NSW Health Infrastructure

Early Works Project, Westmead Hospital

Civil Design Report

Rev F | 29 March 2023

Job number 281916

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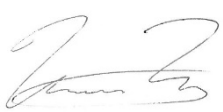
Job title		Early Works Project, Westmead Hospital			**Job number** 281916
Document title		Civil Design Report			**File reference**
Document ref					
Revision	**Date**	**Filename**	IMHC-ARP-CV-RP-005_Arup Civil REF Report		
A	30 Sept 2022	**Description**	Final		
			Prepared by	Checked by	Approved by
		Name	Ashley Nguyen Andrew Crouch	Terrence Tang	Andrew Crouch
		Signature			
B	6 Oct 2022	**Filename**	IMHC-ARP-CV-RP-005_Arup Civil REF Report		
		Description	Minor updates		
			Prepared by	Checked by	Approved by
		Name	Andrew Crouch	Terrence Tang	Andrew Crouch
		Signature			
C	25 Nov 2022	**Filename**	IMHC-ARP-CV-RP-005_Arup Civil REF Report		
		Description	Drawing updates		
			Prepared by	Checked by	Approved by
		Name	Andrew Crouch	Terrence Tang	Andrew Crouch
		Signature			
D	14 Feb 2023	**Filename**	IMHC-ARP-CV-RP-005_Arup Civil REF Report		
		Description	Drawing updates		
			Prepared by	Checked by	Approved by
		Name	Andrew Crouch CPEng	Terrence Tang CPEng	Andrew Crouch CPEng
		Signature			
E	21 Feb 2023	**Filename**	IMHC-ARP-CV-RP-005_Arup Civil REF Report		
		Description	Drawing updates		
			Prepared by	Checked by	Approved by
		Name	Andrew Crouch CPEng	Terrence Tang CPEng	Andrew Crouch CPEng
		Signature			

F	29 Mar 2023	**Filename**	IMHC-ARP-CV-RP-005_Arup Civil REF Report		
		Description	Drawing updates		
			Prepared by	Checked by	Approved by
		Name	Emily Fuller	Andrew Crouch CPEng	Andrew Crouch CPEng
		Signature			
			Issue Document verification with document		✓

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Acronym Definitions

ACM	Asbestos Contaminated Material
AEP	Annual Exceedance Probability
AR&R	Australian Rainfall & Runoff
BIRS	Brain Injury Rehabilitation Service
CASB	Central Acute Services Building
CHW	Children's Hospital Westmead
CoPC	City of Parramatta City Council
DCP	Development Control Plan
ESCP	Erosion and Sediment Control Plan
HI	NSW Health Infrastructure
IMHC	Integrated Mental Health Complex
LHD	Local Health District
LTAMP	Long Term Asbestos Management Plan
PSB	Paediatric Services Building
PMF	Probable Maximum Flood
REF	Review of Environmental Factors

Executive Summary

This report has been prepared as part of a Review of Environmental Factors for the Early Works Project at Westmead Hospital which proposes a series of infrastructure improvements to accommodate the future development of the Integrated Mental Health Complex (proposed separately as part of State Significant Development Application SSD-44034342).

The purpose of this report is to assess the potential environmental impacts which could arise from the proposed works, which include:

- Demolition of the existing Brain Injury Rehabilitation Unit building, Casuarina Lodge and office buildings;
- Diversion of existing in-ground sewer and water services;
- Construction of a new access way to the P14 staff car park;
- Flood mitigation works;
- Bulk earthworks and tree removal to accommodate the carrying out of the above works; and
- Adjustments to and installation of boom gates at the Healthshare building car park.

The proposed works will be carried out within the boundaries of Westmead Hospital which is located approximately 1.5km north-west of the Parramatta Central Business District (CBD).

The civil design involves demolition of the existing Brain Injury Unit, Casuarina Lodge and two Westmead Redevelopment Project Office buildings and subsequent regrading of the site, construction of the new P14 Access Way and diversion of private and Sydney Water utilities. Existing trees will also be removed as part of the early works. Appropriate sediment and erosion control measures will be implemented during construction.

Most potential environmental impacts associated with the project involve erosion and sediment runoff downstream to the waterways. These impacts will be mitigated and controlled through the implementation of robust sediment and erosion control measures in accordance with Landcom's "Soil and Construction Manual" (also known as the Blue Book) as outlined in this report.

As the site is known to contain asbestos, there is a contamination risk associated with excavating asbestos during the site regrading and construction works. This risk will be managed by implementing the Remedial Action plan that has been developed for the site.

Analysis of the site existing conditions reveal site flooding conditions are predominantly overland flows contained within Redbank Road and in the overland flow path to the north of the site. The exception is the PMF river flood event where the extent of flooding reaches the northern and eastern portions of the site.

Analysis of the post-development conditions has been undertaken holistically for the project, including the proposed IMHC building. The flood impacts of the development have been assessed for a range of flood events and the results show that the proposed building design, stormwater scheme and grading strategy for the development do not significantly impact the existing conditions flood behaviour and surrounding areas.

1 Introduction

1.1 Purpose of Report

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- Flood mitigation works; and
- Bulk earthworks and tree removal to accommodate the carrying out of the above works
- Adjustments to and installation of boom gates at the Healthshare building car park.

The proposed works will be carried out within the boundaries of Westmead Hospital, which is located approximately 1.5km north-west of the Parramatta Central Business District (CBD), the primary metropolitan centre of Western Sydney. The site is legally described as Lot 1 DP1194390 and Lot 4 DP 1077852, with works proposed in the central part of the precinct.

1.2 Site Description

The proposed early works development site includes two separate works areas. The main works area is bounded by Redbank Road to the south and west, the P14 elevated on-grade car park to the north and the child care centre to the east. The site is currently occupied by the Westmead Brain Injury Rehabilitation Service (BIRS) building, car parking and site offices. The newly constructed Central Acute Services Building (CASB) is located to the south, across Redbank Road. A site locality plan is included in Figure 1. The secondary works area is located at the Careflight access road, with the area extending to the north-eastern side of the P14 car park and south to the Healthshare building car park.

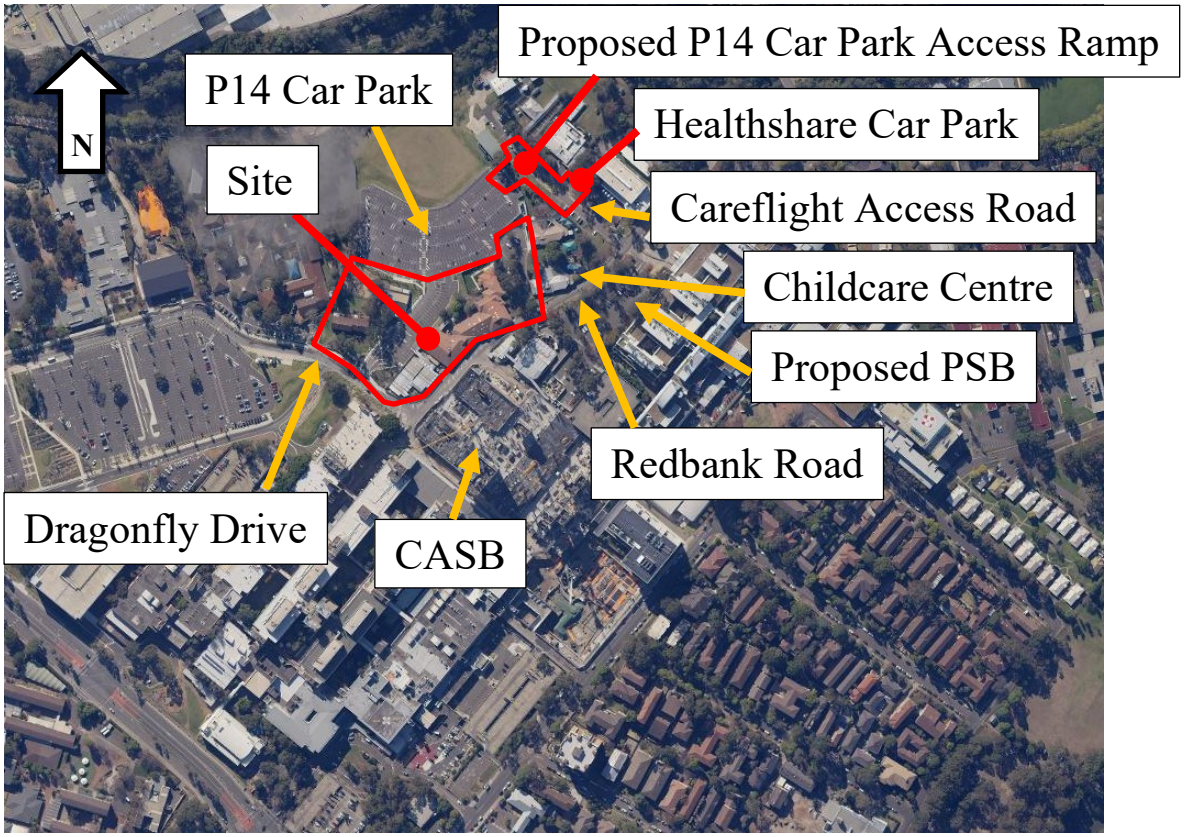


Figure 1: Early works locality plan (NSW Six Maps, 2021)

1.3 Proposed Early Works

This report addresses the key civil engineering design Early Works elements relating to the site and the approval requirements. The civil engineering works are listed below and Early Works package drawings are provided in Appendix A:

- Grading of building pads after building demolition, including minor earthworks;
- Diversion of existing in-ground services;
- Construction of a new road access to the P14 car park from the Careflight access road including pavements, kerbs, line marking, stormwater drainage, boom gates and any associated lighting upgrades deemed necessary. This new access provides an alternative access to the P14 car park and will enable the current P14 car park access road to be closed in future;
- Adjustments to and installation of boom gates at the Healthshare building car park;
- Erosion and sediment control.

The civil scope includes the site extents as indicated in Figure 1.

1.4 Design Standards, Guidelines and References

A summary of relevant design standards and guidelines that have been reviewed and considered as part of the early works design is included in Table 1.

Table 1 Relevant design standards

Design Component	Design References
Architectural Design	• Architectural Schematic Design Drawings, Jacobs, July 2022
Site Survey	• Site survey: Plan of Detail and Levels and Underground Service Detection over Part of Westmead Hospital (Ref No. 32572 088DT) Rev N, LTS Lockley, 2021 • Dial Before You Dig data from July 2021 enquiry • Survey of trunk stormwater drain from CASB to Toongabbie Creek: Plan Showing Proposed Drain Lines, Surveying Solutions Pty Ltd, 2017 • P14 car park for construction drawings: Westmead Redevelopment Early and Enabling Works Carpark SP1.1 and SP1.2 Civil Drawings, Cardno, 2016 • CCTV of trunk stormwater drainage and sewer, LTS Lockley, 26 November 2021 and 5 November 2021, respectively • Additional stormwater connectivity drainage plans of existing stormwater drainage at new P14 car park access ramp and main early works site, LTS Lockley, 26 November 2021
Contamination	• Remedial Action Plan: Integrated Health Complex, JBS&G, 25 July 2022 • Contamination Assessment: Integrated Health Complex, JBS&G, 25 July 2022
Erosion and Sediment Control	• Managing Urban Stormwater – Soil and Construction – Volume 1, 2004
Stormwater Drainage and Flood Risk	• City of Parramatta Council Flood Enquiry Application, 9 September 2021 • Children's Hospital Westmead Paediatric Services Building Flood Impact Assessment, 12 February 2021 • Australian Rainfall and Runoff Guidelines, 2019 • AS3500.3 Plumbing and Drainage – Stormwater Drainage, 2021
Earthworks	• Geotechnical Investigation for Integrated Mental Health Complex, JK Geotechnics, July 2022 •

Arborist	• Preliminary Arboricultural Impact Assessment, Tree Management Strategies, 17 November 2021

2 Existing Site Conditions

This section describes the existing site conditions of the proposed early works development site and surrounding area.

2.1 Site Layout

The early works site is bounded to the south-west by Dragonfly Drive, which is aligned in a northeast to southwest direction. Redbank Road bounds the site to the south-east, with the CASB and proposed PSB buildings located on the south side of Redbank Road. Both Redbank Road and Dragonfly Drive provide two-way vehicular access. The Westmead childcare centre, consisting of two buildings, is located immediately north-east of the site. The P14 car park is located to the north-west of the existing P14 car park.

The site generally grades from south to north and west to east towards Toongabbie Creek.

Within the site boundary a number of features are present that are to be removed or demolished as part of the early works, including:

1. Westmead redevelopment project office – demountables
2. Westmead redevelopment project office
3. Brain Injury Rehabilitation Services (BIRS) building
4. Casuarina Lodge building

These features are shown in Figure 2 and Figure 3.

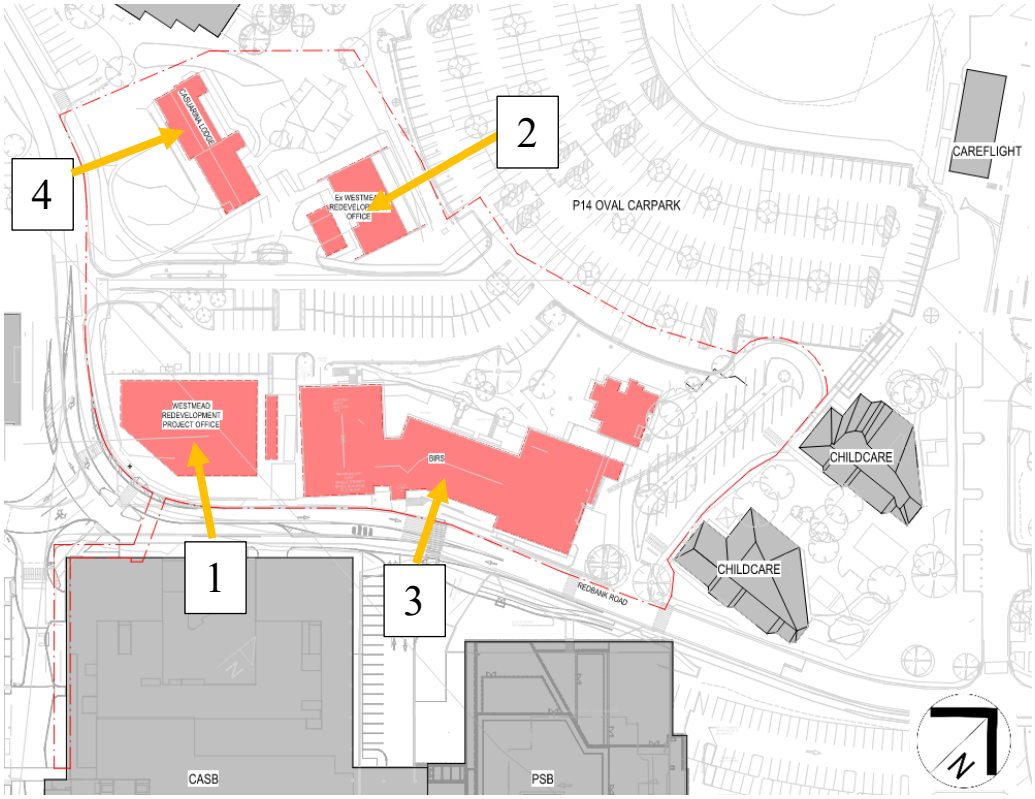


Figure 2: Early works site (Jacobs, 18 July 2022)

Figure 3: Early works site extent shown on aerial photo (source: Six Maps)

The proposed location of the relocated P14 access ramp at the north-eastern side of the existing P14 car park is shown in Figure 4.

