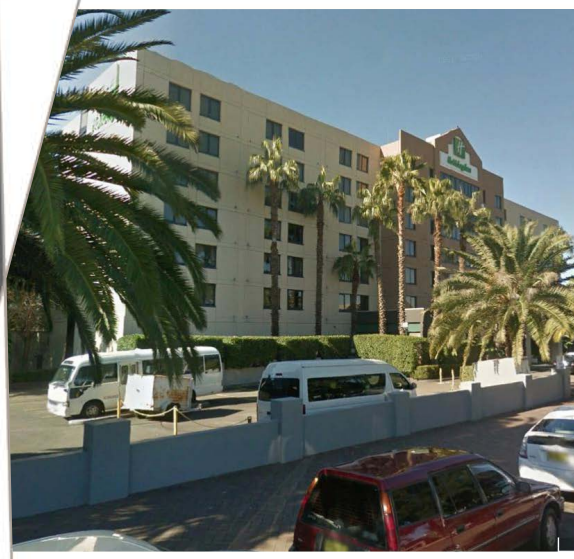
Flood Impact Assessment

18-40 Anderson St, Parramatta

80217054



Prepared for
Landream

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Cardno
Shaping the Future

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Executive Summary

This report details the assessment of the stormwater flooding extent and behaviour under an amended Planning Proposal which has been prepared for a mixed use development of 18 – 40 Anderson Street, Parramatta.

The subject site currently experiences flooding by overflows from Clay Cliff Creek and overland flows. Detailed flood modelling has been completed estimating flood behaviour in existing and future conditions.

The planning proposal has been amended based on consideration of flooding and the flood hazards mapped by Council and presented in **Figures 2** and **3**. In these figures it is noted that Council has mapped an area of inundation only in events greater than a 100 yr ARI flood with an associated Low Hazard in the southeast corner of the property as well as an area of Low Hazard adjacent to the northeast corner of the property. To facilitate access by emergency services and/or evacuation of any hotel staff and guests, retail staff, residents and/or visitors in a 100 yr ARI flood an elevated podium and open concourse would be constructed at the Flood Planning Level (11.25 m AHD). In the southern part of the property the current car parking building would be replaced by open space which would be regraded from the existing ground levels along the property boundaries up to the podium level. The covered section of Clay Cliff Creek would be retained to facilitate the earthworks and landscaping in this area. The path from the podium to Jubilee Land will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

Alternatively access to/from the site could be via the Low Hazard zone which connects to the northeast corner of the property.

An amended ground floor concept planning proposal layout is presented in **Figure 16**. The hydraulic features of the concept planning proposal layout include.

(i) Flood flow through the property is consolidated in an east-west corridor located in the centre of the property. Under day-today operations any residents and/or visitors and/or retail staff can access the external podium level by open stairs (notionally 15 m wide) located on the eastern and western sides of the podium. These stairs will have open risers to permit floodwaters to pass through the stairs and to flow under the podium;

(ii) Access ramps are proposed on the sides of the main concourse;

(iii) To ensure there is ample flow conveyance below the podium it is also proposed to create 6 m wide voids on the northern and southern sides of the main concourse. Access to these voids would be prevented by installing vertical bar screens on the edge of the buildings;

(iv) In the southern part of the property the current car parking building would be replaced by open space/park which would be regraded from the existing ground levels along the property boundaries up to the podium level;

(v) Under current conditions there is a small open section of the Clay Cliff Creek channel located immediately west of Anderson St at the southern end of the property. This open section of channel remains;

(vi) The capacity of the covered section of Clay Cliff Creek is supplemented by a grated inlet on the Anderson St boundary discharging overland flow into a single 1050 mm diameter RCP which conveys flows parallel to Clay Cliff Creek and discharges flow back into the open section of the channel in the vicinity of the eastern boundary.

(vii) A crest level of any driveway access from Anderson Street to basement car parking would incorporate not less than 500 mm freeboard above the 100 year ARI level. Consideration could be also given to including a flood barrier to further delay the ingress of floodwaters into the basement car park in events more extreme than a 100 y

The amended planning proposal will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

It is expected that the short warning times mean that in the case of extreme floods up to the PMF that there would be insufficient time to evacuate any hotel staff, guests, visitors or residents from the site and that instead all persons on site would need to shelter in place. Under these circumstances the expected time that all persons would need to shelter in place would be around 1- 2 hours.

It is concluded that the merit assessment of the amended planning proposal detailed above and the recommendations given in Section 6 that the amended planning proposal is capable of satisfying the requirements of the Parramatta DCP 2011.

Based on the preceding assessments and considerations discussed in Section 7.3 it is concluded that the amended planning proposal complies with the considerations under Section 117(2) of the EP&A Act 1979, Section 4.3 Flood Prone Land.

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1 Introduction

1.1 Background

A submission has been prepared for a mixed use development of 18 – 40 Anderson Street, Parramatta which is currently known as the Holiday Inn site. The location of the Site is identified in **Figure 1**.

Parramatta City Council's CBD Planning Proposal recommends the site for zoning as B3 Commercial Core.

The reason for this anomaly likely relates to flood hazard. The site currently experiences inundation by overflows from Clay Cliff Creek and overland flows.

In the business papers for the Council meeting held on 8 September 2014, the rezoning of the site was specifically discussed. Under one potential rezoning option (Option 2D), the site was proposed to be rezoned to B4 Mixed Use. However, this option was discarded due to the site's location in a high flood hazard zone. It was concluded by Council that theoretically, a commercial building would place fewer people at risk.'

This report details the assessment of the stormwater flooding extent and behaviour for a zoning of the site as B4 Mixed Use based on a preliminary concept design of approximately 250 room hotel, and 260 apartments across 4 buildings of varying heights.

1.2 Flooding Considerations

It is noted that flooding investigations have been previously completed for the Clay Cliff Creek floodplain in the vicinity of the subject property as follows:

- The Lower Parramatta River Floodplain Risk Management Study, Flood Study Review prepared by SKM in 2005;
- The Clay Cliff Creek Catchment Master Drainage Plan prepared by Cardno Willing in 2007;
- Flood Impact Assessment of Development of 14-16 Parkes St, Parramatta prepared by Cardno in 2011;
- Flood Impact Assessment, 111 Wigram St, Harris Park prepared by Cardno in 2011;
- Flood Impact Assessment, 122 Wigram St, Harris Park prepared by Cardno in 2011;
- Flood Impact Assessment, 40-72 Church Street, Parramatta prepared by Cardno in 2011;
- Flood Impact Assessment, 113-117 Wigram St and 23-29 Hassall St, Harris Park prepared by Cardno in 2014; and
- Flood Impact Assessment, 5-7 Parkes St, Parramatta prepared by Cardno in 2017.

The flooding context for the site is provided in the flood maps prepared by Parramatta City Council based on the results of the 2005 Lower Parramatta River Floodplain Risk Management Study, Flood Study Review and is given in **Figures 2** and **3**.

1.3 Objective

The objective of the study was to address the following considerations for planned development of the site:

- Impact of planned development on flooding
- Sensitivity of design flood level to blockage
- Climate change impact on flooding
- Cumulative development
- Flood emergency response
- Flood warning and evacuation
- An outline of an emergency response plan
- Compliance with requirements of Parramatta DCP 2011
- Compliance with the considerations of Section 117(2) of the EP&A Act 1979, Section 4.3 Flood Prone Land

1.4 Methodology

The assessment methodology is outlined as follows:

- Review of previous flood studies and available data
- Compilation of site specific data (including proposed concept development layout)
- Establishment of floodplain model to represent existing site scenario
- Revision of flood model to represent future concept site development
- Assessment of resultant flood behaviour and flood risks
- Review of flood emergency planning
- Outline a draft flood emergency response plan
- Review of compliance with Parramatta City Council development requirements

2 Previous Studies

The proposed development on 18-40 Anderson St, Parramatta is potentially subject to flooding by floodwaters spilling from Clay Cliff Creek and overland flows. Consequently previous studies of flooding in Clay Cliff Creek are relevant to the subject site.

2.1 2005 Lower Parramatta River Floodplain Study

The Lower Parramatta River Floodplain Risk Management Study/Plan was completed in 2005 in accordance with the provisions of the Floodplain Development Manual applicable at that time. This study included a Flood Study Review which re-assessed flood levels in a number of watercourses and in the tidal section of Parramatta River, between the Charles Street weir and Ryde (road) Bridge. The Flood Study Review provided the base data for the subsequent Floodplain Risk Management Study.

The study was commissioned by Parramatta City Council to update the previous data on flood levels and extents. PCC was aware that the results predicted in the 1986 study would now be subject to change due to changes in the catchment such as urbanisation and the construction of flood mitigation projects in the upper catchment. It also recognised that the previous flood extent mapping was based on the best information available at the time, but it was of variable reliability and did not provide an assessment of flood hazard.

The LPRFS adopted the best current practice to review the flood data which included (SKM, 2005):

- up-to-date catchment hydrology for the Upper Parramatta River Catchment;
- existing/ updated hydrology for the tributaries within the Lower Parramatta River study area;
- Airborne Laser Survey;
- an additional 70 surveyed cross-sections;
- the widely used and accepted MIKE-11 hydraulic model;
- use of GIS to develop digital terrain models;
- multiple design storms to generate maximum flood levels; and
- appropriate methodology for estimating concurrent flows in tributaries.

Generally, results from the review compared well with previous studies. However, flood levels estimated in the 1986 Lower Parramatta Flood Study prepared by Willing and Partners in the Lower Parramatta River downstream of Subiaco Creek (including the Duck River confluence) were up to 1.2 m lower than those derived in the 2005 review. The reasons for this difference as described in the 2005 Flood Study report include:

- revision of the critical duration to 9 hours for the Upper Parramatta River catchment in the 2005 study, due to the inclusion of channel routing and the effect of the Darling Mills Retarding Basin and other flood mitigation works. This leads to an increase in the volume of floodwaters;
- more detailed and complete survey data; and
- the adoption of an integrated modelling approach and consistent design storms for the main river and tributaries.

The LPRFS noted that there was "*very little data*" available to use in the calibration process. The results generated by the 2005 MIKE 11 floodplain model are representative of a broadscale overland flow study. The LPRFS states that the "*approach fairly closely mimics the flood behaviour in the creek and on the floodplain taking due consideration of floodplain storage*". However, the cross sections in the MIKE 11 model are often several hundred meters apart and do not always represent all the local overland flowpaths and floodplain storage areas in a specific location in sufficient detail.

It is our understanding that Parramatta City Council adopted the design flood levels from this study for planning purposes in 2005.

2.2 2007 Clay Cliff Creek Catchment Master Drainage Plan

A Catchment Master Drainage Plan for the Clay Cliff Creek catchment at Parramatta was prepared in 2007. The aim of the study as set out by Parramatta City Council was to identify overland flow problem areas, locations of surcharge due to insufficient pipe capacity and pit inlet capacity, and localised flooding with areas of improvement. The study aimed also to prepare cost effective options based on cost benefit analysis.

The 2007 study assembled a hydrological model of the Clay Cliff Creek catchment and input local flow hydrographs into a 1D/2D XP-SWMM floodplain model.

We consider the model to provide a more detailed estimation of design flood levels for the Clay Cliff Creek floodplain.

2.3 2011 Flood Impact Assessment, 40-72 Church Street, Parramatta

In 2011 a flood impact assessment and emergency management strategy was prepared for the proposed redevelopment of the Trivett Car Showroom at Church Street Parramatta. The existing flood behaviour for the 20 year and 100 year ARI was modelled and the proposed development flood behaviour was assessed using an updated version of the 1D/2D XP-SWMM floodplain model. This assessment also recommended a strategy to manage flood risk during the PMF.

The flood impact assessment has found that there will be no net impact to the 100 year ARI flood behaviour as a result of the development. In the case of the proposed box culvert (Option 3) trunk drainage amplification, there would be a reduction in flood levels in Church Street and Anderson Street for the most part. Localised increases in flood level were shown in front of 16 Anderson Street, being a drainage easement and carpark.

Council's flood planning level requirements were satisfied for the floor level and basement carpark entry. In addition plans for the management of an emergency during the PMF event were outlined.

It was concluded that the flood impact assessment addressed the requirements of Council for the proposed development as outlined in the Flood Policy, Floodplain Development Matrix, DCP and specific advice from Bewsher Consulting.

2.4 2014 Flood Impact Assessment, 113-117 Wigram St and 23-29 Hassall St, Harris Park

In 2014 a mixed-use development of 113-117 Wigram St and 23-29 Hassall St was proposed comprising retail outlets, residential apartments and a multi-storey underground car park.

This site is located adjacent to and north of Clay Cliff Creek.

The objective of the study was to address the overall conclusions of Council's Peer Reviewer as documented in a memorandum dated 21 October 2013.

A 1D/2D assessment of flooding in the vicinity of the site was undertaken to define flood behaviour and to assess the impacts if any of the proposed development using a modified version of the 1D/2D XP-SWMM floodplain model. The 1D/2D floodplain model included the floodplain of Clay Cliff Creek up to the Railway Line and a reach of the Parramatta River.

2.5 2017 Flooding Assessments, Anderson St, Parramatta

As discussed in the flooding advice dated 1 March 2017, Cardno has undertaken a number of flood impact assessments in the vicinity of the development site using a 1D/2D XP-SWMM floodplain model of the Clay Cliff Creek floodplain which incorporates a number of approved development in the area. The 1D/2D XP-SWMM floodplain model has been progressively amended and used to assess the impact of several proposed developments on Church St, Parramatta.

A review was undertaken to assess the suitability or otherwise of the formally adopted flood levels from the Lower Parramatta River Flood Study for setting the flood planning level for 18-40 Anderson St, Parramatta and whether the flood levels estimated by the 1D/2D XP-SWMM floodplain model provide a more accurate estimate of design flood levels and flood hazards in the vicinity of the development site.

It was concluded that while the flood extents estimated by the 1D/2D XP-SWMM floodplain model differ significantly from the flood extents mapped by Council in the vicinity of the Anderson St / Parkes St intersection the estimated 100 yr ARI flood level in Anderson St (Parkes_Anderson 85) are almost identical. Consequently the flood planning level for development of 18-40 Anderson St is expected to be the same irrespective of which model is adopted.

3 Flooding Assessment

Since 2007 Cardno has updated the 1D/2D XP-SWMM model to simulate the flood behaviour for the 1% AEP and Probable Maximum Flood (PMF) under existing conditions. The updates to the model have included:

- Inclusion of the Ollie Webb Reserve detention basin ground levels and hydraulic structures;
- Update to the geometry of the Clay Cliff Creek channel according to ground survey;
- Generation of a local 1 m grid of the topography for the site using ground survey of both 57-83 Church Street and the Trivett site; and
- Update of the drainage system geometry according to the ground survey of both 57-83 Church Street and the Trivett site.

Pits, pipes and the Clay Cliff Creek channel were updated in the model as 1D elements. Flows that exceeded the capacity of the 1D element were conveyed as overland flows across the 2D model terrain to assess the extent, depth and provisional hazard of overland flows. The Probable Maximum Precipitation was calculated using the General Short Duration Method devised by the Bureau of Meteorology.

Further updates to the model were made in 2015 to ensure an accurate representation of local conditions, as observed at the site inspection. Ground survey for 5-7 Parkes St, 20 Anderson St (Holiday Inn), and Jubilee Park was used to update the ground surface (topography and roughness) of the hydraulic model in the vicinity of the development site.

While the flood extents estimated by the XP-SWMM floodplain model differ significantly from the flood extents mapped by Council in the vicinity of the Anderson St / Parkes St intersection the estimated 100 yr ARI flood level in Anderson St (Parkes_Anderson 85) are almost identical. Consequently the flood planning level for development of 18-40 Anderson St is expected to be the same irrespective of which model is adopted.

Consequently the flood impact assessment of planned concept development of the site (18-40 Anderson St) was undertaken using the 1D/2D XP-SWMM floodplain model which is based on more recent data than was available at the time of the 2005 MIKE-11 study.

3.1 Existing Conditions

3.1.1 Model Configuration

The floodplain model which was used for assessment purposes was an updated version of the 2007 Clay Cliff Creek model recently used in 2017 to assess the impacts of planned concept development on 5-7 Parkes St, Parramatta.

3.1.2 Terrain

The Digital Terrain Model (DTM) adopted for the floodplain model represents the ground surface elevations and blockages to flow caused by buildings. Ground survey for 18-40 Anderson St (Holiday Inn), 5-7 Parkes St and Jubilee Park was used to update the ground surface (topography and roughness) of the hydraulic model in the vicinity of the development site.

3.1.3 Roughness

The roughness zones in the vicinity of the site are plotted in **Figure 4** and were guided by the roughness values previously adopted in the 2007 Clay Cliff Creek catchment study.

3.1.4 Results

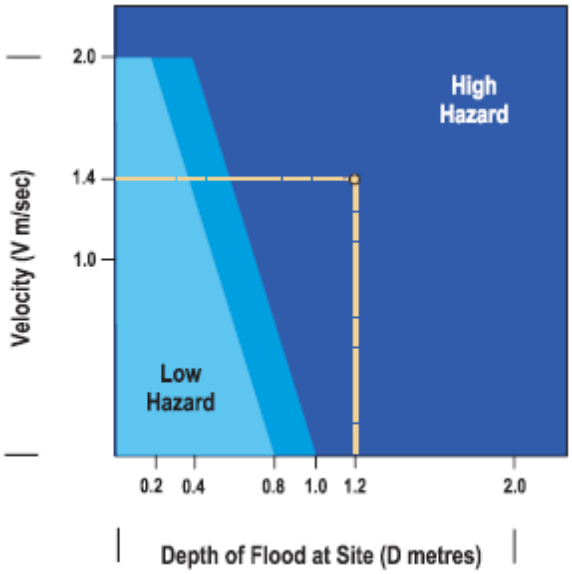
The estimated 1% AEP flood levels and extent, depths and velocities under Existing Conditions are plotted in **Figures 5, 6** and **7** respectively.

When considering pedestrian and vehicular stability, three velocity x depth criteria were identified as follows:

Velocity x Depth	Comment
≤ 0.4 m^2/s	This is typically adopted by Councils as a limit of stability for pedestrians
0.4 – 0.6 m^2/s	Unsafe for pedestrians but safe for vehicles if overland flood depths do not exceed around 0.3 m
> 0.6 m^2/s	This is typically adopted by Councils as a limit of stability for vehicles

The estimated 1% AEP velocity x depth under Existing Conditions is plotted in **Figure 8.**

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



Provisional Hazard Categories (after Figure L2, NSW Government, 2005)

To use the diagram, it is necessary to know the average depth and velocity of floodwaters at a given location. If the product of depth and velocity exceeds a critical value (as shown below), the flood flow will create a **high hazard** to life and property. There will probably be danger to persons caught in the floodwaters, and possible structural damage. Evacuation of persons would be difficult. By contrast, in **low hazard** areas people and their possessions can be evacuated safely by trucks. Between the two categories a transition zone is defined in which the degree of hazard is dependent on site conditions and the nature of the proposed development. This calculation leads to a provisional hazard rating. The provisional hazard rating may be modified by consideration of effective flood warning times, the rate of rise of floodwaters, duration of flooding and ease or otherwise of evacuation in times of flood. The estimated 1% AEP provisional flood hazard under updated Existing Conditions is plotted in **Figure 9.**

The estimated PMF levels and extent, depths, velocities, velocity x depth and hazards under Existing Conditions are plotted in **Figures 10, 11, 12, 13** and **14** respectively. It is noted that the PMF levels are based on the 60 minute PMP storm which is critical for the Clay Cliff Creek catchment not the 4 hour PMP storm which is critical for the Parramatta River.

Based on the results of the assessments of 1% AEP and PMF flooding the flood risk precincts are identified in **Figure 15**.

3.2 Future Conditions

The planning proposal has been amended based on consideration of flooding and the flood hazards mapped by Council and presented in **Figures 2** and **3**. In these figures it is noted that Council has mapped an area of inundation only in events greater than a 100 yr ARI flood with an associated Low Hazard in the southeast corner of the property as well as an area of Low Hazard adjacent to the northeast corner of the property. To facilitate access by emergency services and/or evacuation of any hotel staff and guests, retail staff, residents and/or visitors in a 100 yr ARI flood an elevated podium and open concourse would be constructed at the Flood Planning Level (11.25 m AHD). In the southern part of the property the current car parking building would be replaced by open space which would be regraded from the existing ground levels along the property boundaries up to the podium level. The covered section of Clay Cliff Creek would be retained to facilitate the earthworks and landscaping in this area. The path from the podium to Jubilee Land will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

Alternatively access to/from the site could be via the Low Hazard zone which connects to the northeast corner of the property.

An amended ground floor concept planning proposal layout is presented in **Figure 16**.

The hydraulic features of the concept planning proposal layout are summarised in **Figure 17** and are discussed as follows.

(i) Flood flow through the property is consolidated in an east-west corridor located in the centre of the property. Under day-today operations any residents and/or visitors and/or retail staff can access the external podium level by open stairs (notionally 15 m wide) located on the eastern and western sides of the podium. These stairs will have open risers to permit floodwaters to pass through the stairs and to flow under the podium. The potential impedance to flow of the open stairs is represented in the model as walls with 50% porosity;

(ii) Ramps are also proposed on the sides of the main concourse. While these ramps are intended to have a void beneath each ramp these ramps are represented in the model as partial blockouts where the ramps is inundated by floodwaters in a 1% AEP flood;

(iii) To ensure there is ample flow conveyance below the podium it is also proposed to create 6 m wide voids on the northern and southern sides of the main concourse. Access to these voids would be prevented by installing vertical bar screens on the edge of the buildings. The potential impedance to flow of the bar screens is represented in the model as walls with 90% porosity;

(iv) The remaining areas of the proposed development outside the central east-west corridor were blocked-out in the floodplain model;

(v) In the southern part of the property the current car parking building would be replaced by open space/park which would be regraded from the existing ground levels along the property boundaries up to the podium level. This regraded area was represented in the model in the 2D terrain;

(vi) Under current conditions there is a small open section of the Clay Cliff Creek channel located immediately west of Anderson St at the southern end of the property. This open section of channel is retained in the future conditions model;

(vii) The capacity of the covered section of Clay Cliff Creek is supplemented by a grated inlet on the Anderson St boundary discharging overland flow into a single 1050 mm diameter RCP which conveys flows parallel to Clay Cliff Creek and discharges flow back into the open section of the channel in the vicinity of the eastern boundary.

3.2.1 Planning Proposal Terrain

The Digital Terrain Model (DTM) adopted for Existing Conditions was modified as outlined above.

3.2.2 Planning Proposal Roughness

The roughness zones in the vicinity of the site are plotted in **Figure 18** and were guided by the roughness values previously adopted in the 2007 Clay Cliff Creek catchment study.

3.2.3 Results

The estimated 1% AEP flood levels and extent, depths, velocities, velocity x depth and hazards under the amended Planning Proposal Conditions are plotted in **Figures 19, 21, 22, 23** and **24** respectively.

3.3 Peak Flood Levels

Council's Flood Map (**Figure 1**) indicated the following peak flood levels (at Parkes_Anderson 85):

- 5% AEP: 10.52 m AHD;
- 1% AEP: 10.74 m AHD; and
- PMF: 12.97 m AHD

The flood modelling of existing and concept future site conditions completed as described in **Sections 3.1** and **3.2** estimated the following peak flood levels:

- 1% AEP: 10.75 m AHD; and
- PMF: 11.0 m AHD

The 1% AEP flood level adopted for the review of the development floor levels is 10.75 m AHD.

It is noted that PMF level estimated by the XP-SWMM model is lower than the PMF level adopted by Council. This may be due to the assessment of the 1 hour PMP storm burst which is critical to the Clay Cliff Creek catchment not the 4 hour PMP storm burst which is critical to the Parramatta River catchment. For the purpose of flood emergency management Council's higher PMF level was adopted when considering the amended planning proposal.

3.4 Flood Impact Assessment

3.4.1 Amended Planning Proposal

The estimated 1% AEP flood level differences under the amended Planning Proposal Conditions in comparison with Existing Conditions are plotted in **Figure 20**. It is concluded that the concept planned development has a negligible adverse impact on 1% AEP flood levels.

Under the amended Planning Proposal Conditions the extent of peak flow velocities in a 1% AEP event which exceed 2.0 m/s is greatly reduced in comparison to Existing Conditions with the raised velocity zone located within the central east-west corridor.

Under the amended Planning Proposal Conditions the extent of the zone of velocity x depth which exceeds 0.6 m^2/s is greatly reduced except for a small area along the Clay Cliff Creek flowpath.

Under Existing Conditions the site is largely mapped as provisionally Low Hazard under a 1% AEP flood except for the Clay Cliff Creek flowpath which is primarily mapped as Medium Hazard with a limited area of provisional High Hazard. Under the amended Planning Proposal Conditions the east-west corridor is provisionally mapped as Low Hazard.

3.4.2 Cumulative Development

The cumulate impact of multiple potential developments in the vicinity has been previously represented in the floodplain model assembled during the 2005 Lower Parramatta River Floodplain Study and is already incorporated in the resulting flood levels adopted by Council. In the 2005 floodplain model overland flowpaths are primarily represented as road corridors and any existing or new development on lots or re-development lies outside the modelled flood extents. Council's plotted flood extents are based on extrapolating the calculated flood levels beyond the modelled flood extents. Consequently new development or re-development can't be represented by modification of current cross sections in Council's floodplain model and will not change the flood levels adopted by Council.

4 Flood Risks

The flood risks at and in the vicinity of 18-40 Anderson Street, Parramatta are discussed as follows.

