extreme rainfall events. • Receive notifications from the Early Warning Network. • Decide when evacuation is required. • Liaison with SES or Emergency Services personnel if they attend site. • Coordinate recovery efforts including check of site conditions post event by qualified
Residents	On-site	• Prepare and maintain Floodsafe Emergency Kit. • Monitor weather daily for upcoming extreme rainfall events. • Receive notifications from the Early Warning Network. • Provide signage around the site to highlight evacuation of the facility. • Liaison with SES or Emergency Services personnel if they attend site. • Prepare and coordinate assistance for residents with mobility difficulties.
Olds Park Carpark	Olds Park Ln, Penshurst NSW 2222	• Nominated Secondary off-site refuge

Site Floor Levels and Flood Immunity

The proposed residential facility has several floors, including multiple basement levels. The level of each floor is presented below in Table 8. The floor levels with respect to the 1% AEP and PMF flood events are also presented in the below Table 8.

Table 8 - Internal Floor Levels

Floor	Level (m AHD)	Relationship to Flood Levels
Basement Levels (B1-B2)	23.0 – 26.0	Below 1% AEP and PMF
Ground Floor	31.0	Above the 1% AEP and PMF
Upper Levels (Levels 1-3)	34.1 – 40.3	Above the 1% AEP and PMF

Flood Response Actions

Response Actions

Evacuation

The primary flood emergency response action from the site is evacuation.

In the event where a Generalised Flood Warning or Severe Weather Warning is received with nominated rainfall depths equivalent to a 1% AEP flood event as presented in the following Table 7, residents are to proceed to the nominated primary or secondary off-site refuge location.

Table 9 - Rainfall triggers for Cancellation

Rainfall Depth (mm)	Timescale
62.5	30-mins
86.7	1-hour
113.8	2-hours
166.2	6-hours

Early evacuation reduces the strain on emergency services during a flood event, however, **should be undertaken in advance of rainfall occurring.** Once rainfall has commenced or if the on-site flood sensor alarm has been triggered, refuge is to be sought on-site as discussed in the following section.

On-Site Refuge

On-site refuge is recommended if heavy rainfall has commenced, or the on-site flood sensor has been triggered.

The procedure for on-site refuge should be carried out as per the following:

- Building Manager / Residents Sound alarm on PA system to notify users of imminent risk.
- Residents to seek refuge within their apartments and wait it out until flood water subsides.

It is recommended to have a back-up generator or other forms of emergency power to ensure critical systems within the building remain available, that may otherwise be disrupted during an extreme flood event. It is strongly recommended that in the event of a flood, the elevators are not used unless backup power supply is provided.

Similarly, installing a flood sensor that can provide automatic text messages to tenants can assist to notify residents of the impending flood event. This can also assist to alert residents if they are away from the site at the time of the event, directing them not to return to the site until it is safe.

Should you become isolated on-site, move to **the Ground Level (or above)** and do not try to evacuate by foot or vehicle and never enter rising flood water. **Call the SES on 132 500 if emergency supplies are getting low, or 000 if in a life-threatening situation. Remember if its flooded, forget it.**

TRIGGERS FOR EVACUATION / REFUGE:

- Weather forecast with a **rainfall depth as below:**
  - **62.5mm over a period of 30 minutes**
  - **86.7mm over a period of 1 hour**
  - **113.8mm over a period of 2 hours**
  - **166.2mm over a period of 6 hours**
- Seek refuge if:
  - **Heavy Rainfall has commenced; or**
  - **Flood Sensor Alarm has been activated; or**
  - **Evacuation and off-site refuge is deemed impossible.**

RESPONSIBLE FOR THE DECISION: Building Manger / Residents

Emergency Services Attending Site

There is a possibility that emergency services such as Police, Fire, Ambulance or SES may attend site and assume control. Once this has occurred, they are in control of the site and any response operations.

TRIGGERS FOR EMERGENCY SERVICES TAKE CONTROL:

- Police, Fire, Ambulance or SES attending site.

RESPONSIBLE FOR THE DECISION; Building Manger / Residents

After a Flood

Once a Final Flood Warning or SES "All Clear" has been received:

- A thorough check of services such as electricity, sewer, water and gas should be undertaken by qualified persons.
- A thorough check of building damage and structural capacity
- Personal protective equipment should be worn during the clean-up and disinfectant used.

TRIGGER FOR RETURN:

- All clear given by SES or emergency services and building inspected by representatives appointed by the department of education.

BY WHO: SES, Emergency Services, Building Manager

Emergency Provisions for Essential Services

It is recommended the following contingency measures be implemented and maintained to facilitate on-site refuge:

- Supply of medicines, non-perishable food items and bottled water to withstand isolation for a minimum of 72 hours.
- Maintain a minimum run time of at least 24 hours for the backup generator in the event where power is cut to the facility.

Do not Drive or Walk through Floodwater.

Remember, If It's Flooded, Forget It!

Evacuation Centres and Routes

When evacuating the facility, it is recommended residents review advice and warnings from the SES to determine prior to leaving to determine whether an evacuation shelter has been opened for the impending major or extreme flood event. If an off-site evacuation shelter has been opened, heavy rainfall has not commenced and the on-site flood sensor has not been activated, it is recommended residents proceed to the SES nominated evacuation shelter.

In the event where an off-site evacuation shelter has not yet been nominated by the SES, a temporary alternative nearby place of refuge may be the Olds Park carpark located at Olds Park Lane, Penshurst. The below route is expected to be trafficable for all events up to and including the PMF. Residents leaving the facility are to follow the route presented in **Figure 8** below to reduce the risk of getting caught or trapped by floodwater while in transit.