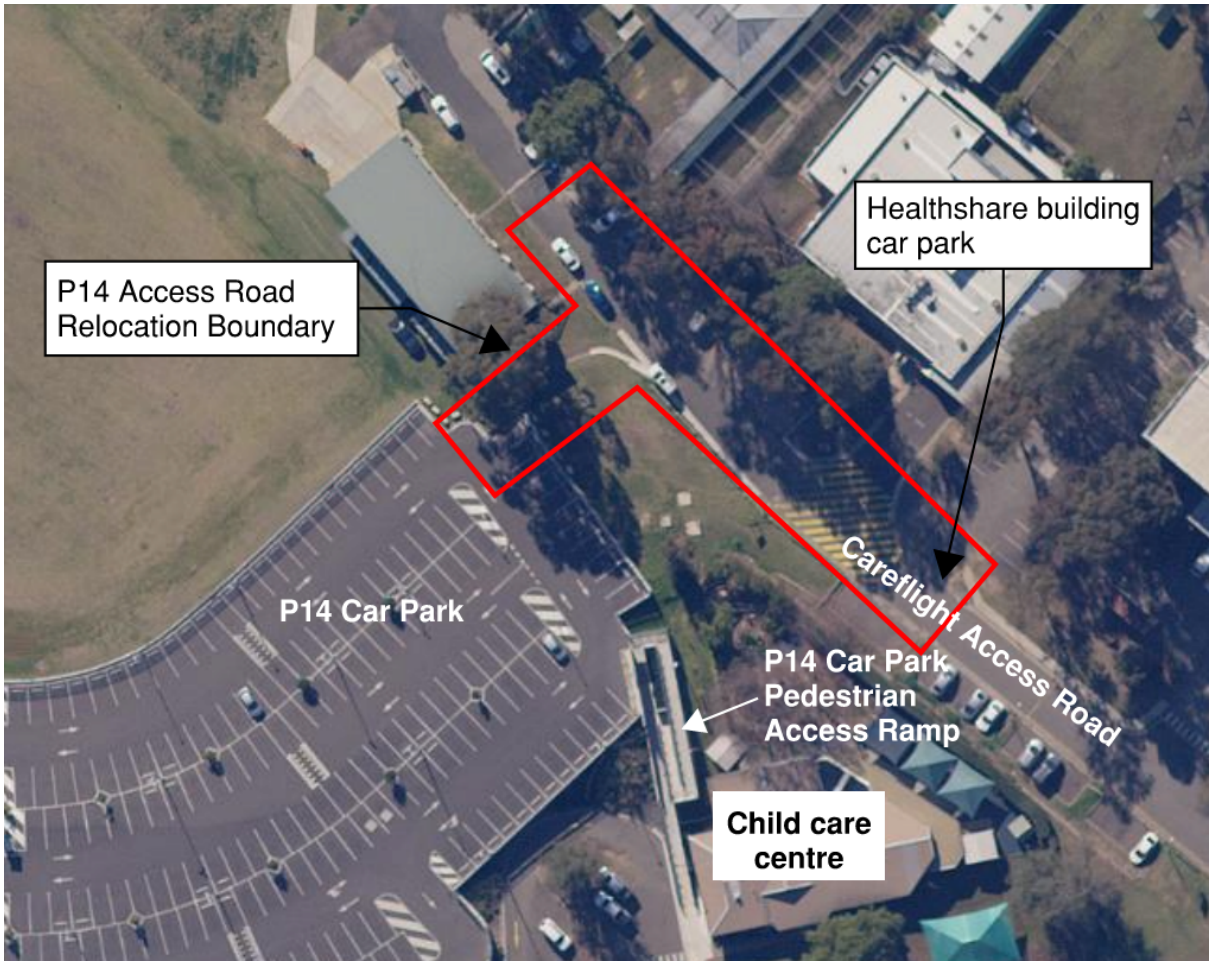


Figure 4: P14 car park access ramp location shown on aerial photo (source: Six Maps)

2.2 Flooding

The early works site is mainly impacted by overland flow flood events, with the exception of the PMF whereby the site is impacted by both riverine flooding from Toongabbie Creek and overland flow flooding.

Referring to Figure 5, overland flow flooding around the site is caused by the following:

- Local catchment runoff draining north, including along existing P14 car park access road;
- Local catchment runoff draining east, including from child care car park
- Dragonfly Drive flow overtopping the road threshold near the existing Casuarina Lodge building and running overland to Toongabbie Creek at the north of the site
- Redbank Road acting as overland flow path

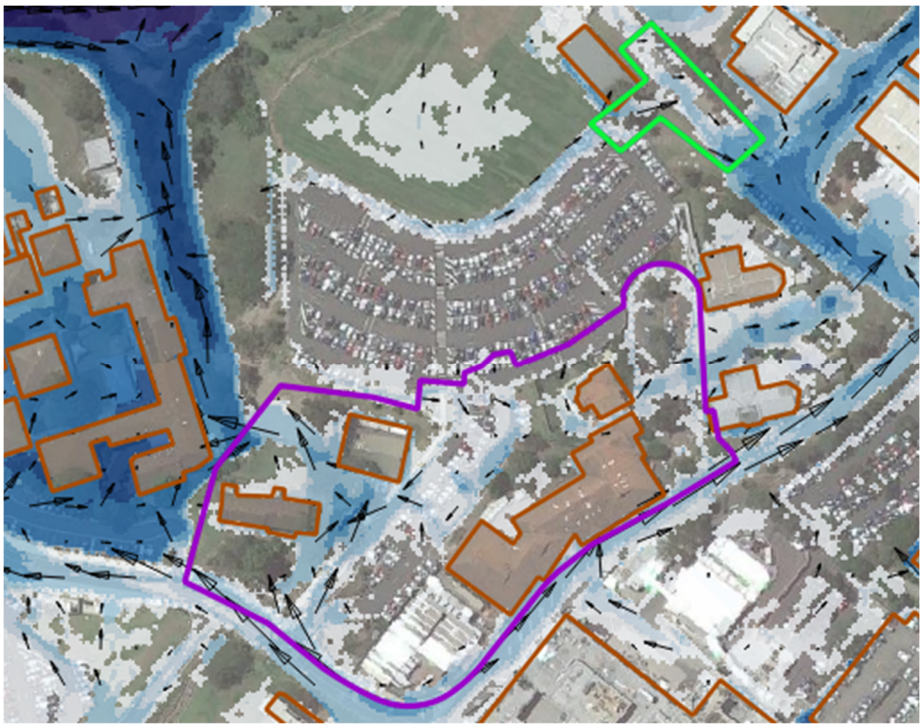


Figure 5: Flooding mechanisms in area surrounding early works site – PMF event overland flow shown for illustration

In the PMF event, the Toongabbie Creek riverine flood extent reaches the northern and eastern portion of the site, and generally flows from west to east across the site. Refer to Figure 6 for illustration.

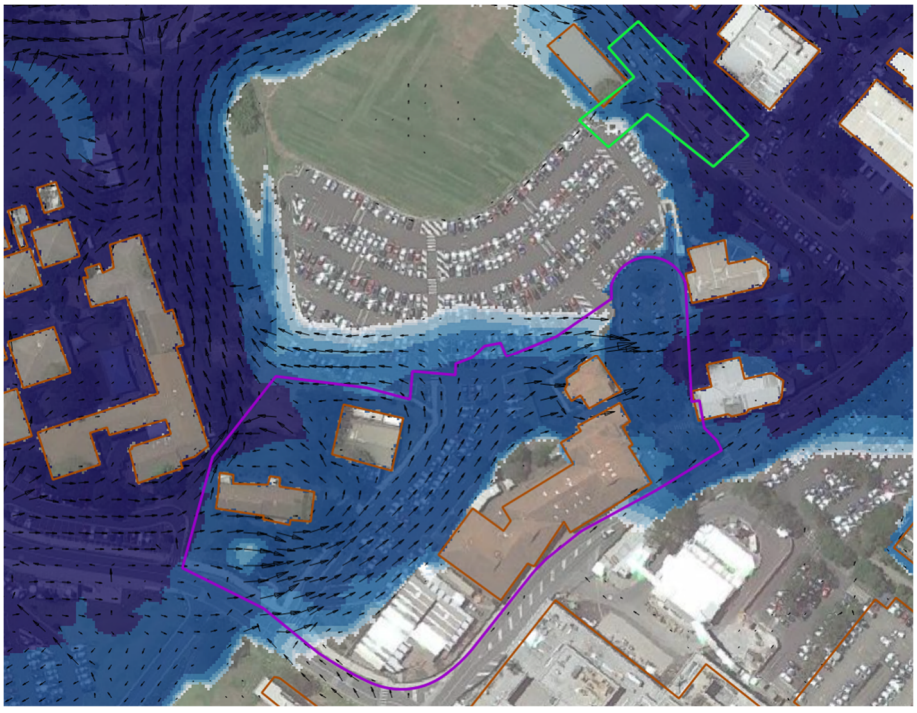


Figure 6: Flooding mechanisms in area surrounding early works site – Riverine flooding in PMF event

2.2.1 CoPC Flood Information

The development site is situated within the City of Parramatta Council (CoPC) Local Government Area (LGA). From both historical experience and the predictions of current flood studies, Parramatta is an area known to be at risk of flooding, principally as a function of Toongabbie Creek and Parramatta River.

The CoPC flood hazard mapping indicates that part of the early works site resides within a low-risk area as indicated in Figure 7.

The coloured areas displayed within the map indicate the flooding risk as being;

- Red = High hazard flood area within the 1% AEP
- Orange = Medium and low hazard in the 1% AEP
- Yellow = Low hazard from the 1% AEP up to the PMF
- All other areas = Not expected to experience flooding

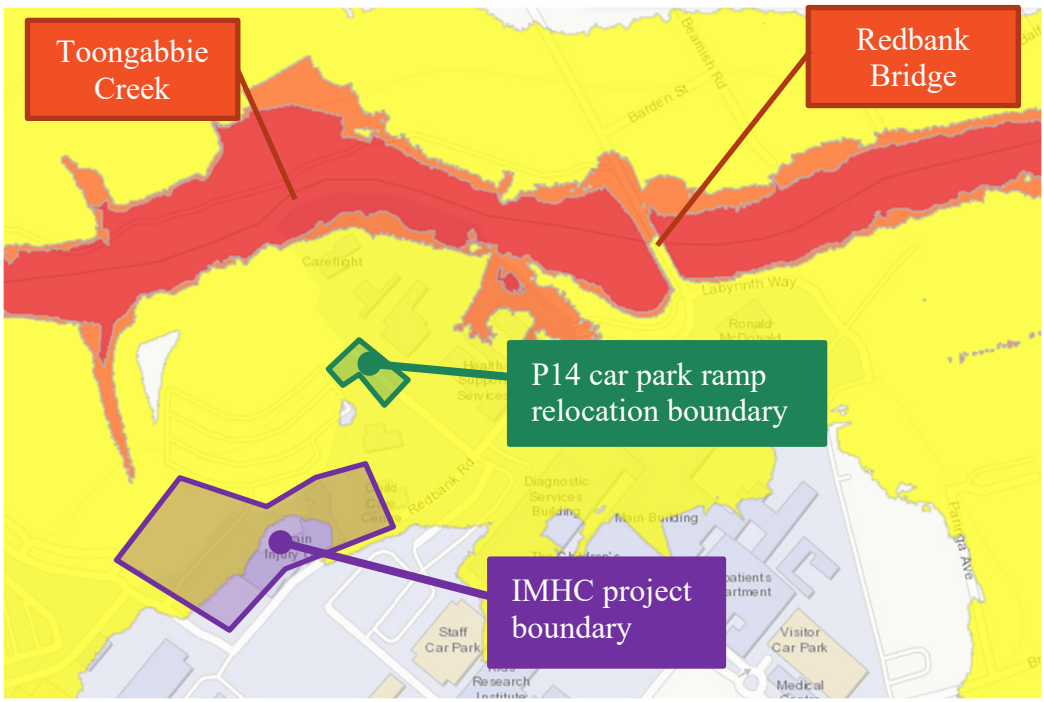


Figure 7: City of Parramatta Council flood risk mapping (CoPC, 2022)

It should be noted that this CoPC flood risk map is an estimate only and may not necessarily be updated with the latest information. The flood model developed as part of this flood impact assessment would be considered a higher level of accuracy for the purposes of assessing flood hazard for the early works site.

The peak flood levels documented in the CoPC flood map (refer to Figure 8) have been compared against peak flood levels derived from the flood modelling herein for the existing riverine flood scenario, and were found to correlate well. It should be noted that the CoPC flood map is based on results from the MIKE11 Parramatta River model, which is a 1D model and does not capture recent topographical changes in the catchment.