4.1 Flood Levels, Velocities and Hazards

The estimated 1% AEP flood levels and extent, depths, velocities, velocity x depth and hazards under the amended Planning Proposal Conditions are plotted in **Figures 19, 21, 22, 23** and **24** respectively.

4.2 Flood Risk

The flood risk precincts in the vicinity of the site are plotted in **Figure 15**. The site is almost largely mapped as a Medium Flood Risk precinct with a High Flood Risk precinct which aligns with the primary overland flowpath through the site.

The planning proposal has been amended based on consideration of flooding and the flood hazards mapped by Council and presented in **Figure 3**. In this figure it is noted that Council has mapped an area of Low Hazard in the southeast corner of the property as well as an area of Low Hazard adjacent to the northeast corner of the property.

To facilitate access by emergency services and/or evacuation of any retail staff, residents and/or visitors in a 1% AEP flood an elevated podium will be constructed at the Flood Planning Level (11.25 m AHD) which would allow any retail staff, residents and/or visitors to exit the property via the path connecting the podium to Jubilee Lane. In the southern part of the property the current car parking building would be replaced by open space which would be regraded from the existing ground levels along the property boundaries up to the podium level. The path from the podium to Jubilee Land is located in Council's mapped area of Low Hazard.

4.3 Rate of Rise of Floodwaters

To understand the likely warning times and associated response times during extreme flood events it is necessary to estimate the expected rate of rise of floodwaters. At 18-40 Anderson Street, Parramatta the estimated rate of rise of flooding in a PMF event is around 1-2 m/hr.

Features of the planned development include:

- The ground level generally falls from west to east with ground levels on the western boundary varying from 10.09 m AHD – 10.7 m AHD and ground levels on the eastern boundary varying from around 9.76 m AHD to 10.0 m AHD;
- Flood flow through the property is consolidated in a central east-west corridor located in the centre of the property. Under day-today operations any residents and/or visitors and/or retail staff can access the external podium level by open stairs (notionally 15 m wide) located on the eastern and western sides of the podium. These stairs will have open risers to permit floodwaters to pass through the stairs and to flow under the podium;
- To ensure there is ample flow conveyance below the podium, it is also proposed to create 6 m wide voids on the northern and southern sides of the main concourse. Access to these voids would be prevented by installing vertical bar screens on the edge of the buildings;
- Proposed ground floor levels for concept development of 11.25 m AHD which provides 500 mm freeboard above the estimated 1% AEP flood level;
-

- Proposed Level 1 floor levels of the concept development will be higher than the PMF level;
- A crest level of any driveway access from Anderson Street to basement car parking would incorporate not less than 500 mm freeboard above the 1% AEP flood level. Consideration could be also given to including a flood barrier to further delay the ingress of floodwaters into the basement car park in events more extreme than a 1% AEP event;
- If needed the installation of flood proof doors at key locations on the ground floor to prevent the ingress of floodwaters to stairs that provide access to the basement car park levels;
- In the southern part of the property the current car parking building would be replaced by open space which would be regraded from the existing ground levels along the property boundaries up to the podium level. Access by emergency services and/or evacuation of any retail staff, residents and/or visitors in a 1% AEP flood would be via the path connecting the podium to Jubilee Lane. This path is located in Council's mapped area of Low Hazard.

4.4 Duration of Inundation

Depending on the duration of the PMP storm the indicative duration of inundation of the Ground Floor in a PMF is around 1 – 2 hours.

4.5 Persons at Risk (PAR)

The direct Persons at Risk (PAR) during the PMF on the Ground Floor and the car parking levels and the indirect PAR for hotel guests and staff and residents living in apartments at levels higher than the PMF level would be estimated during the preparation of a DA for the site.

5 Emergency Planning

5.1 North West Metropolitan District Disaster Plan

On 27th June 2012 the Interim Version of the "North West Metropolitan District Disaster Plan (Displan)" was endorsed by Chairman, State Emergency Management Committee, The Displan was prepared by the North West Metropolitan District Emergency Management Committee in compliance with Section 23 (1) of the State Emergency and Rescue Management Act, 1989, (as amended). The Parramatta LGA is one of the LGAs covered by this plan.

The Plan details emergency preparedness, response and recovery arrangements for the North West Metropolitan Emergency Management District, Local Emergency Management Areas and local government. It recognises that many of the details contained in the plan are similar to those contained in Local Plans and therefore this Plan may be utilised and applied at a local level in conjunction with a Local Displan.

The Plan's aim is to ensure a controlled response to emergencies by all agencies having responsibilities and functions in emergencies, (Section 12 (2) of the SERM Act), and it reflects and applies in conjunction with arrangements agreed to at State level and detailed in the State Disaster Plan

5.2 Parramatta DISPLAN

The Parramatta Disaster Plan (DISPLAN) released in 2010 details arrangements for preparing for, responding to and recovering from emergencies within the City of Parramatta.

As described in the plan, *it encompasses arrangements for:*

a) Incidents controlled by combat agencies.
b) Emergencies controlled by combat agencies and supported by the Local Emergency Operations Controller.
c) Emergency operations for which there is no combat agency.
d) Circumstances where a combat agency has passed control to the Local Emergency Operations Controller

The area covered by the plan comprises the whole of the City of Parramatta.

The Plan is based upon operation during both normal business hours and outside of normal business hours and takes into consideration special events that may from time to time operate outside and during normal business hours.

Transportation of people will be by either government/private transport or by private vehicle, with numbers and method dependant on circumstances and location of emergency.

Each agency with a statutory role has in place arrangements which detail that agency's response.

Each Emergency Service Organisation and Functional Area has in place an appropriate supporting plan/operational procedures which detail that agency's response.

It is expected that in the Parramatta CBD that Building Owners, Managers and Tenants will be provided with education regarding their responsibilities in both evacuation and general building emergency management.
It is accepted that all buildings where required will have in place a practised Emergency Management Plan in line with AS 3745 and as per NSW OH&S Regulation 2001

Section 23 of the DISPLAN discusses evacuation as follows:

23. EVACUATION

a) The LEOCon, in consultation with the Combat Agency, will determine the need for evacuation.
b) Police will control and coordinate the evacuation of persons to the chosen Safe site or marshalling point and supervise disaster victim registration.
c) Transport resources will be arranged through and coordinated by the transport functional area coordinator, if private vehicles are not available.
d) The LEOCon will determine, in consultation with the Combat Agency, when return of evacuees is possible.

Concept of Operations

The evacuation process is based on a 5 stage process

i) Decision to Evacuate
ii) Warning
iii) Withdrawal
iv) Shelter
v) Return

The concept of operations for an emergency in the Parramatta CBD can be summarised as:

Emergency occurs or is imminent in the CBD:

Buildings may/may not begin self evacuation due to the emergency;
Public transport systems are disrupted, resulting in Transport/Traffic plans being enacted to provide an emergency service;
Emergency Service Agencies begin deployment in accordance with normal arrangements;
An area requiring Evacuation is identified;
When deemed safe to do so, "return" advised through Displan arrangements, and may include some caveats;
Throughout, the Emergency Services and Functional Area agencies continue to deal with the particular emergency.

Withdrawal

If there is a decision to evacuate, or a self evacuation commences, there is a need to follow a process to move people to a place of safety while the status of the transport system is assessed and arrangements are made to move people out of the Parramatta CBD.

The withdrawal stage for the CBD is based on the following philosophy.

Building to Assembly Area (covered by individual building evacuation plans)
Assembly Area to Safe sites in accordance with the CBD evacuation plan or this plan (based on building location) OR
Safe sites in accordance with the CBD evacuation plan or this plan

Control Measures

For the purpose of this plan, the Parramatta CBD has been divided into three (3) zones (refer to map on Annexure 2)

- *Ollie Webb Reserve*
- *Macarthur Girls High School*
- *Parramatta Golf Course*

In the event of an emergency which severely disrupts transport and requires an evacuation of an area of the CBD, the control arrangements will recommend business and residents to either:

Stay at Work

This is used for all areas of the CBD (and surrounds) where the public are not directly threatened by the emergency. It may also imply that public transport may be affected and/or may not be available. This message is intended to stop or reduce the incidence of the public rushing to transport sites or exiting by private vehicles, thus allowing time for transport/traffic services to be re-established.

Stay at Work protocols assist in achieving a desired response for business and residents in the areas of the CBD unaffected by the emergency, such as:

> *To carry on normal business;*
> *Advise staff and others on their site that an emergency has resulted in a disruption to public and private transport, and to allow for communication updates.*

Shelter in Place

This is used when it is assessed that for safety of the occupants of a building(s) or for control reasons, it is safer for occupants to remain in the building than to be on the streets. The time required to Shelter in Place will depend on the nature of the emergency.

CBD Residents/Permanent and Temporary

People who live in the area to be evacuated and those from temporary accommodation (hotels etc), will be directed to an Evacuation Centre (Refer to Parramatta Displan Sections 6.8. 1) and if necessary to temporary accommodation under the control of the Department of Community Services as per DISPLAN arrangements.

Commuters

People who are evacuated to their residence (as per a normal business day) will not receive further specialist management under this Annexure once their journey has concluded.

Evacuate to Safe Sites or Evacuation Centres

This is used as a control measure to identify those areas that require evacuation for safety and/or control reason. It is the intent to minimize the area of the CBD that is evacuated, noting that some emergencies may require the evacuation of some sections or large sections, if not all of the CBD.

People evacuated to Parramatta safe site will be requested to:

> *Remain in position until further information is available, or*
> *Make their way to other parts of the city and delay their journey home, or Make their way to specific transport terminals for movement out of the city, or Identify themselves if they have specific needs or Move to an Evacuation Centre, or Combinations of the above.*

Support will be provided to people in Safe Sites or Evacuation Centres in accordance with this plan.

Return

LEOCON, in consultation with the combat agency and/or Functional Area, if applicable, will allow the area to be reoccupied when it is safe to do so in accordance with this plan

Building Owners and Managers

It is accepted that Building Owners and Managers in accordance with existing OH&S requirements, the Building Code of Australia and relevant City of Parramatta regulations, are to have a building Emergency Management Plan which complies with the provisions of AS 3745.

It is expected that all building Emergency Management Plans are to contain details of the most relevant Parramatta Safety Site. All wardens trained under the building emergency plan are to be aware of the Parramatta Safety Sites, routes to the site and how to liaise with the building occupants at the site.

It is accepted that all building Emergency Management Plans are to contain detail of how the information regarding an evacuation will be disseminated from the Chief Warden to occupants of the building.

It is noted that a copy of the Parramatta CBD Evacuation Plan was not located in the time available to prepare this advice.

It is noted also that the 2010 Parramatta DISPLAN, states in part that:

i) the intent is to minimize the area of the CBD that is evacuated, noting that some emergencies may require the evacuation of some sections or large sections, if not all of the CBD; and
ii) shelter in place is used when it is assessed that for safety of the occupants of a building(s) or for control reasons that it is safer for occupants to remain in the building than to be on the streets.

It is expected that this is also the intent for the all other areas within the LGA outside the CBD.

5.3 Local Plan

The 2010 Parramatta DISPLAN states that there are no sub-plans or supporting plans.

5.4 Sizing Temporary Flood Refuge

Two primary sources of information were located when considering the size of a temporary flood refuge:

- Building Code of Australia (BCA, 2008)[1]
- US Flood Emergency Management Authority (FEMA, 2000)[2].

As outlined above, the Building Code of Australia (2008) stipulates that an area of public assembly such as halls or theatres should have a maximum density of 1 m^2 per person (BCA, 2008). FEMA, 2000 recommends a minimum of 0.45 m^2 per person for tornado shelters.

In the case of the proposed development a conservative maximum density of 2 m^2 per person has been adopted in view of the length of time visitors and/or residents may be required to shelter in place.

It is expected that this refuge would be provided easily within the proposed hotel and in the publically accessible areas within the other multi-storey buildings which far exceed any expected area of refuge.

[1] Building Codes of Australia (2008 Edition). *Part D Access and Egress. D1.13 Number of Persons Accommodated*

[2] FEMA (2000) *Design and Construction Guidance for Community Shelters*, Federal Emergency Management Agency, Mitigation Directorate, FEMA361, 1st Ed., July 2000

6 Flood Emergency Response

As indicated in the 2010 Parramatta DISPLAN, it is expected that Building Owners and Managers (in accordance with existing OH&S requirements, the Building Code of Australia and relevant City of Parramatta regulations) are to have a building Emergency Management Plan which complies with the provisions of AS 3745.

6.1 Flood Warning

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

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

Other sources of information regarding approaching severe weather conditions which could cause potential flooding at the site including:

- The Bureau of Meteorology through their website (www.bom.gov.au);
- Observation of local rainfall;
- The local SES (http://parramatta-ses.com);
- Parramatta City Council Emergency Management Officer;
- Local television stations; and/or
- Local radio stations.

An important indication of likely imminent flood activity would be intense local rainfall and residents, retail workers and visitors should take notice of extreme rainfall warnings issued by the Bureau of Meteorology and disseminated by local media.

6.2 Draft Flood Emergency Detailed Response Plan

The building Emergency Management Plan will contain a Flood Emergency Detailed Response Plan. It is also expected that all wardens trained under the building emergency plan are to be aware of the flood evacuation site, routes to the site and how to liaise with the any building occupants at the site.

The planning proposal has been amended based on consideration of flooding and the flood hazards mapped by Council and presented in **Figures 2** and **3**. In these figures it is noted that Council has mapped an area of inundation only in events greater than a 100 yr ARI flood with an associated Low Hazard in the southeast corner of the property as well as an area of Low Hazard adjacent to the northeast corner of the property. To facilitate access by emergency services and/or evacuation of any hotel staff and guests, retail staff, residents and/or visitors in a 100 yr ARI flood an elevated podium and open concourse would be constructed at the Flood Planning Level (11.25 m AHD). In the southern part of the property the current car parking building would be replaced by open space which would be regraded from the existing ground levels along the property boundaries up to the podium level.

The covered section of Clay Cliff Creek would be retained to facilitate the earthworks and landscaping in this area. The path from the podium to Jubilee Land will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

It is expected that the short warning times mean that in the case of extreme floods up to the PMF that there would be insufficient time to evacuate any hotel staff, guests, visitors or residents from the site and that instead all persons on site would need to shelter in place. Under these circumstances the expected time that all persons would need to shelter in place would be around 1- 2 hours.

The Flood Emergency Detailed Response Plan (FEDRP) for the proposed development would describe:

- Flood behaviour at the site for the 1% AEP and Probable Maximum Flood (PMF),
- Flood protection measures, and
- A Flood Emergency Response Plan for the site, including:
    - A Flood Warning System
    - Evacuation strategy, measures, procedures and plan
    - FloodSafe Plans

A Flood Emergency Detailed Response Plan would accompany any DA lodged with Council.

An example Table of Contents for a FEDRP is given in **Appendix A**.

7 Assessment of Council Requirements

7.1 Parramatta Local Environment Plan 2011

Section 6.3 of the *Parramatta Local Environment Plan (LEP) 2011* outlines the minimum requirements for land lower than the Flood Planning Level (FPL) which is defined as land the 100 year AR flood level plus 0.5 metre freeboard. The LEP notes development consent should not be granted unless Council is satisfied the development:

(i) is compatible with the flood hazard of the land, and
(ii) is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and
(iii) incorporates appropriate measures to manage risk to life from flood, and
(iv) is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and
(v) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

7.2 Parramatta DCP 2011

Section 2 of the Parramatta DCP 2011 describes site planning considerations including design objectives, design principles and design controls. The development is located in Medium a Flood Risk Precinct (refer **Figure 15**). The concept planning options have been assessed against the planning and development controls that apply to "Tourist Related Development" and to "Residential" in a Medium Flood Risk Precinct. These controls are identified in **Table 4** and are discussed as follows.

Table 4 PCC Floodplain Matrix

Table 2.7: FLOODPLAIN MATRIX

Planning & Development Controls

Planning Consideration	Flood Risk Precincts (FRP's)																										
	Low Flood Risk									Medium Flood Risk									High Flood Risk								
	Sensitive Uses & Facilities	Critical Uses & Facilities	Subdivision	Filling	Residential*	Commercial & Industrial	Tourist Related Development	Open Space & Non-Urban	Concessional Development	Sensitive Uses & Facilities	Critical Uses & Facilities	Subdivision	Filling	Residential*	Commercial & Industrial	Tourist Related Development	Open Space & Non-Urban	Concessional Development	Sensitive Uses & Facilities	Critical Uses & Facilities	Subdivision	Filling	Residential*	Commercial & Industrial	Tourist Related Development	Open Space & Non-Urban	Concessional Development
Floor Level		3			2, 5	2, 5	2, 5							2, 5	2, 5	2, 5	1, 5	4, 5								1, 5	4, 5
Building Components		2												1	1	1	1	1								1	1
Structural Soundness		2												1	1	1	1	1								1	1
Flood Affectation		2	2	1	2	2	2					1		1	1	1	2	1								1	1
Car Parking & Driveway Access		1, 3, 5, 6			1, 3, 5, 6	1, 3, 5, 6	1, 3, 5, 6	2, 4, 6, 7						1, 3, 5, 6, 7	1, 3, 5, 6, 7	1, 3, 5, 6, 7	2, 4, 6, 7	1, 5								2. 4. 6. 7	1, 5
Evacuation		2, 4, 6	5		3, 4	4	4					5, 3, 4		3, 4, 6	3, 4, 6	3, 4, 6	1, 4	3, 6								1, 4	3, 4 6
Management & Design		2, 3, 4	1									1		2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4								2, 3, 4	2, 3, 4

Not Relevant Unsuitable Land Use * For redevelopment of an existing dwelling refer also to ' Concessional Development' provisions

i. Freeboard equals an additional height of 500mm.

ii. The Parramatta LEP 2011 identifies development permissible with consent in various zones. Notwithstanding, constraints specific to individual sites may preclude Council granting consent for certain forms of development on all or part of a site. The above matrix identifies where flood risks are likely to determine where certain development types will be considered "unsuitable" due to flood related risks.

iii. Filling of the site, where acceptable to Council, may change the FRP considered to determine the controls applied in the circumstances of individual applications.

iv. Any fencing that forms part of a proposed development is subject to the relevant Flood Effects and Structural Soundness planning considerations of the applicable land use category.

v. Development within the floodplain may be subject to Clause 6.7 Foreshore Building Line in the Parramatta LEP 2011.

Floor Level	
1	All floor levels to be equal to or greater than the 20 year Average Recurrence Interval (ARI) flood level plus freeboard
2	Habitable floor levels to be equal to or greater than the 100 year ARI flood level plus freeboard.
3	All floor levels to be equal to or greater than the Probable Maximum Flood (PMF) level plus freeboard
4	Floor levels to be equal to or greater than the 100 year ARI flood level plus freeboard. Where this is not practical due to compatibility with the height of adjacent buildings, or compatibility with the floor level of existing buildings, or the need for access for persons with disabilities, a lower floor level may be considered. In these circumstances, the floor level is to be as high as practical, and, when undertaking alternations or additions, no lower than the existing floor level.
5	A restriction is to be placed on the title of the land, pursuant to S.88B of the Conveyancing Act, where the lowest habitable floor area is elevated more than 1.5m above finished ground level, confirming that the subfloor space is not to be enclosed.
Building Components & Method	
1	All structures to have flood compatible building components below the 100 year ARI flood level plus freeboard.
2	All structures to have flood compatible building components below the PMF.
Structural Soundness	
1	An engineers report is required to certify that the structure can withstand the forces of floodwater, debris and buoyancy up to and including a 100 year ARI flood level plus freeboard.
2	An engineers report is required to certify that the structure can withstand the forces of floodwater, debris and buoyancy up to and including a PMF level.
Flood Affectation	
1	An engineers report is required to certify that the development will not increase flood affectation eleswhere, having regard to: (i) loss of flood storage; (ii) changes in flood levels, flows and velocities caused by alterations to flood flows; and (iii) the cumulate impact of multiple potential developments in the vicinity.
2	The impact of the development on flooding elsewhere to be considered having regard to the three factors listed in consideration 1 above.
Car Parking and Driveway Access	
1	The minimum surface level of open spaces or carports shall be as high as practical, but no lower than 0.1m below the 100 year ARI flood level. In the case of garages, the minimum surface level shall be as high as practical, but no lower than the 100 year ARI flood level.
2	The minimum surface level of open parking spaces or carports shall be as high as practical, but no lower than 0.3m above the 20 year ARI flood level.
3	Garages capable of accommodating more than 3 motor vehicles on land zones for urban purposes, or enclosed car parking, must be protected from inundation by floods equal to or greater than the 100 year ARI flood. Ramp levels to be no lower than 0.5m above the 100 year ARI flood level.
4	The driveway providing access between the road and parking spaces shall be as high as practical and generally rising in the egress direction.
5	The level of the driveway providing access between the road and parking spaces shall be no lower than 0.2m below the 100 year ARI flood level.
6	Enclosed car parking and car parking areas accommodating more than 3 vehicles, with a floor below the 100 year ARI flood level, shall have adequate warning systems, signage, exits and evacuation routes.
7	Restraints or vehicle barriers to be provided to prevent floating vehicles leaving a site during a 100 year ARI flood.
Evacuation	
1	Reliable access for pedestrians required during a 20 year ARI peak flood.
2	Reliable access for pedestrians and vehicles required to a publicly accessible location during the PMF peak flood.
3	Reliable access for pedestrians and vehicles is required from the site to an area of refuge above the PMF level, either on site (eg. second storey) or off site.
4	Applicant is to demonstrate the development is consistent with any relevant flood evacuation strategy or similar plan.
5	Applicant is to demonstrate that evacuation in accordance with the requirements of this DCP is available for the potential development resulting from the subdivision.
6	Adequate flood warning is available to allow safe and orderly evacuation without increased reliance upon SES or other authorised emergency services personnel.
Management and Design	
1	Applicant is to demonstrate that potential development as a consequence of a subdivision proposal can be undertaken in accordance with this the relevant FRMS and FRMP
2	Site Emergency Response Flood plan required where the site is affected by the 100 year ARI flood level, (except for single dwelling-houses).
3	Applicant is to demonstrate that area is available to store goods above the 100 year flood level plus freeboard.
4	No storage of materials below the 100 year ARI flood level.

Fl

2. *Habitable floor levels to be equal to or greater than the 100 year ARI flood level plus freeboard*

The proposed floor level of the amended planning proposal is 11.25 m AHD which provides 500 mm freeboard above the estimated 100 yr ARI flood level.

5 *A restriction is to be placed on the title of the land, pursuant to S.886 of the Conveyancing Act, where the lowest habitable floor area is elevated more than 1.5 m above finished ground level, confirming that the subfloor space is not to be enclosed.*

This requirement is noted.

Building Components

1 *All structures to have flood compatible building components below the 100 year ARI flood level plus freeboard.*

It is proposed that flood compatible building components be used in accordance with this requirement.

Structural Soundness

1 *An engineer's report is required to certify that the structure can withstand the forces of floodwater, debris and buoyancy up to and including a 100 year ARI flood level plus freeboard.*

In a 100 year ARI event flooding of the site occurs from overflows from Clay Cliff Creek and overland flows. A statement addressing this issue will be prepared separately by a Principal Structural Engineer and would accompany any DA lodged with Council.

Flood Affectation

1 *An engineer's report is required to certify that the development will not increase flood affectation elsewhere, having regard to: (i) loss of flood storage; (ii) changes in flood levels, flows and velocities caused by alterations to flood flows; and (iii) the cumulate impact of multiple potential developments in the vicinity.*

This report satisfies this requirement.

It is concluded from the plots of flood level difference that the proposed development has a negligible impact on 100 year ARI levels.

Obstructions to flow have been minimised in the amended planning proposal which includes provision to convey flood flow through the property via a 27 m wide east-west corridor located in the centre of the property.

The cumulate impact of multiple potential developments in the vicinity has been previously represented in the floodplain model assembled during the 2005 Lower Parramatta River Floodplain Study and is already incorporated in the resulting flood levels adopted by Council.

Car Parking and Driveway Access

1. *The minimum surface level of open spaces or carports shall be as high as practical, but no lower than 0.1m below the 100 year ARI flood level. In the case of garages, the minimum surface level shall be as high as practical, but no lower than the 100 year ARI flood level.*

   This requirement is not applicable to the proposed concept development.

3. *Garages capable of accommodating more than 3 motor vehicles on land zones for urban purposes, or enclosed car parking, must be protected from inundation by floods equal to or greater than the 100 year ARI flood. Ramp levels to be no lower than 0.5 m above the 100 year ARI flood level.*

   A crest level of any driveway access from Anderson Street to basement car parking would incorporate not less than 500 mm freeboard above the 100 year ARI level. Consideration could be also given to including a flood barrier to further delay the ingress of floodwaters into the basement car park in events more extreme than a 100 yr ARI event.

   If needed the installation of flood proof doors at key locations on the ground floor to prevent the ingress of floodwaters to stairs that provide access to the basement car park levels.

5. *The level of the driveway providing access between the road and parking spaces shall be no lower than 0.2 m below the 100 year ARI flood level.*

   This requirement is noted.

6. *Enclosed car parking and car parking areas accommodating more than 3 vehicles, with a floor below the 100 year ARI flood level, shall have adequate warning systems, signage, exits and evacuation routes.*

   These systems and information are to be incorporated in the building emergency plan.

7. *Restraints or vehicle barriers to be provided to prevent floating vehicles leaving a site during a 100 year ARI flood.*

   While this requirement is noted it is not expected to be an issue for the proposed concept development because all parking is most likely located underground within the multi-storey car park and any vehicles which are floated by floodwaters will be trapped within the basement levels.