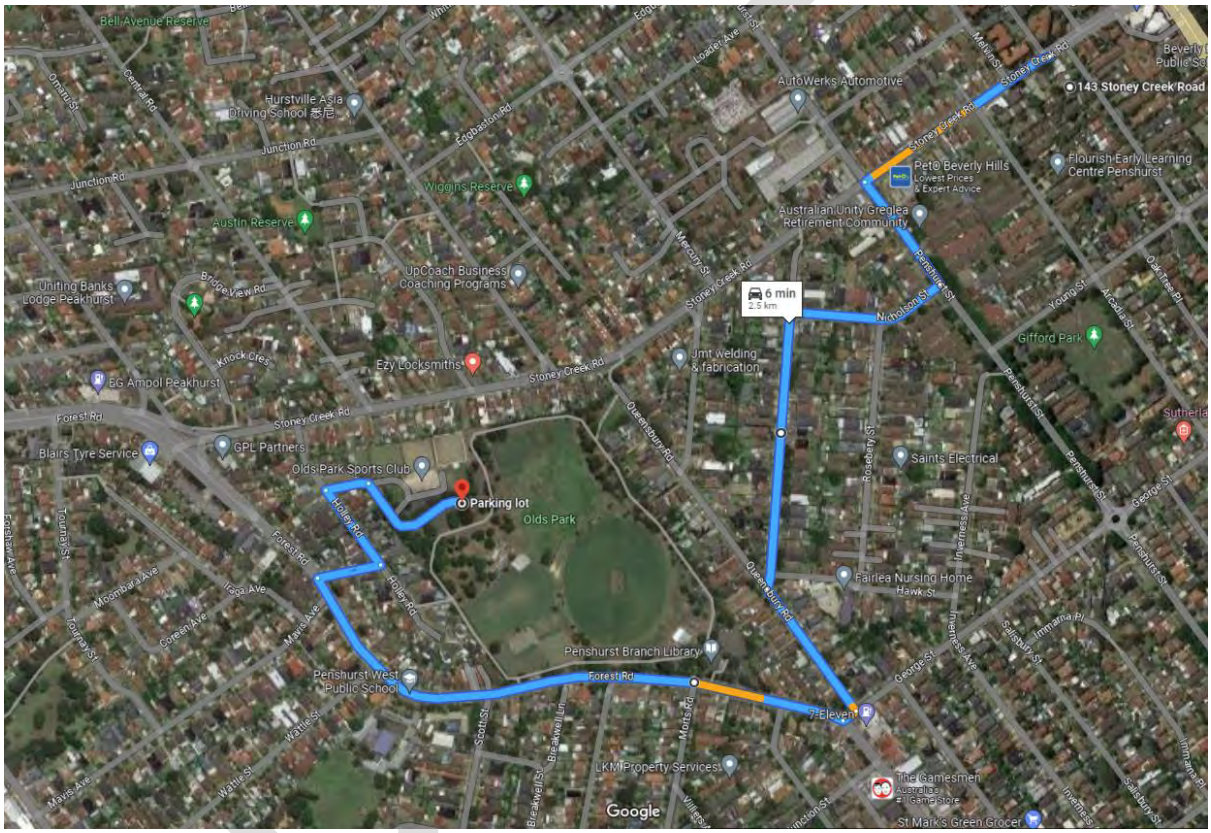


Figure 8 - Recommended Evacuation Route to Olds Park Carpark (Olds Park Ln, Penshurst)

Do not Drive or Walk through Floodwater.

Remember, If It's Flooded, Forget It!

Emergency Contact

For emergency assistance during flood events, please call the **SES** on **132 500.**

If you are in a life-threatening situation please call **Police, Fire or Ambulance** on **000.**

For road blockages, fallen trees and other local asset issues, please call **Georges River Council** on (02) 9330 6400.

Flood Response Preparation

It is the responsibility of the Building Manager to prepare the facility for a flood event. This will be achieved through; induction training for residents including, advice with respect to the flood risks and behaviour, and the requirement for the preparation and and maintenance of a *Floodsafe Emergency Kit.*

The information presented above is a summary of the flood behaviour and considered key to understanding the risks associated with flooding. This should be displayed in conjunction with other emergency information (such as fire, etc.) throughout the facility.

Notification to Residents of Site Flood Conditions

Prospective residents are to be notified that the site is flood prone with the site emergency information and procedures to be relayed prior to issue of any lease agreement.

Induction training

Induction training is also recommended for all new tenants which is to occur on the first day of occupation. Induction training should include a site walkover that identifies the site flooding conditions and expected flood behaviour. The evacuation procedures are also to be relayed to the tenants during this induction training as well as all additional information contained within this plan.

Records should be kept which detail who has had the training, when they were trained, the name of the trainer as well as reference to the material used in the training course.

Flood Emergency Response Drills

Flood Emergency Response Drills are designed to increase flood awareness within the facility. These drills are to be undertaken twice per year to familiarise residents of the procedures when responding to a flood event.

It is also an opportunity to outline expected flood levels and dangers of entering flood water. The following link can be used as a resource for relocating and/or evacuating residents that are mobility impaired: https://www.ses.nsw.gov.au/floodsafe/what-floodsafe-means-for-you/mobility-impaired/.

Floodsafe Emergency Kit

Although the storm event may only last a couple hours, there is the potential for flood water to remain for a longer period following completion of rainfall. As such, enough resources should be contained in the Flood Emergency Kit to ensure anyone trapped on site has enough supplies for a prolonged period.

Potential items for a flood emergency kit are outlined on the SES website https://www.ses.nsw.gov.au/floodsafe/prepare-your-home/emergency-kit/. Items outlined on the SES website and some additional items are presented below:

- Drinking water, medicines and non-perishable food items.
- A copy of this Flood Emergency Response Plan.
- Torches with spare batteries.
- Rubber Gloves
- Lanterns with spare batteries.
- A first aid kit.

- Candles and waterproof matches.
- Waterproof bag for valuables.
- A copy of emergency numbers.

When flooding and evacuation is likely and if time permits, it is recommended all residential tenants consider adding the following items to their Floodsafe Emergency Kit prior to leaving the site.

- Enough clothes for several days.
- Any special requirements for babies and the disabled, infirm or elderly.
- Strong covered shoes.
- Fresh Food and Drinks.
- Toiletries.
- Important papers, valuables and mementoes.
- Electronic devices and charges as required.

It is the responsibility of the tenants to maintain their individual Floodsafe Emergency Kits, which are to be prepared immediately following occupation.

During extreme flooding events, there is the potential for the facility to lose power. It is essential that the items recommended for the Floodsafe Emergency Kit be maintained to ensure those seeking refuge on-site are as comfortable as possible during a flood event.

TRIGGER FOR REVIEW AND EDUCATION:

- Notification to Residents of Site Flood Conditions Prior to Lease agreement
- Inductions for residents, highlighting the flood risk associated with the subject site.
- Three monthly checking of the emergency kit to ensure all items are in suitable working order.
- Six monthly evacuation drills and reminder of the flood risks.

BY WHO: Building Manager and Residents

Storage of Sensitive Goods

All sensitive goods which are susceptible to damage from flood waters or, if exposed to floodwaters would have significant ramifications to the surrounding area, must not be stored in the basement carparks or ground floors which may become susceptible to flooding. The ground floor is above the PMF level and are therefore considered appropriate places to store goods which are sensitive to water.