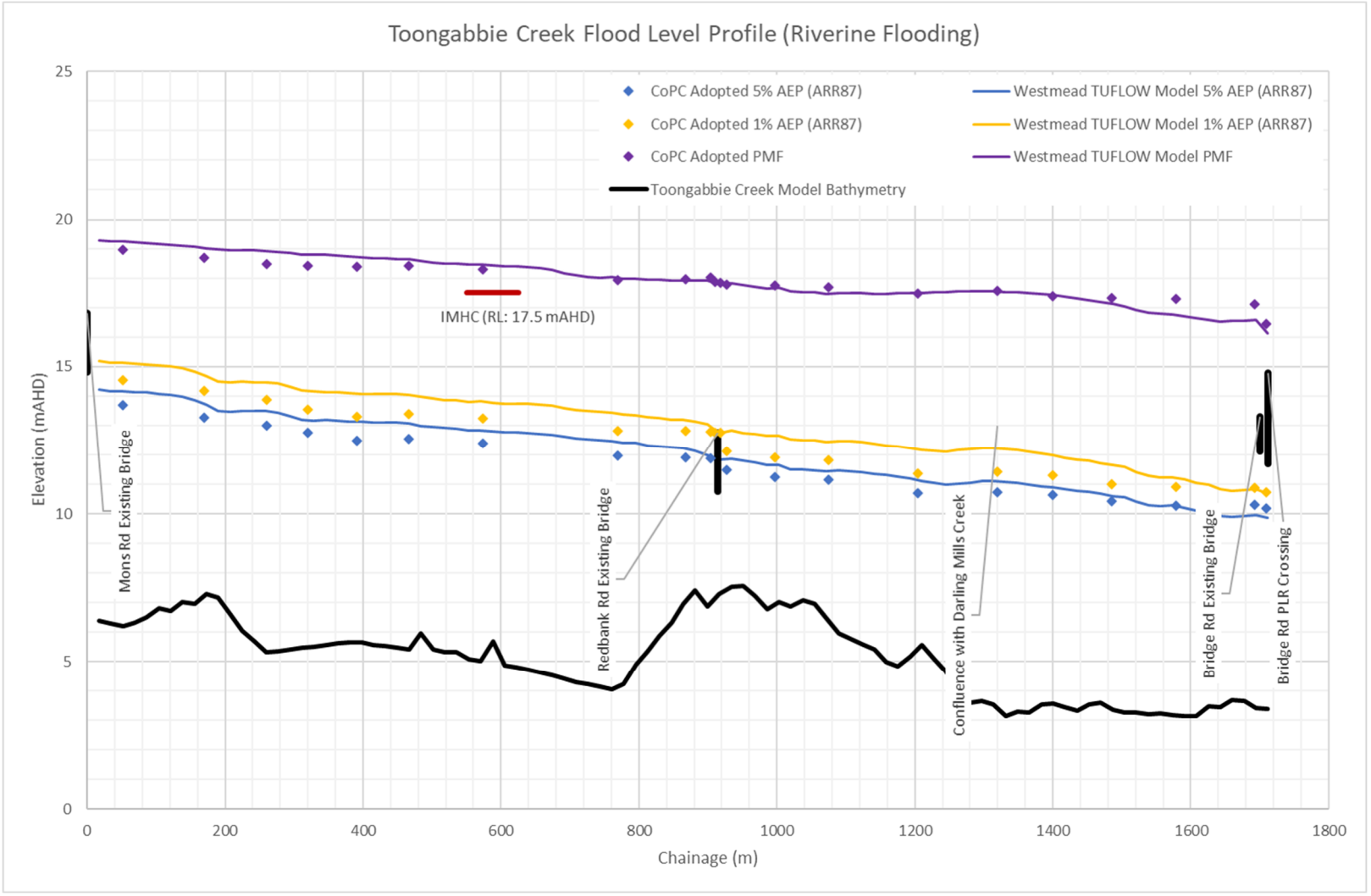
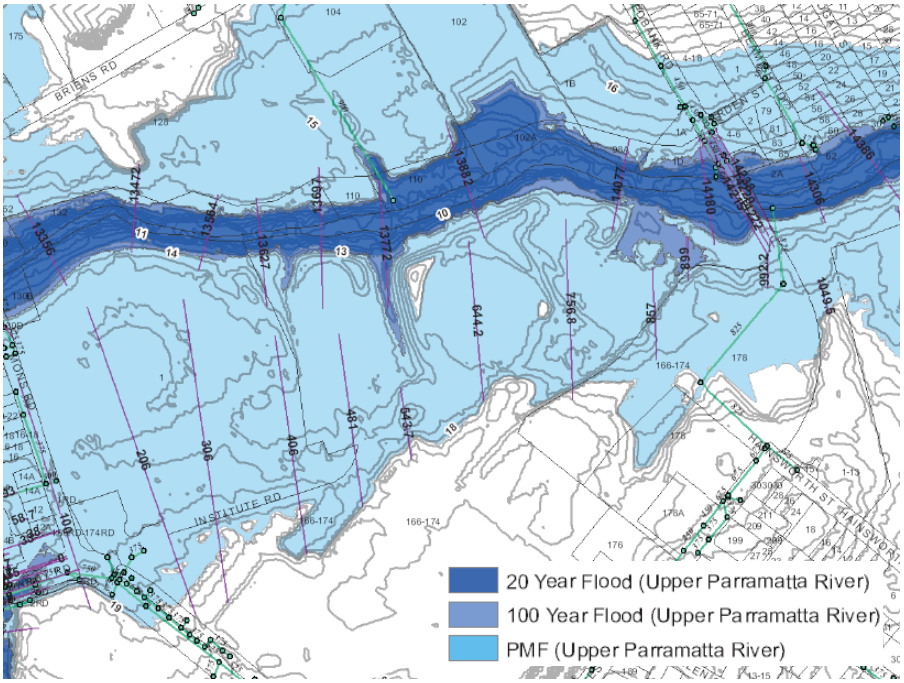


Figure 8: Toongabbie Creek longitudinal profile

A comparison of the flood extents has also been undertaken and shown as Figure 9. The extents generally match up well other than for locations whereby new development has taken place.



CoPC Flood Map

Westmead TUFLOW Flood Extent (Dark Blue – 1% AEP, Light Blue – PMF)

Figure 9: Flood extent comparison

2.2.2 Pre-Development Flood Model Results

The following sections describe the flood affectation for the site in detail, mainly due to overland flow flooding unless noted otherwise.

2.2.2.1 10% AEP Event

The 10% AEP event results indicate localised flooding within the site, primarily from overland flows as follows:

Redbank Road

- Sheet flow in the order of 0.1m depth or less along the road carriageway.

Dragonfly Drive

- Minor localised flow in the order of 0.05m depth of less along the road carriageway.

Existing P14 Car Park Access Road

- Minor localised flooding in the order of 0.1m depth within the existing on-grade car park, which is drained by the access road car park local drainage.

Careflight Access Road at Proposed P14 Car Park Ramp

- Minor localised flow in the order of 0.1 m depth or less along the road carriageway towards the north.
- Ponding to flood depths in the order of 0.5m depth or less at the intersection of the Careflight Access Road and existing Health Share car park entrance.

Toongabbie Creek Riverine Flooding

- Peak flood levels at Toongabbie Creek are approximately 12.9 mAHD and do not reach the project site

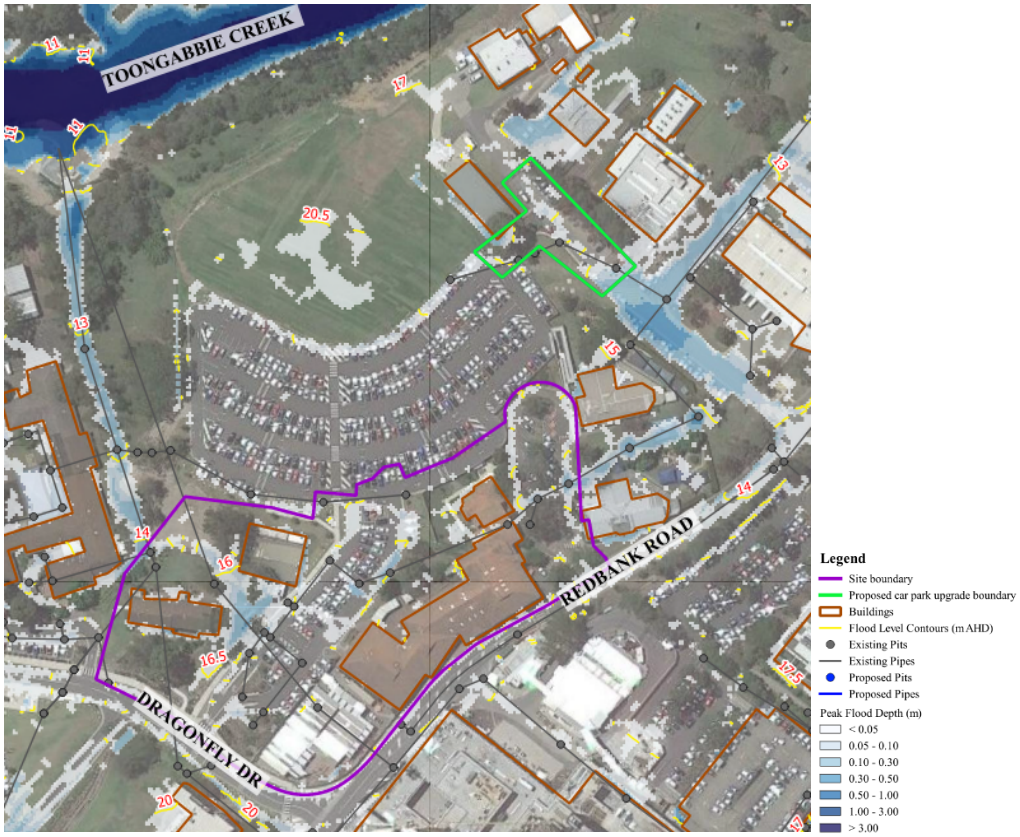


Figure 10: Existing case 10% AEP overland flooding peak flood depths and levels

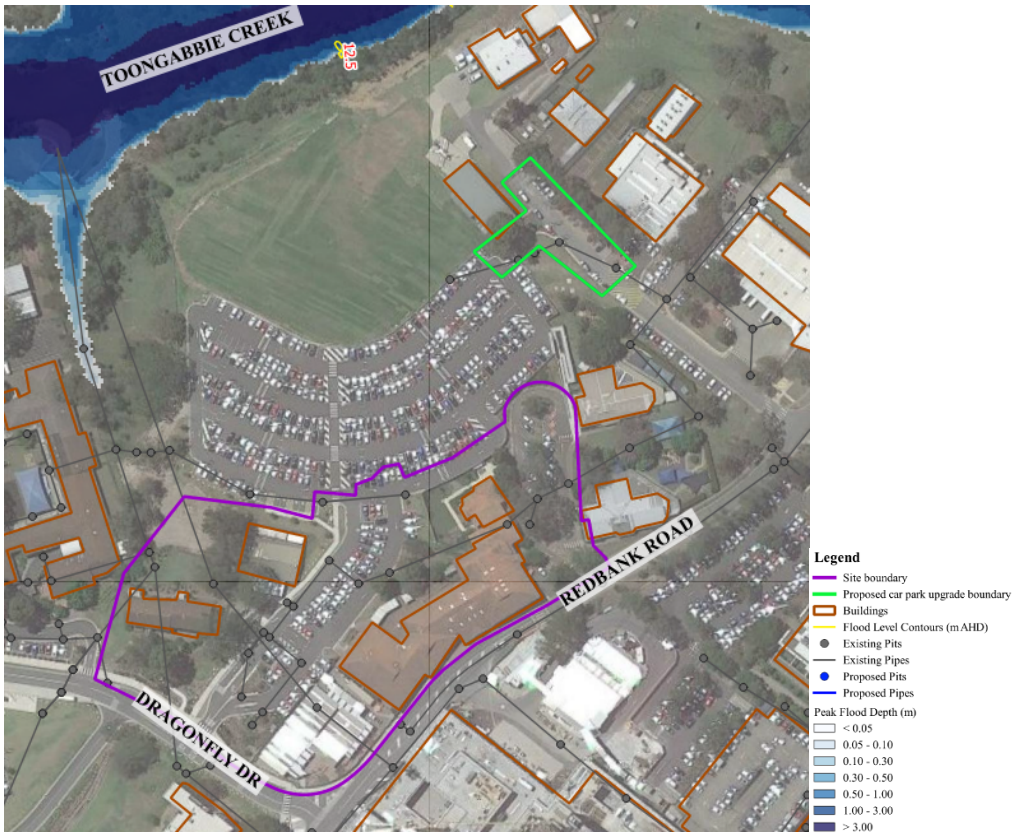


Figure 11: Existing case 10% AEP riverine flooding peak flood depths and levels

2.2.2.2 1% AEP Event

The 1% AEP event results indicate localised flooding within the site as follows:

Redbank Road

- Sheet flow in the order of 0.1m depth or less along the road carriageway towards the east end.

Dragonfly Drive

- Minor localised flow in the order of 0.05m depth of less along the road carriageway towards the south end.

Existing P14 Car Park Access Road

- Minor localised flooding in the order of 0.1m depth within the existing on-grade car park, which is drained by the access road car park local drainage.

Careflight Access Road at Proposed P14 Car Park Ramp

- Minor localised flow in the order of 0.1m depth or less along the road carriageway.
- Ponding to flood depths in the order of 0.5m depth or less at the intersection of the Careflight Access Road and existing Health Share car park entrance.

Toongabbie Creek Riverine Flooding

- Peak flood levels at Toongabbie Creek are approximately 14.1mAHD and do not reach the project site.