Evacuation

3 *Reliable access for pedestrians and vehicles is required from the site to an area of refuge above the PMF level, either on site (eg. second storey) or off site.*

   To facilitate access by emergency services and/or evacuation of any hotel staff and guests, retail staff, residents and/or visitors in a 100 yr ARI flood an elevated podium and open concourse would be constructed at the Flood Planning Level (11.25 m AHD). In the southern part of the property the current car parking building would be replaced by open space which would be regraded from the existing ground levels along the property boundaries up to the podium level.

The covered section of Clay Cliff Creek would be retained to facilitate the earthworks and landscaping in this area. The path from the podium to Jubilee Land will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

It is expected that the short warning times mean that in the case of extreme floods up to the PMF that there would be insufficient time to evacuate any hotel staff, guests, visitors or residents from the site and that instead all persons on site would need to shelter in place. Under these circumstances the expected time that all persons would need to shelter in place would be around 1- 2 hours.

4 *Applicant to demonstrate the development is consistent with any relevant flood evacuation strategy or similar plan.*

Discussed in Section 5 of this report. A Flood Emergency Detailed Response Plan would accompany any DA lodged with Council.

6 *Adequate flood warning is available to allow safe and orderly evacuation without increased reliance upon SES or other authorised emergency services personnel.*

Discussed in Section 6 of this report. A separate draft Flood Emergency Detailed Response Plan (FEDRP) would accompany any DA lodged with Council.

Management & Design

2 *Site Emergency Response Flood plan required where the site is affected by the 100 year ARI flood level, (except for single dwelling-houses).*

A separate draft Flood Emergency Detailed Response Plan (FEDRP) would accompany any DA lodged with Council. It would describe:

- Flood behaviour at the site for the 1% Average Exceedance Probability (AEP) and Probable Maximum Flood (PMF),
- Flood protection measures, and
- A Flood Emergency Response Plan for the site, including:
  - A Flood Warning System
  - Evacuation strategy, measures, procedures and plan
  - FloodSafe Plans

3 *Applicant is to demonstrate that area is available to store goods above the 100 year flood level plus freeboard.*

All commercial outlets and residential floor levels are above the 100 year flood level plus freeboard.

4 *No storage of materials below the 100 year ARI flood level.*

This requirement is noted.

It is concluded that the merit assessment of the amended planning proposal detailed above and the recommendations given in Section 6 that the amended planning proposal is capable of satisfying the requirements of the Parramatta DCP 2011.

7.3 Section 117(2) of the EP&A Act 1979, Section 4.3 Flood Prone Land

Drawing on the preceding assessments and considerations the following responses to considerations under Section 117(2) of the EP&A Act 1979, Section 4.3 Flood Prone Land are provided:

Objectives

(1) The objectives of this direction are:

(a) to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005, and

(b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.

What a relevant planning authority must do if this direction applies

(4) A planning proposal must include provisions that give effect to and are consistent with the NSW Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005 (including the Guideline on Development Controls on Low Flood Risk Areas).

Flood risk can be defined as being existing, future or residual risk:

- **Existing flood risk** - the existing problem refers to existing buildings and developments on flood prone land. Such buildings and development by virtue of their presence and location are exposed to an 'existing' risk of flooding.
- **Future flood risk** - the future problem refers to buildings and developments that may be built on flood prone land in the future. Such buildings and developments may be exposed to a 'future' flood risk, i.e. a risk would not materialise until the developments occur.
- **Continuing risk of flooding** - the continuing problem refers to the 'residual' risk associated with floods that exceed management measures already in place, i.e. unless a floodplain management measure is designed to withstand the Probable Maximum Flood, it will be exceeded by a sufficiently large flood at some time in the future.

Measures available for the management of flood risk can be categorised according to the way in which the risk is managed. As a result, there are three types of measures for the management of flooding:

- Flood Modification Measures (for the existing risk)
- Property Modification Measures (for the future risk)
- Emergency Response Modification Measures (for the residual risk).

The flood risks on 18-40 Anderson Street, Parramatta are described in **Section 4** above.

Existing Flood Risk

The existing flood risks on 18-40 Anderson Street, Parramatta has been assessed using a 1D/2D floodplain model and are described in Section 3.1 above.

Future Flood Risk

The future flood risks on 18-40 Anderson Street, Parramatta under the amended planning proposal have been assessed using a 1D/2D floodplain model and are described in Section 3.2.

The future flood risk is addressed by amended planning proposal achieving and/or exceeding the requirements of the Parramatta LEP 2011 and the Parramatta DCP 2011 as discussed in Section 7.2 and by providing measures for the passage of floodwaters through the site.

Continuing Flood Risk

The only occupants directly at risk would be hotel staff, guests, retail staff, residents and/or visitors located on the ground floor. All other hotel staff, guests or visitors or residents would be indirectly at risk during extreme floods up to the PMF.

As indicated in Section 6.2, it is expected that Building Owners and Managers (in accordance with existing OH&S requirements, the Building Code of Australia and relevant City of Parramatta regulations) are to have a building Emergency Management Plan which complies with the provisions of AS 3745.

The building Emergency Management Plan will contain a Flood Emergency Response Plan. It is also expected that all wardens trained under the building emergency plan are to be aware of the flood risks, actions to be undertaken in response to a major flood and how to liaise with the any building occupants on the site.

An example Table of Contents for a FEDRP is given in **Appendix A**.

A detailed Flood Emergency Response Plan would accompany any DA lodged with Council.

(6) A planning proposal must not contain provisions that apply to the flood planning areas which:

(a) permit development in floodway areas,

The 2005 NSW Floodplain Development Manual defines “floodway areas” as follows:

> *“those areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with naturally defined channels. Floodways are areas that, even if only partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.”*

Council’s 2005 assessment of flooding under Existing Conditions identified a single7 m wide floodway area only through the property being the driveway between the hotel building and the current hotel car park building (see below).

Holiday Inn driveway viewed from Anderson St
(MIKE 11 cross section "Church Claycliff 124")

(Source: Google Earth, accessed 22 October 2016)

Under the amended planning proposal Council's floodway area is relocated to the centre of the property and widened to a 27 m wide east-west corridor. This preserves the floodway area through the property. An elevated podium would be constructed at the Flood Planning Level (11.25 m AHD) above the floodway area which would allow any retail staff, residents and/or visitors to cross the floodway area without interacting with 100 yr ARI floodwaters and to exit the property via the path connecting the podium to Jubilee Lane. The path from the podium to Jubilee Land is located in Council's mapped area of Low Hazard

It is therefore concluded that the amended planning proposal preserves and widens the floodway through the property and that the proposed development occurs over the floodway and does not occur in the floodway.

(b) permit development that will result in significant flood impacts to other properties,

The flood impact assessments described in Section 3 demonstrate that the amended planning proposal does not have a significant flood impact on any other property.

(c) permit a significant increase in the development of that land

The only persons directly at risk in floods greater than a 100 yr ARI flood would be hotel staff, guests, retail staff or visitors or residents on the ground floor. All other persons would be indirectly at risk during extreme floods up to the PMF.

As indicated in Section 6.2, it is expected that Building Owners and Managers (in accordance with existing OH&S requirements, the Building Code of Australia and relevant City of Parramatta regulations) are to have a building Emergency Management Plan which complies with the provisions of AS 3745.

The building Emergency Management Plan will contain a Flood Emergency Response Plan. It is also expected that all wardens trained under the building emergency plan are to be aware of the flood risks, actions to be undertaken in response to a major flood and how to liaise with the any building occupants on the site.

An example Table of Contents for a FEDRP is given in **Appendix AB**.

A detailed Flood Emergency Response Plan would accompany any DA lodged with Council.

(d) are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services

The flood impact assessments described in Section 3 demonstrate that the amended planning proposal does not have a significant flood impact on other properties. Consequently there will be no substantially increased requirement for government spending on flood mitigation measures or infrastructure arising from the amended planning proposal.

The amended planning proposal will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

The building Emergency Management Plan will contain a Flood Emergency Detailed Response Plan. It is also expected that all wardens trained under the building emergency plan are to be aware of the flood evacuation site, routes to the site and how to liaise with the any building occupants at the site.

A Flood Emergency Response Plan would accompany any DA lodged with Council.

The implementation of a FERP for the development is not reliant on any requirement for government spending on services.

8 Conclusions

This report details the assessment of the stormwater flooding extent and behaviour under an amended Planning Proposal which has been prepared for a mixed use development of 18 – 40 Anderson Street, Parramatta.

The subject site currently experiences flooding by overflows from Clay Cliff Creek and overland flows. Detailed flood modelling has been completed estimating flood behaviour in existing and future conditions.

The planning proposal has been amended based on consideration of flooding and the flood hazards mapped by Council and presented in **Figures 2** and **3**. In these figures it is noted that Council has mapped an area of inundation only in events greater than a 100 yr ARI flood with an associated Low Hazard in the southeast corner of the property as well as an area of Low Hazard adjacent to the northeast corner of the property. To facilitate access by emergency services and/or evacuation of any hotel staff and guests, retail staff, residents and/or visitors in a 100 yr ARI flood an elevated podium and open concourse would be constructed at the Flood Planning Level (11.25 m AHD). In the southern part of the property the current car parking building would be replaced by open space which would be regraded from the existing ground levels along the property boundaries up to the podium level. The covered section of Clay Cliff Creek would be retained to facilitate the earthworks and landscaping in this area. The path from the podium to Jubilee Land will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

Alternatively access to/from the site could be via the Low Hazard zone which connects to the northeast corner of the property.

An amended ground floor concept planning proposal layout is presented in **Figure 16**. The hydraulic features of the concept planning proposal layout include.

(viii) Flood flow through the property is consolidated in an east-west corridor located in the centre of the property. Under day-today operations any residents and/or visitors and/or retail staff can access the external podium level by open stairs (notionally 15 m wide) located on the eastern and western sides of the podium. These stairs will have open risers to permit floodwaters to pass through the stairs and to flow under the podium;

(ix) Access ramps are proposed on the sides of the main concourse;

(x) To ensure there is ample flow conveyance below the podium it is also proposed to create 6 m wide voids on the northern and southern sides of the main concourse. Access to these voids would be prevented by installing vertical bar screens on the edge of the buildings;

(xi) In the southern part of the property the current car parking building would be replaced by open space/park which would be regraded from the existing ground levels along the property boundaries up to the podium level;

(xii) Under current conditions there is a small open section of the Clay Cliff Creek channel located immediately west of Anderson St at the southern end of the property. This open section of channel remains;

(xiii) The capacity of the covered section of Clay Cliff Creek is supplemented by a grated inlet on the Anderson St boundary discharging overland flow into a single 1050 mm diameter RCP which conveys flows parallel to Clay Cliff Creek and discharges flow back into the open section of the channel in the vicinity of the eastern boundary.

(xiv) A crest level of any driveway access from Anderson Street to basement car parking would incorporate not less than 500 mm freeboard above the 100 year ARI level. Consideration could be also given to including a flood barrier to further delay the ingress of floodwaters into the basement car park in events more extreme than a 100 y

The amended planning proposal will provide any hotel staff and guests, retail staff, residents and/or visitors with flood-free access to Jubilee Lane in a 100 yr ARI flood.

It is expected that the short warning times mean that in the case of extreme floods up to the PMF that there would be insufficient time to evacuate any hotel staff, guests, visitors or residents from the site and that instead all persons on site would need to shelter in place. Under these circumstances the expected time that all persons would need to shelter in place would be around 1- 2 hours.

It is concluded that the merit assessment of the amended planning proposal detailed above and the recommendations given in Section 6 that the amended planning proposal is capable of satisfying the requirements of the Parramatta DCP 2011.

Based on the preceding assessments and considerations discussed in Section 7.3 it is concluded that the amended planning proposal complies with the considerations under Section 117(2) of the EP&A Act 1979, Section 4.3 Flood Prone Land.

9 References

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FEMA (2000) *Design and Construction Guidance for Community Shelters*, Federal Emergency Management Agency, Mitigation Directorate, FEMA361, 1st Ed., July 2000.

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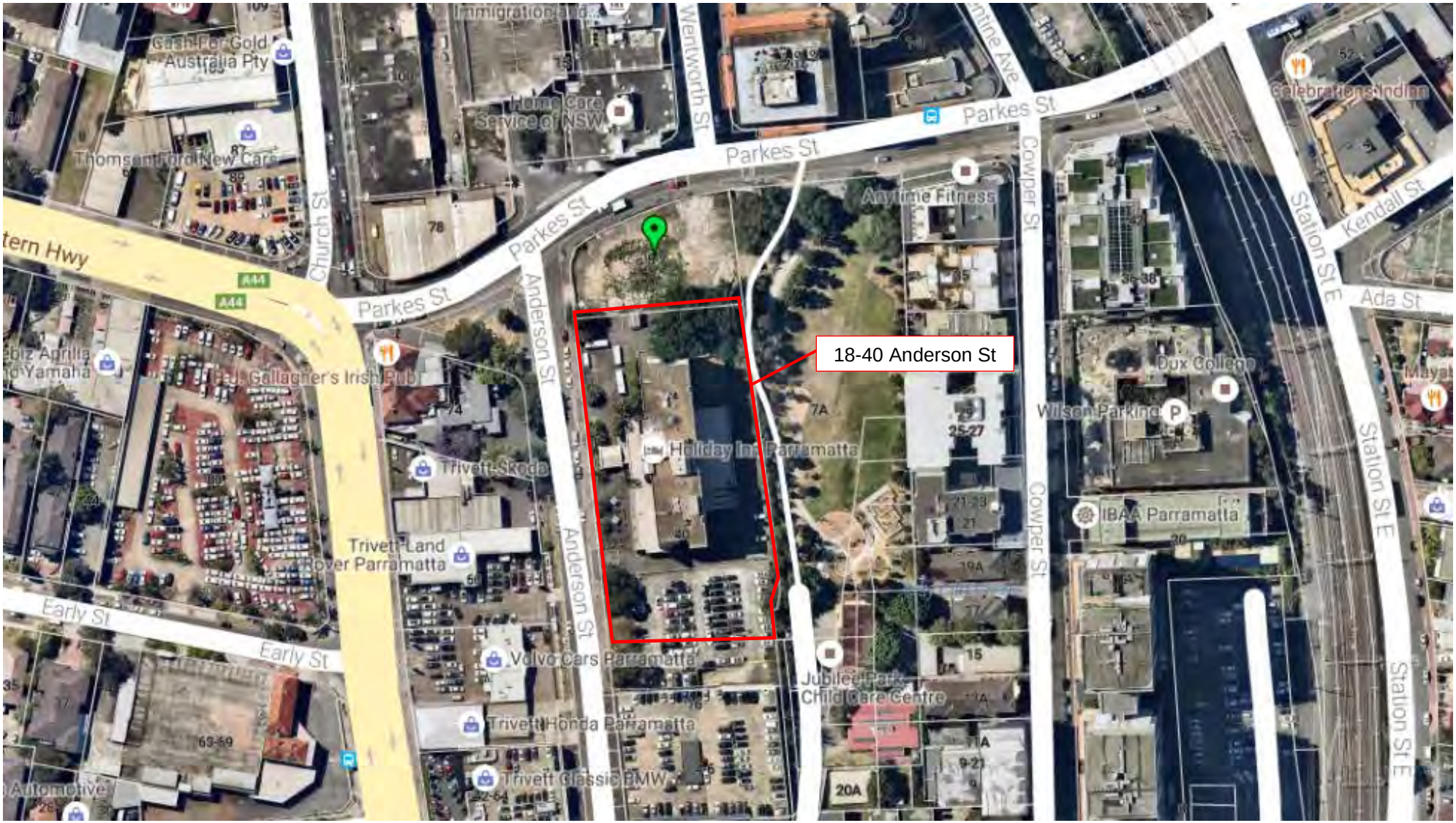
Parramatta Local Emergency Management Committee (2010) “*Parramatta Local Disaster Plan*”.

SKM (2005) “Lower Parramatta River Floodplain Risk Management Study, Flood Study Review”, *Final Report*, prepared for Parramatta City Council, March.



(Source: Nearmap accessed 2 December, 2016)

Figure 1 Location of 18-40 Anderson St, Parramatta

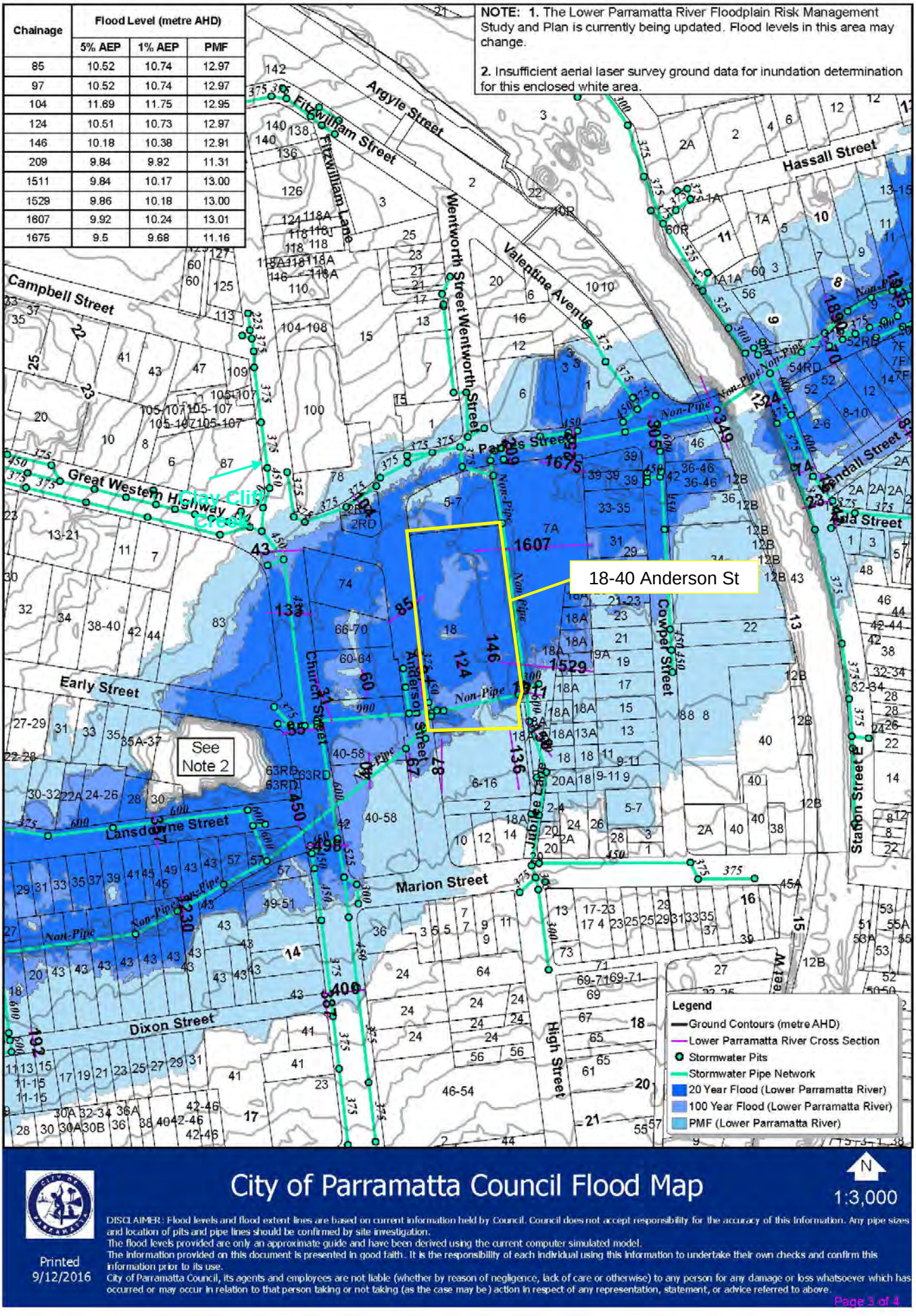


Figure 2 Parramatta City Council Flood Map (Source: Parramatta City Council)

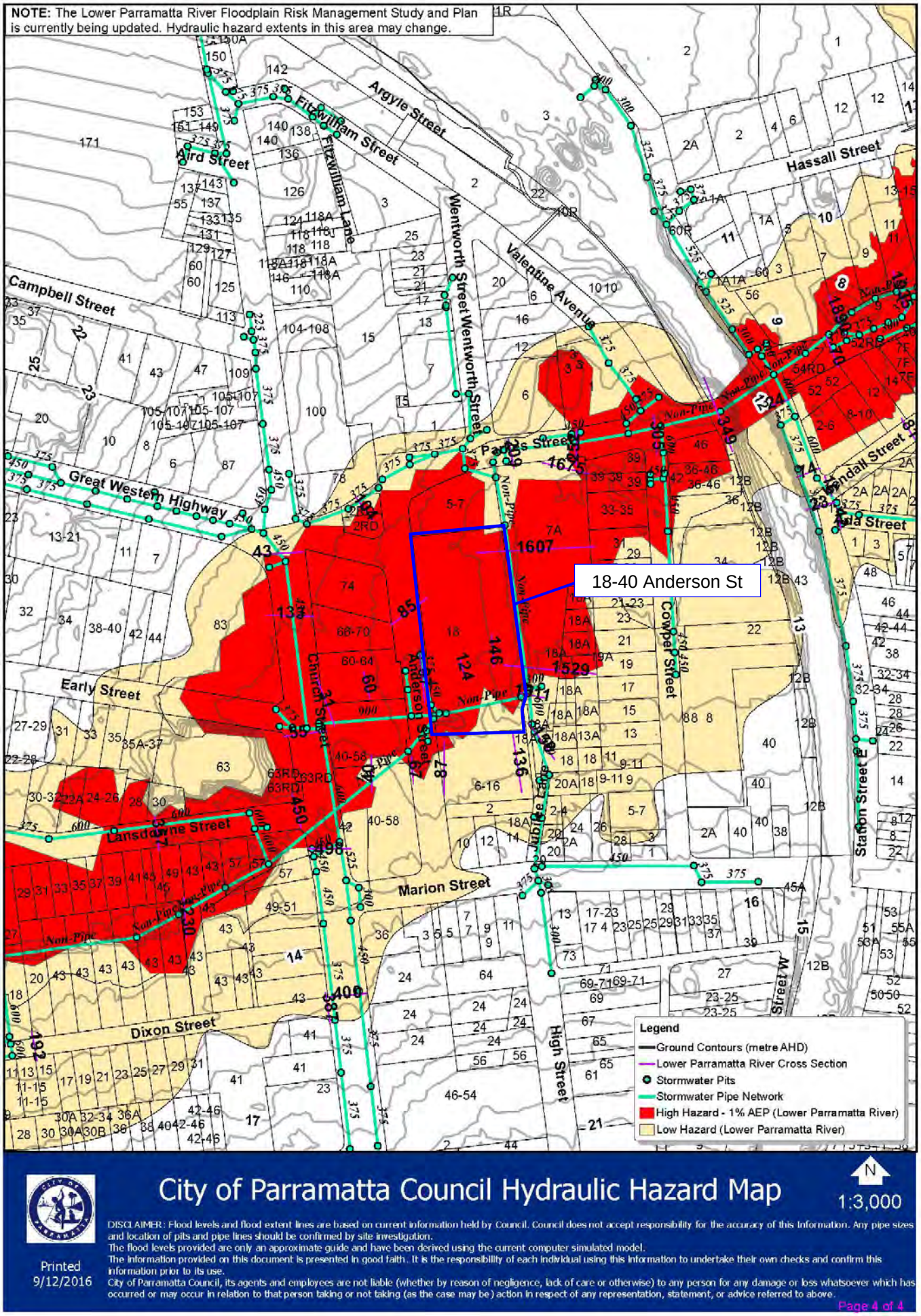


Figure 3 Parramatta City Council Hydraulic Hazard Map (Source: Parramatta City Council)