Monitoring of Weather Situation

It is the responsibility of the Building Manager and Residents to monitor the weather situation and be aware if a warning has been issued. This will be achieved through automatic text messages and emails from Early Warning Network, Hazards Near Me App, and checking of the local radio stations and the Bureau website.

TRIGGER FOR MONITORING:

- Continuous, 9am and 4pm daily

BY WHO: Building Manager and Residents

Signage

Flood warning signage, such as the Flood Response Actions shown at the beginning of this plan, or the example signage provided in Appendix A is to be placed throughout common areas throughout the facility (i.e. lift lobbies and common halls). It is also recommended that a copy of the Flood Response Summary be placed within each individual tenancy. All flood warning signage is to be laminated and must identify that the site is flood prone.

It is the responsibility of each individual tenant to ensure signage within the tenancies are up to date and displayed as recommended above. Similarly, it is the responsibility of the Building Manager to ensure signage throughout the common areas are displayed and maintained as recommended above.

Revision of this Flood Evacuation Plan

This plan has been prepared as a preliminary plan for the purposes of the approval. It is anticipated this plan will be during future project phases to incorporate additional available information such as more detailed floor plans and flood information.

Following occupation, this plan should be revised if the regional flood study is revised or if a new flood study for the site is prepared to capture changes in the catchment and updates to best practice.

Notwithstanding the above, this plan shall be **revised every three years,** when there is a major operational change, or following a flood event.

Revisions should be undertaken by a suitably qualified flood emergency response consultant.

Conclusion

The subject site is affected by flooding generated by overland flow from the regional upstream catchment. A review of the proposed development has been undertaken in conjunction with the expected flood behaviour.

This plan has outlined the likely emergency response for the facility during a flood event. The plan recommends early evacuation if possible, and shelter-in-place (vertical evacuation) during predicted major and extreme flood events between the 1% AEP to the Probable Maximum Flood (PMF).

It is noted that this plan has been prepared as a preliminary plan for the purposes of the Planning Proposal. It is anticipated that this plan will be updated during future project phases to incorporate additional available information such as more detailed floor plans and flood information.

Through adoption of this plan, the Planning Proposal adequately minimises the flood risk associated with the subject site. The recommendations contained herein assist in managing the risk to life of the users of the subject site.

References

Cardno	(2020)	*Flood Impact Assessment for 143 Stoney Creek Road, Beverly Hills – Health Services Facility* dated 17 December 2020
SES	(2021)	*Georges River Council Flood Emergency Sub Plan* accessed from: https://www.ses.nsw.gov.au/media/5287/georges-river-flood-emergency-sub-plan-nov-2021.pdf Accessed 26 September 2023
SES	(2019)	*Flood Disaster Website* accessed from: https://www.ses.nsw.gov.au/disaster-tabs-header/flood/ Accessed 26 September 2023
SES	(2018)	*Emergency Business Continuity Plan* accessed from: http://www.sesemergencyplan.com.au/business/index.php Accessed 26 September 2023
SES	(2018)	*Flood Planning for the Mobility impaired* accessed from: https://www.ses.nsw.gov.au/floodsafe/what-floodsafe-means-for-you/mobility-impaired/ Accessed 26 September 2023
DPE	(2023)	Draft Shelter In Place Guideline Accessed from: https://shared-drupal-s3fs.s3.ap-southeast-2.amazonaws.com/master-test/fapub_pdf/NSW+Planning+Portal+Exhibitions/Draft+Shelter-in-place+Guideline.pdf Accessed 26 September 2023
Bureau of Meteorology	(2020)	Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 3.13 accessed from: http://www.bom.gov.au/nsw/NSW_SLS_Current.pdf Accessed 26 September 2023

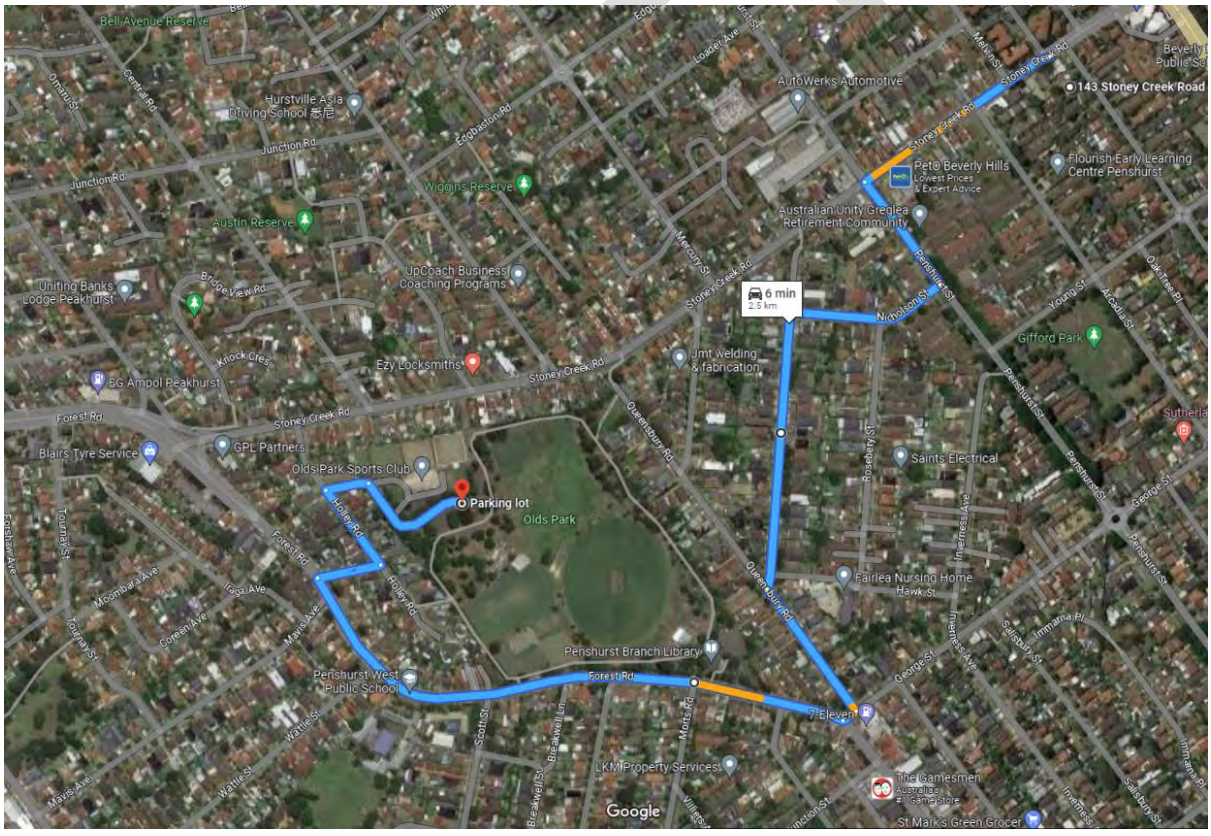
Example Signage

This property is flood prone with predicted **depths** surrounding the property of up to approximately **0.9 meters.**

In the event of a predicted flood event with rainfall depth greater than those presented below, **proceed to the nearest SES off-site evacuation facility and remain in place to receive advice from the building manager**.