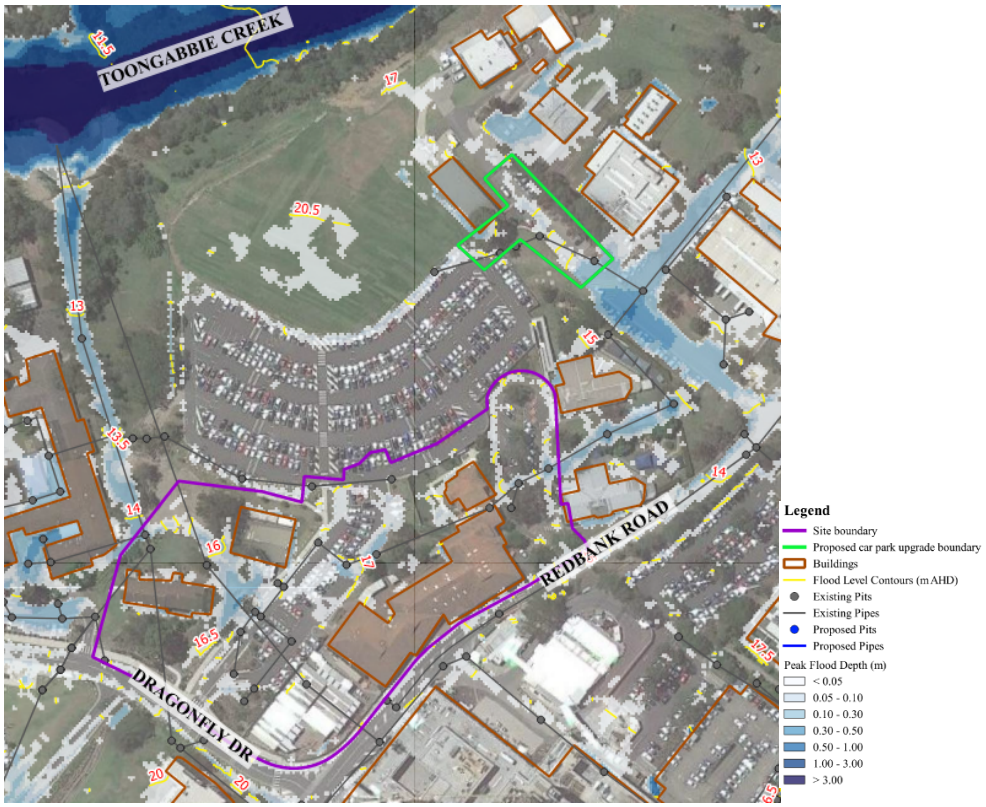


Figure 12: Existing case 1% AEP overland flooding peak flood depths and levels

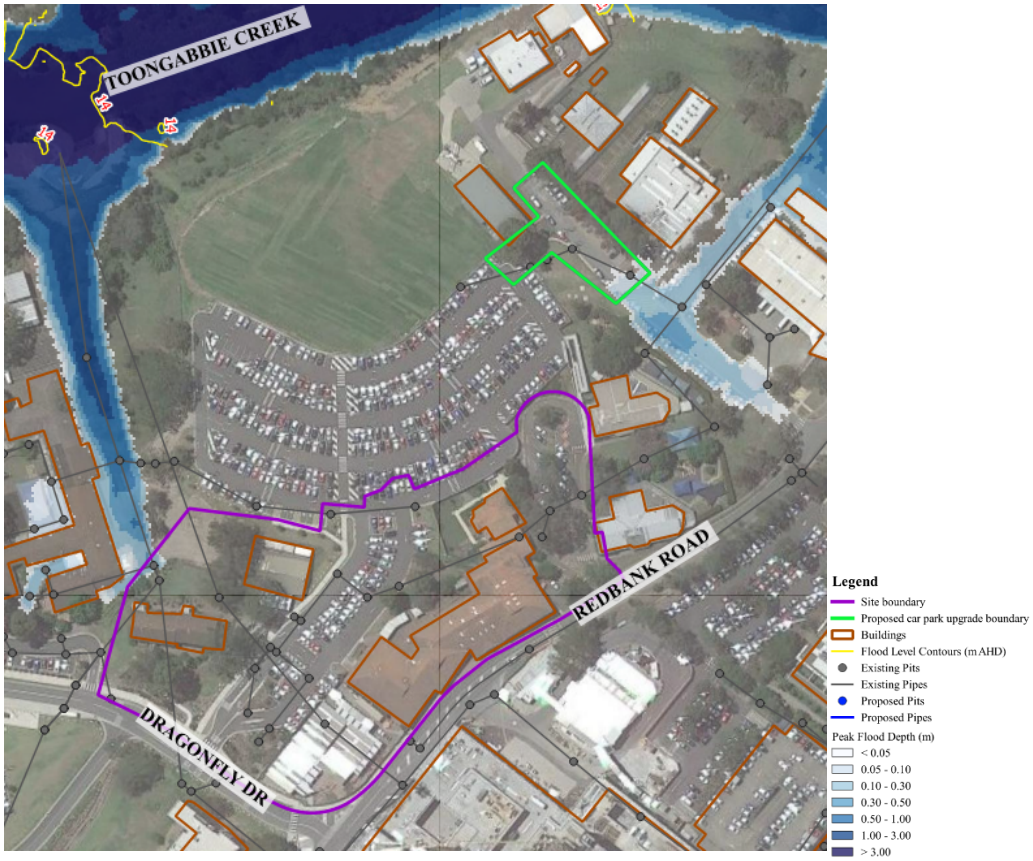


Figure 13: Existing case 1% AEP event riverine flooding peak flood depths and levels

2.2.2.3 PMF Event

The PMF event results indicate flooding from both overland and riverine flooding occurs at the site as follows:

Redbank Road

- (Overland) Up to 0.5m flood depth at the north end of the road near the car park access driveway; and
- (Riverine) In excess of 4.0m flood depth at the north end of the road near the car park access driveway.

Dragonfly Drive

- (Overland) Up to 0.5m flood depth at the south end of the road near the Redbank Road intersection; and
- (Riverine) In excess of 3.0m flood depth at the north end of the road near Casurina Lodge.

Existing P14 Car Park Access Road

- (Overland) Up to 0.3m flood depth through the access road to P14 car park; and
- (Riverine) In excess of 3.0m flood depth through the entire access road to P14 car park.

Careflight Access Road at Proposed P14 Car Park Ramp

- (Overland) Up to 0.5m flood depth through the Careflight access road; and
- (Riverine) In excess of 3.0m flood depth through the Careflight Access Road towards the south.

Toongabbie Creek Riverine Flooding

- Flooding from Toongabbie Creek reaches the site with peak flood levels of approximately 18.8 mAHD at the northern extent of the existing BIRS building and 18.1 mAHD at the eastern extent of the building and in the childcare car park

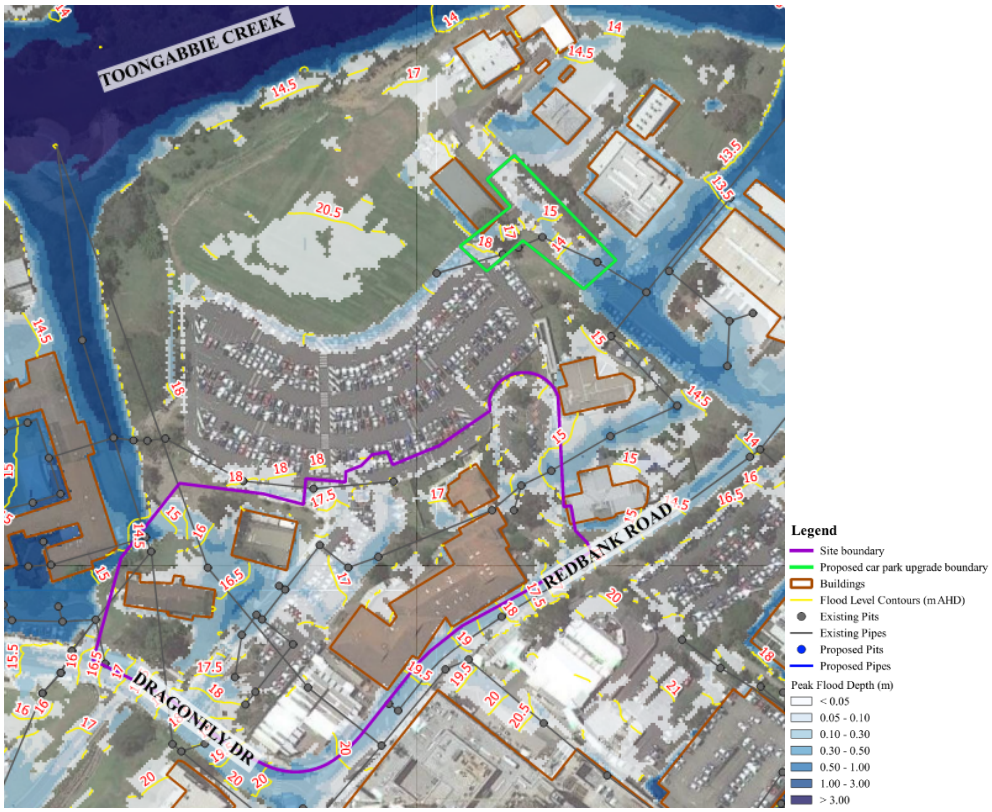


Figure 14: Existing case PMF overland flooding peak flood depths and levels

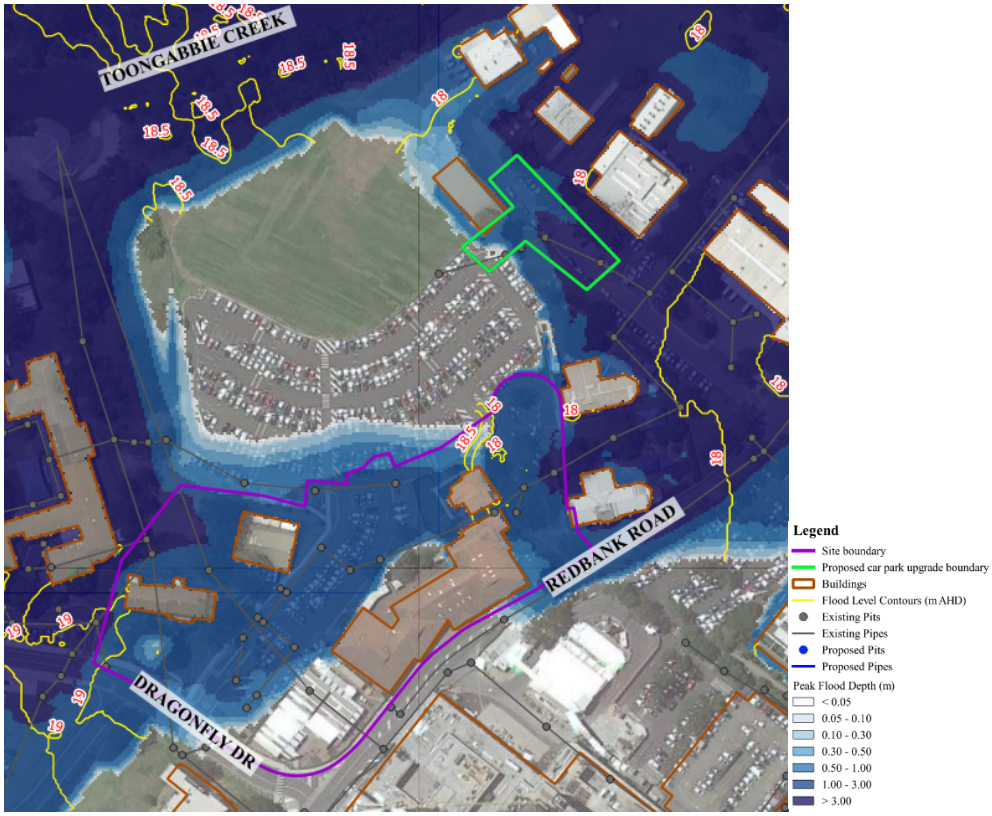


Figure 15: Existing Case PMF riverine flooding peak flood depths and levels

2.2.3 Pre-Development Flood Hazard

Pre-development flood hazards have been determined for the 1% AEP and PMF events, based on the hazard category recommended by the AR&R2019 guidelines. These guidelines provide a classification of six categories (H1 to H6) and the classification is shown below in Figure 16. These classifications use a combination of flood depth and flood velocity to derive a classification which defines the general vulnerabilities of associated users with that hazard category.

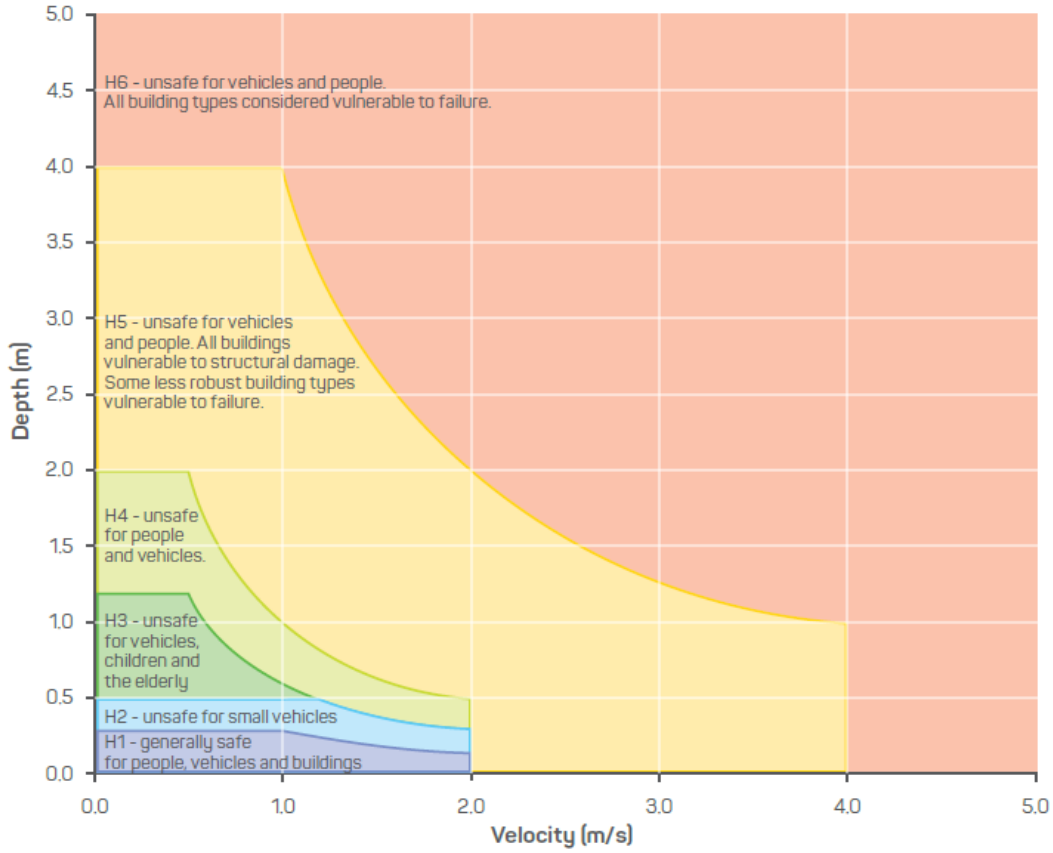


Figure 16: Flood Hazard Categories based on AR&R2019 guidelines

Notable areas of flood hazard are as follows:

- 1% AEP event:
  - Generally H1 hazard for the overland flow flooding for the site and its surrounds, which is safe flow conditions for people and vehicles.
- PMF event:
  - For the overland and riverine flooding, up to H5 and H6 hazard, respectively, can be found on Redbank Road, Dragonfly Drive and the Careflight Access Road to the proposed P14 car park ramp. These flow conditions are unsafe for people and vehicles, and buildings are vulnerable to structural damage and failure; and
  - Up to H6 hazard can be found through the existing access road to the P14 car park and the child care car park during Riverine flooding. These flows are unsafe for all vehicles, children and the elderly.