Figure 4 Floodplain Roughness under Existing Conditions

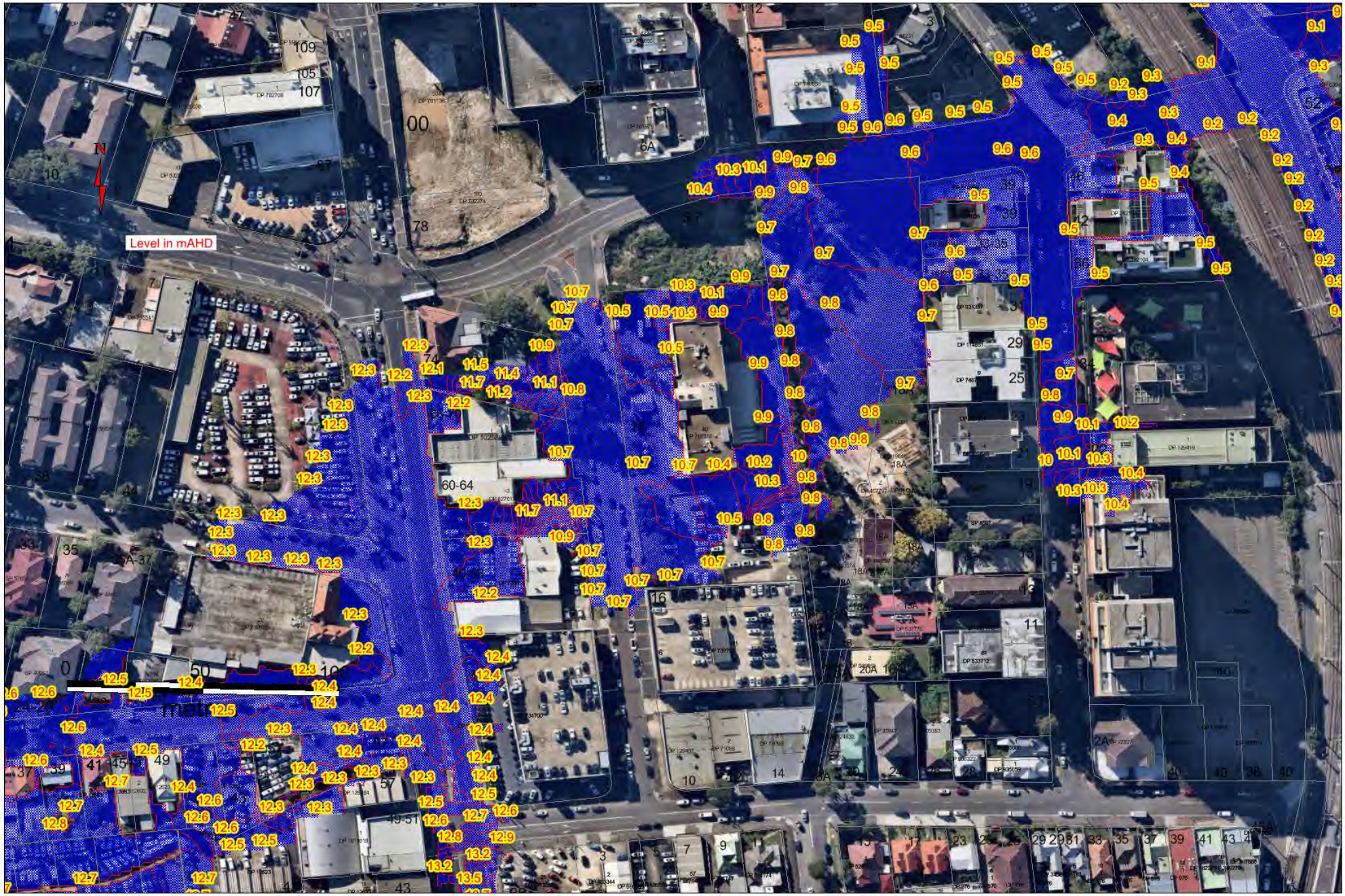


Figure 5 1% AEP Flood Extents and Flood Levels - Existing Conditions

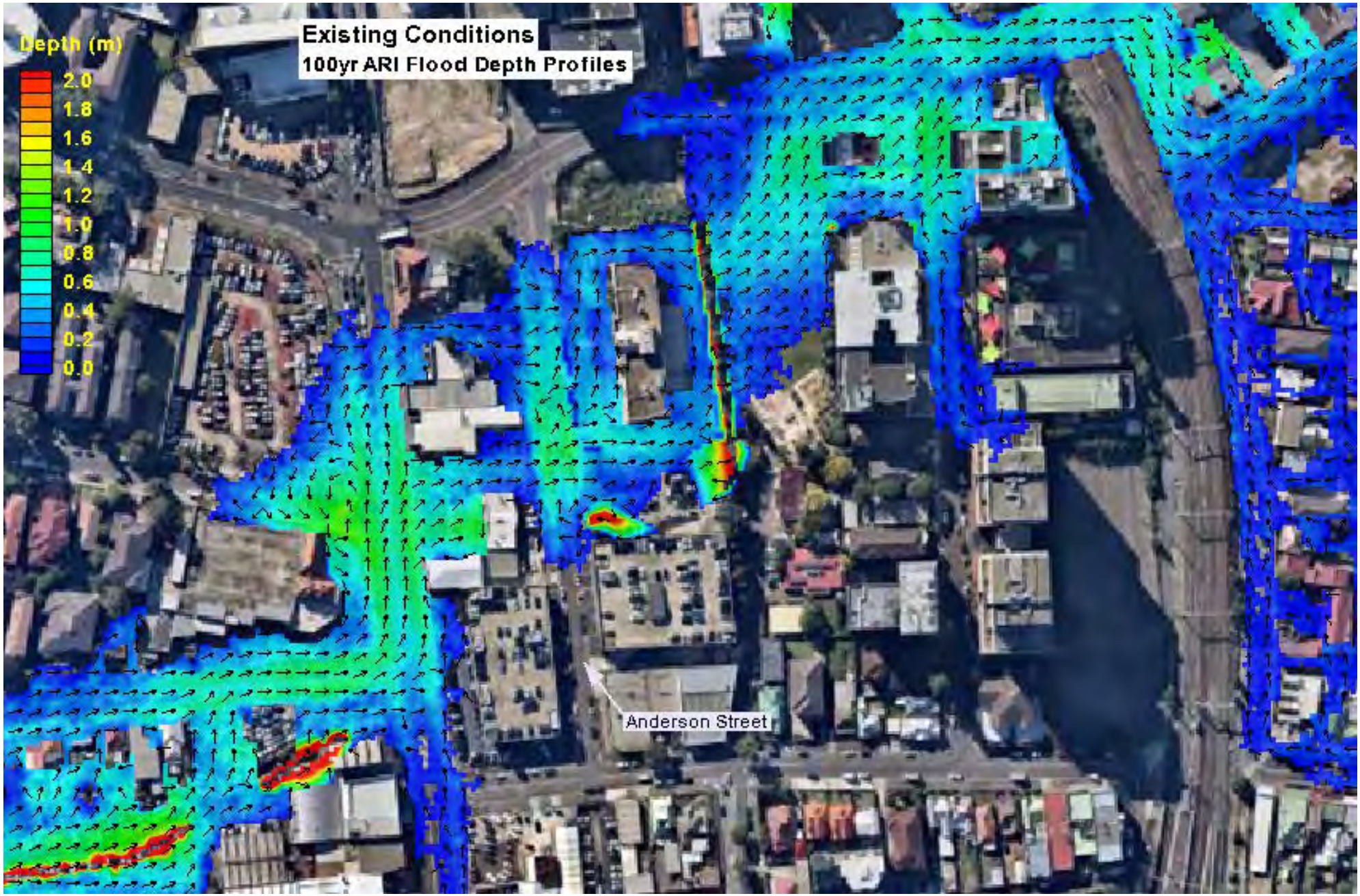


Figure 6 1% AEP Flood Depths - Existing Conditions

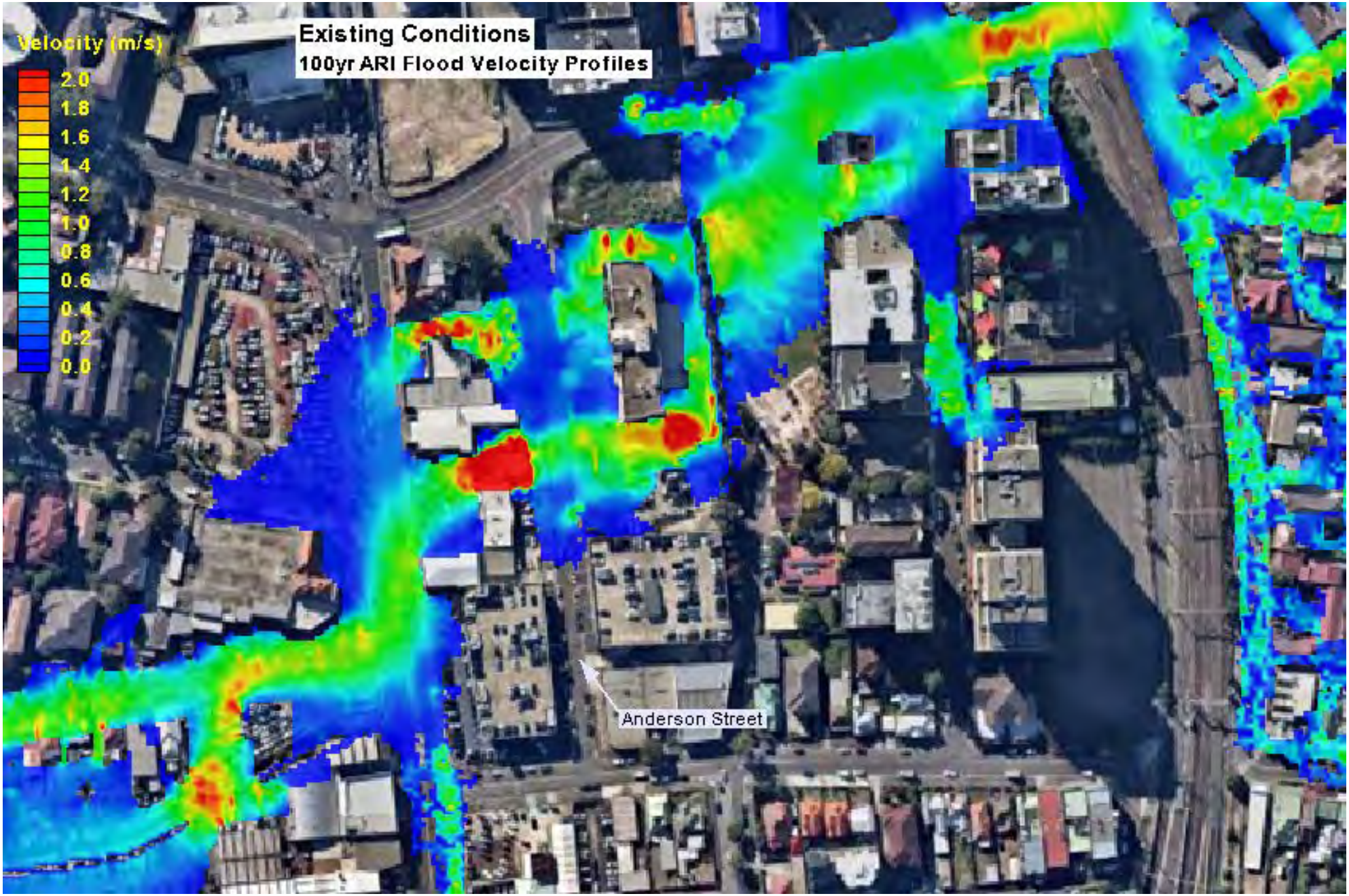


Figure 7 1% AEP Flood Velocities - Existing Conditions

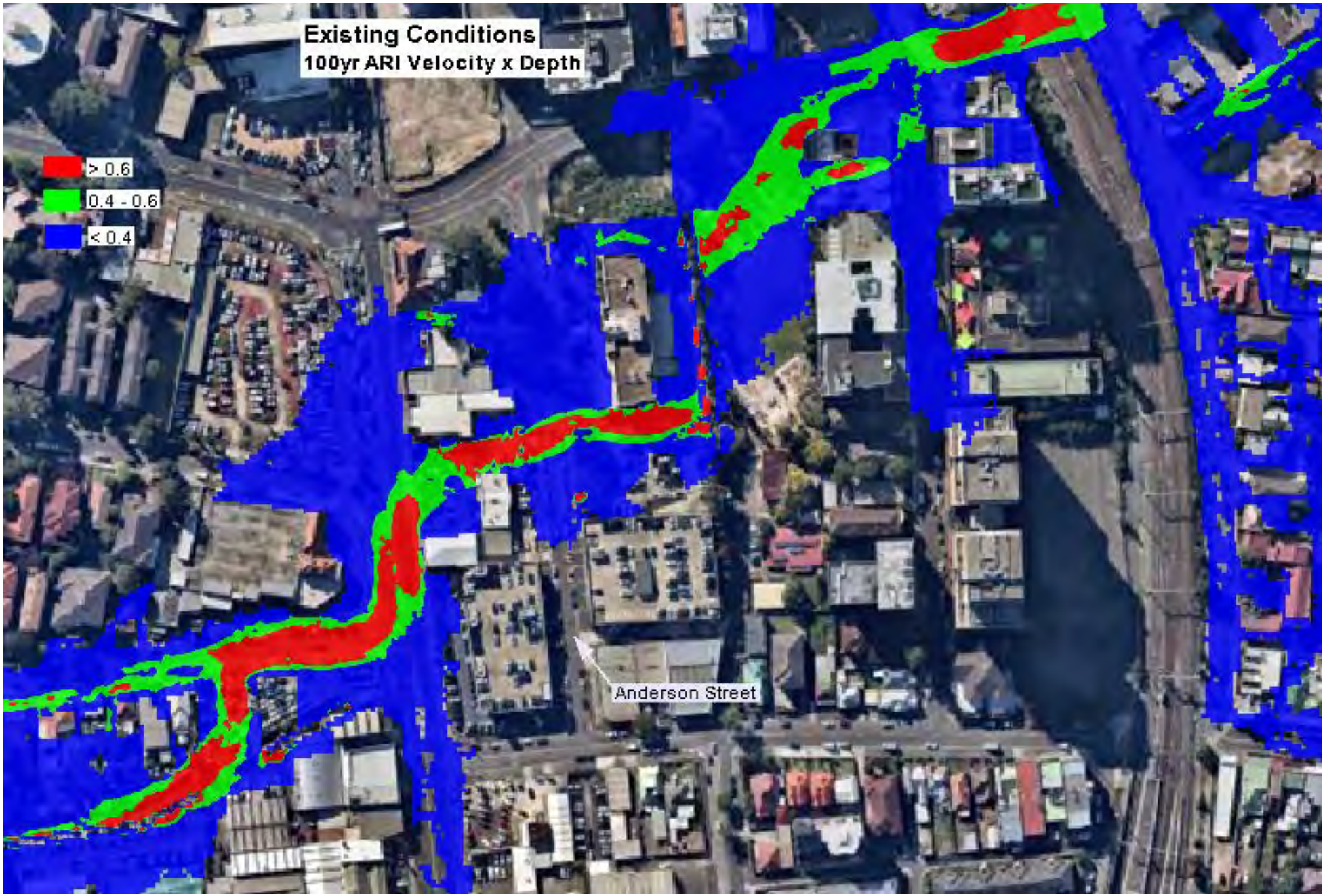


Figure 8 1% AEP Flood Velocity x Depth - Existing Conditions

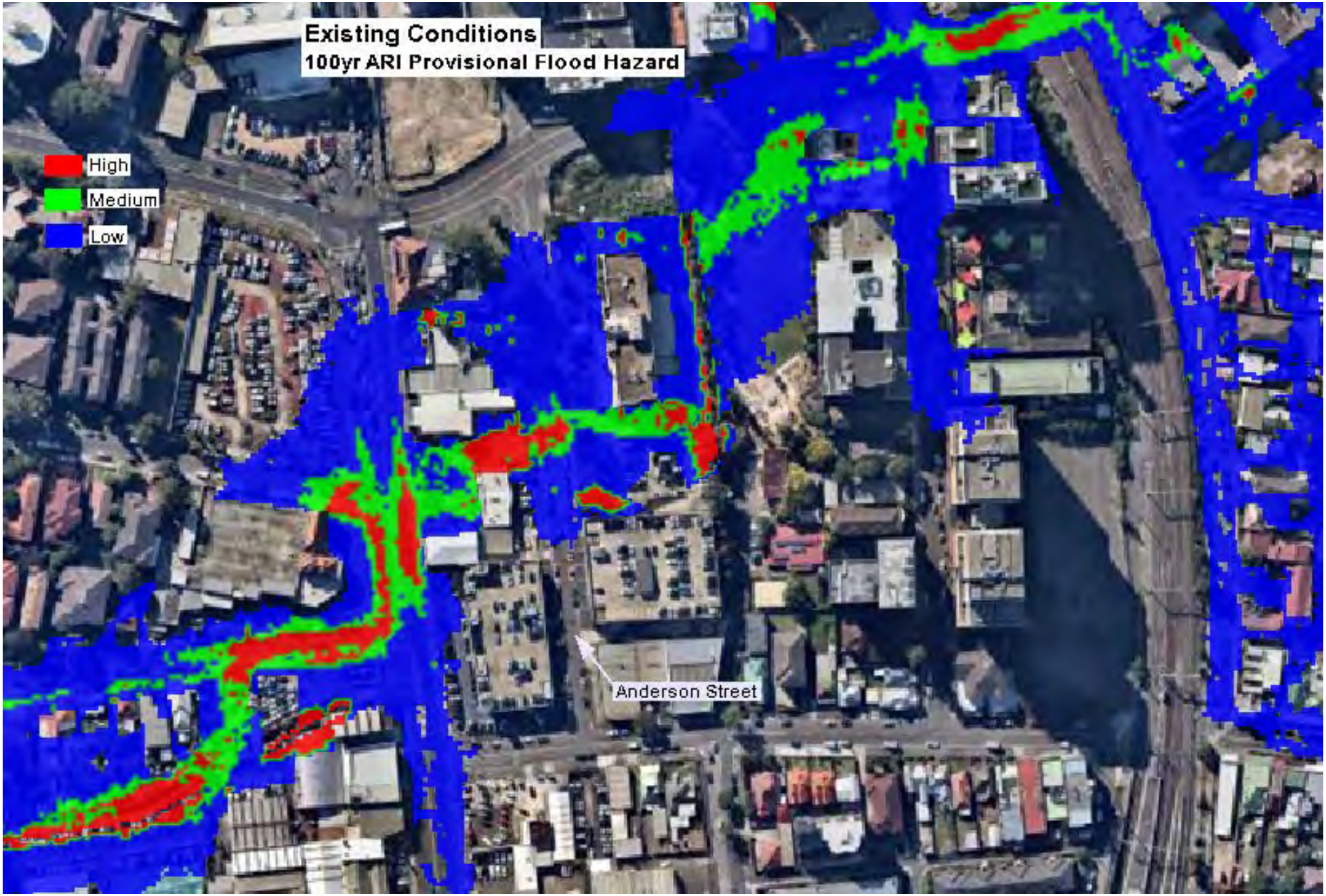


Figure 9 1% AEP Provisional Flood Hazards - Existing Conditions

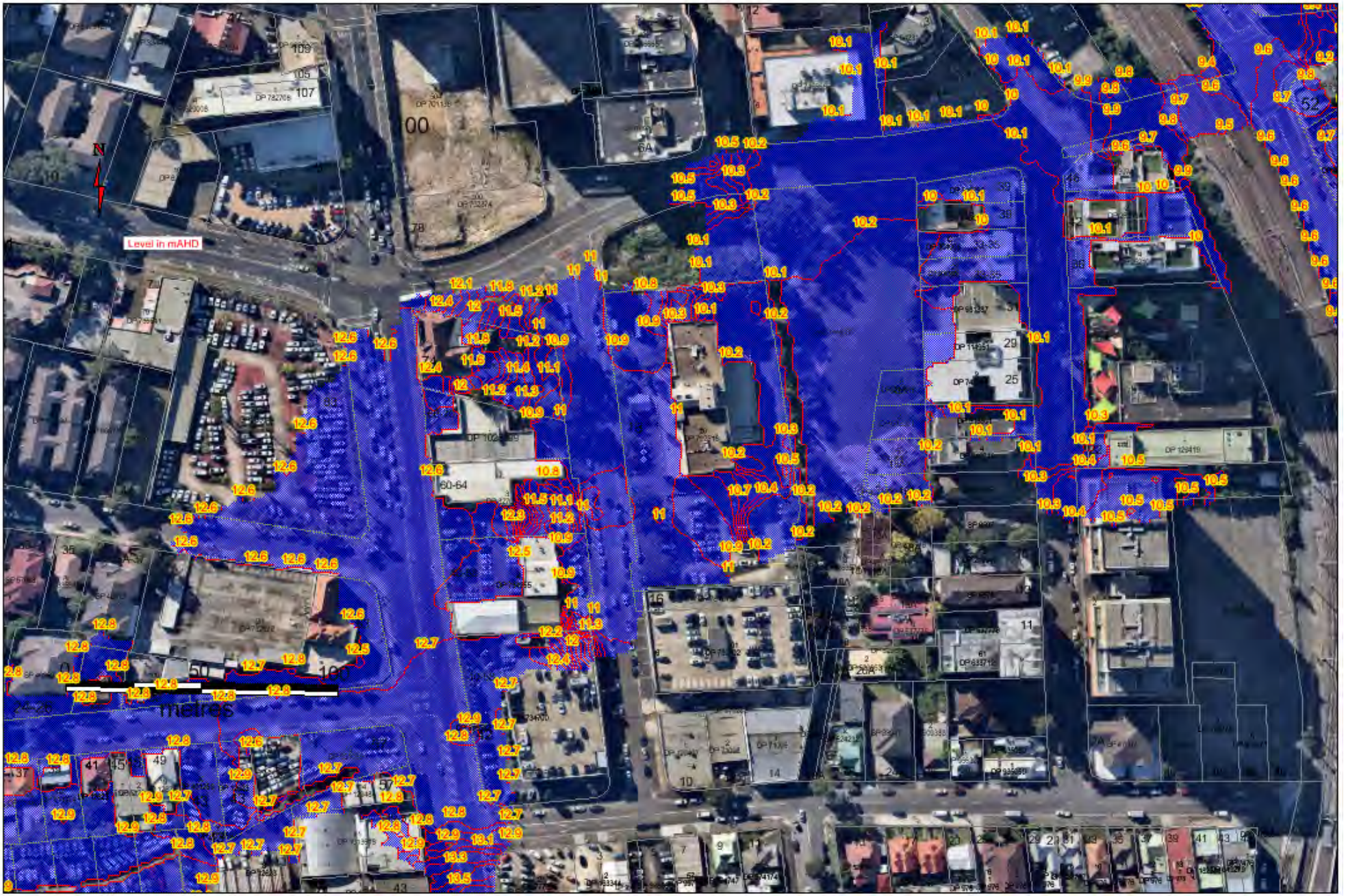


Figure 10 PMF Extents and Flood Levels - Existing Conditions

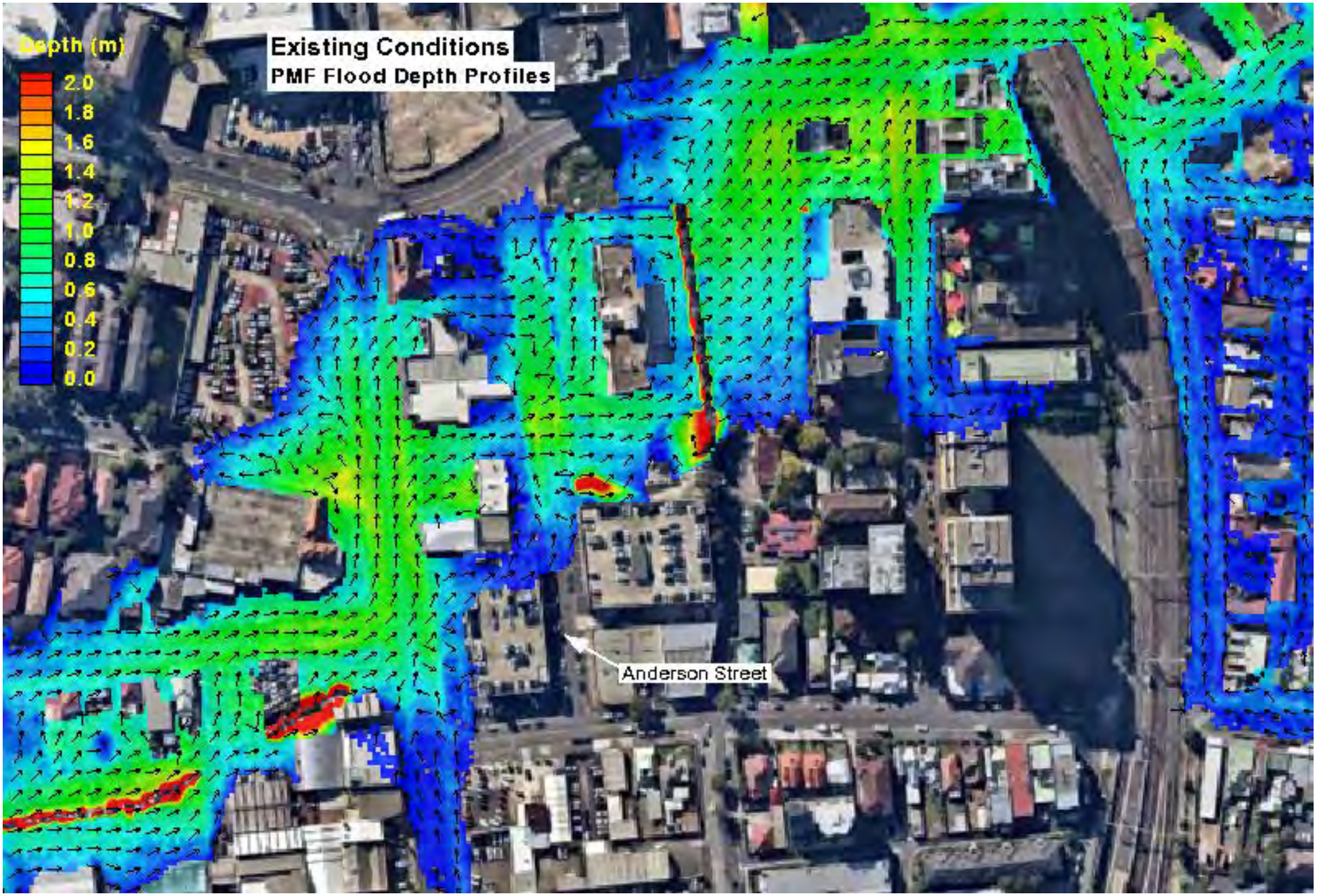


Figure 11 PMF Depths - Existing Conditions