Depth	Timescale	Depth	Timescale	Depth	Timescale	Depth	Timescale
62.5mm	30-mins	86.7mm	1-hour	113.8mm	2-hours	166.2mm	6-hours

If the **SES has not yet identified a suitable off-site refuge facility**, proceed to the **Olds Park carpark** via the below nominated evacuation route and wait it out until you receive advice from the building manager.



In the event where the **flood alarm has been triggered**, flooding external to the site is potentially hazardous and **no attempt to evacuate should be made**. **Refuge on-site, within apartments** is available following activation of the flood alarm.

No attempt should be made to evacuate elsewhere through floodwater by foot or vehicle. **Access to the basement carpark should not be attempted** during a flood event and lifts should not be used.

If assistance is required, please call the following emergency numbers:

Table 10 – Emergency Numbers

Person Organisation	Name	Number
Building Manager		
First Aid Officer		
SES	-	132 500
Police / Fire / Ambulance	-	000

Do not Drive or Walk through Floodwater.

Remember, If It's Flooded, Forget It!

Attachment 2 – Council Submission to Planning Proposal

GEORGES RIVER COUNCIL

Contact: Harkirat Singh
Direct Telephone: (02) 9330 6259
File Reference: D23/119492

23 May 2023

The Director, Agile Planning and Programs (on behalf of the SSPP)
NSW Department of Planning and Environment
4 Parramatta Square,12 Darcy Street
Parramatta NSW 2150

Attention: Louise McMahon

Dear Ms McMahon

Georges River Council Submission – Planning Proposal PP-2021-6630 (Council Ref. PP2021/0002) for 143 Stoney Creek Road, Beverly Hills

Thank you for the opportunity to provide feedback on the Planning Proposal PP-2021-6630 (Council Ref. PP2021/0002) for 143 Stoney Creek Road, Beverly Hills which is on public exhibition from 27 April 2023 to 26 May 2023.

The key points of Council's submission include:

- An acknowledgement of the Planning Proposal's strategic and site-specific merit;
- Importance of the site specific DCP amendment accompanying the Planning Proposal to ensure that the built form outcome reflects urban design considerations for any future development of the site; and
- Necessity for a Voluntary Planning Agreement (VPA) to accompany the Planning Proposal to address the local demands and cumulative impacts of the new residential population that will be enabled by the Planning Proposal.

The Planning Proposal

- As you would be aware, the Planning Proposal was first lodged with Council in November 2021 and after a series of amendments, the applicant lodged a

rezoning review request with the Department of Planning and Environment (the Department), for consideration by the Sydney South Planning Panel (the Panel) in October 2022.

- It is noted that the Planning Proposal submitted for the rezoning review, was recommended by the Panel to be submitted for a Gateway Determination, and is on public exhibition seeks to amend the *Georges River Local Environmental Plan 2021* (GRLEP 2021) for the site as follows:
    - Rezone the site from part SP2 Infrastructure (Public Administration) and part R2 Low Density Residential to R4 High Density Residential;
    - Include "business premises" and "office premises" as additional permitted uses (Schedule 5) on the site;
    - Introduce a maximum floor space ratio (FSR) of 1.4:1 across the site;
    - Introduce a maximum building height of 16m across the site; and
    - Introduce a minimum lot size of 1000sqm across the site.

Strategic and Site Specific Merit

Council officers reviewed the subject Planning Proposal and concluded that it demonstrates strategic merit as it is consistent with the planning priorities and objectives of the Greater Sydney Region Plan and South District Plan, Council's Local Strategic Planning Statement (LSPS), Council's Local Housing Strategy, the draft Beverly Hills Master Plan, relevant State environment planning policies (SEPPs) and s.9.1 Ministerial Directions.

The Planning Proposal also demonstrates site specific merit as it adequately justifies that the proposed density (maximum building height of 16m and FSR of 1.4:1) can be accommodated on the site without resulting in adverse amenity impacts on the proposed and surrounding developments. Refer to Council's submission for detail (**Attachment 1**).

Draft Site Specific DCP Amendment

- A draft site-specific Development Control Plan (Amendment No. 4 to GRDCP 2021) (DCP amendment) has been prepared for the subject site to accompany the Planning Proposal. Whilst Council officers acknowledge the Planning Proposal has strategic and site specific merit, it is imperative that the draft DCP amendment be adopted to support the planning controls in the Planning Proposal. The draft DCP amendment has been prepared to ensure that the built form outcome reflects urban design considerations for any future development of the site, including the provision of built form, boundary setbacks, deep soil

areas, vehicular access, stormwater management, contamination and waste management issues.

- The draft DCP amendment is on public exhibition from **17 May to 16 June 2023**. Council has formally notified the Department's Agile Planning and Programs section regarding the exhibition of the DCP amendment. It should be noted that as part of the exhibition of the draft DCP amendment, Council is receiving submissions that relate to the Planning Proposal which will be sent to the Department and should be considered prior to finalising the Planning Proposal.
- Following the public exhibition of the DCP amendment, Council will consider a report on the submissions received and seeking the adoption of the DCP.
- The DCP will become effective when the LEP (Amendment No. 6 to GRLEP 2021) is gazetted.