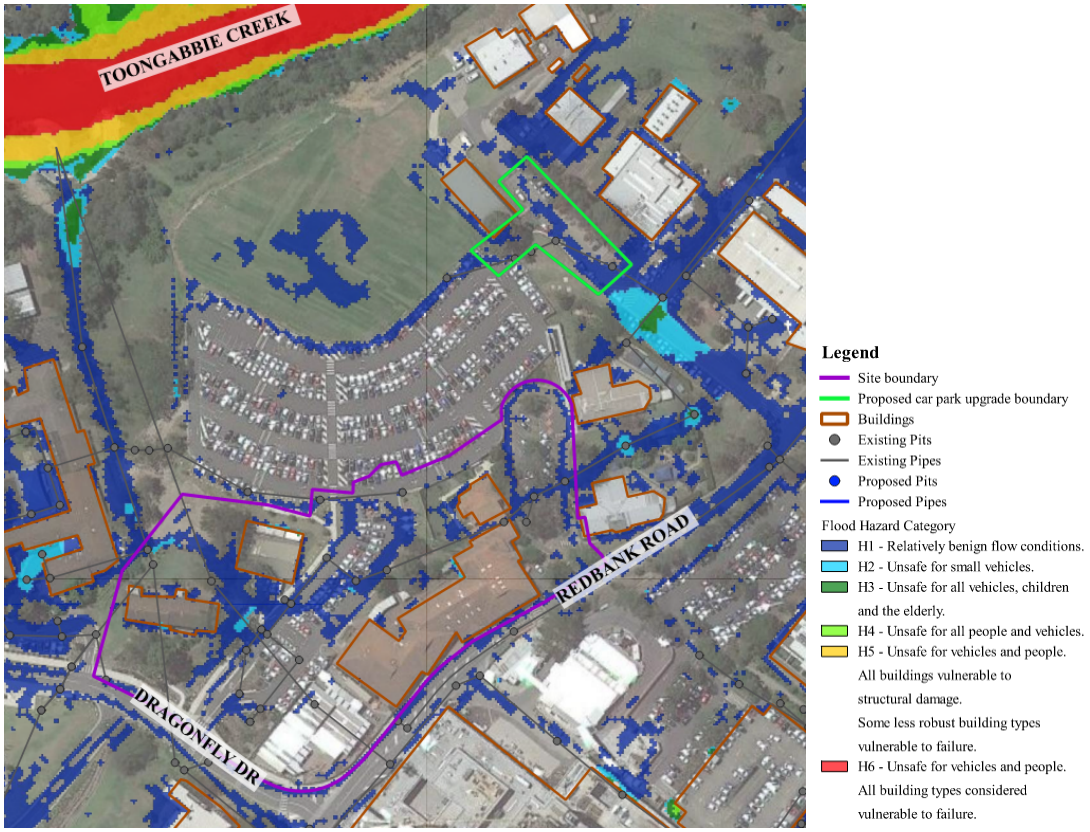


Figure 17: Existing Case 1% AEP Overland Flooding Flood Hazard

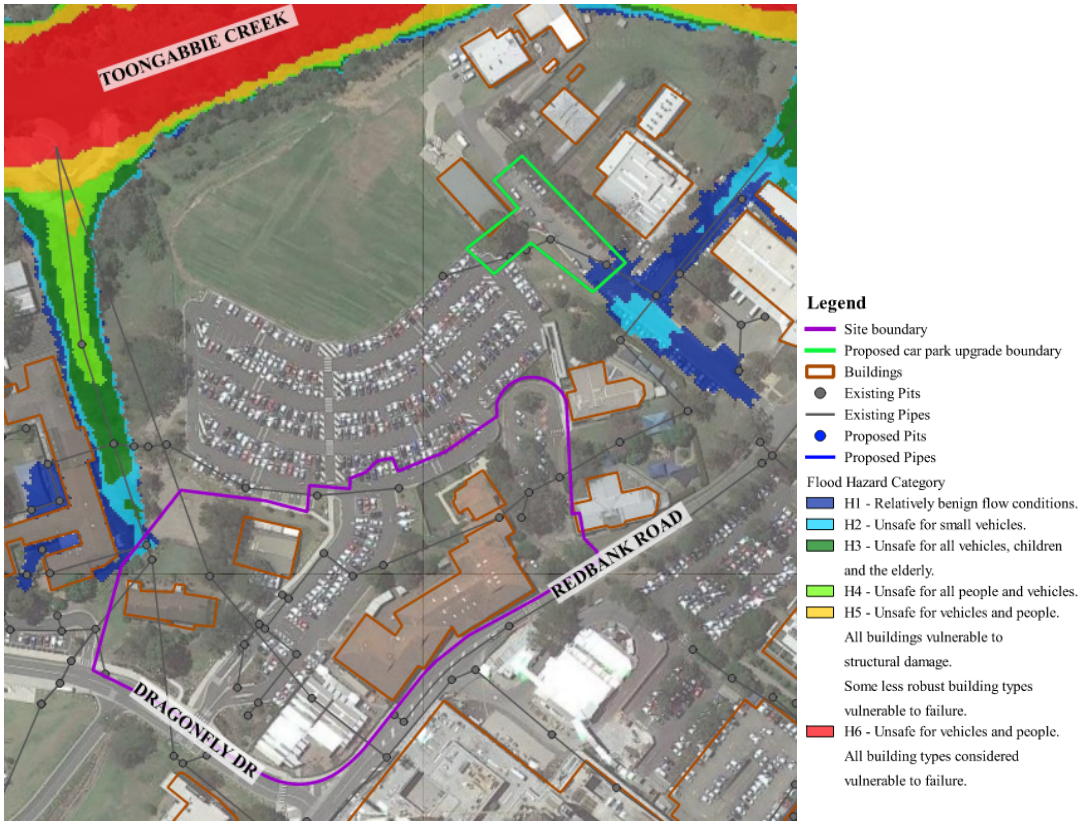


Figure 18: Existing Case 1% AEP Riverine Flooding Flood Hazard

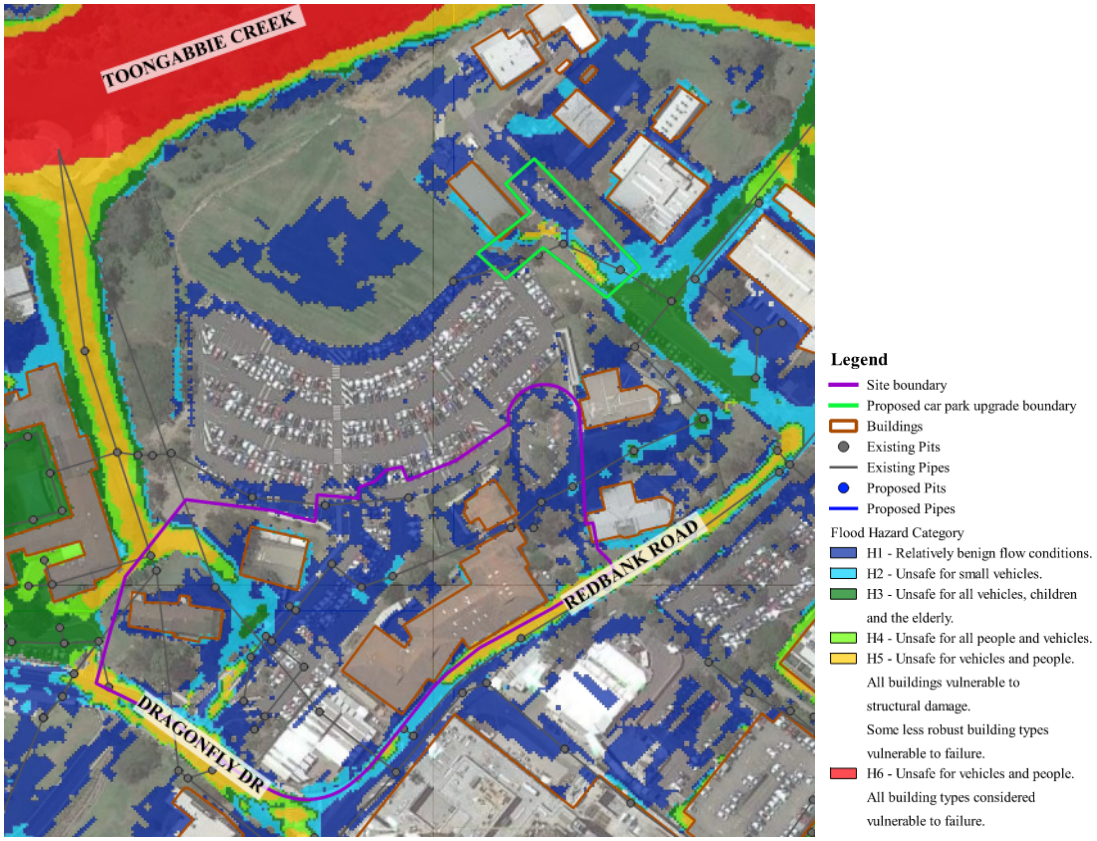


Figure 19: Existing Case PMF Overland Flooding Flood Hazard

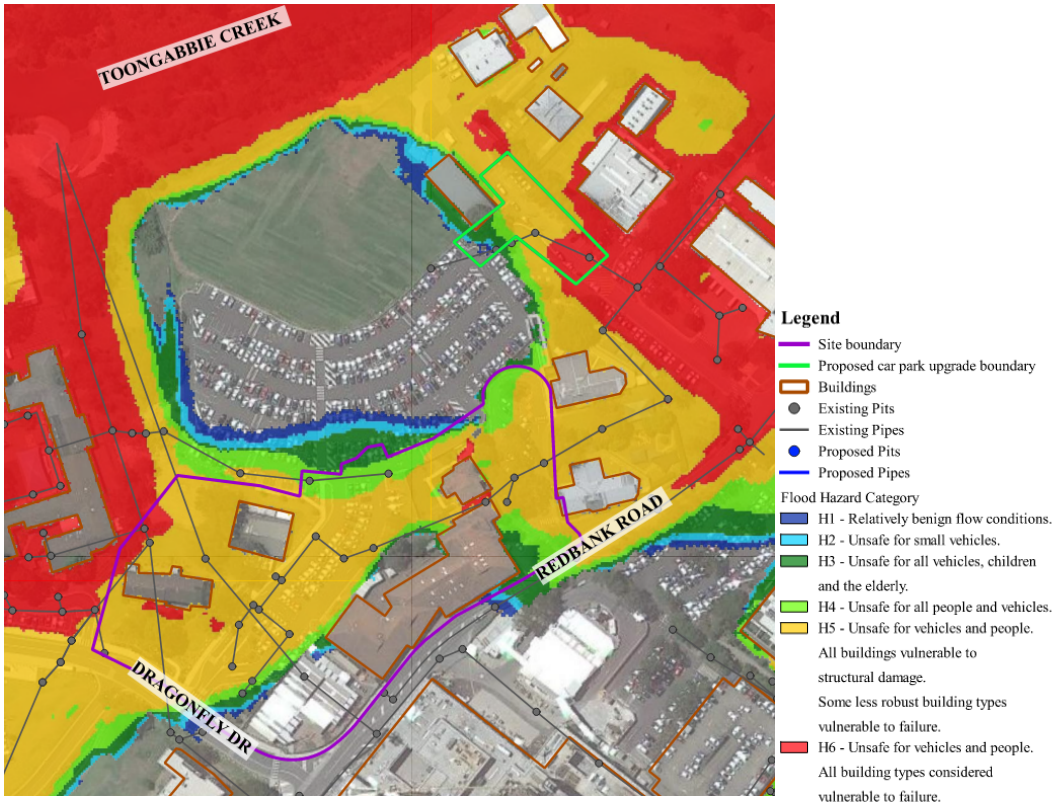


Figure 20: Existing Case PMF Riverine Flooding Flood Hazard

2.2.4 Notable Areas Impacted by Flooding

The following areas within the wider Westmead Health Precinct near the site are also noted to be impacted by flooding in the pre-development conditions (refer to Figure 21):

- Redbank House
- Child care centre (both buildings)
- Health Share building

Figure 21: Notable areas subject to existing flooding (PMF overland event in background)

2.3 Stormwater

The LTS Lockley survey (2021) identified existing stormwater infrastructure present on the site. This included multiple stormwater pits and pipes present within the site and drainage connections that service the existing BIRS. These lines connect to stormwater drainage lines located at the northern and eastern extents of the site. All stormwater at the site is privately owned by the local health authority.

Consistent with the existing site topography stormwater runoff from the site drains to the north and east through separate subsurface drainage networks as shown in Figure 22. All stormwater drainage from the site ultimately drains to Toongabbie Creek.

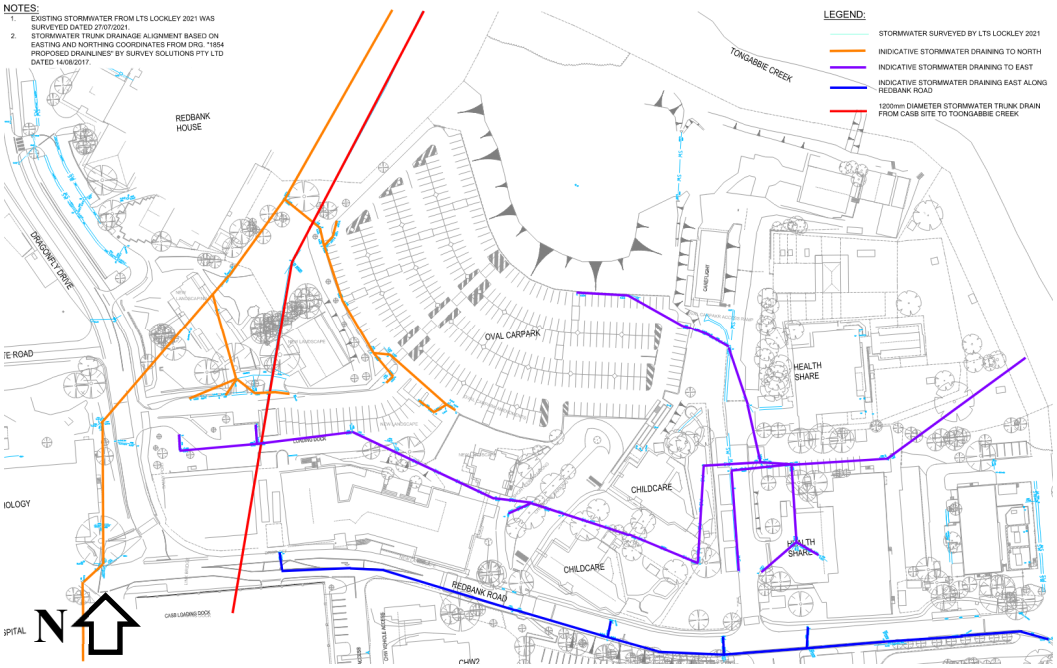


Figure 22: Existing site stormwater network

The stormwater network figures were created based on a combination of the 2021 and 2017 LTS Lockley surveys, information from the P14 car park for construction drawings by Cardno in 2016 and additional supplementary stormwater connectivity diagrams which were provided by LTS Lockley on the 26th November 2021. The following sections discuss the existing stormwater networks draining to the north and east of the site.

2.3.1 Stormwater Draining to North

Stormwater drainage at the western portion of the P14 car park access road connects to the existing 900mm diameter trunk drain (shown in orange in Figure 22) which subsequently drains to Toongabbie Creek to the north of the site.