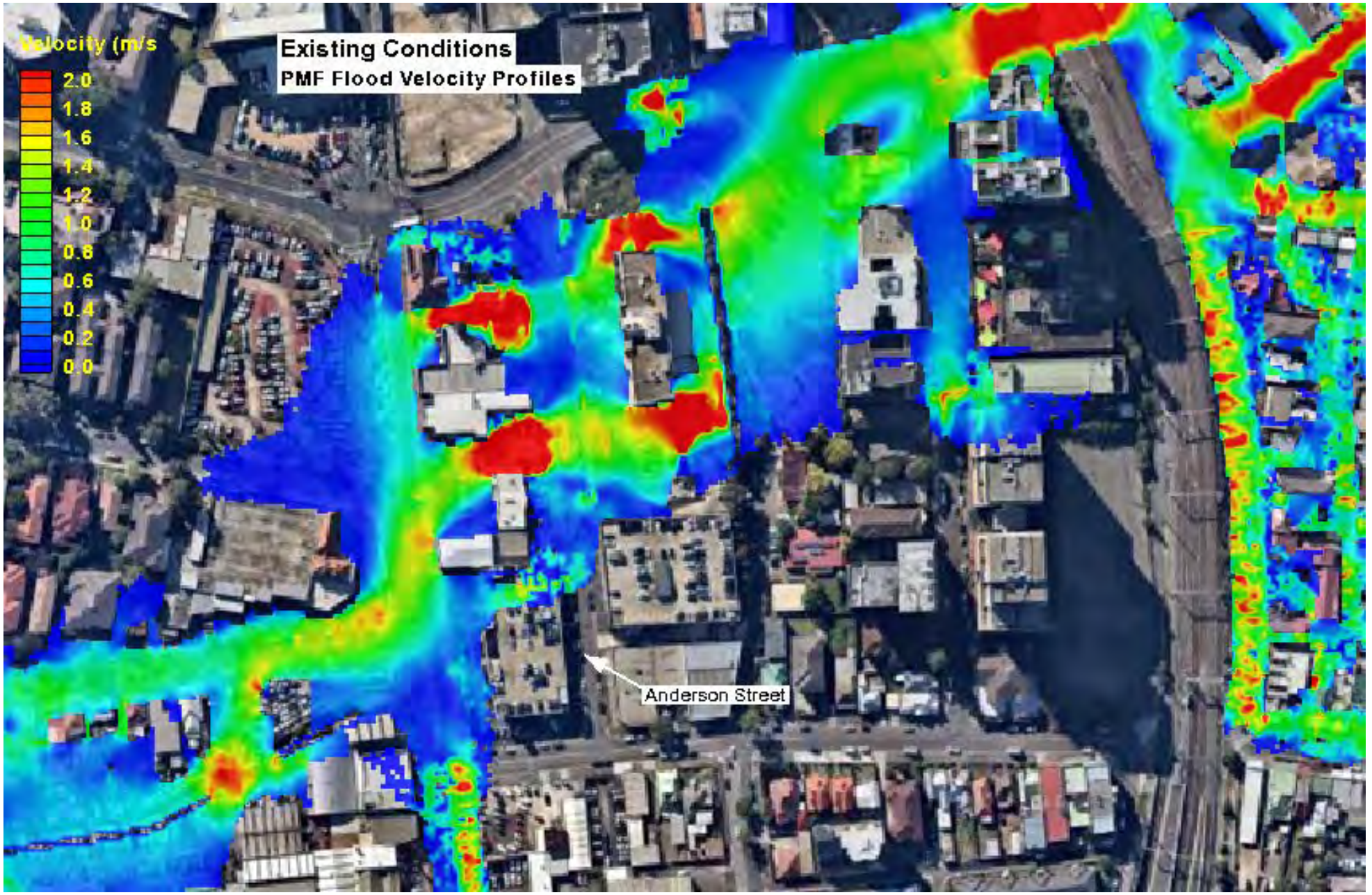


Figure 12 PMF Velocities - Existing Conditions

Figure 13 PMF Velocity x Depth - Existing Conditions

Figure 14 PMF Provisional Flood Hazards - Existing Conditions

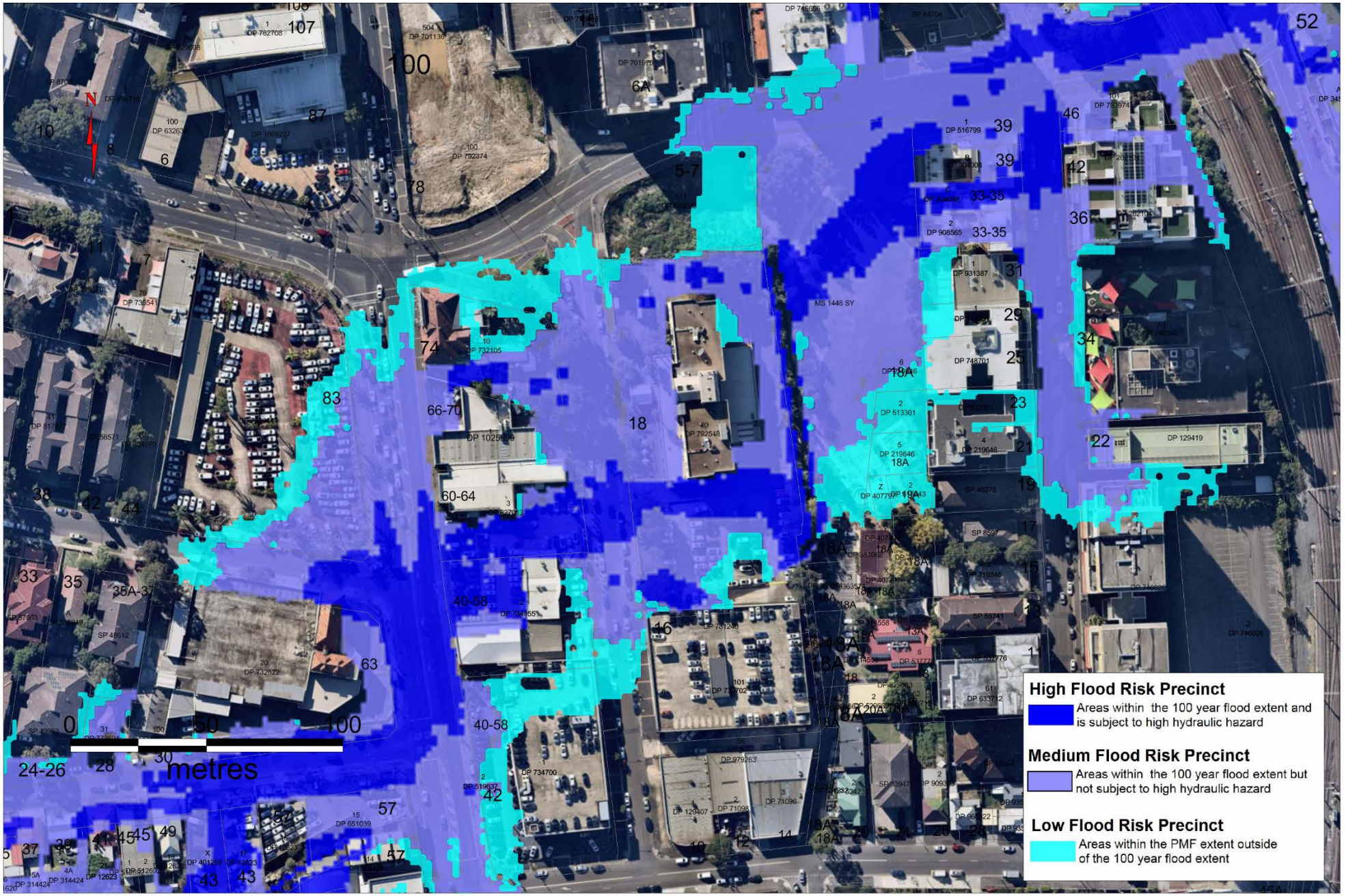


Figure 15 Flood Risk Precincts

Figure 16 Amended Planning Proposal Layout

Figure 17 Primary Features of Model Layout under the Amended Planning Proposal

Figure 18 Floodplain Roughness under Planning Proposal Conditions

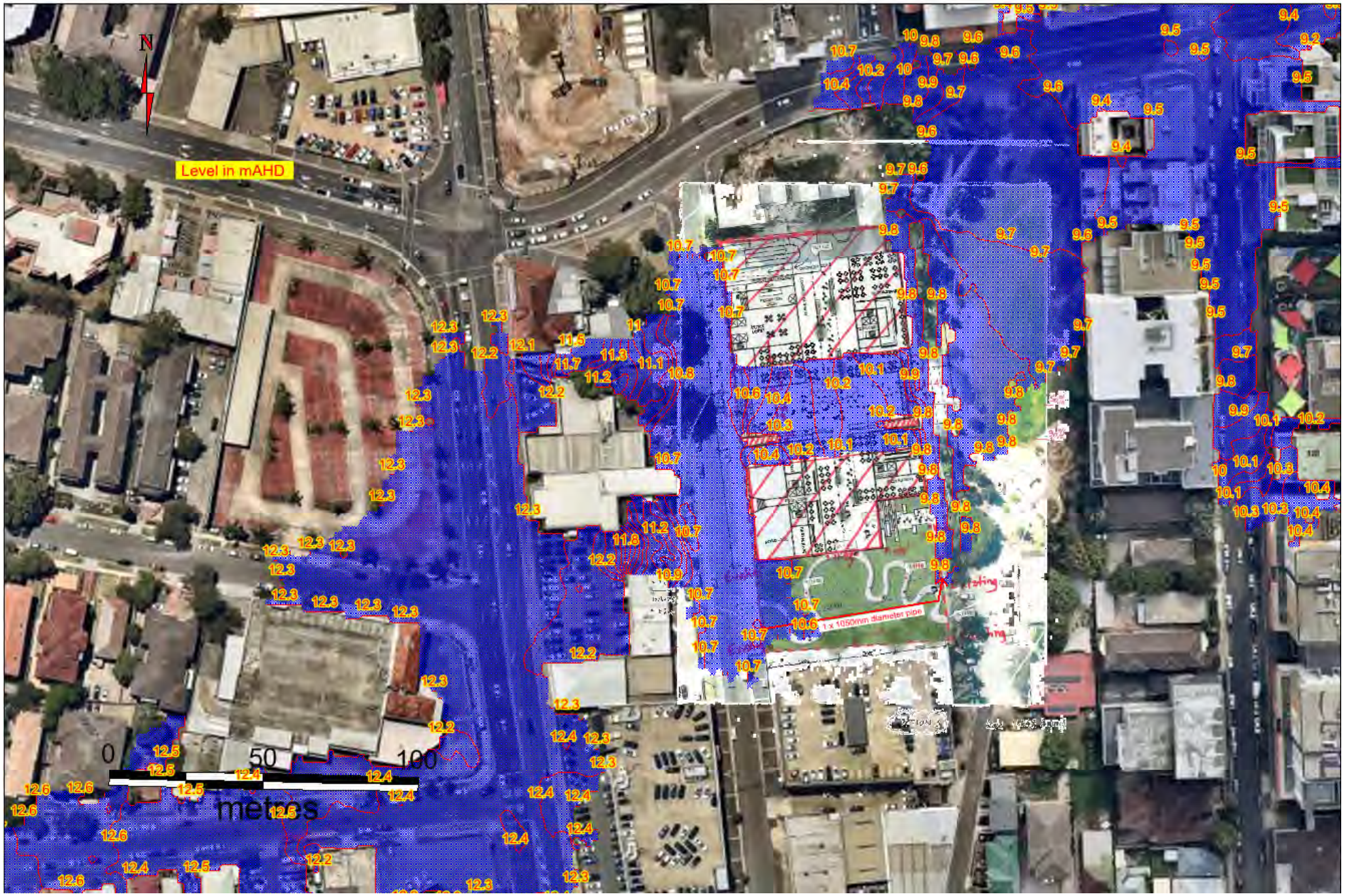


Figure 19 1% AEP Flood Extents and Flood Levels - Planning Proposal Conditions

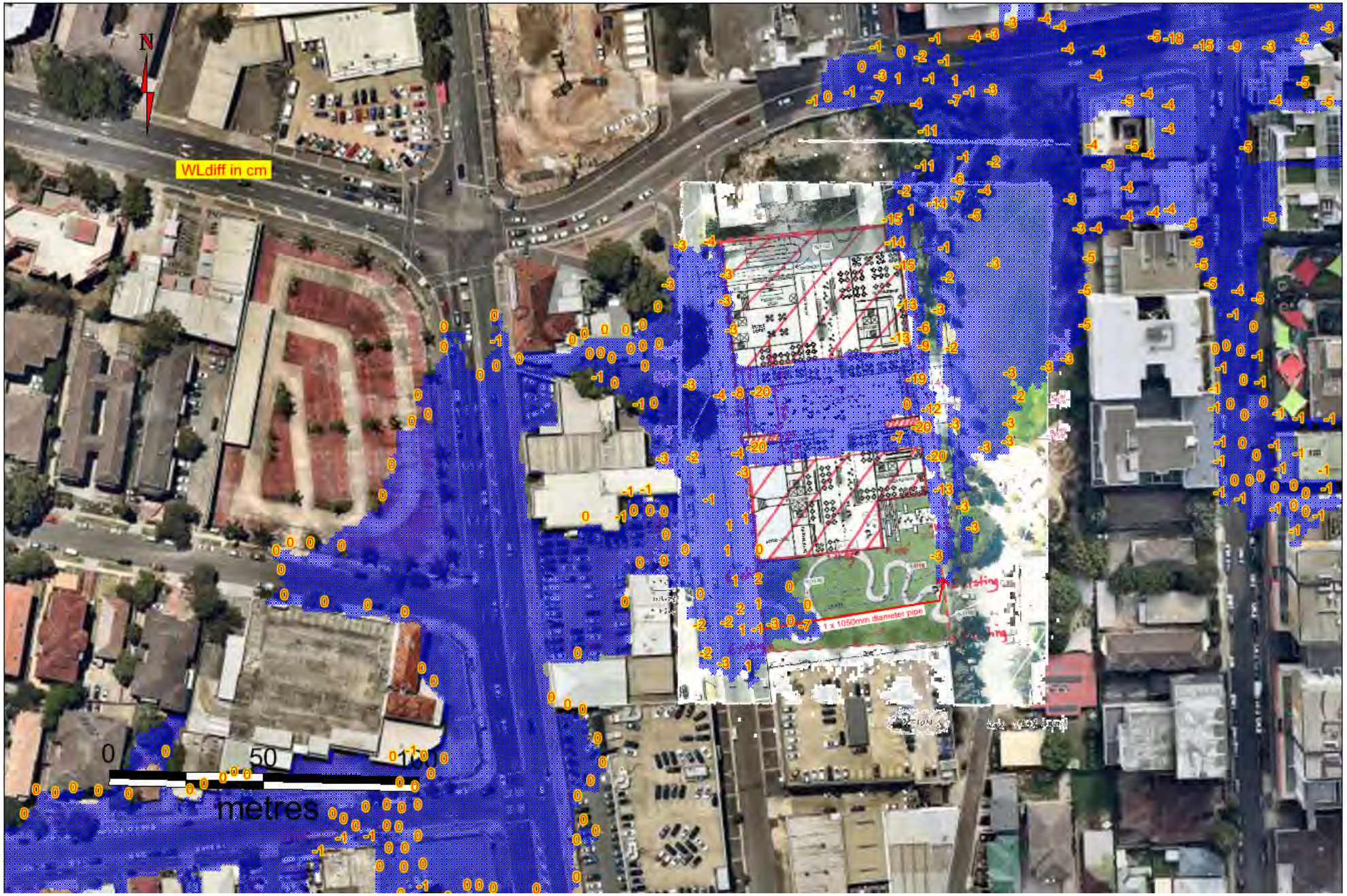


Figure 20 1% AEP Flood Level Differences (Planning Proposal Conditions – Existing Conditions)