Need for a VPA to Address Demands and Impacts of the Proposal

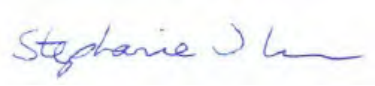
- The Planning Proposal does not include an offer to enter into a VPA. Council considers that a VPA is essential in order to address the local demands and cumulative impacts of the new residential population that will be enabled by the Planning Proposal.
- The proposal will enable the site to be developed for residential flat buildings with the concept plans indicating a yield of up to 38 dwellings. The resulting population of 90-102 people will generate a demand for local parks, require safe and direct pedestrian connections to local parks and public transport facilities as well as improved community facilities and services.
- A preliminary list of the local infrastructure works and facilities identified by Council to directly address the cumulative impacts and demands from the new residential population from the proposal is included in the attached submission (**Attachment 1**).
- The Georges River Council *Local Infrastructure Contributions Plan 2021* (Contributions Plan) does not levy for the above local facilities and works. The proposed development of the site was not anticipated at the time the Contributions Plan was prepared. As such, the S7.11 contributions would not appropriately address the impacts of the development.
- Council concern: Council reiterates that a VPA provides the only funding mechanism for Council to address the demands for local infrastructure and facilities arising from the Planning Proposal. The public benefits identified for a VPA could not be conditioned on a future development consent. Accordingly, finalisation of the Planning Proposal should be subject to the submission and acceptance of a VPA offer.
- Further information on the public benefits of a VPA offer are provided in **Attachment 2**.

It is reiterated that as part of the ongoing public exhibition of the draft DCP amendment, Council is receiving submissions that relate to the Planning Proposal. Accordingly, Council requests that the Department not finalise the Planning Proposal until after the conclusion of the exhibition period for the draft DCP amendment (i.e., 16 June 2023) to enable consideration of all submissions relating to the Planning Proposal.

Attached to this letter is a detailed submission (**Attachment 1**) which covers the topics summarised above. **Attachment 2** provides further information on the public benefits of a VPA offer.

If you require any further explanation of the issues raised in the submission, please do not hesitate to contact the undersigned on 9330 9437 or Harkirat Singh, Senior Strategic Planner on 9330 6259.

Yours faithfully



Stephanie Lum
Coordinator Strategic Planning

Attachment 1 – Georges River Council Officer's Submission

Public Exhibition – PP-2021-6630 – 143 Stoney Creek Road, Beverly Hills

Summary
This submission is provided in response to the public exhibition of the Planning Proposal PP-2021-6630 (Council reference PP2021/0002) that applies to 143 Stoney Creek Road, Beverly Hills (Lots 2 and 3 in DP 1205598) (the site) which is on public exhibition from 27 April 2023 to 26 May 2023.

It should be noted that as part of the ongoing public exhibition of the draft DCP amendment, Council is receiving submissions that relate to the Planning Proposal. Accordingly, Council requests that the Department of Planning and Environment (the Department) not finalise the Planning Proposal until after the conclusion of the exhibition period for the draft DCP amendment (i.e., 16 June 2023) to enable consideration of all submissions relating to the Planning Proposal.

The key points of Council's submission include:

- An acknowledgement of the Planning Proposal's strategic and site specific merit;
- Importance of the site specific DCP amendment accompanying the Planning Proposal to ensure that the built form outcome reflects urban design considerations for any future development of the site; and
- Necessity for a Voluntary Planning Agreement (VPA) to accompany the Planning Proposal to address the local demands and cumulative impacts of the new residential population that will be enabled by the Planning Proposal.

The Planning Proposal

As you would be aware, the Planning Proposal was first lodged with Council in November 2021 and after a series of amendments, the applicant lodged a rezoning review request with the Department, for consideration by the Sydney South Planning Panel (the Panel) in October 2022.

It is noted that the Planning Proposal submitted for the rezoning review, was recommended by the Panel to be submitted for a Gateway Determination, and is on public exhibition seeks to amend the *Georges River Local Environmental Plan 2021* (GRLEP 2021) for the site as follows:

- Rezone the site from part SP2 Infrastructure (Public Administration) and part R2 Low Density Residential to R4 High Density Residential;

- Include “business premises” and “office premises” as additional permitted uses (Schedule 5) on the site;
- Introduce a maximum floor space ratio (FSR) of 1.4:1 across the site;
- Introduce a maximum building height of 16m across the site; and
- Introduce a minimum lot size of 1000sqm across the site.

1. Strategic and Site Specific Merit

Council officers reviewed the exhibited Planning Proposal as part of the Rezoning Review and concluded that the Planning Proposal demonstrates strategic merit as it is consistent with the planning priorities and objectives of the Greater Sydney Region Plan and South District Plan, Council’s Local Strategic Planning Statement (LSPS), Council’s Local Housing Strategy, the draft Beverly Hills Master Plan, relevant State environment planning policies (SEPPs) and s.9.1 Ministerial Directions as summarised in **Table 1 – Strategic consistency** below:

Strategic document	Comment
Greater Sydney Region Plan and South District Plan	The subject site: • is located within walking distance of train and bus services, including those that travel to Riverwood and Hurstville • provides opportunities for employment, housing and services for the local community • provides potential for residential and employment uses on the site within walking distance to an existing centre and public transport
Local Strategic Planning Statement	The Planning Proposal is consistent with the employment and residential targets and objectives of the Georges River Local Strategic Planning Statement 2040.
Local Housing Strategy	The design concept provides for a range of housing options, in the form of one, two and three bedroom apartments.
Draft Master Plan for Beverly Hills Centre	The subject site was identified as a “future housing investigation area” in the exhibited draft Beverly Hills Local Centre Master Plan (exhibited July 2020). The exhibited draft Master Plan did

	not propose any changes to zoning and development standards of this site or adjoining sites on Stoney Creek Road. At its meeting on 24 April 2023, Council resolved not to proceed with the exhibited Master Plan and endorsed (in part) a number of area-based principles and elements on which a future exhibited Master Plan should be based. However, an amended draft Master Plan would not propose any changes to zoning and development standards of this site or adjoining sites on Stoney Creek Road.
SEPP (Resilience and Hazards) 2021	The site was previously used for a non-residential land use as a government administration building for the Roads and Traffic Authority. A Detailed Site Investigation (DSI) report was submitted with the Planning Proposal. The DSI concluded that widespread contamination was not identified at the site and that the site could be made suitable for mixed use commercial, residential and child care uses. The Planning Proposal is considered satisfactory with respect to the provisions of Chapter 4 Remediation of Land under SEPP (Resilience and Hazards) 2021.
S9.1 Ministerial Directions: 4.1 Flooding 4.4 Remediation of Land 5.1 Integrating Land Use and Transport 6.1 Residential Zones	4.1: The submitted concept plans and Flood report demonstrate the ability for a future development to improve the existing flood conditions through a set of design and management conditions. 4.4: The DSI concludes that the site can be made suitable for mixed use commercial, residential and child care uses 5.1: The Planning Proposal increases opportunities for a range of employment land uses and housing within walking distance of Beverly Hills Centre and public transport. 6.1: The proposed land use zone will broaden housing choice and proposes to make use of