An additional 1200mm diameter trunk drain (shown in red in Figure 23) runs under the site discharging stormwater from the CASB site to Toongabbie Creek. This drain was built in 2017 as an underbore and includes a pit at the northern extent of the site.

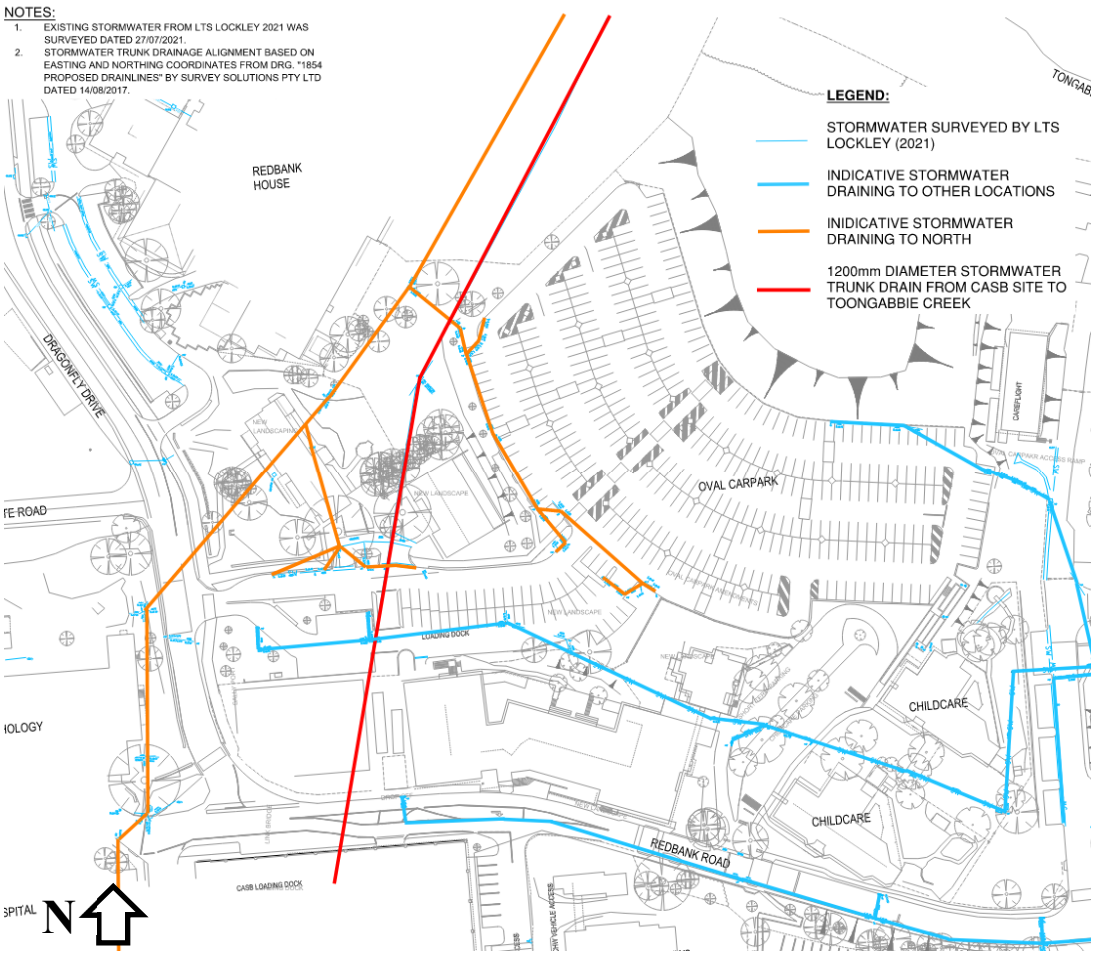


Figure 23: Existing stormwater draining to the north

2.3.2 Stormwater Draining to East

Stormwater from the existing BIRS building and child care car park is collected in a series of pits and pipes, shown in purple in Figure 24, and ultimately discharges to the east of the site via a 375mm pipe which runs between the two child care centre buildings. This drain ultimately drains to Toongabbie Creek further downstream.

Similarly, the stormwater along Redbank Road is collected along the southern side of the road and drains to Toongabbie Creek further downstream.

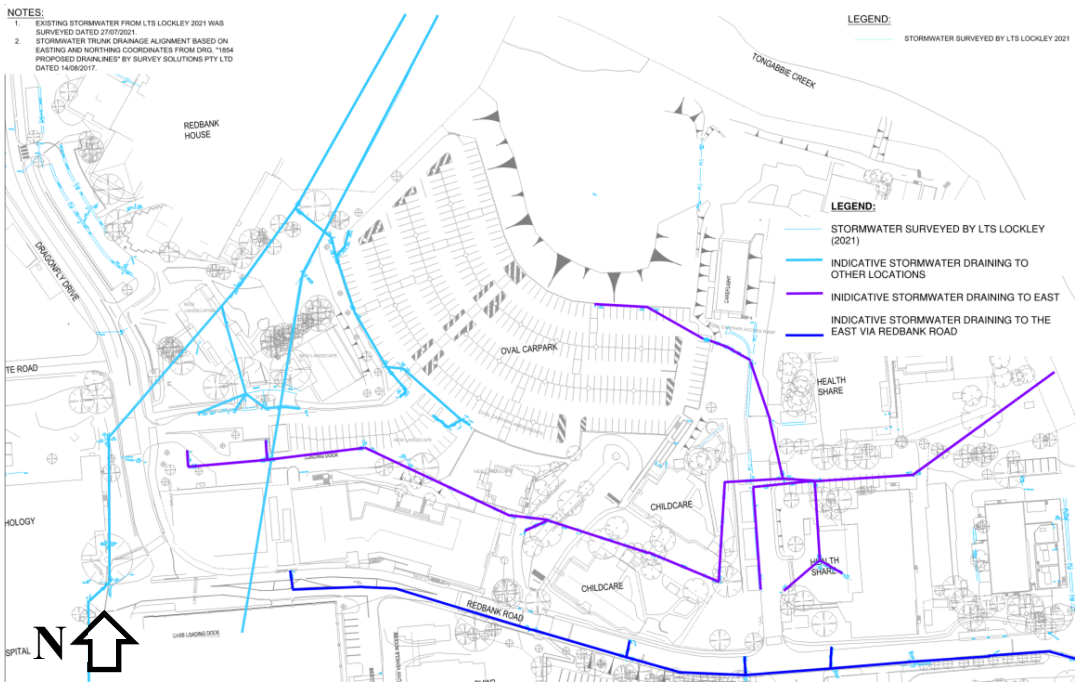


Figure 24: Existing stormwater draining to the east

2.3.3 Careflight Access Road

A dish drain and local drainage pits are located at the Careflight Access Road where the new P14 ramp is proposed. Stormwater runoff from this area eventually discharges to Toongabbie Creek via the same drainage line draining east from the main site area, as shown in Figure 25.

The existing drainage for the Healthshare building car park is to be retained in the proposed layout.

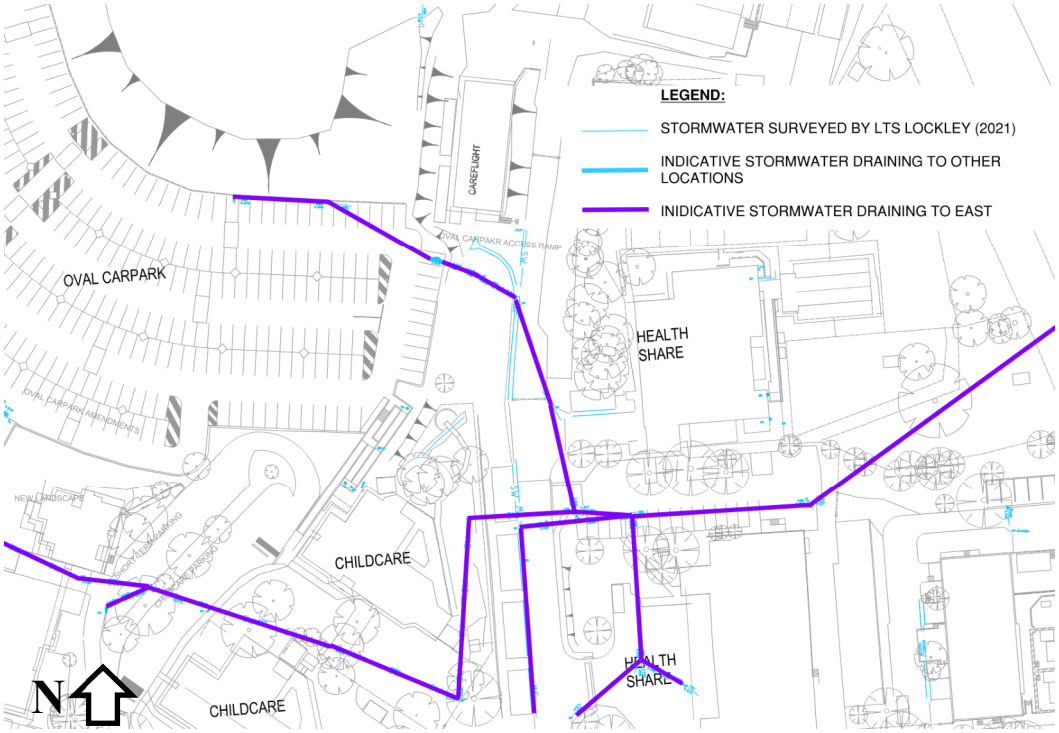


Figure 25: Existing stormwater at Careflight access road

2.3.4 Riparian Zones

The nearest riparian land and waterway to the site is Toongabbie Creek which is located approximately 160m north of the main site boundary and 100m north of the P14 ramp relocation boundary. The most conservative interpretation of the Toongabbie Creek riparian zone is that it extends 40m either side of the creek bank consistent with a 4th order watercourse (Guidelines for riparian corridors on waterfront land, NSW Office of Water, 2012). Therefore, it can be concluded that the proposed works are not located within riparian land and therefore, the Guidelines for Controlled Activities on Waterfront Land (Natural Resource Access Regulator, 2018) are not relevant to this development.

Stormwater runoff from the site will eventually discharge to riparian land at Toongabbie Creek and the following measures have been considered as part of the design to protect the waterway:

- Erosion and sediment control measures shall be implemented to minimise water quality impacts during construction. Refer to Section 3.4 and the erosion and sediment control plan in Appendix A for more details.
- Exposed areas under existing buildings that are to be demolished will be graded smoothly to tie in with existing levels with all slopes to be flatter than 1V:3H gradient and will be hydroseeded for slope stability and erosion control.
- Construction works are to be undertaken within the project site boundaries and shall avoid disturbing the existing riparian areas outside of site extents.

2.3.5 Ground Conditions

The broader Westmead Health Precinct has been subject to a range of previous ground conditions investigations that have identified asbestos impacted soils are present and as such this is a known risk for the development.

JK Geotechnics have completed a site-specific geotechnical investigation for the site dated July 2022. This report indicates that the site is located within the Hawkesbury Sandstone geological unit and within close proximity to Ashfield Shale. Borehole logs encountered pavements and fill covering residual silty clay which grades into weathered siltstone, laminate and interbedded siltstone and sandstone within the upper rock profile.

The fill is categorised as “uncontrolled” due to the variable fill depth observed across the test boreholes and is considered not suitable for the support of footings or floor slabs.

Soil aggressivity tests indicate the soils and weathered rock would be classified as “Mild” exposure for concrete piles and “Non-Aggressive” for steel piles, in accordance with Table 6.4.2 (c) of AS2159-2009. Additionally, based on a review of the Acid Sulfate Soils (ASS) risk maps prepared by the Department of Land and Water Conservation and the Parramatta LEP, the development is found to pose a negligible risk of disturbing ASS materials.

In addition, JBS&G has prepared a Remedial Action Plan and Contamination Assessment (both dated July 2022). These reports note that previous investigations have identified asbestos contaminated fill across the site and surrounding areas. The extent of this fill type beneath the existing buildings is currently unknown however it is assumed to be present across the site. Sample locations and asbestos identified soils are shown in Figure 26.

Figure 26: Previous sampling locations and asbestos identified soils (source: Remedial Action Plan, JBS&G 2022)

The JBS&G Remedial Action Plan report notes that, “a portion of the site has been subject to remediation via a cap and contain remedial strategy.” This area consists of the P14 car park access road and surrounding landscape areas as shown in Figure 27.

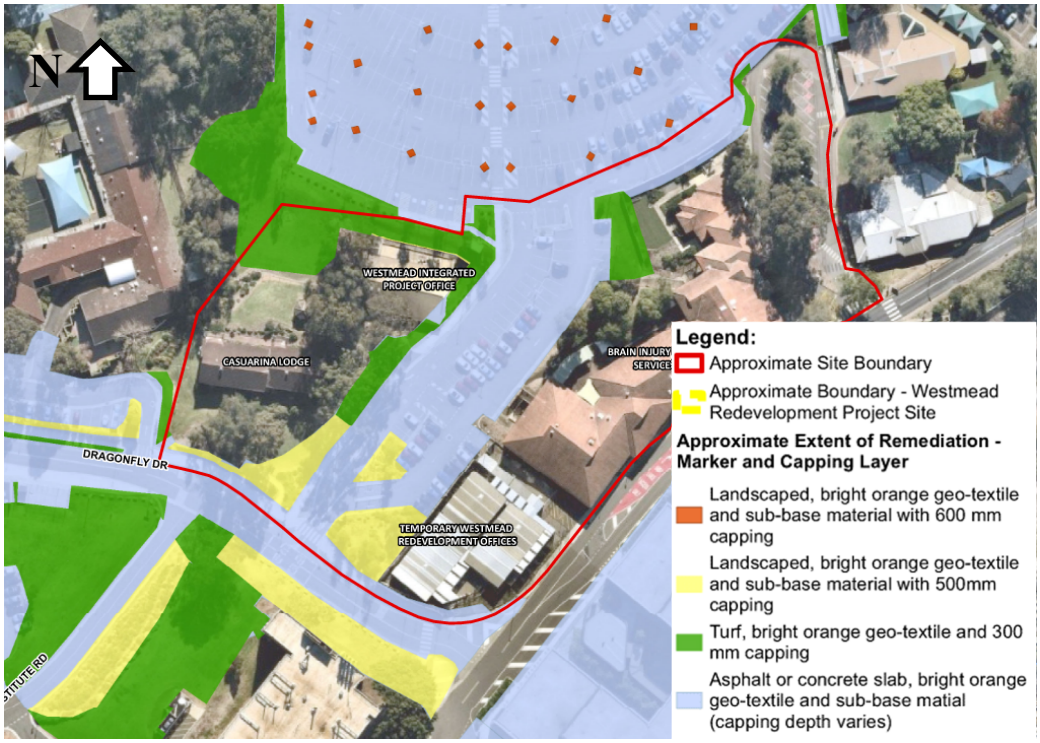


Figure 27: Previous redevelopment works asbestos fill capping arrangements (source: Remedial Action Plan, JBS&G 2022)

The preferred remedial strategy outlined in the JBS&G 2021 Remedial Action Plan for the site is, "containment of asbestos impacted soils onsite, subject to space constraints, with the installation of a marker layer, capping layer, implementation of a LTAMP (long term asbestos management plan) and notation on the land title." The design for the project is based on the assumption that this approach will be adopted to manage the maximum feasible volume of contamination on the site, with remaining excess material disposed of off-site.