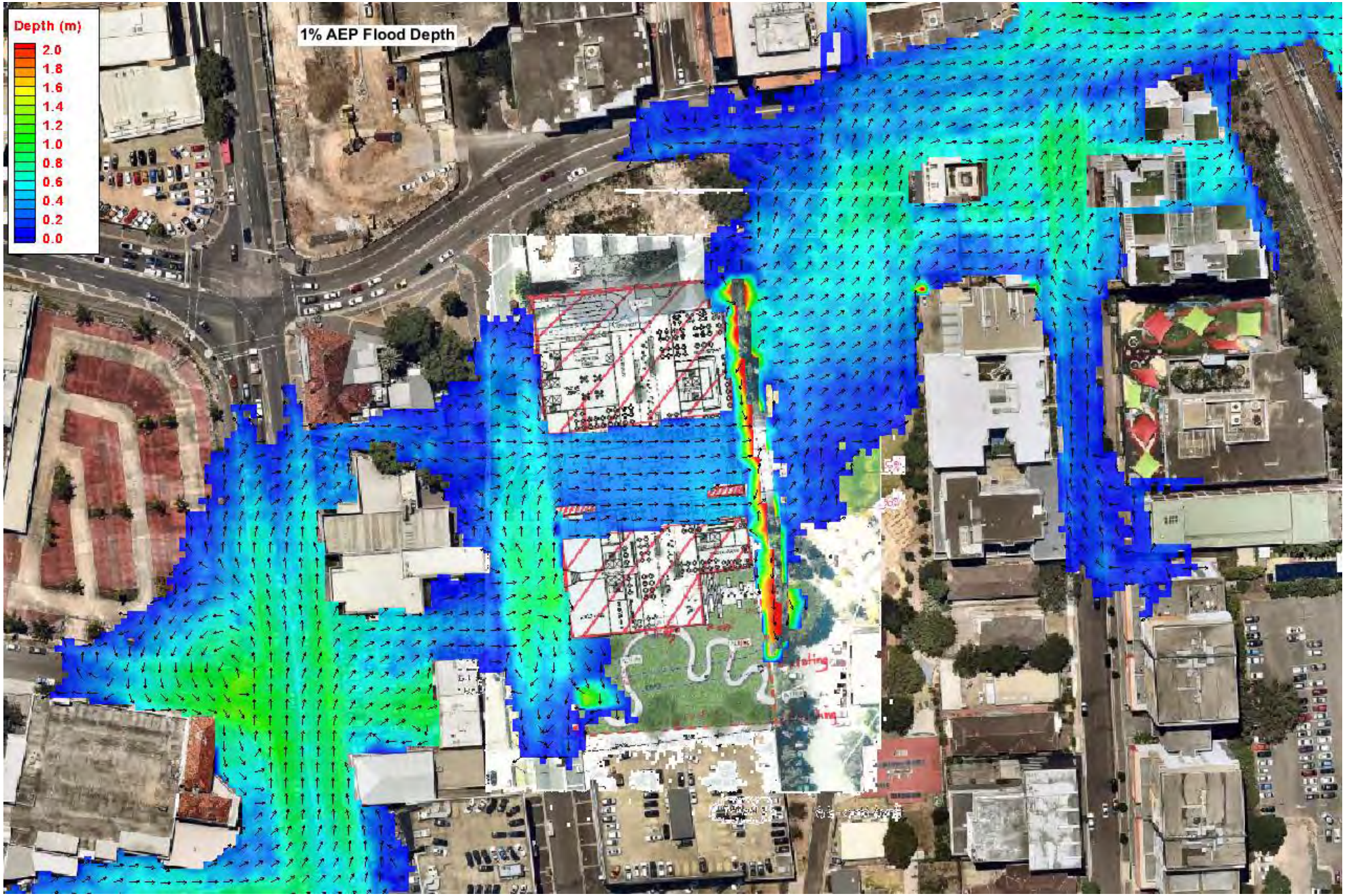


Figure 21 1% AEP Flood Depths - Planning Proposal Conditions

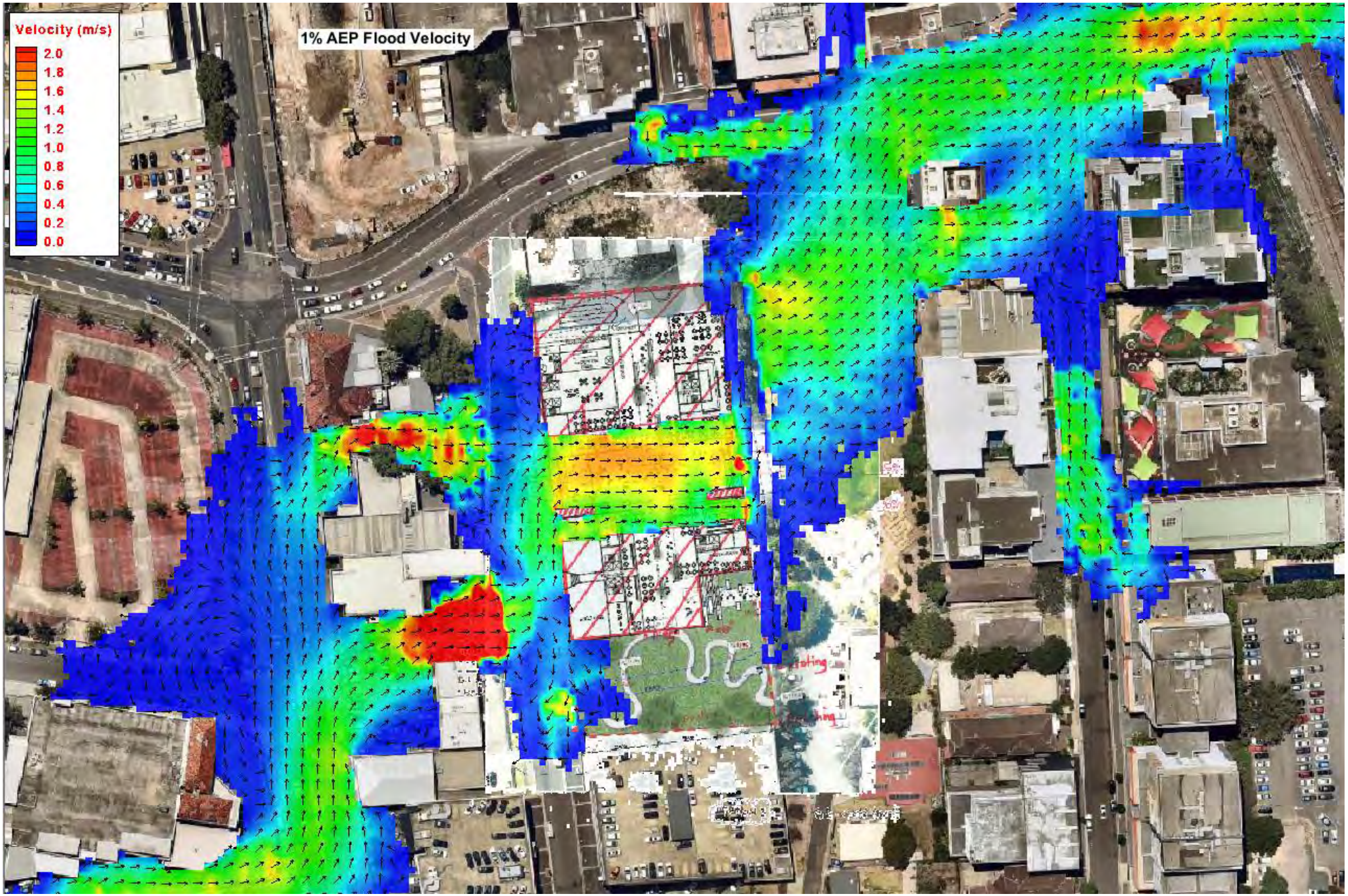


Figure 22 1% AEP Flood Velocities - Planning Proposal Conditions

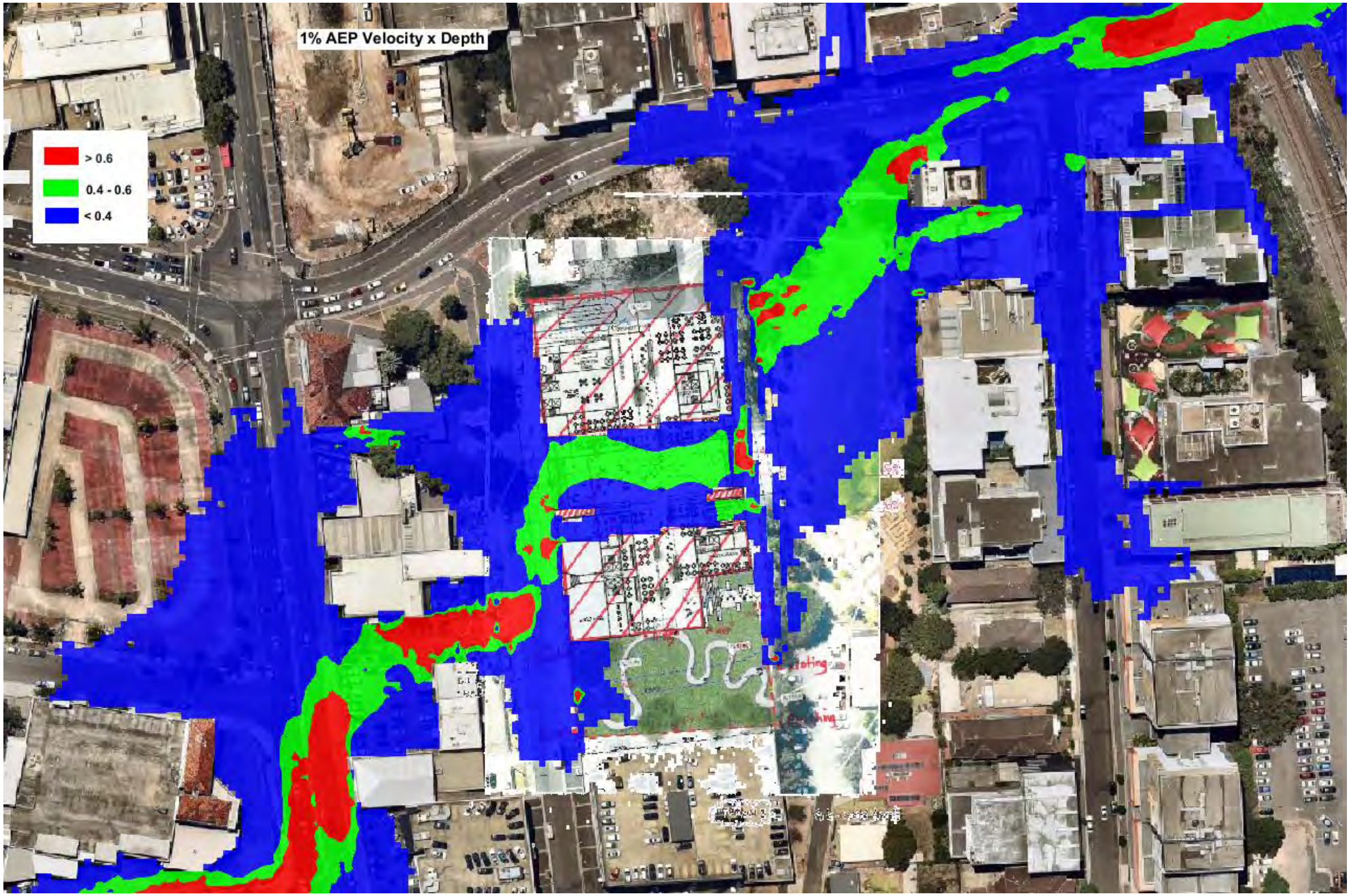


Figure 23 1% AEP Flood Velocity x Depth – Planning Proposal Conditions

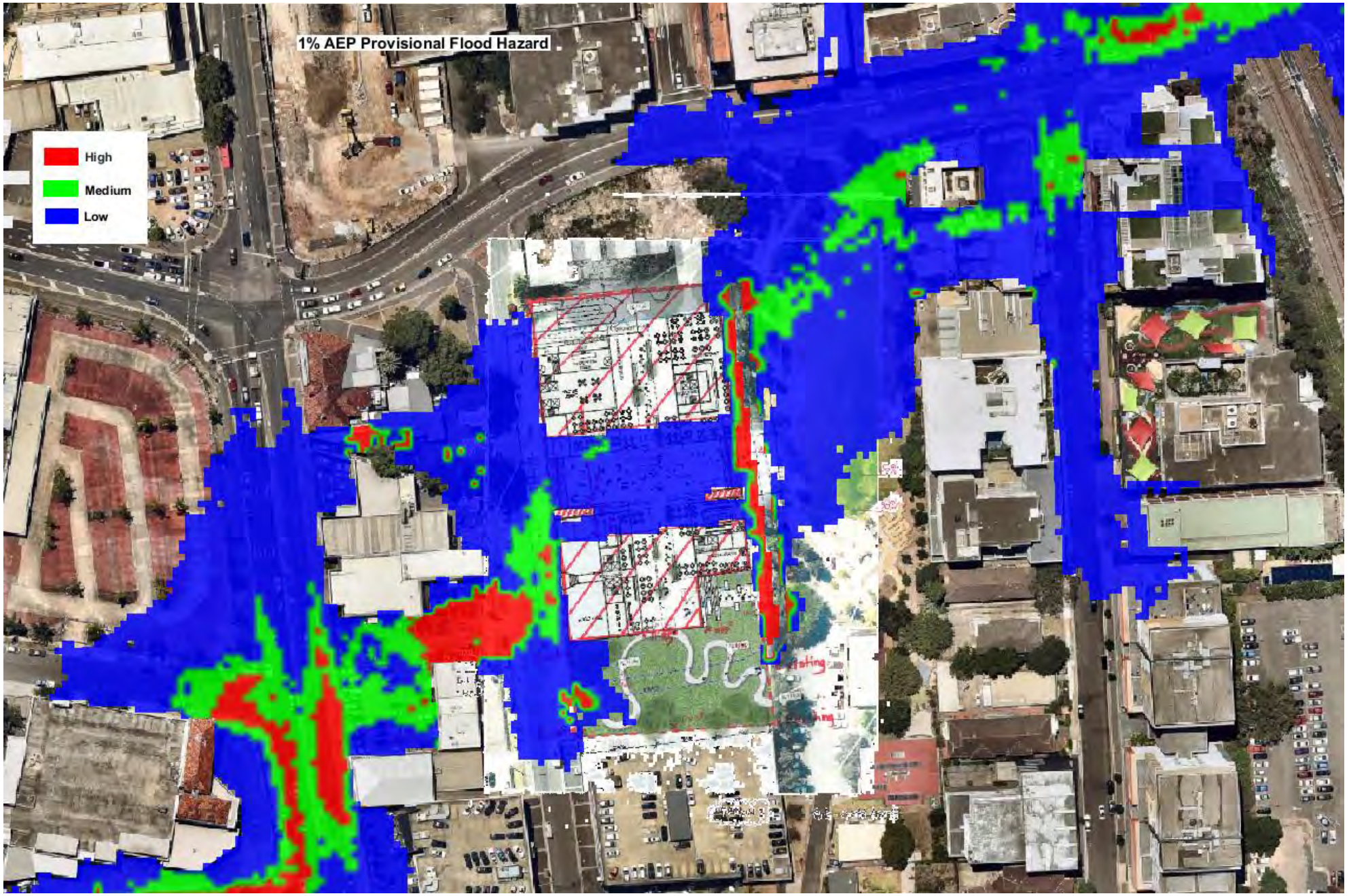


Figure 24 1% AEP Provisional Flood Hazards - Planning Proposal Conditions

18-40 Anderson St, Parramatta

APPENDIX A

EXAMPLE FEDRP TABLE OF CONTENTS

Cardno
Shaping the Future

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Appendices

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Figures

18-40 Anderson Street, Parramatta

Planning Proposal for a Mixed Use Development

On behalf of
Landream
May 2018

mecone

Project Director

Adam Coburn

Signed*

……

Date

Project Planners

Addison Boykin

*This document is for discussion purposes only unless signed and dated by the project director.

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Schedule of Figures and Tables

Introduction

This planning proposal report (planning proposal) is submitted to City of Parramatta Council (Council) on behalf of Landream Pty Ltd (the proponent) in order to seek amendments to *Parramatta Local Environmental Plan 2011* (Parramatta LEP 2011) in relation to the site at 18-40 Anderson Street, Parramatta (the site).

The intent of the planning proposal is to facilitate redevelopment of the existing Holiday Inn Hotel into a mixed-use development including residential, hotel and commercial uses. The hotel component of the development is envisioned to be an internationally branded 5-star hotel, which would help position Parramatta as a destination for international tourism and provide visitors with immediate access to Parramatta CBD's commercial opportunities and cultural facilities.

The planning proposal specifically seeks to:

- Rezone the site from B5 Business Development to B3 Commercial Core;
- Amend the maximum height of building from 14m to part 95m and part 0m;
- Amend the maximum FSR from 4:1 to 6:1;
- Add 'residential accommodation' and 'serviced apartments' as additional permitted uses and include a provision limiting these additional permitted uses to a maximum FSR of 4.15:1.

The planning proposal been prepared in accordance with:

- Section 3.33 of the Environmental Planning and Assessment Act 197 (EP&A Act); and
- NSW Department of Planning and Environment's (DP&E's) *A Guide to Preparing Planning Proposals* (2016).

The following technical reports submitted under separate cover have been prepared in support the planning proposal:

- Urban Design Report (Grimshaw, April 2018);
- Traffic Technical Note (Ason Group, March 2018);
- Economic Impact Assessment (AEC, December 2017);
- Preliminary Site Investigation (Cardno, February 2018);
- Civil Infrastructure Report (Cardno, March 2018); and
- Flood Impact Assessment (Cardno, May 2018).

Background

In July 2017 Mecone lodged an informal submission to the Parramatta CBD Planning Proposal on behalf of Landream. The submission proposed to amend the Parramatta CBD Planning Proposal by changing the site's land use from B3 Commercial Core to B4 Mixed Use in order to permit a mixed-use development. No changes were sought to the FSR or height controls proposed under the CBD Planning Proposal.

In February 2018, due to uncertainties regarding timing of the Parramatta CBD Planning Proposal, Landream decided to pursue a site-specific planning proposal to amend the existing Parramatta LEP 2011 and arranged a meeting with Council on the matter. At the

meeting, Council expressed general support of the site-specific approach, subject to certain issues being addressed in any future proposal, namely flooding and alignment with the CBD Planning Proposal.

Council also expressed a strong preference for a through-site link at the southern end of the site with a strong visual connection to Jubilee Park as per the Parramatta CBD Planning Proposal. Council advised this link should form part of the planning proposal and be dedicated to Council, and show a height of 0m. Furthermore, there was general consensus that as a result of a loss of developable area due to the through-site link, additional height would be appropriate in the southern portion of the site, subject to solar access modeling demonstrating no additional shadow impact to Jubilee Park between the hours of 12pm and 2pm.

Site description

The site is located at 18-40 Anderson Street, Parramatta, as shown in Figure 1 below.

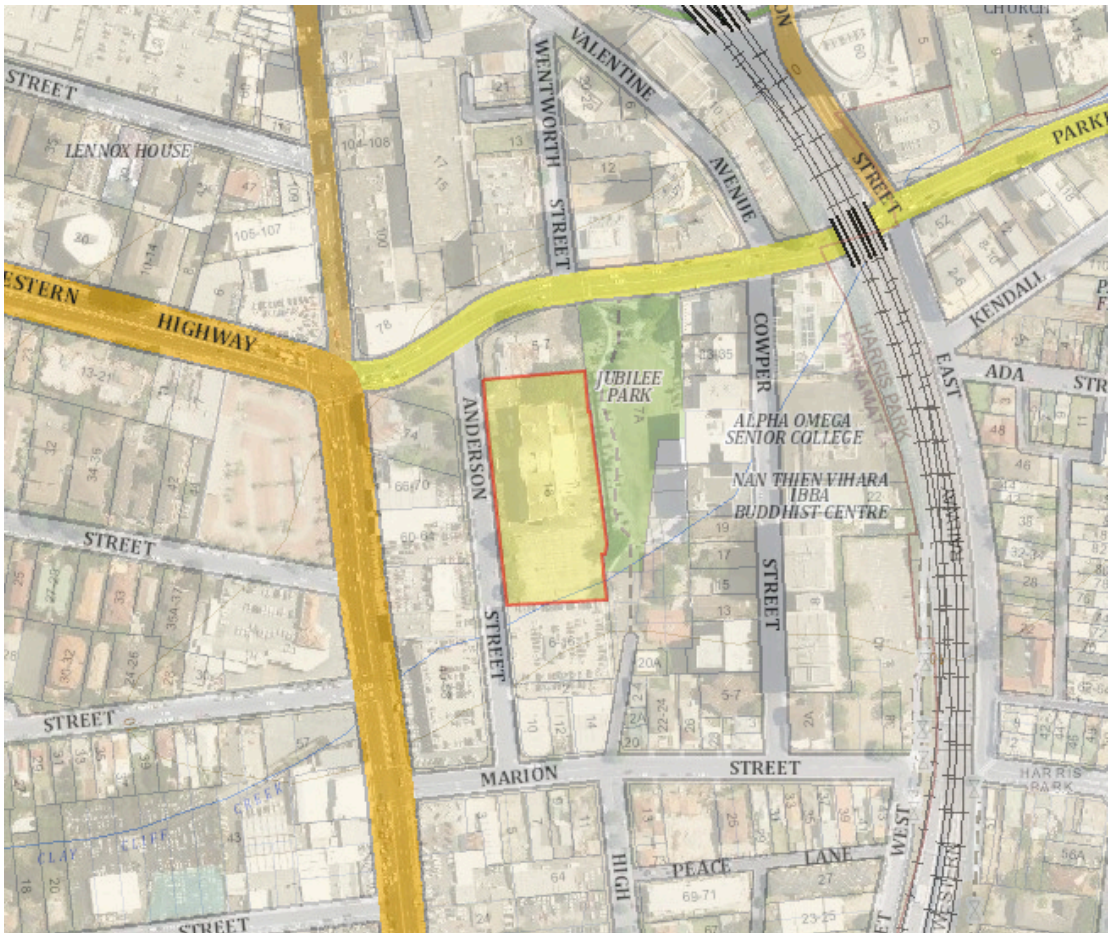

Figure 1 – Aerial view of site
Source: SIX Maps

Table 2 provides a description of the site's key characteristics.

Table 1 – Site description	
Item	Detail
Legal description	Lot 20 DP792518
Total site area	8,075sqm
Shape	The site is generally rectangular in shape.
Frontage	Approximately 130m to Anderson Street
Site topography	The site is generally flat.
Flooding	The Clay Cliff Creek open channel borders the site to the east (between the site and Jubilee Park). The channel traverses the southern end of the site in and east-west direction in the form of a covered channel. The site is subject to flooding by floodwaters spilling from Clay Cliff Creek and overland flows.
Existing buildings/ structures	The site currently contains the 7-storey Holiday Inn Hotel, comprising 181 rooms, ground floor restaurant and bar, corporate function rooms, gym facilities and heated in-ground pool and spa. A decked carpark is located adjacent to the hotel building along the southern boundary of the site. The hotel building has traded under a series of brands, including Ramada, Courtyard by Marriot, Clarion on the Park and the current Holiday Inn.
Access and parking	Access to the site is via a porte cochere–style driveway off Anderson Street. There is a separate access point to the site's car park further to the south.
Public transport	The site is located approximately 340m to the south of Parramatta Transport Interchange, located on the Western Railway Line. The Interchange is a key infrastructure node, enabling transfer between trains and the regional bus network. A number of bus routes operate along Church Street, with the nearest northbound and southbound stops being approximately 95m and 65m, respectively, to the west. The northbound routes lead primarily to Parramatta Transport Interchange, while the southbound routes lead to Hurstville Westfield and Bankstown Station.

Refer to Figure 2 to Figure 4 below for photographs of the site.

Figure 2 – Development Anderson St frontage
Source: Mecone (March 2018)

Figure 3 – Site seen from intersection of Anderson St and Parkes St
Source: Mecone (March 2018)

Figure 4 – Drainage channel along eastern site boundary (looking north)
Source: Mecone (March 2018)

Surrounding development

Immediate surrounding development is described below. This development is also identified in the diagram at Figure 5 and the photographs at Figure 6 to Figure 10.

To the north: To the north the site is adjoined by 5-7 Parkes Street (Figure 6), which was recently approved for a 24-storey mixed-use development (DA/730/2016) (Figure 7). This is currently vacant with works for the development not yet commenced. Beyond 5-7 Parkes Street, across Parkes Street, is the beginning of Parramatta CBD, including the West Village development at 100 Church Street (currently under construction) (Figure 6).

To the south: To the south the site is adjoined by a 2-storey car repair facility with rooftop parking at 6-19 Anderson Street (refer to Figure 8 below). Further to the south, to Marion Street and beyond, are more car repair shops and related facilities.

To the east: Immediately to the east of the site is Jubilee Park (Figure 9). This park is protected by solar access provisions in Parramatta Development Control Plan 2011. The Parramatta CBD Planning Proposal seeks to incorporate these provisions into PLEP 2011.

To the west: Development to the west includes the 2-storey PJ Gallagher's Irish Pub at 74 Church Street (Figure 6) and multiple car dealerships/repair shops at 66-70, 60-64 and 40-58 Church Street (Figure 10).

1	5-7 Parkes St
2	Jubilee Park
3	6-16 Anderson St
4	40-58 Church St
5	60-64 Church St
6	66-70 Church St
7	74 Church St (PJ Gallagher's)
8	100 Church St (West Village)

Figure 5 – Surrounding development diagram
Source: SIX Maps

Figure 6 – Looking south from intersection of Anderson St and Parkes St
Source: Mecone (March 2018)

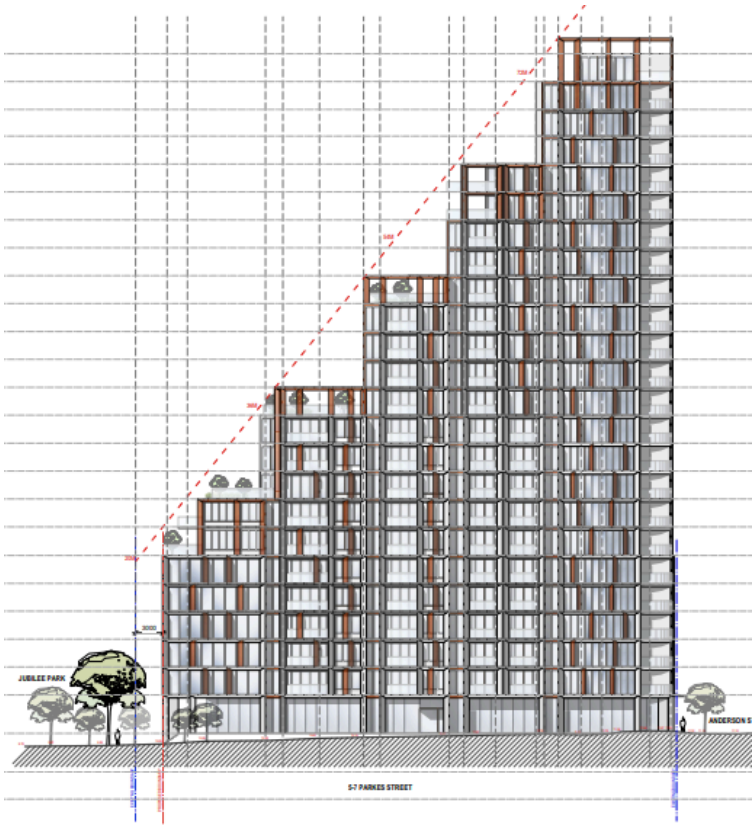

Figure 7 – North elevation of 5-7 Parkes St (stamped)
Source: Aleksandar Design Group

Figure 8 – Looking south from site
Source: Mecone (March 2018)

Figure 9 – Jubilee Park (looking south from Parkes St)
Source: Mecone (March 2018)

Figure 10 – Car repair shops/dealerships across Anderson St
Source: Mecone (March 2018)

Local context

The site is located at the northern end the Auto Alley Precinct, which consists of a strip of car dealerships and related uses immediately to the south of Parramatta's commercial core. The Auto Alley Precinct stretches along Church Street for approximately 750m between the Great Western Highway/Parkes Street intersection and the M4 Motorway. Current development to the east and west sides of Auto Alley is generally low- to medium-density residential development.

As expressed in the Parramatta CBD Planning Proposal, Council intends for the Auto Alley Precinct to become a high-density extension of the commercial core with A-grade office development along Church Street flanked by mixed uses.

See Figure 11 below for a local context map.

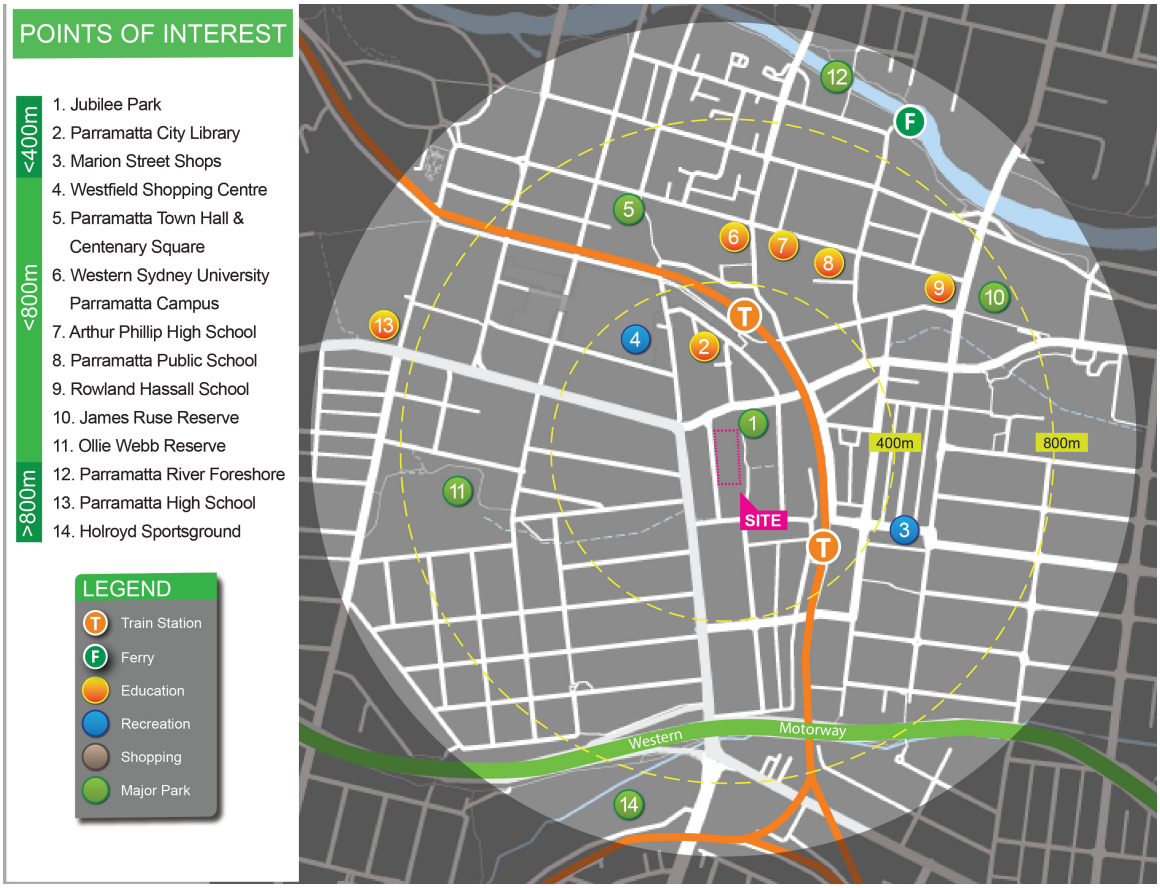

Figure 11 – Local context map
Source: Mecone

Regional context

The site is located in Parramatta CBD within the local government area of City of Parramatta, approximately 23km west of Sydney CBD.

Under the *Greater Sydney Region Plan*, Parramatta CBD forms one of Sydney's two metropolitan city centres, the other being Sydney CBD. Parramatta CBD is located in the demographic centre of the Sydney Metropolitan Area and performs a key economic, social and cultural role. Parramatta CBD is significant at a metropolitan level as an employment centre and is expected to experience significant growth over the coming decades.

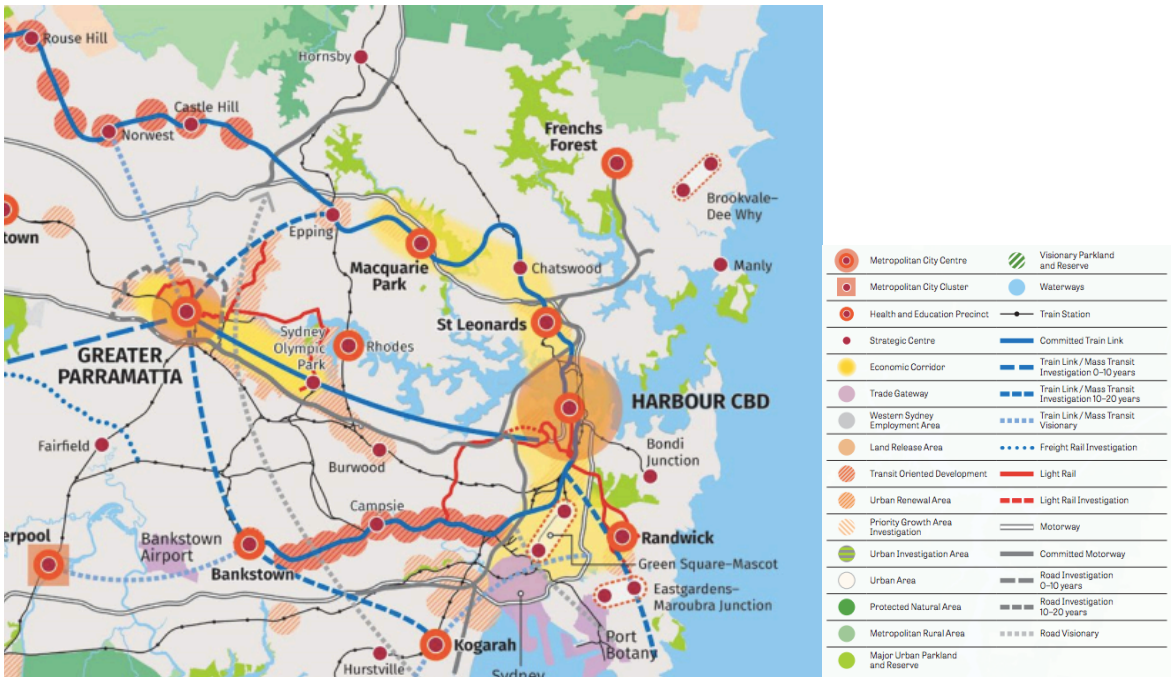

Figure 12 – Regional context map
Source: Greater Sydney Region Plan

Existing planning controls

The site is subject to Parramatta LEP 2011. The following key provisions apply to the site:

- land use zone: B5 Business Development;
- maximum building height: 18m; and
- maximum floor space ratio: 4:1.

Figure 13 to Figure 15 below show the relevant current LEP map.