	existing infrastructure and services. Also, refer to point 3 below.
Proposed Land use zone: It is proposed to rezone the subject site from SP2 Infrastructure (Public Administration) zone and R2 Low Density Residential zone to R4 High Density Residential zone	The proposed rezoning from SP2 Infrastructure (Public Administration) zone to R4 High Density Residential zone is considered an appropriate planning response, as the site is redundant government land and the intended land uses within the Planning Proposal do not meet the objectives of the SP2 Infrastructure (Public Administration) zone, which are: • To provide for infrastructure and related uses • To prevent development that is not compatible with or that may detract from the provision of infrastructure • To protect and provide for land used for community purposes and public infrastructure The proposal seeks an FSR of 1.4:1 and Height of Building (HOB) of 16m for the site; which are equivalent to those for the approved medical centre (DA2020/0227 granted consent on 21 February 2021). The proposed development standards are higher than the adjoining zones. The adjoining R2 Low Density Residential zone has a base FSR of 0.55:1 and HOB of 9m. The adjacent R4 High Density Residential zone on the northern side of Stoney Creek Road has an FSR of 1:1 and HOB of 12m.

Table 1: Strategic Consistency

The Planning Proposal demonstrates site specific merit, as it adequately justifies that the proposed density (maximum building height of 16m and FSR of 1.4:1) can be accommodated on the site without resulting in adverse amenity impacts on the proposed and surrounding developments and current and future occupants. See comments in **Table 2 - Site specific consistency** below:

Topic	Comment
Urban Design	The concept scheme for a residential flat building development has been assessed against the Design Quality Principles specified by Schedule 1 of SEPP 65

	and is consistent with Principle 1 'Context and neighbourhood character', Principle 2 'Built form and scale', Principle 7 'Safety', Principle 9 'Aesthetics', and is considered to comply with the key ADG Design Criteria of deep soil area. The development concept plans can achieve an ADG-compliant development in future, including the criteria of setbacks and building separation.
Stormwater	Any future development on the site would require the diversion of the existing Sydney Water Culvert. Council's stormwater engineer's recommendation for the site (see point 2 below) include stormwater management controls to ensure any future development considers this constraint.
Contamination	The Planning Proposal is accompanied by a DSI prepared by Environmental Investigations Australia. The investigation concludes that widespread contamination was not identified at the site and that the site can be made suitable for mixed use commercial, residential and child care uses.
Traffic and Parking	No major issues concerning traffic and parking have been identified. Council's traffic engineer has reviewed the proposal and is satisfied with the assessment made by Ason Group that the concept design for the residential flat building on the site depicts a decrease in traffic generated from the approved Medical Centre. Further assessment of the parking requirements and vehicular access for any future development would need to be considered at the development assessment stage.
Social and economic impact	The Planning Proposal seeks to include "business premises" and "office premises" as additional permitted uses in Schedule 1 of the GRLEP 2021. These additional uses and the proposed land use zone may result in non-residential land uses which may compete with the existing employment and retail uses in the nearby Beverly Hills Centre. However, non-residential uses are consistent with the previous land use - as a

	government administration building and the approved land use of a medical centre on the subject site.

Table 2: Site specific consistency

Although the Planning Proposal demonstrates strategic and site-specific merit, it is likely to place additional demand on public infrastructure due to the potential increase in population from the future development on the site. Council has identified a potential shortfall in local infrastructure provision which has not been addressed by the proposal. Refer to point 3 below.

2. Draft Site Specific DCP Amendment

A draft site-specific Development Control Plan (Amendment No. 4 to GRDCP 2021) (DCP amendment) has been prepared for the subject site to accompany the Planning Proposal. Whilst Council officers acknowledge the Planning Proposal has strategic and site specific merit, it is imperative that the draft DCP amendment be adopted to support the planning controls in the Planning Proposal. The draft DCP amendment has been prepared to ensure that the built form outcome reflects urban design considerations for any future development of the site, including the provision of built form, boundary setbacks, deep soil areas, vehicular access, stormwater management, contamination and waste management issues.

The draft DCP amendment is on public exhibition from **17 May to 16 June 2023**. Council has formally notified the Department's Agile Planning and Programs section regarding the exhibition of the DCP amendment.

It should be noted that as part of the public exhibition of the draft DCP amendment, Council is receiving submissions that relate to the Planning Proposal. Accordingly, it is requested that the Department not finalise the Planning Proposal until after the conclusion of the exhibition period (i.e., 16 June 2023) to enable consideration of all submissions relating to the Planning Proposal.

Following the public exhibition of the DCP amendment, Council will consider a report on the submissions received and seeking the adoption of the DCP.

The DCP will become effective when the LEP (Amendment No. 6 to GRLEP 2021) is gazetted.

3. Need for a VPA to Address Demands and Impacts of the Proposal

The Planning Proposal does not include an offer to enter into a VPA. Council considers that a VPA is essential in order to address the local demands and

cumulative impacts of the new residential population that will be enabled by the Planning Proposal.

The proposal will enable the site to be developed for residential flat buildings with the concept plans indicating a yield of up to 38 dwellings. The resulting population of 90-102 people will generate a demand for local parks, require safe and direct pedestrian connections to local parks and public transport facilities as well as improved community facilities and services.

A preliminary list of the local infrastructure works and facilities identified by Council to directly address the cumulative impacts and demands from the new residential population from the proposal include:

- Construction of pedestrian refuge island - upgrade intersection of Cambridge Street / Stoney Creek Road to assist with a direct and safe pedestrian route from the site to Beverly Hills Train Station via the signalised intersection of Stoney Creek Road/ King Georges Road.

- Construction of pedestrian refuge island - upgrade intersection of Arcadia Street/ Stoney Creek Road to assist with a direct pedestrian route from the site to the nearest bus stop on Penshurst Street.

- Bus stop upgrades - upgrade and installation of DDA compliant tactile surfaces.

- New bus shelter and upgrade – at the Penshurst Street bus stop (after Stoney Creek Road).

- Improve access to local park – construct pedestrian refuge islands to provide safe and direct route to local park (Gifford Park)

- Upgrade of local park – contribution toward upgrade of Gifford Park that is the closest local park, located on Arcadia Street, 500 metres south of the site.

- On-road and off-road cycleway paths – contribution towards design and construction.

- Improvements to local childcare services and facilities – contribution for portion of cost.

- Improvement to local library services – contribution for portion of cost.