2.3.6 Groundwater

As part of the geotechnical investigation undertaken by JK Geotechnics a number of boreholes were drilled and three groundwater monitoring wells were installed at the site and measured over a three-month period between 24 November 2021 and 9 February 2022. The locations of the boreholes are shown in Figure 28, with groundwater monitoring wells located at boreholes 2, 4 and 6. The JK Geotechnics geotechnical report indicates that groundwater seepage was only encountered in two of the site boreholes at depths of 4.1m and 4.5m respectively . In these wells groundwater depths ranged between 2.7m (observed at borehole 2) to 5.6m (observed at borehole 4) over the monitoring period with a groundwater gradient towards the north. Corresponding groundwater levels range from RL11.4 to RL15.1.

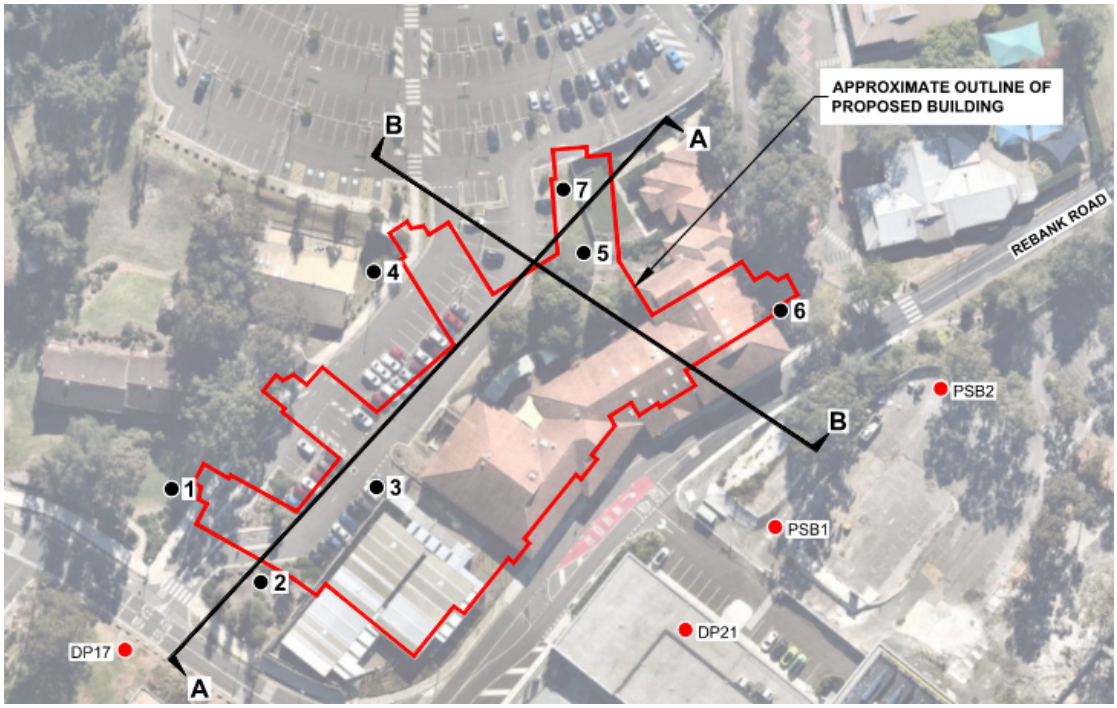


Figure 28: Groundwater borehole locations (JK Geotechnics, 2022)

2.3.7 Utilities

The site survey undertaken by LTS Lockley (2021) indicates the presence of a number of different utility lines which cross the site. The majority of assets within the site are privately owned by the Western Sydney Local Health District (WSLHD). The only exception is a sewer main owned by Sydney Water. A summary of the existing utility assets identified is provided Figure 29 and below:

- High voltage electrical cables running west-east under the existing P14 access road (concrete encased)
- Telecommunications cables running west-east under the existing P14 access road (concrete encased)
- High pressure gas mains:
  - 150mm diameter 100kPa private gas main running from north-west to south-east under the proposed building
  - 250mm diameter private gas main running from Dragonfly Drive then east along Redbank Road
- Sewer and trade waste running from north-west to south-east under the proposed building including:
  - 300mm diameter Sydney Water sewer main
  - 375mm diameter private sewer main (approximately 7m deep)
  - 225mm diameter private trade waste main (approximately 7m deep)
- Electrical cables servicing lighting within the existing childcare car park and oval car park
- Electrical cables in the northern footpath of Redbank Road

- Telecommunications cables in the northern footpath of Redbank Road
- Water mains:
  - Water main crossing the access driveway to the childcare car park
  - 200mm private water main crossing the access driveway to P14 along Dragonfly Drive

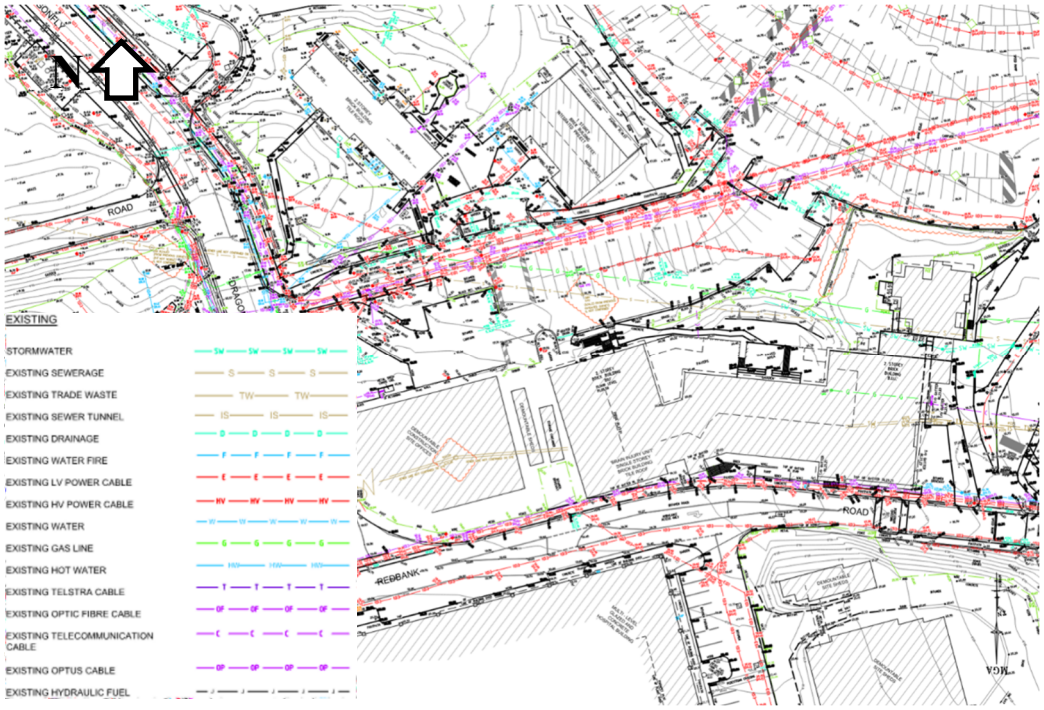


Figure 29: Extract of site survey (LTS Lockley, 2021)

A DBYD check has been undertaken in July 2021, however, most utilities crossing the site boundary are privately owned and are not identified within the DBYD surveys.

3 Proposed Development

The following section outlines the proposed civil works required as part of the early works project.

3.1 Demolition and Site Regrading

As part of the early works, the existing Brain Injury Rehabilitation Services (BIRS) building, Casuarina Lodge and the Westmead Redevelopment Project Office will be demolished and smoothly graded to tie-in to the surrounding levels. Trapped low points will be locally graded out from the site. Site grading where feasible will aim to match the existing subcatchment distribution of the site.

The current Westmead Redevelopment Project Office demountable buildings and timber decking will be removed, with existing ground levels retained after demolition.

Refer to Appendix A for Early Works package drawings showing the proposed grading.

A maximum earth slope of 1 vertical:3 horizontal has been adopted throughout the site, with batter slopes. Flatter batter slopes have been adopted in areas where there are opportunities to maximise the disposal of contaminated material.

3.2 Stormwater

3.2.1 Site Drainage

As part of the demolition of existing buildings at the early works site, all downpipe connections to the stormwater network will be capped and removed.

The P14 car park ramp relocation will require additional stormwater drainage inlet pits which will be connect into the existing Westmead health campus stormwater network.

3.3 Utility Diversions

Existing utilities that cross the site are proposed to be diverted around the future building footprint as part of the early works. The services to be diverted are:

- Private sewer (Ø375) and private trade waste (Ø225) to be diverted around south of the proposed building via directional boring/micro tunnelling
- Sydney Water sewer (Ø300) to be diverted around north of the proposed building. Consultations with Sydney Water regarding this diversion are ongoing.
- Private water main (Ø150) to be diverted around north of the proposed building.

These diversions are shown in the civil works drawings in Appendix A.

Other existing utilities on the site, including the concrete encased high-voltage electrical and telecommunications cables will be retained during the early works project.

3.4 Erosion and Sediment Control

Erosion and sediment control measures are a specific consideration of the broader construction management plan. These measures are designed to minimise the risk of scour, erosion, sedimentation and impacts to water quality. These risks are typically increased during construction activities including:

- Earthworks, including stripping of topsoil, excavation and filling.
- Demolition.

The potential impacts from inappropriate management of the construction site on water quality could include:

- Increased sediment loads from exposed soil during rainfall events and dust blown off site causing high sediment loads to be washed or deposited into nearby creeks.
- Increased sedimentation of downstream watercourses smothering aquatic life and affecting the ecosystems of downstream sensitive waterways, wetlands and floodplains.
- Increased levels of nutrients, metals and other pollutants, transported via sediment to downstream water courses.
- Chemical, heavy metal, oil and grease, and petroleum hydrocarbon spills from construction machinery directly polluting downstream waterways.
- Siltation of pit and pipe networks reducing the conveyance capacity of the network.
- Water borne transport of ACM.

An erosion and sediment control plan for the site has been provided in accordance with Landcom's "Soil and Construction Manual" (commonly known as the Blue Book), Volume 1, March 2004. In accordance with Table 2.1 of the Blue Book. This has been prepared for the site due to the area of disturbance being greater than 2,500 m^2.

Measures that have been adopted to minimise water quality impacts are indicated on the ESCP and includes:

- Installation of sediment and erosion controls such as sediment fences, cut off drains and sediment basins prior to the removal of topsoil and commencement of earthworks.
- Designated site access locations to enable management of sediment removed from site.
- Onsite water management using sediment traps, silt fencing and diversion banks.
- Stockpile management.
- Sedimentation basin.

It is the construction contractor's responsibility to develop and adapt this erosion and sediment control plan to suit the site conditions, construction staging and any requirements of CoPC and other relevant authorities. The erosion and sediment control plan has been prepared to be used as a guide only. Changes may materialise for several reasons including ongoing design development, construction methodology and the sequencing of works.

Refer to the erosion and sediment control plan in Appendix A.

3.5 Impacts on Water Resources and Riparian Zones

Stormwater runoff from the site will eventually discharge to riparian land at Toongabbie Creek, to the north and east of the site. The following measures have been considered as part of the design to protect surface water and groundwater resources downstream of the site including Toongabbie Creek and the Parramatta River:

- Erosion and sediment control measures shall be implemented to minimise water quality impacts during construction. Refer to Section 3.4 and the erosion and sediment control plan in Appendix A for more details.
- Grades in landscape areas will not exceed 1V:3H gradient and will be reinstated with grass for slope stability and erosion control.
- Construction works are to be undertaken within the project site boundaries and shall avoid disturbing the existing riparian areas outside of our site extents.

3.6 Groundwater Impacts

The proposed building demolition and re-grading of building pads would not include any substantial excavation beneath existing surrounding ground levels. Similarly excavations for the P14 car park ramp relocation will be to depths of less than 1m for new pavements. Groundwater levels observed as part of the geotechnical site investigation and groundwater monitoring were below these levels and therefore, these earthworks are expected to be above the groundwater levels.

Diversions of existing sewer and trade waste mains at the site will be at greater depths and are likely to encounter groundwater during construction. Permanent groundwater impacts are not anticipated as the diversions will not form a barrier to groundwater flows. Should the works completed during the construction phase encounter groundwater, temporary pumping of groundwater would be undertaken by the contractor during the temporary works phase subject to an approved license/permit with the relevant authority. The quality of water discharged from the site will be monitored during construction. Any works below the water table are to be completed in accordance with the NSW Aquifer Interference Policy.

4 Flood Impact Assessment

The REF development, including the demolition of existing buildings and construction of new P14 car park ramp and drainage will result in changes to the behaviour of overland flow. The future building that is proposed in place of the existing BIRS building will also result in changes to overland flow. Although these two developments are being proposed separately under different planning pathways, due to the proximity of the developments any flood impacts will be interrelated. Therefore, flood impacts for the two developments have been assessed holistically. A summary of the assessed impact of this whole project, including the proposed IMHC building, is included in the following sections.

4.1 Post-Development Flood Modelling Results

The following sections describe the post-development flooding conditions. Refer to Appendix B for the proposed case flood results maps.

As discussed in Section 2.2, since the site is mainly impacted by overland flow flood events, assessment of the post-development flows has been undertaken mainly for this flood mechanism since the riverine flooding would be similar to pre-development conditions with the exception of the PMF.

The following sections describe the overland flow flood affectation for the site under post-development conditions unless noted otherwise.

4.1.1 10% AEP Event

The 10% event results indicate localised flooding within the site to be primarily from overland flows as follows:

Redbank Road

- Sheet flow in the order of 0.1 m depth or less (unchanged from existing) along the road carriageway and deepest in the proximity of the child care centre building frontage along Redbank Road.

Dragonfly Drive

- Minor localised flow in the order of 0.05m depth or less (unchanged) along the road carriageway.

Existing P14 Car Park Access Road

- Minor localised flood in the order of 0.1m depth (slight decrease from existing) within the existing on-grade car park, which is drained by the proposed back of house access road local drainage.