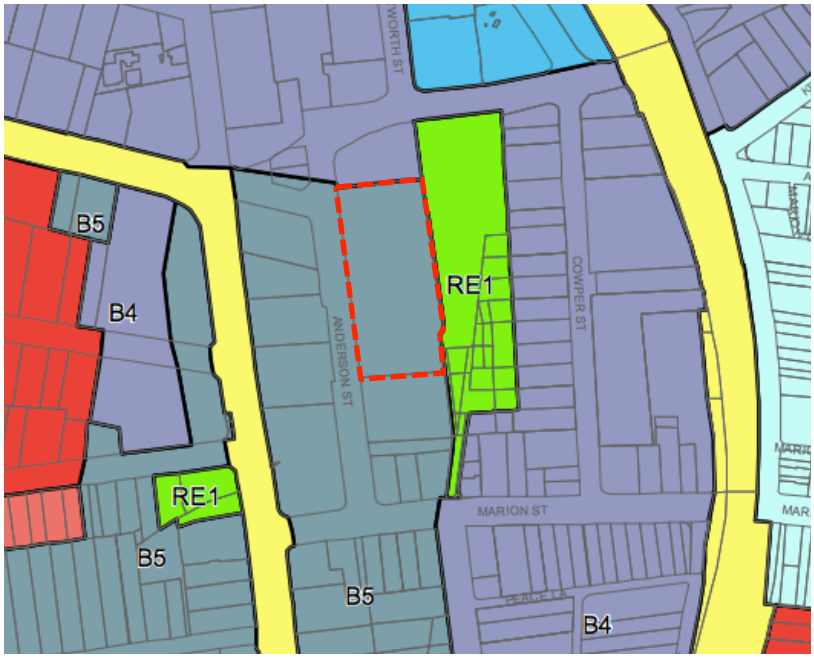

Figure 13 – Land Use Zone Map (Sheet LZN_010)
Source: Parramatta LEP 2011

Figure 14 – Height of Building Map (Sheet HOB_010)
Source: Parramatta LEP 2011

Figure 15 – Floor Space Ratio Map (Sheet FSR_010)
Source: Parramatta LEP 2011

Structure of this planning proposal

This planning proposal has been prepared in accordance with the requirements of Section 3.33 of the EP&A Act and the DP&E's *A Guide to Preparing Planning Proposals* (2016), and is structured as follows:

- Part 1—A statement of the objectives and intended outcomes;
- Part 2—An explanation of the provisions to be included in the proposed instrument;
- Part 3—Justification of the objectives, outcomes and the process for implementation;
- Part 4—Maps to identify the modifications required to the proposed instrument and the area to which it applies;
- Part 5—Details of the community consultation to be undertaken; and
- Part 6—Draft timeline for the planning proposal.

Part 1: Objectives or intended outcomes

The objectives and intended outcomes of the proposal are:

- To facilitate redevelopment of an aging hotel into a high-quality mixed-use development;
- To facilitate delivery of a 5-star hotel with international branding in Parramatta CBD;
- To facilitate urban renewal that aligns with local and State strategic objectives for Parramatta CBD;
- To enable delivery of an open through-site link in the south end of the site in accordance with Council's vision expressed in the CBD Planning Proposal;
- To provide for high-quality residential accommodation that would improve housing choice and affordability and cater to the needs of the community;
- To enable redevelopment with high-quality architectural design that responds to site constraints and is compatible with surrounding development;
- To provide additional housing and jobs in a metropolitan-significant centre with good access to public transport, services and facilities; and
- To contribute to the economy and provide additional employment opportunities for the community.

Part 2: Explanation of provisions

The planning proposal seeks to achieve the intended outcomes through the following amendments to Parramatta LEP 2011:

- Rezone the site from B5 Business Development to B3 Commercial Core;
- Amend the maximum height of buildings from 14m to part 95m and part 0m;
- Amend the maximum FSR from 4:1 to 6:1;
- Add 'residential accommodation' and 'serviced apartments' as additional permitted uses and include a provision limiting these additional permitted uses to a maximum FSR of 4.15:1.

The rezoning and increases to the maximum height and FSR would be achieved by amending the relevant mapping in Parramatta LEP 2011. The additional permitted use and residential FSR restriction would be achieved by amending Schedule 1 of Parramatta LEP 2011. The following wording is suggested:

> ***Use of certain land at 18-40 Anderson Street, Parramatta***
>
> 1) *This clause applies to land at 18-40 Anderson Street, being Lot 20, DP 792518.*
> 2) *Development for the purposes of 'residential accommodation' and 'serviced apartments', up a maximum floor space ratio of 4.15:1 (excluding any additional floor space permitted under clause 7.10), is permitted with development consent.*

Serviced apartments are currently permitted with consent in the B3 Commercial Core zone. This has been included as an additional permitted use in anticipation of the implementation of the CBD Planning Proposal, which seeks to remove serviced apartments as a permitted use in the B3 Commercial Core zone.

Part 3: Justification

Section A—Need for the proposal

Q1. Is the Planning Proposal a result of any strategic study or report?

The planning proposal responds to Council's strategic vision for Parramatta CBD as expressed in its Parramatta CBD Planning Proposal, which seeks to intensify development across the CBD to meet future population and jobs growth and to support Parramatta's role as Sydney's second CBD. The planning proposal also responds to key strategic objectives in the *Greater Sydney Region Plan* and *Central City District Plan*. The planning proposal's consistency with the Parramatta CBD Planning Proposal and other strategic documents is discussed in Section B below.

Q2. Is the Planning Proposal the best means of achieving the objectives and outcomes, or is there a better way?

This planning proposal is the most appropriate method of achieving the intended outcomes. In particular, it is the most effective way of providing certainty for the landowner and community about the site's future. The following alternative options were considered:

Formal submission to Parramatta CBD Planning Proposal

An alternative option would be to make a submission to the Parramatta CBD Planning Proposal once it goes on formal exhibition following Gateway determination. This option is considered inferior given the timing uncertainties associated with the CBD Planning Proposal. The landowner intends to redevelop the site in the near future, and potential delays associated with the large, complex CBD Planning Proposal could impede this objective. A site-specific proposal would likely progress more quickly than the CBD Planning Proposal and enable redevelopment of the site to stimulate renewal of Auto Alley.

Rezone to B4 Mixed Use

Instead amending Schedule 1 of Parramatta LEP 2011 to allow for residential development at the site, an alternative option would be to rezone the site to B4 Mixed Use. This option is inferior in that it would not align with Council's preferred land use pattern identified in the Parramatta CBD Planning Proposal.

Section B—Relationship to strategic planning framework

Q3. Is the Planning Proposal consistent with the objectives and actions of the applicable regional, sub-regional or district plan or strategy (including any exhibited draft plans or strategies)?

The planning proposal is consistent with the objectives and actions contained within the following plans and strategies:

NSW State and Premier's Priorities

The 18 NSW State Priorities were introduced in 2015 to identify key policy commitments for the State Government. Three of these priorities are relevant to this planning proposal, as outlined in the table below.

The NSW Premier's Priorities consist of 12 priorities personally set out and committed to by the Premier. The priorities contain measurable targets intended to guide the social and economic development of the State. Two of the priorities are particularly relevant to this planning proposal, as outlined in the table below.

Table 2 – NSW State and Premier's Priorities

Priority	Consistency
State Priorities	
Improving road travel reliability	The planning proposal contributes indirectly to this priority by encouraging commuters to use public transport.
Increasing housing supply	The planning proposal contributes to this priority by facilitating additional residential development, which would help meet the State's target of 50,000 approvals per year.
Premier's Priorities	
Creating jobs	The planning proposal facilitates development that would result in an additional 90 full time equivalent jobs at the site compared to current operations and would contribute to the Premier's target of 150,00 new jobs by 2019.
Making housing more affordable	The planning proposal facilitates additional residential development, which would help meet the Premier's target of 61,000 housing completions per year.

Greater Sydney Region Plan

The *Greater Sydney Region Plan* (2018) (Region Plan) forms Sydney's overarching metropolitan strategic plan. The Plan builds on the three cities vision introduced by *Towards our Greater Sydney 2056* (2017).

The Region Plan is structured around four key themes—infrastructure and collaboration, liveability, productivity and sustainability—and sets out a number of directions and objectives to guide delivery of these themes. The planning proposal's consistency with relevant key directions and objectives is outlined in the table below.

Table 3 – Greater Sydney Region Plan (2018)		
Direction	Objective	Consistency
Infrastructure and collaboration		
A city supported by infrastructure	Objective 4: Infrastructure use is optimised	The planning proposal allows for more intense development within walking distance (<400m) of Parramatta Transport Interchange.
Liveability		
A city for people	Objective 6: Communities are healthy, resilient and socially connected	
Housing the city	Objective 10: Greater housing supply	The planning proposal allows for approximately 289 additional apartments and contribute to Parramatta's housing supply.
	Objective 11: Housing is more diverse and affordable	The planning proposal allows for a range of apartment types to cater to community needs.
A city of great places	Objective 12: Great places that bring people together	The planning proposal allows for creation of a new great place consisting of a high-quality mixed-use development with expansive publicly-accessible open space areas.
	Objective 13: Environmental heritage is conserved and enhanced	The planning proposal maintains solar access to the neighbouring Jubilee Park. The proposal has no adverse impact on Parramatta's built form heritage.
Productivity		
Jobs and skills for the city	Objective 19: Greater Parramatta is stronger and better connected	The planning proposal contributes to the strength of Parramatta as a metropolitan significant centre by facilitating redevelopment of the site for the purposes of a 5-star hotel, residential apartments and retail. This is an appropriate mix of uses in an ideal location within close proximity of public transport.
	Objective 22: Investment and business activity in centres	The planning proposal facilitates redevelopment of the existing hotel into a 5-star offering that would complement increased business activity in Parramatta.
Sustainability		
	Objective 30: urban tree canopy cover is increased	The planning proposal facilitates redevelopment of the existing site, which is largely hardstand area, into a mixed-

Table 3 – Greater Sydney Region Plan (2018)		
		use precinct with increased landscaping and deep soil areas for large canopy trees.
	Objective 31: Public open space is accessible, protected and enhanced	The planning proposal preserves solar access to Jubilee Park in accordance with the current clause 7.4 of Parramatta LEP 2011 and the draft amendments to clause 7.4 under the CBD Planning Proposal. The planning proposal also facilitates new through-site links between Anderson Street and Jubilee Park.

Central City District Plan

The *Central City District Plan* (2018) (District Plan) supports the Region Plan and sets out a 20-year vision to guide the growth of the District within the context of Greater Sydney's three cities. The District Plan sets out a number of planning priorities structured around the Region Plan's four key themes. Key relevant priorities are discussed in the table below.

Table 4 – Central City District Plan (2018)	
Priority	Consistency
Infrastructure and collaboration	
C1. Planning for a city supported by infrastructure	The planning proposal would allow for more intense development within walking distance of key public transport (Parramatta Transport Interchange), thereby ensuring land use is optimsed.
Liveability	
C5. Providing housing supply, choice and affordability, with access to jobs and services	The planning proposal would allow for approximately 289 additional apartments in close proximity to a large range of employment and services in Parramatta CBD.
C6. Creating and renewing great places and local centres, and respecting the District's heritage	The planning proposal would prove for the redevelopment of an aging hotel into a well-designed mixed-use development with 5-star hotel. This would help renew the area and contribute to a well-designed built environment in Parramatta.
Productivity	
C7. Growing a stronger and more competitive Greater Parramatta	The planning proposal would facilitate delivery of a 5-star hotel, which would grow Parramatta's appeal and complement new business investment.
C9. Delivering integrated land use and transport planning and a 30-minute city	The planning proposal would support delivery of a 30-minute city by placing workers and residents within walking distance of key public transport (Parramatta Transport Interchange).

Table 4 – Central City District Plan (2018)	
C10. Growing investment, business opportunities and jobs in strategic centres	The planning proposal would contribute to the growth of the metropolitan-level centre of Parramatta by facilitating delivery of a 5-star hotel, new retail premises and new housing within walking distance of public transport.
Sustainability	
C16. Increasing urban tree canopy cover and delivering Green Grid connections	The planning proposal would facilitate redevelopment of the existing site, which is largely hardstand area, into a mixed-use precinct with increased landscaping and deep soil areas for large canopy trees.
C17. Delivering high quality open space	The planning proposal would preserve solar access to Jubilee Park in accordance with the draft provisions under the CBD Planning Proposal. The planning proposal would also facilitate new through-site links between Anderson Street and Jubilee Park.

Q4. Is the Planning Proposal consistent with a council's local strategy or other local strategic plan?

The following local strategic documents are relevant to the planning proposal:

Planning Proposal for Parramatta CBD

The Parramatta CBD Planning Proposal is the formal implementation mechanism for the recommendations contained in Council's *Parramatta CBD Planning Strategy* (2015) (CBD Planning Strategy), which was informed by the draft City Centre Planning Framework Study (2014) and the draft *Auto Alley Planning Framework Study* (2014).

The CBD Planning Proposal has been adopted by Council and is currently with DP&E awaiting Gateway determination. The intended outcomes of the CBD Planning Proposal are:

1. *To strengthen Parramatta's position as the dual CBD for metropolitan Sydney;*
2. *To increase the capacity for new jobs and dwellings so as to create a dynamic and diverse city;*
3. *To encourage a high quality and activated public domain with good solar access;*
4. *To facilitate the provision of community infrastructure to service the growing city;*
5. *To strengthen opportunities for the provision of high quality commercial floor space;*
6. *To future proof the city through efficient and sustainable use of energy and resources; and*
7. *To manage risks to life and property from flooding.*

The CBD Planning Proposal proposes to achieve these outcomes through amendments to land use zones and built form controls and the introduction of community infrastructure incentive provisions and other various bonus provisions.

This planning proposal is consistent with the above outcomes in that it facilitates a high-quality mixed-use development including 5-star hotel with international branding, which would contribute to Parramatta's role as the dual CBD for metropolitan Sydney. Also importantly, in accordance with Outcome 7, the proposed uplift and land use are also considered acceptable from a flood risk perspective, as discussion in Section C below.

Land use

A key component of the CBD Planning Proposal is the extension of the B3 Commercial Core zone to the south along Church Street within the Auto Alley Precinct. The subject site forms part of this proposed extension (Figure 16).

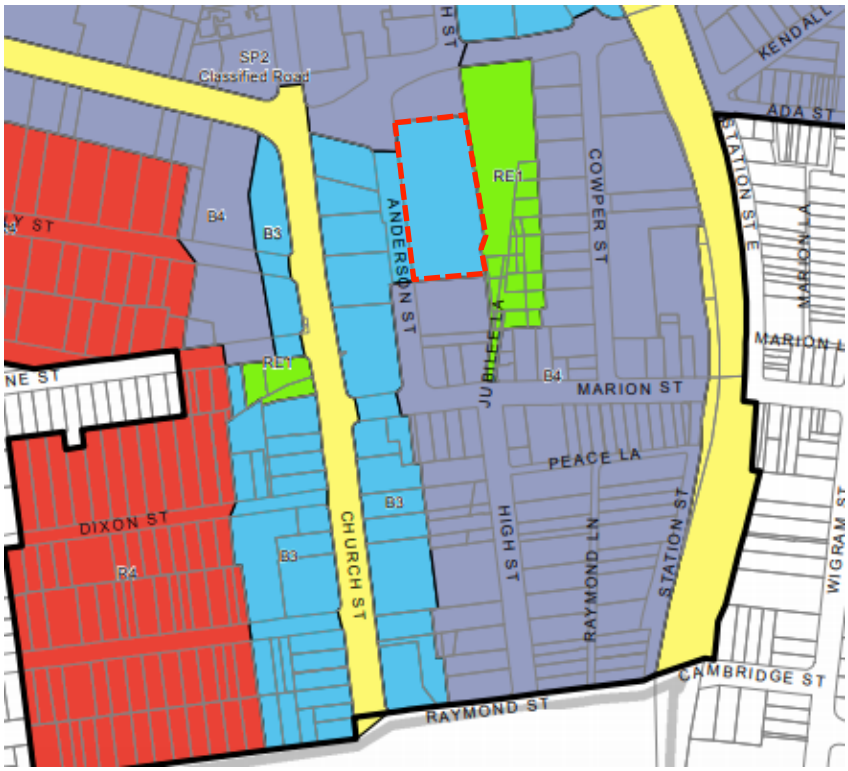

Figure 16 – Draft Land Use Zone Map
Source: Parramatta CBD Planning Proposal

The subject planning proposal seeks to rezone the site from B5 Business Development to B3 Commercial Core in accordance with the CBD Planning Proposal.

Additionally, the subject planning proposal seeks to include 'residential accommodation' as an additional permitted use at the site. While this approach varies from the CBD Planning Proposal, residential accommodation is considered appropriate due to the site's unique location and surrounding context. Unlike other proposed B3 Commercial Core land in the Auto Alley Precinct, the subject site is positioned a full block to the east of Church Street, forming an irregular extension of the primary commercial strip along Church Street (as evident in Figure 16 above). Furthermore, the site is adjoined by B4 Mixed Use land to the north and south, and by Jubilee Park to the east. As such, residential accommodation at the site is compatible with the predominately mixed-use context and would not disrupt the proposed commercial strip fronting Church Street.

Height

The CBD Planning Proposal proposes a maximum height for the site of part 80m and part 0m (Figure 17). The 0m portion reflects Council's desire for the land to dedicated to Council for the delivery of new open space (p. 29 of CBD Planning Proposal).

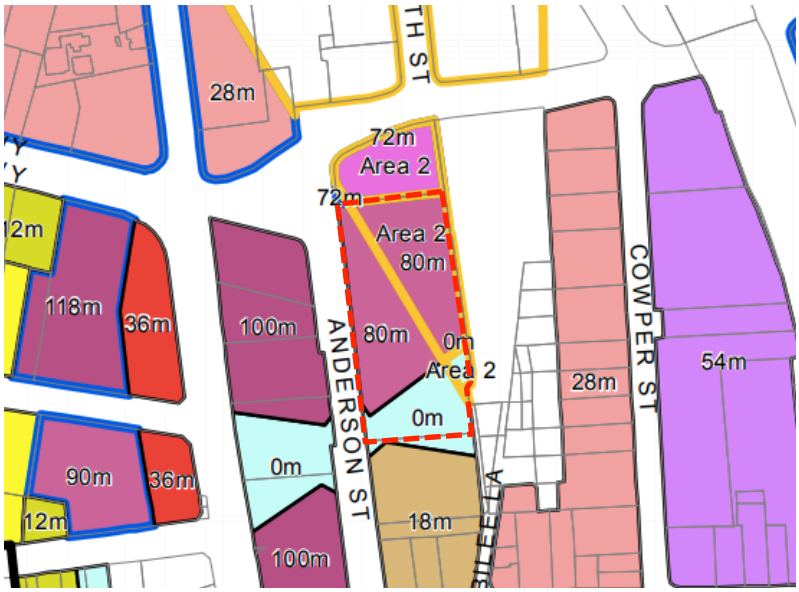

Figure 17 – Draft Height of Building Map
Source: Parramatta CBD Planning Proposal

The subject planning proposal seeks a maximum height of part 95m and part and 0m. The proposed 0m portion is consistent with the CBD Planning Proposal and would accommodate the open space and through-site link planned for this portion of the site. The proposed 95m portion is 15m above the maximum height of 80m proposed for this portion of the site under the CBD Planning Proposal; nonetheless, this height is considered appropriate, as it would have no unacceptable overshadowing or view impacts. There is no important view corridor affecting the site or any nearby heritage items. Overshadowing is discussed in further detail in Section C of this report.

Solar access protection

The CBD Planning Proposal proposes a new sun protection map and associated provisions under clause 7.4 of Parramatta LEP 2011. The current provisions state that the consent authority must take into consideration the relevant sun access plane controls specified in section 4.3.3 of the Parramatta DCP 2011. The draft provisions formalise the DCP's controls and state that consent cannot be granted for development that causes additional overshadowing to Jubilee Park on 21 June between 12pm and 2pm.

No amendment to the sun access plane controls is proposed under this planning proposal. Any future development application allowed by this planning proposal would be subject to all relevant sun access plane controls in the Parramatta LEP 2011 and DCP 2011. It is assumed that the draft sun access plane provisions in the CBD Planning Proposal would be in force (or would form a relevant consideration under section 4.15 of the EP&A Act) before any development application allowed by this planning proposal is determined. The concept scheme in the Urban Design Report has been prepared accordingly.

Floor space ratio

The CBD Planning Proposal proposes a maximum FSR of 6:1 for the site (Figure 18). Given its commercial zoning, the site is not subject to incentive floor space provisions under the Parramatta CBD Planning Proposal.

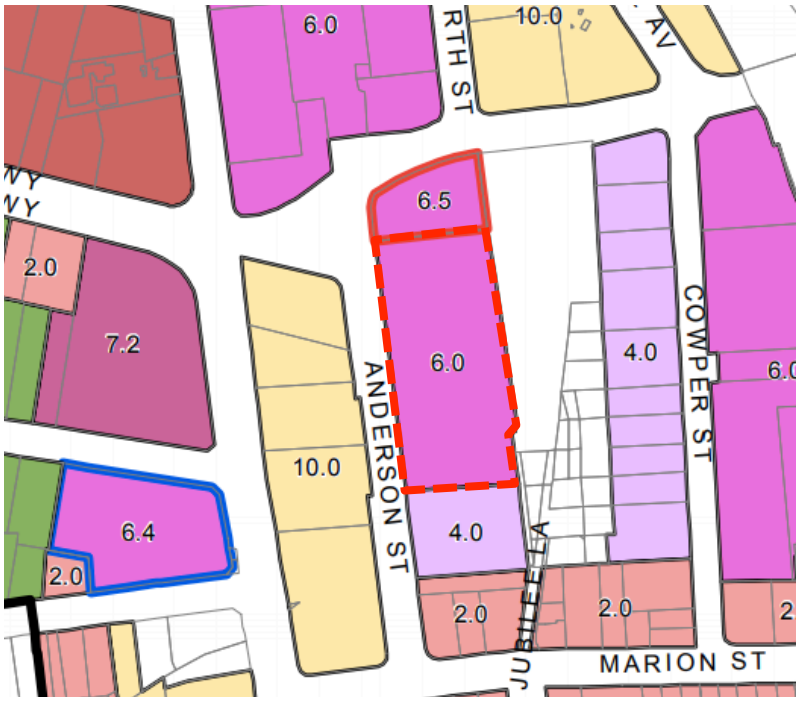

Figure 18 – Draft Floor Space Ratio Map
Source: Parramatta CBD Planning Proposal

Consistent with the CBD Planning Proposal, the subject planning proposal seeks a maximum FSR of 6:1. This FSR would provide for an appropriate scale of the development that is compatible with Council's desired future character for the area as expressed by the CBD Planning Proposal.

Additionally, the subject planning proposal seeks to cap the site's residential accommodation and serviced apartments at 4.15:1 FSR (excluding design excellence bonus). This would ensure that the site retains significant commercial floor space potential. The concept scheme for the site envisions that the remaining 1.85:1 FSR would be occupied by retail uses and a 5-star hotel.

Parramatta 2038 Community Strategic Plan (2013)

Parramatta 2038 Community Strategic Plan (2013) (Parramatta 2038) is a long-term community strategic plan for the City of Parramatta. It formalises a series of major ideas for the transformation of the City, including the development of Parramatta CBD, Westmead, Camellia and Rydalmere; a Light Rail network and Local and Regional Ring Roads; the Parramatta River entertainment precinct; and a connected series of parks and recreation spaces.

The planning proposal pursues key strategic objectives identified in Parramatta 2038 by contributing to economic growth through the addition of employment opportunities associated with a 5-star hotel and by adding to the city's connectedness by allowing additional residential population in close proximity to a key public transport node. More generally, the planning proposal is considered to meet the strategies by allowing for an

appropriate mix of residential and commercial uses, which would support the revitalisation of the CBD.

Overall, the increase in development potential and incorporation of the provisions included in this planning proposal are consistent with the identified strategic objectives contained in Parramatta 2038.

Parramatta Smart City Masterplan (2015)

The Parramatta Smart City Master Plan (2015) (Smart City Master Plan) aligns with the objectives in Parramatta 2038. Parramatta's mission as a Smart City is that:

- *Parramatta will be a highly liveable, technologically enabled, active and desirable place to live, work and visit as Australia's next great city.*
- *Parramatta will develop an environment that encourages and leverages the synergies between centres of excellence in research, technology, education, health, enterprise and creativity.*
- *Parramatta will plan for outcomes that drive economic competitiveness, improves safety, enhances mobility, improves environmental sustainability, enriches social and community connections, embraces cultural diversity and celebrates our heritage.*

The Smart City Master Plan sets out a number of guiding principles that will be used by the City for any initiative that is put forward to test its alignment to Parramatta's mission as a Smart City. These include, relevant to this proposal, 'improve livability', 'enhance the environment' and 'improve connectivity'.

The planning proposal is generally consistent with these guiding principles in that it would allow for a high-quality, livable mixed-use precinct located close public transport and sensitive to the surrounding built form and natural environment.

Q5. Is the Planning Proposal consistent with the applicable State Environmental Planning Policies?

The planning proposal is consistent with all relevant State Environmental Planning Policies (SEPPs) as outlined in Table 6.