The Georges River Council *Local Infrastructure Contributions Plan 2021* (Contributions Plan) does not levy for the above local facilities and works. The proposed development of the site was not anticipated at the time the Contributions Plan was prepared. As such, the S7.11 contributions would not appropriately address the impacts of the development.

Council concern: Council reiterates that a VPA provides the only funding mechanism for Council to address the demands for local infrastructure and facilities arising from the Planning Proposal. The public benefits identified for a VPA could not be conditioned on a future development consent. Accordingly, finalisation of the Planning Proposal should be subject to the submission and acceptance of a VPA offer.

Further information on the public benefits of a VPA offer are provided in **Attachment 2**.

Attachment 3 - Rezoning Review 143 Stoney Creek Road, Beverly Hills

Information on Public Benefits for a VPA Offer

Planning Proposal - No VPA offer

The Planning Proposal does not include an offer to enter into a VPA. The Planning Proposal (dated July 2022) states that it:

> "*is not accompanied by an offer to enter into a planning agreement with Council, noting that the Council's current Planning Agreements Policy is predicated on the concept of "value capture" which is contrary to the Department of Planning & Environment Planning Agreements Practice Note dated February 2021 which provides that planning agreements should not be used explicitly for value capture in connection with the making of planning decisions.*
>
> *Notwithstanding, the Planning Proposal does not seek any "uplift" in FSR and provides an identical FSR to that which is already approved on the site. Any increase in infrastructure demand arising from the Planning Proposal is appropriately addressed via the Council's existing Section 94A Plan, Section 7.12 – Fixed Development Consent Levies, as is already the case under the recently approved medical centre on the site".*

On 5 October 2022, the Applicant provided legal advice and advised Council that a VPA will not be offered for the reasons summarised below:

- *Council's Planning Agreements Policy does not entitle Council to mandate a VPA. The voluntary nature of VPAs is confirmed by the Department's Planning Circular PS21-001 as follows: "A council cannot require a planning agreement in order to progress a planning proposal".*

- *Council's Planning Agreements Policy and approach to negotiating a VPA is predicated on the concept of "value capture", which is directly contrary to the Department's Practice Note dated February 2021. The Practice Note is made under legislation and Council therefore has an obligation to act in a manner consistent with the Practice Note.*

- *The Planning Proposal is needed to replace redundant zoning, noting that the NSW State Government has sold the site which is now redundant to its requirements.*

- *The Planning Proposal does not seek any uplift in FSR or height.*

- *The Planning Proposal is not designed to facilitate a single, specific development as other Planning Proposals often are. The primary objective of the Planning Proposal has always been to expand the uses which can be accommodated within the existing building on the site and also within the approved medical centre building on the site, and to replace a redundant zoning. If any other development made permissible by the LEP amendment is pursued, the specific infrastructure needs of that future development is appropriately determined at the time the development application is made, just as it was when the DA for the medical centre was approved. The Georges River Council Local Infrastructure Contributions Plan 2021 (Section 7.11and 7.12 plan) therefore provide the most appropriate mechanisms for addressing any infrastructure demand associated with the potential redevelopment of the site in the future.*

Council Comments

Council considers a VPA is required in order to address the local demands and cumulative impacts of the new residential population that will be enabled by the Planning Proposal.

The Planning Proposal seeks to amend the zoning and change the land uses permissible on the site that will result in a different type of demand and use of local infrastructure compared to that of the existing commercial use.

Council has requested that a VPA offer be submitted in conjunction with the Planning Proposal and has provided the Applicant with a preliminary list of the infrastructure works and community facilities that would address the additional demands (see Table 1). Council has also meet with the Applicant to discuss these public benefits.

A VPA is considered necessary for the reasons outlined below:

a) Change of use - new residential population

A VPA is considered essential in order to address the demands that will arise from the 'change of land use' from the current SP2 Infrastructure (Public Administration) and R2 Low Density Residential zones to the proposed R4 High Density Residential zone.

The site was historically used as a RTA administration centre with an office building and carparking on the site. Recently a Development Consent was issued (21 February 2021) for a two and three storey medical centre with an FSR of 1.4:1 and height of 16 metres on the site.

The Planning Proposal seeks to introduce the FSR of 1.4:1 and building height of 16 metres as well as high density residential and additional permitted uses of 'office' and 'business premises'. It is noted that the R4 High Density Residential Zone under *Georges River LEP 2021* typically has an FSR of 1:1 and building height of 13 metres. The residential area opposite the site on Stoney Creek Road has an FSR of 1:1.

Although there is no change to the FSR that has been approved under the recent Development Consent, the proposal will change the use of the site to residential and therefore the demands for infrastructure from the people using the site.

The Planning Proposal will enable the site to be developed for residential flat buildings, with the concept plans indicating a yield up to 38 dwellings. The new resident population of between 90-102 people will generate a different type of demand for local facilities than the current commercial use.

New residents will increase the demand and use of local parks, require safe and direct pedestrian connections to parks and public transport facilities as well as improved local community facilities and services.

b) **S7.11 Contributions Plan**

The *GRC Local Infrastructure Contributions Plan 2021* does not levy for the local facilities and works that would address the demand generated by the new residents on the site.

The proposed development of the site was also not anticipated at the time the Contributions Plan was prepared. As such the s7.11 contributions would not appropriately address the impacts of the development

The Contributions Plan levies for community facilities and services that cater for the broader LGA wide demands and larger scale projects, such as the upgrade of sporting fields and facilities, upgrade of major parks, town centre public domains, new community facilities and key traffic and transport upgrades.

c) VPA addresses cumulative demand on local facilities

The VPA provides the only funding mechanism for Council to address the cumulative demands for local infrastructure and facilities arising from Planning Proposals.

The public benefits identified for a VPA could not be conditioned on a future Development Consent.

The VPA forms part of the strategic planning process and addresses the site-specific demands of the proposal, providing proposed public benefits including:

- upgrade of local park,
- upgrade of pedestrian paths to ensure there is a direct and safe route from the site to local parks and public transport,
- upgrade nearby bus stops to ensure they are DDA compliant and improve amenity such as upgrade of seating and shelters,
- improve local community services such as childcare and library services.

d) Acceptability Test

The proposed public benefits will meet the acceptability test under the *Practice Note on Planning Agreements* 2021 including:

- The public benefits identified are *"directed towards legitimate planning purposes, which can be identified in the statutory planning controls and other adopted planning strategies and policies applying to development".*

- The VPA and proposed public benefits will *"produce outcomes that meet the general values and expectations of the public and protect the overall public interest".*

- A VPA will *"provide for a reasonable means of achieving the desired outcomes and securing the benefits"*.

- A VPA will *"protect the community against adverse planning decisions"* and will address the cumulative impacts and demands of the Planning Proposal.

e) Economic Feasibility Assessment - Public Benefits are reasonable

To ensure that the public benefits for a VPA are not unreasonable or inappropriate, Council engaged economic consultants Hill PDA in June 2022 to undertake an economic feasibility assessment.

The purpose of this work was to provide advice and guidance on a reasonable contribution value. Hill PDA reviewed the Planning Proposal documentation, market research and feasibility assessment.

The economic assessment of the Planning Proposal considered a reasonable contribution value for the public benefits under a VPA was $760,000. This value would be used to ensure that the value of any public benefits in a VPA was not unreasonable.

Council has not applied land value capture as the primary purpose to determine the value of the contributions. The public benefits were identified by Council staff following an assessment of the Planning Proposal, review of local infrastructure near the site and a review of Council's adopted strategies and policies.

Council's current *Planning Agreement Policy 2016* was prepared prior to the Department's *Practice Note on Planning Agreements* and states that value capture may be 'one' of the mechanisms used to determine the contributions for a VPA.

Public Benefits for a VPA

The preliminary list of the infrastructure works and facilities, identified by Council staff to directly address the cumulative impacts and demands from the new residential population from the proposal, are listed below in Table 1.

The public benefits are not levied under Council's Local Infrastructure Contributions Plan 2021 and cannot be required by way of a condition on any future Development Consent.

The public benefits are local works and facilities close to the site and are supported by Council's adopted strategies and policies.

A VPA will be a key tool to facilitate the delivery of the works and facilities to support the proposed population growth. Council would seek a monetary contribution towards the provision of these public benefits.

Table 1: Preliminary list of public benefits for VPA

Infrastructure and community facilities	Comments
Construction of pedestrian refuge island - upgrade intersection of Cambridge Street/ Stoney Creek Road	The refuge will assist with a direct and safe pedestrian route from the site to Beverly Hills Train Station via the signalised intersection of Stoney Creek Road/ King Georges Road. This route will also lead to the nearest bus stops on King Georges Road. With the proposed increase in residents, additional traffic management facilities will be required surrounding the site to improve pedestrian and road safety. Estimated cost of refuge - $50,000.
Construction of pedestrian refuge island - upgrade intersection of Arcadia Street/ Stoney Creek Road	The refuge will assist with a direct pedestrian route from the site to nearest bus stop on Penshurst Street. This intersection also connects with Council's strategic cycleway that will lead to Gifford Park and straight to the Penshurst shopping district. With the proposed increase in residents, additional traffic management facilities will be required surrounding the Site to improve pedestrian and road safety. Estimated cost of refuge - $50,000.
Bus stop upgrades - Upgrade and installation of DDA compliant tactile surfaces.	Upgrade three local bus stops: - Penshurst Street before Stoney Creek Road bus stop - King Georges Road at Norfolk Avenue bus stop - King Georges Road opposite Norfolk Avenue bus stop Estimated cost of $15,000 for each upgrade.
New bus shelter & upgrade - Penshurst Street after Stoney Creek Road bus stop	The installation of a bus shelter and upgrade and installation of DDA compliant tactile will assist customers while waiting for buses. Council's *Transport Strategy* 2021 sets out strategies and actions to improve for the transport networks and pedestrian facilities.
Pedestrian refuge islands - to provide safe and direct route to local park (Gifford Park)	Gifford Park is the closest local park located on Arcadia street, 500 metres south of the site. In order to provide a safe and direct pedestrian route from the Site to Gifford Park, pedestrian refuge islands are required to slow traffic and provide a safe crossing point at the intersections / road crossing points. Two refuges are required at the intersection of Arcadia Street/ Young Street.

Infrastructure and community facilities	Comments
	Estimated cost of $100,000. One refuge is required at the intersection of Young Street/ Penshurst Street. This is the preferred intersection which will align with Council's Transport Strategy and cycleway link which leads to Penshurst shopping district. Estimated cost of $50,000.
Upgrade of local park - Gifford Park	The increase in population from the proposal will increase the use of local parks. Gifford Park is the closest local park, located on Arcadia Street, 500 metres south of the site. The park has a small playground with play equipment, small old amenities block and netball court. The VPA could include a contribution of $50,000 towards the upgrade of the play equipment, existing netball courts and upgrade of the amenities block in the park. The GRC Contributions Plan does not levy for the upgrade of Gifford Park. *Georges River Open Space, Recreation and Community Facilities Strategy (2019-2036)* and *South District Plan* (2018) states that high density development should be located within 200 metres of quality open space. Council's *Community Strategic Plan 2022 – 2032*, provides that everyone has access to quality parks and open space and active and passive recreation facilities and to ensure public parks and open space and Council buildings are accessible.
On-road and off-road cycleway paths – design and construction	The provision of active links and safe cycle paths is important as the population increases. A VPA contribution towards the design and construction of on-road and off road paths (including line marking, speed patches, bike lanes, signals and refuges) is important as sites outside of the key centres are redeveloped. Council's Transport Strategy 2021 identifies the need to provide active transport links throughout the LGA.
Improvements to local childcare services and facilities –contribution for portion of cost	Improvements to existing childcare facilities located in close proximity to the site will directly support the new residential population and address additional demands. The VPA could include a contribution towards a portion of the cost of these improvements. Jack High Child Care Centre in Beverly Hills and the Penshurst Long Day are located close to the site. Improvements to these existing centres can include extended hours of care, extended services (such as to support children with additional needs) and improvement to the resources/facilities. The total estimated cost of such improvements is $200,000. The GRC *Local Infrastructure Contributions Plan* does not levy for the upgrade of childcare facilities. The Plan levies for a range of new community facilities throughout the LGA, including a new childcare facility (location yet to be identified).
Improvement to local library services – contribution for portion of cost	There are no existing or proposed libraries in Beverly Hills, with the closest library's being Penshurst Library and Hurstville Central Library. Improvements to existing libraries such as improving flexible use, standalone self-service points, as well as expanding library services to incorporate mobile library services will support the new population. The VPA could include a

Infrastructure and community facilities	Comments
	contribution towards a portion of the cost of these improvements. The Council's *Library Strategy 2030* identifies the need to ensure libraries are accessible and "*provide opportunities for the community to engage with the library outside our buildings through outreach and online services*". The estimated cost of a new mobile library service is $150,000.