Table 5 – State Environmental Planning Policies

SEPP	Consistent	Comment
SEPP No. 1- Development Standards	Not Applicable	-
SEPP No. 14 – Coastal Wetlands	Not Applicable	-
SEPP No. 19 – Bushland in Urban Areas	Not Applicable	-
SEPP No 21 – Caravan Parks	Not Applicable	-
SEPP No. 26 – Littoral	Not Applicable	-

Table 5 – State Environmental Planning Policies		
Rainforests		
SEPP No. 30 – Intensive Agriculture	Not Applicable	-
SEPP No. 32 – Urban Consolidation (Redevelopment of Urban Land)	Consistent	The proposal is an example of infill development and provides for multiple uses on site. The proposal meets the aims and objectives of this SEPP.
SEPP No. 33 – Hazardous and Offensive Development	Not Applicable	-
SEPP No. 36 – Manufactured Home Estates	Not Applicable	-
SEPP No. 44 – Koala Habitat Protection	Not Applicable	-
SEPP No. 47 – Moore Park Showground	Not Applicable	-
SEPP no. 50 – Canal Estate Development	Not Applicable	-
SEPP No. 52 – Farm Dams and Other Works in Land and Water Management Plan Areas	Not Applicable	-
SEPP No. 55 – Remediation of Land	Consistent	A Preliminary Site Investigation has been prepared for the site (submitted under separate cover). The investigation has identified three potential sources of contamination: • Historic fill materials utilised in earthworks; • Potential asbestos and/or lead-containing material due to demolition of historical buildings; and • Spills and leaks from vehicles stored at the site's previous car yard. Nonetheless, the investigation considers that the associated risks to human health are low and could be effectively managed through standard occupational health and safety procedures.
SEPP No. 62 – Sustainable Aquaculture	Not Applicable	-
SEPP No. 64 – Advertising and	Not Applicable	-

Table 5 – State Environmental Planning Policies		
Signage		
SEPP No. 65 – Design Quality of Residential Flat Development	Consistent	The concept scheme (refer to Urban Design Report submitted under separate cover) has been prepared with consideration of SEPP 65. Any future development application for the site would be subject to a detailed assessment under SEPP 65 and associated ADG. See Section C of this report for further discussion.
SEPP No. 70 – Affordable Housing (Revised Schemes)	Consistent	The proposal does not affect the schemes within this SEPP, nor does it propose any new scheme for affordable housing that would need to be included in this SEPP. The planning proposal is consistent with the objectives of this SEPP.
SEPP No. 71 – Coastal Protection	Not Applicable	-
SEPP (Affordable Rental Housing) 2009	Consistent	The proposal does not inhibit any operations of this SEPP.
SEPP (Building Sustainability Index: BASIX) 2004	Consistent	The proposal does not inhibit any operations of this SEPP. Any future development application for residential uses at the site would be accompanied by a BASIX certificate.
SEPP (Exempt and Complying Development Codes 2008	Consistent	The proposal does not inhibit any operations of this SEPP.
SEPP (Housing for Seniors or People with a Disability) 2004	Consistent	The proposal does not inhibit any operations of this SEPP.
SEPP (Infrastructure) 2007	Not Applicable	-
SEPP (Kosciuszko National Park – Alpine Resorts) 2007	Not Applicable	-
SEPP (Kurnell Peninsula) 1989	Not Applicable	-
SEPP (Major Development) 2005	Consistent	The proposal does not inhibit the operations of the former Part 3A provisions or the replacement measures.
SEPP (Mining, Petroleum	Not Applicable	-

Table 5 – State Environmental Planning Policies		
Production and Extractive Industries) 2007		
SEPP Penrith Lakes Scheme	Not Applicable	-
SEPP (Rural Lands) 2008	Not Applicable	-
SEPP (State and Regional Development) 2011	Not Applicable	-
SEPP (State Significant Precincts) 2005	Not Applicable	-
SEPP (Sydney Drinking Water Catchment) 2011	Not Applicable	-
SEPP (Sydney Region Growth Centres) 2006	Not Applicable	-
SEPP (Three Ports) 2013	Not Applicable	-
SEPP (Urban Renewal) 2010	Not Applicable	-
SEPP (Western Sydney Employment Area) 2009	Not Applicable	-
SEPP (Western Sydney Parklands) 2009	Not Applicable	-
SREP No. 8 – Central Coast Plateau Areas	Not Applicable	-
SREP No. 9 – Extractive Industry (No 2 – 1995)	Not Applicable	-
SREP No. 16 – Walsh Bay	Not Applicable	-
SREP No. 20 – Hawkesbury – Nepean River (No 2 – 1997)	Not Applicable	-
SREP No. 24 – Homebush Bay Area	Not Applicable	-

Table 5 – State Environmental Planning Policies		
SREP No. 26 – City West	Not Applicable	-
SREP No. 30 – St Marys	Not Applicable	-
SREP No. 33 – Cooks Cove	Not Applicable	-
SREP (Sydney Harbour Catchment) 2005	Not Applicable	-

Q6. Is the Planning Proposal consistent with applicable Ministerial Directions (s. 117 directions)?

The planning proposal is consistent with all applicable Ministerial Directions under the previous Section 117 of the EP&A Act (now Section 9.1) as outlined in the table below.

Table 6 – Section 117 Ministerial Directions			
Clause	Direction	Consistency	Comment
1. Employment and Resources			
1.1	Business and Industrial Zones	Consistent	The proposal retains the site as a business zone. It seeks to rezone the site from a lower to higher order business zone (B5 Business Development to B3 Commercial Core). The proposed additional permitted use would not reduce the total potential floor space area for employment uses, as the site would retain a business zoning. Also, under the CBD Planning Proposal, development for the purposes of office premises has no restriction on FSR, and therefore the capacity of the site to accommodate ongoing commercial and business-related development is strong. It is estimated that the proposal would result in additional employment (+90 full time equivalent jobs) compared to existing operations (refer to the Economic Impact Assessment submitted under separate cover).
1.2	Rural Zones	Not Applicable	-
1.3	Mining, Petroleum Production and Extractive Industries	Not Applicable	-
1.4	Oyster Aquaculture	Not Applicable	-

Table 6 – Section 117 Ministerial Directions			
1.5	Rural Lands	Not Applicable	-
2. Environment and Heritage			
2.1	Environment Protection Zones	Not Applicable	-
2.2	Coastal Protection	Not Applicable	-
2.3	Heritage Conservation	Not Applicable	-
2.4	Recreation Vehicle Areas	Not Applicable	-
2.5	Application of E2 and E3 Zones and Environmental Overlays in Far North Coast LEPs	Not Applicable	-
3. Housing, Infrastructure and Urban Development			
3.1	Residential Zones	Not Applicable	The proposal allows for a range of residential unit types, consistent with the existing trends and market demands.
3.2	Caravan Parks and Manufactured Home Estates	Not Applicable	-
3.3	Home Occupations	Consistent	-
3.4	Integrating Land Use and Transport	Consistent	The proposal is consistent with this direction in that it increases density for potential residential and commercial uses in a location close to public transport (Parramatta Transport Interchange).
3.5	Development Near Licensed Aerodromes	Not Applicable	-
3.6	Shooting Ranges	Not Applicable	-
4. Hazard and Risk			
4.1	Acid Sulfate Soils	Consistent	Based on the Acid Sulfate Soils Map in Parramatta LEP 2011, the site contains mostly Class 4 Acid Sulfate Soils. In this class, works more than two metres below natural ground surface or that are likely to lower the water table more than two metres below the natural ground surface present an environmental risk. The preliminary site investigation

Table 6 – Section 117 Ministerial Directions			
			(submitted under separate cover) considers acid sulfate soils. Overall, the investigation has found that the potential risks to human health and environment resulting from the proposal are considered to be low.
4.2	Mine Subsidence and Unstable Land	Not Applicable	-
4.3	Flood Prone Land	Consistent	See further discussion below table.
4.4	Planning for Bushfire Protection	Not Applicable	-
5 Regional Planning			
5.1	Implementation of Regional Strategies	Not Applicable	-
5.2	Sydney Drinking Water Catchments	Not Applicable	-
5.3	Farmland of State and Regional Significance on the NSW Far North Coast	Not Applicable	-
5.4	Commercial and Retail Development along the Pacific Highway, North Coast	Not Applicable	-
5.5	Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA) (Revoked 18 June 2010)	Not Applicable	-
5.6	Sydney to Canberra Corridor (Revoked 10 July 2008. See Amended Directions 5.1)	Not Applicable	-
5.7	Central Coast (Revoked 10 July 2008. See amended Directions 5.1)	Not Applicable	-
5.8	Second Sydney Airport: Badgerys Creek	Not Applicable	-
5.9	North West Rail Link	Not Applicable	-

Table 6 – Section 117 Ministerial Directions			
	Corridor Strategy		
5.10	Implementation of Regional Plans	Not Applicable	-
6 Local Plan Making			
6.1	Approval and Referral Requirements	Consistent	The proposal does not include consultation, referral or concurrence provisions, nor does it identify development as designated development.
6.2	Reserving Land for Public Purposes	Consistent	The proposal does not contain any land that has been reserved for a public purpose, and no requests have been made to reserve such land.
6.3	Site Specific Provisions	Consistent	The planning proposal is for a site-specific increase in maximum height of building and floor space ratio and Schedule 1 additional permitted use in accordance with existing clauses in the Standard Instrument Parramatta LEP 2011. It does not impose any unnecessarily restrictive site-specific controls.
7 Metropolitan Planning			
7.1	Implementation of A Plan for Growing Sydney	Consistent	As demonstrated in Table 3 above, the planning proposal is consistent with the planning principles, directions and priorities for subregions, strategic centres and transport gateways in the *Greater Sydney Region Plan*, which has replaced *A Plan for Growing Sydney* as Sydney's overarching metropolitan strategy.
7.2	Implementation of Greater Macarthur Land Release Investigation	Not Applicable	-

4.3 Flood prone land

The site is potentially subject to flooding by floodwaters spilling from Clay Cliff Creek and overland flows. According to Council's 2005 Lower Parramatta River Floodplain Study, the site is identified as being within the High Hydraulic Hazard area.

Section 4.3 of the Section 9.1 Ministerial Directions (previous Section 117) sets out provisions that must be followed when a planning proposal alters a zone or a provision that affects flood prone land. The planning proposal's consistency with these provisions is outlined below:

> *(4) A planning proposal must include provisions that give effect to and are consistent with the NSW Flood Prone Land Policy and the principles of the Floodplain*

Development Manual 2005 (including the Guideline on Development Controls on Low Flood Risk Areas).

The planning proposal is consistent with the NSW Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005 as discussed in Section 7.3 of the Flood Impact Assessment prepared by Cardno (submitted under separate cover).

(6) A planning proposal must not contain provisions that apply to the flood planning areas which:

(a) permit development in floodway areas,

Council's 2005 assessment of flooding under existing conditions identified a single 7m-wide floodway area through the property, being the driveway between the hotel building and the current hotel carpark building. The planning proposal seeks to relocate and widen the corridor to a 27m-wide east-west corridor in the centre of the property, allowing for sufficient floodway area in the case of redevelopment.

(b) permit development that will result in significant flood impacts to other properties,

The flood impact assessments described in Section 3 of Cardno's report demonstrate that the planning proposal would not have a significant flood impact on any other property.

(c) permit a significant increase in the development of that land

The planning proposal proposes an increase in density consistent with Council's planned increase under the CBD Planning Proposal (i.e., 6:1 FSR). The only persons directly at risk in floods greater than a 100-year Average Recurrence Interval (ARI) flood would be hotel staff and guests, retail staff and customers, and visitors/residents on the ground floor. All other persons, including occupants of the residential apartments, would be indirectly at risk. A detailed Flood Emergency Response Plan would accompany any DA lodged with Council.

(d) are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services

The flood impact assessments described in Section 3 of Cardno's report demonstrate that the planning proposal would not have a significant flood impact on other properties. As such, there would be no substantially increased requirement for government spending on flood mitigation measures or infrastructure. All persons on the would be provided with flood-free access to Jubilee Lane in a 100-year ARI flood.

Overall, the planning proposal is considered consistent with Section 4.3 Flood Prone Land of the Ministerial Directions.

Section C—Environmental, social and economic impact

Q7. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

There are no critical habitat or threatened species, populations or ecological communities, or their habitats on or around the site that would be affected by this planning proposal.

Q8. Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

The planning proposal would not result in any unacceptable environmental impacts as discussed below:

Built form

Grimshaw has prepared a concept scheme to demonstrate a possible building under the proposed controls (refer to urban Design Report submitted under separate cover). The scheme has been designed to respond to the site's context and key constraints and to minimise environmental impacts.

The scheme features four building forms comprising two high-rise forms on the western side of the site and two lower-rise forms on the eastern side (with the highest form at the southwest corner). This layout is optimal for the following reasons:

- It avoids additional overshadowing to Jubilee Park during the critical hours of 12pm to 2pm at mid-winter and minimises overshadowing to dwellings to the southeast while maintaining rational, efficient floor plates;
- It maximises internal residential amenity, such as solar access and natural cross ventilation;
- It facilitates views towards Sydney CBD to the east and the Blue Mountains to the west; and
- It allows for a high level of ground level open space and pedestrian permeability.

Three east-west through-site links run through the site, providing pedestrian connectivity between Anderson Street and Jubilee Park. A north-south link connects these links internally.

A hard building edge is provided along Anderson Street, reinforcing this street as the primary development frontage.

Based on the concept scheme, it is clear that the planning proposal is capable of facilitating a high-quality, well-designed development that is compatible with the existing and future built form context and responsive to site constraints.

The design would be developed during the design competition (potential) and development application phases. The design would be subject to a detailed assessment against SEPP 65 and other built form controls in Parramatta DCP 2011 during the latter phase.

SEPP 65 and Apartment Design Guide

The concept scheme (refer to Urban Design Report submitted under separate cover) demonstrates general compliance with key ADG criteria, as outlined below:

- 87% of residential apartments achieve at least two hours of sunlight between the hours of 9am and 3pm at the winter solstice to their living room windows and private open space areas, which is greater than the minimum of 70%;
- Only 13% of residential apartments receive no direct sunlight at the winter solstice, which is less than the maximum of 15%;
- 93% of residential apartments apartments in the first nine storeys of the building are naturally cross-ventilated, which is greater than the minimum of 60% (Note: some of

the apartments rely on façade slots for cross ventilation purposes; this design can be modified if necessary during the application stage);

- The required building separation is provided between buildings on site and between the buildings and the site boundary;
- Deep soil areas comprise 22% of the site area, which is well above the required 7%. There are two distinct areas of deep soil—one at the north end of the site adjacent to the significant trees located along the boundary and one at the south end of the site within the 0m height area;
- 50% of the site area is provided as open space, which is sufficient for accommodating communal open space areas equivalent to 25% of the site area as required by the ADG; and
- 25% of the open space area achieves at least two hours of sunlight between 9am and 3pm at the winter solstice; when combined with the high percentage of open space (50% of the site area), this leaves ample opportunity for achieving direct sunlight to 50% of the principal usable area of communal open space as required by the ADG.

Parking and traffic

A Traffic Technical Note (submitted under separate cover) has been prepared by Ason Group in support of the planning proposal. The technical note provides a traffic generation assessment of the site under two scenarios, being the CBD Planning Proposal and the subject planning proposal. The table below outlines the results of the assessment. (For a discussion of the adopted trip generation rates, refer to the technical note).

Table 7 – Traffic generation comparison

Scheme	AM Peak (vehicles per hour)	PM Peak (vehicles per hour)	Daily generation (vehicles per day)
CBD Planning Proposal	332	293	2,915
Subject planning proposal	151	113	1,177
Difference	-181	-180	-1,738

The table shows that redevelopment for mixed-use purposes under the subject planning proposal would result in *less* traffic than redevelopment for purely commercial purposes under the CBD Planning Proposal.

Council is currently undertaking CBD-wide traffic modeling as part of the CBD Planning Proposal. Given the difference predicted traffic generation in the table above, this CBD-wide modeling would more than account for the traffic generated by the subject planning proposal. Further detailed traffic assessments are therefore considered unnecessary at this stage. Such assessments could be undertaken during the future development application stage if required.

Overshadowing

The concept scheme has been designed to comply with the overshadowing provisions related to Jubilee Park contained within the PLEP 2011, PDCP 2011 and Parramatta CBD Planning Proposal. Specifically, the scheme has been designed to result in no additional overshadowing to the park between 12pm and 2pm at the winter solstice. As demonstrated

at Figure 19 below, the shadow of the buildings are completely outside of Jubilee Park at 2pm at the winter solstice (i.e., the worst-case overshadowing scenario).

Figure 19 – Jubilee Park overshadowing diagram (concept scheme) – 2pm at winter solstice
Source: Grimshaw

The concept scheme has no unacceptable overshadowing impacts on other surrounding properties, which are generally commercial in nature. During the hours 10am to 1pm at the winter solstice, the scheme's shadow is generally contained within the commercial area defined by Church Street to the west, Marion Street to the south and Jubilee Lane to the east. Between 2pm and 3pm, the shadow affects a row of single-storey dwelling houses on the south side of Mariton Street. However, these dwellings receive sunlight during the morning and early afternoon in accordance with ADG and Parramatta DCP 2011 overshadowing requirements, and therefore the concept scheme's overshadowing is considered acceptable.

Flooding

The site currently experiences flooding from overflow from Clay Cliff Creek and overland flows. Based the flood hazards mapped by Council , the site is identified as within a High Hydraulic Flood Hazard area. There are also Low Hazard areas in the southeast and northeast corners of the site.

Informed by detailed flood modeling, the ground floor concept scheme has been designed to manage the flood risk at the site as follows:

- Flood flow through the property would be consolidated in an east-west corridor in the centre of the property.
- An elevated podium and concourse would be constructed at the Flood Planning Level (11.25m AHD).

- Access by emergency services and/or evacuation in a 100-year ARI flood event would be via a path connecting the podium to Jubilee Lane. This path is located in Council's mapped area of Low Hazard.

- The crest level of any driveway access from Anderson Street to basement car parking would incorporate not less than 500mm freeboard above the 100-year ARI level. Consideration could be also given to including a flood barrier to further delay the ingress of floodwaters into the basement car park in events more extreme than a 100-year flood.

- In the southern part of the property, the current car parking building would be replaced by open space/park, which would be regraded from the existing ground levels along the property boundaries up to the podium level.

- The capacity of the covered section of Clay Cliff Creek would be supplemented by a grated inlet on the Anderson Street boundary discharging overland flow into a single 1050 mm diameter RCP which would convey flows parallel to Clay Cliff Creek and discharge flow back into the open section of the channel in the vicinity of the eastern boundary.

Overall, it is considered that the site is suitable for residential development from a flood risk perspective subject to implementation of the hydraulic strategies outlined above, which would be further refined at the development application stage. Flooding impacts and mitigation strategies are discussed in detail in the Flood Assessment Report (submitted under separate cover).

The planning proposal's consistency with Section 4.3 Flood Prone Land of the Section 9.1 Ministerial Directions is summarised in Section B of this report.

Q9. Has the planning proposal adequately addressed any social and economic effects?

Social effects

The planning proposal would create a number of positive social outcomes, as follows:

- It would facilitate delivery of additional dwellings in close proximity to transport, employment and services within Parramatta CBD, meeting the strategic objectives of the *Greater Sydney Region Plan* and *Central City District Plan*.
- It would allow for range of dwelling types and sizes at different price points, which would reduce the pressure on existing housing stock and improve housing diversity.
- It would provide for commercial floor space at the site, which would create employment opportunities for the community.
- It would facilitate a high-quality mixed-use development that contributes to a well-designed built environment to be enjoyed by the community.

Economic effects

An Economic Impact Assessment (submitted under separate cover) has been prepared in support of the planning proposal. The assessment provides an analysis of the site's suitability for redevelopment and to provide an assessment of the economic impacts likely to result from redevelopment under the planning proposal.

The assessment has found that the site is poorly situated for the A-grade office development envisioned by the CBD Planning Proposal due to the surrounding mixed-use, largely

residential environment. This environment may deter A-grade tenants, who demand the corporate image and prestige associated with dense, mostly commercial areas. A decline in corporate prestige can be observed in parts of the southern portion of Sydney CBD and Chatswood, which are dominated by residential uses.

The commercial viability of redeveloping the site with a 5-star hotel is linked to the ability to include residential accommodation in the redevelopment. If residential uses are not permitted, the site may become sterilised, and redevelopment may not occur.

The Economic Impact Assessment has found that redevelopment of the site under the planning proposal would result in a significantly improved outcome compared to current operations. In summary:

- Existing operations result in $34.8 million in annual output, $17.9 million contribution to Gross Regional Product (GRP), $8.5 million in incomes and salaries paid to households, and 118 full-time (FTE) jobs; and
- Redevelopment under the planning proposal would result in $59 million in annual output (+70%), $30.3 million contribution to GRP (+41%), $14.5 million in incomes and salaries paid to households (+41%), and 208 FTE jobs (+76%).

Section D—State and Commonwealth Interests

Q10. Is there adequate public infrastructure for the planning proposal?

The site is currently serviced by all essential services and infrastructure. Certain infrastructure may be required to be upgraded to service future development. This would be determined at the future development application stage in consultation with the relevant utility authorities. For further information, refer to the preliminary civil infrastructure report by Cardno (submitted under separate cover).

The site is well serviced by public transport, with Parramatta Transport Interchange approximately 340m to the north.

Q11. What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway determination?

At this stage, the views of appropriate State and Commonwealth public authorities have not been obtained. This would occur following Gateway determination.

Part 4: Mapping

The table below outlines the proposed changes to the provisions of Parramatta LEP 2011.

Table 8 – Proposed mapping changes

Item	Current provisions	Proposed provisions
Zone	B5 Business Development	B3 Commercial Core 'Residential accommodation' and 'serviced apartments' (up to 4.15:1 FSR) would be added as an additional permitted use under Schedule 1.
Height	18m	Part 95m and part 0m

Table 8 – Proposed mapping changes		
Item	Current provisions	Proposed provisions
FSR	4:1	6:1

The proposed changes would be reflected in amendments to the Height of Building Map and Floor Space Ratio Map in Parramatta LEP 2011.

The proposed maps have been submitted with this proposal under separate cover. Extracts are provided at Figure 20 to Figure 22.

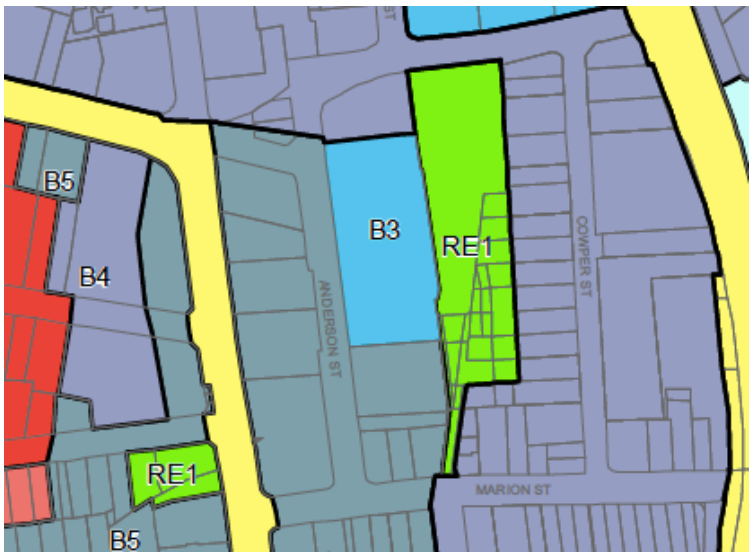

Figure 20 – Proposed zoning map
Source: Mecone

AB3 = 95m

Figure 21 – Proposed height of buildings map
Source: Mecone

Figure 22 – Proposed FSR map
Source: Mecone

Part 5: Community Consultation

Community consultation would take place following a Gateway determination, in accordance with Section 3.34 and clause 4 of Schedule 1 of the EP&A Act. It is anticipated that public exhibition would include:

- Notification on the City of Parramatta Council website;
- Advertisement in local newspapers that are circulated within the local government area;
- Notification in writing to adjoining landowners and neighbours, and any other relevant stakeholders; and
- A four-week exhibition period.

Part 6: Project timeline

This project timeline has been provided to assist with monitoring the progress of the planning proposal through the plan making process and assist with resourcing to reduce potential delays.

Table 9 – Project timeline

Milestone	Date	Comments
Anticipated commencement date (date of Gateway determination)	August 2018	
Anticipated timeframe for the completion of required technical information	Completed prior to lodgment	Updates to be made if necessary
Timeframe for government agency consultation (pre and post exhibition as required by Gateway	September 2018	Other relevant agencies to be consulted as necessary or required by the Gateway determination

Table 9 – Project timeline		
determination)		
Commencement and completion dates for public exhibition period	October 2018	
Dates for public hearing (if required)	Within exhibition period	
Timeframe for consideration of submissions	November – December 2018	
Timeframe for consideration of a proposal post exhibition	As above	
Date of submission to the department to finalise the LEP	January 2019	
Anticipated date for publishing of the plan	February 2019	
Anticipated date RPA will forward to the department for notification	As above	

Conclusion

This planning proposal has provided a full justification of the proposed changes to Parramatta LEP 2011 in line with DP&E's standardised pathway for Gateway rezonings. The justification demonstrates that the proposal:

- Is consistent with the *Greater Sydney Region Plan* and *Central City District Plan*;
- Is consistent with relevant Ministerial Directions;
- Is consistent with relevant State Environmental Planning Policies;
- Supports Council's local strategies including the Parramatta CBD Planning Proposal;
- Provides for a high-quality mixed-use development with 5-star internationally branded hotel that is compatible with the existing and future built form context;
- Provides for additional residential accommodation and commercial space in a location in close proximity to a range of public transport and services; and
- Provides a range of housing types that would contribute to State and local housing targets and serve the needs of the local community.


mecone