Careflight Access Road at Proposed P14 Car Park Ramp

- Minor localised flow in the order of 0.1 m depth or less (slight decrease from existing) along the road carriageway towards the north, which is drained by the proposed access road local drainage.

- Ponding of flood depths in the order of 0.5m depth or less (slight decrease from existing) at the intersection of the Careflight Access Road and existing Health Share car park entrance.

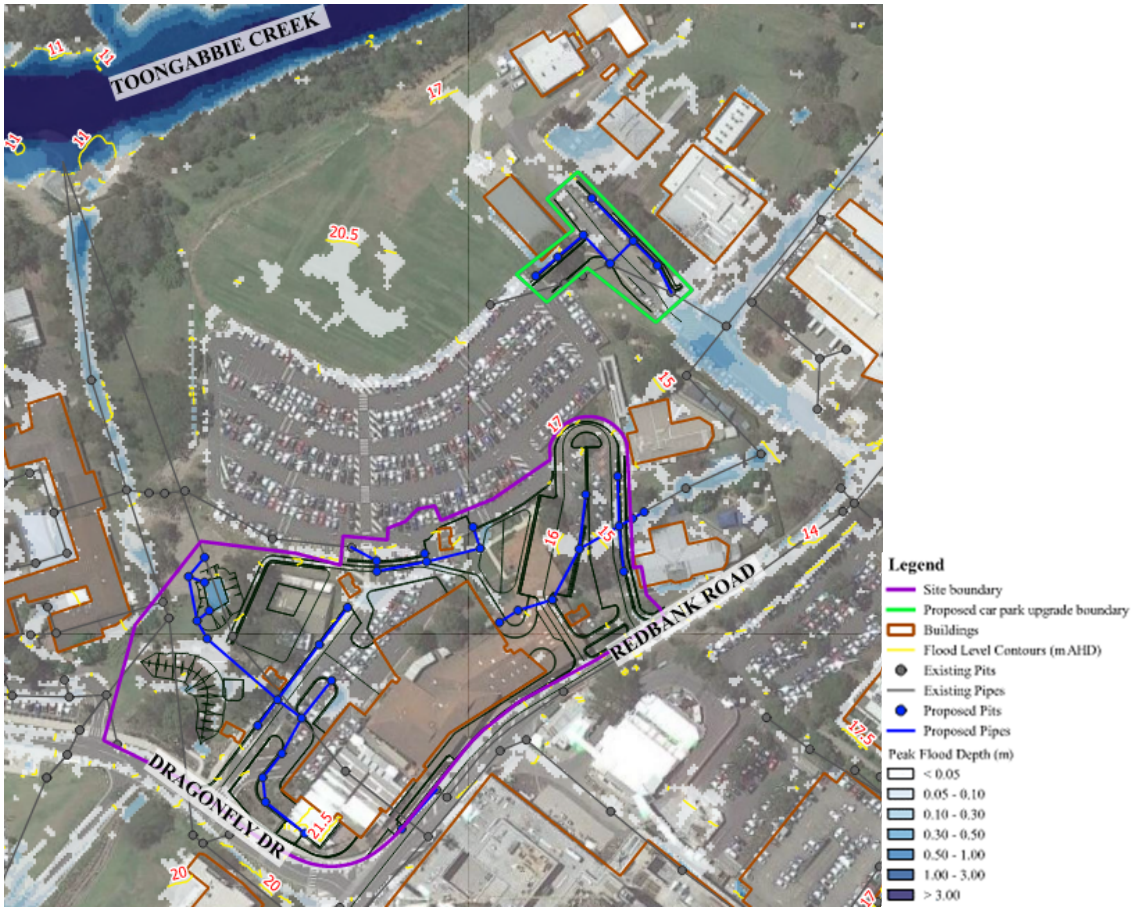


Figure 30: IMHC proposed case 10% AEP overland flooding peak flood depths and levels

4.1.2 1% AEP Event

The 1% AEP event results indicate localised flooding within the site as follows:

Redbank Road

- Sheet flow in the order of 0.1m depth or less (unchanged from existing) along the road carriageway towards the east end.

Dragonfly Drive

- Minor localised flow in the order of 0.05m depth or less (unchanged from existing) along the road carriageway towards the south end.

Existing P14 Car Park Access Road

- Minor localised flood in the order of 0.1m depth (slight decrease from existing) within the existing on-grade car park, which is drained by the proposed back of house access road local drainage.

Careflight Access Road at Proposed P14 Car Park Ramp

- Minor localised flow in the order of 0.1 m depth or less (slight decrease from existing) along the road carriageway towards the north, which is drained by the proposed access road local drainage.
- Ponding of flood depths in the order of 0.5m depth (slight decrease from existing) at the intersection of the Careflight Access Road and existing Health Share car park entrance.

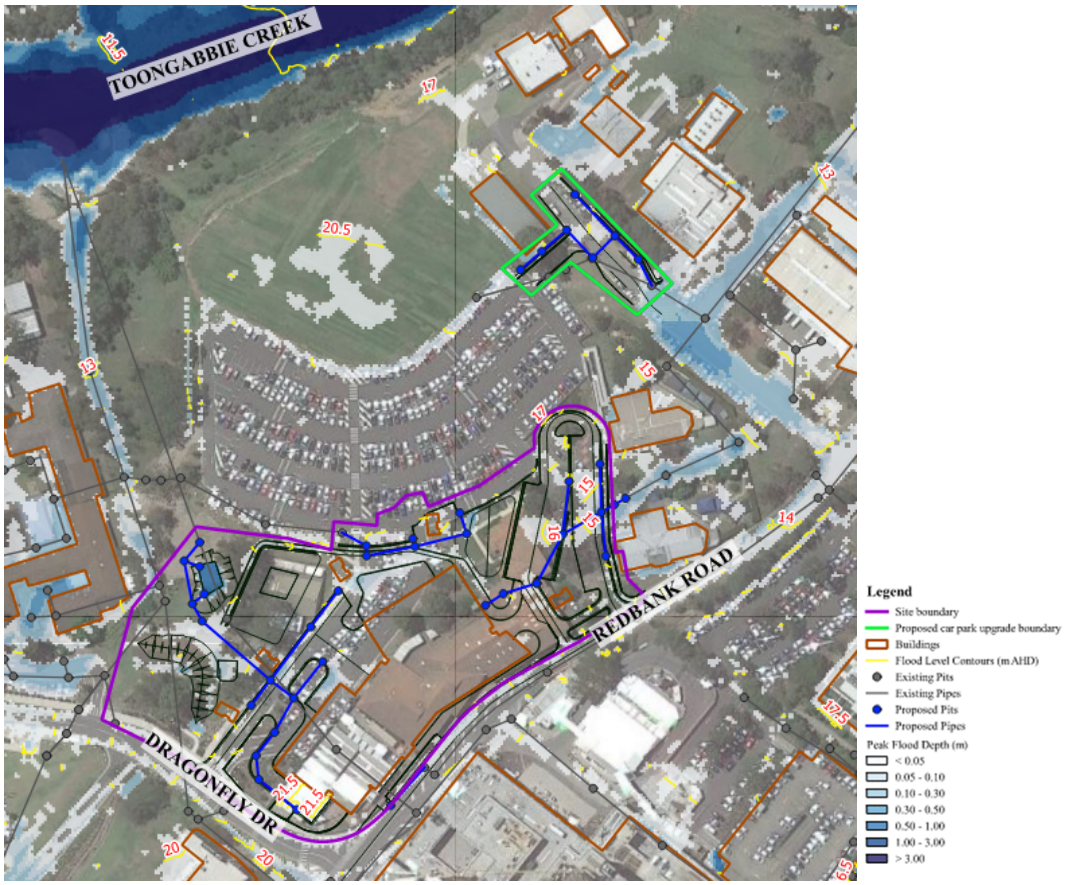


Figure 31: IMHC proposed case 1% AEP overland flooding peak flood depths and levels

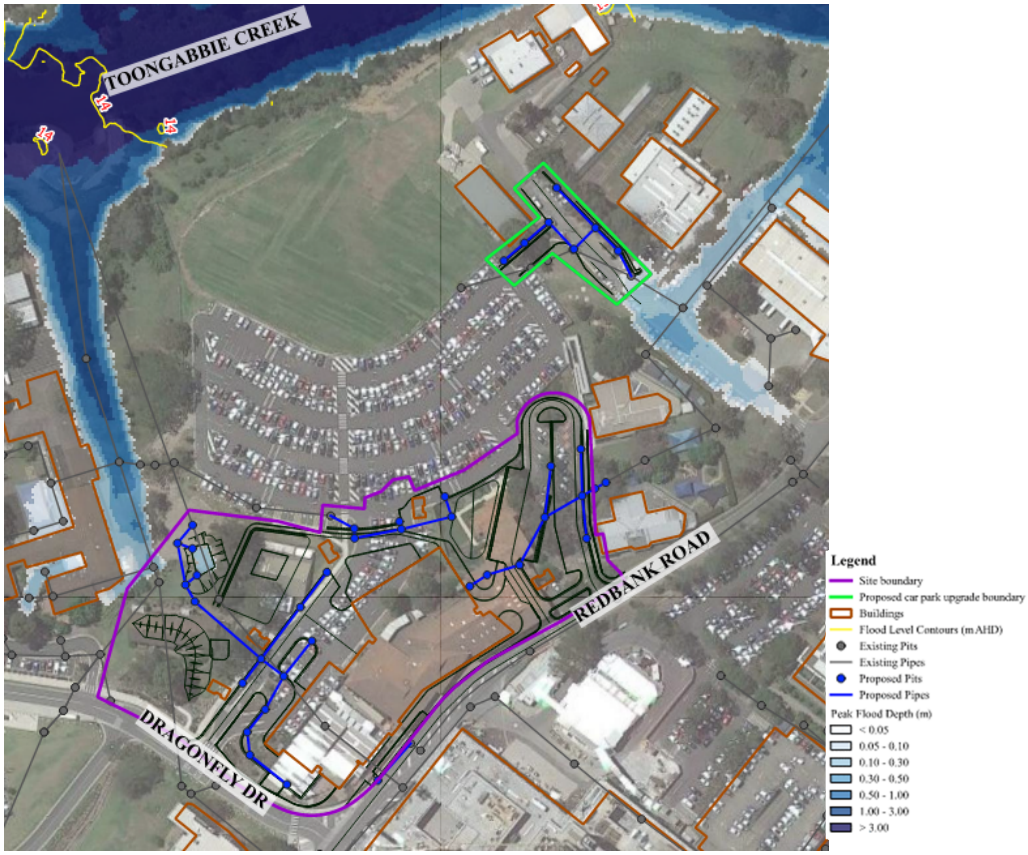


Figure 32: IMHC proposed case 1% AEP riverine flooding peak flood depths and levels

4.1.3 PMF Event

Similar to pre-development conditions, the PMF event results indicate flooding from both overland and river that impacts the site as follows:

Redbank Road

- (Overland) Up to 0.5m flood depth (slight decrease from existing) at the north end of the road near the car park access driveway; and
- (Riverine) In excess of 4.0m flood depth (unchanged from existing) at the north end of the road near the car park access driveway.

Dragonfly Drive

- (Overland) Up to 0.5m flood depth (slightly decrease from existing) at the south end of the road near the Redbank Road intersection; and
- (Riverine) In excess of 3.0m flood depth (unchanged from existing) at the north end of the road near Casuarina Lodge.

Existing P14 Car Park Access Road

- (Overland) Up to 0.5m flood depth (slight increase from existing) through the access road to P14 car park; and
- (Riverine) In excess of 3.0m flood depth (unchanged from existing) through the entire access road to P14 car park.

Careflight Access Road at Proposed P14 Car Park Ramp

- (Overland) Up to 0.5m flood depth (slight decrease from existing) through the Careflight access road; and
- (Riverine) In excess of 3.0m flood depth (unchanged from existing) through the Careflight Access Road towards the south.

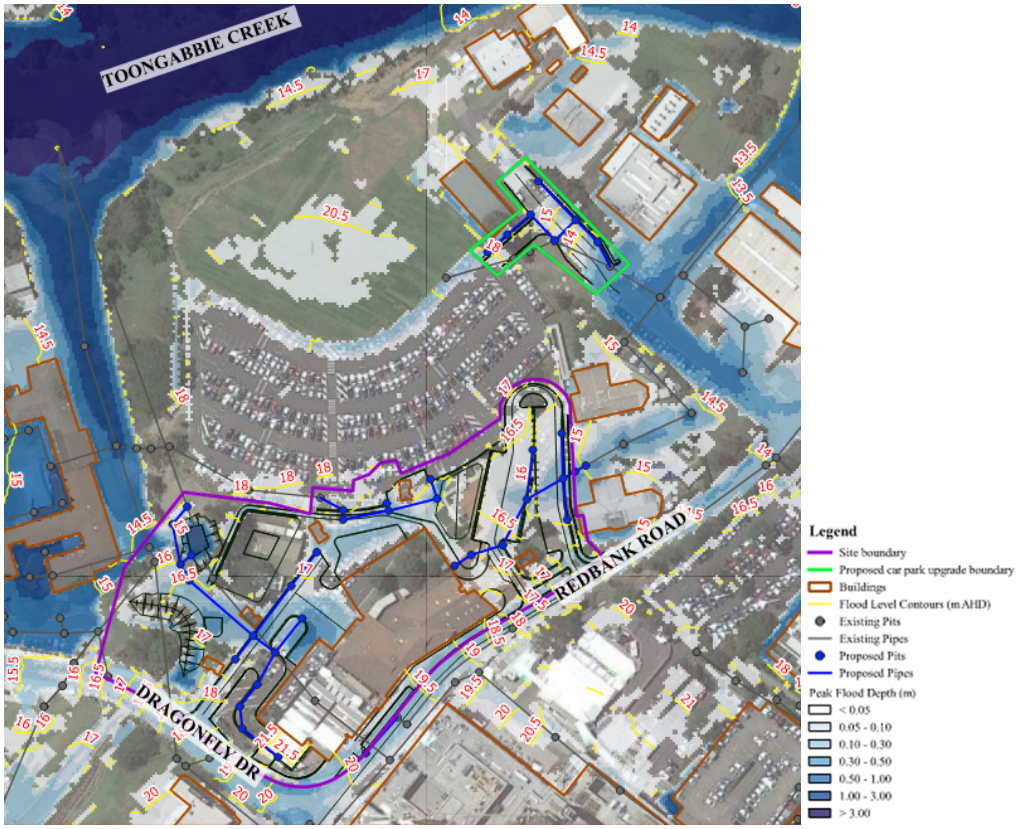


Figure 33: IMHC proposed case PMF overland flooding peak flood depths and levels

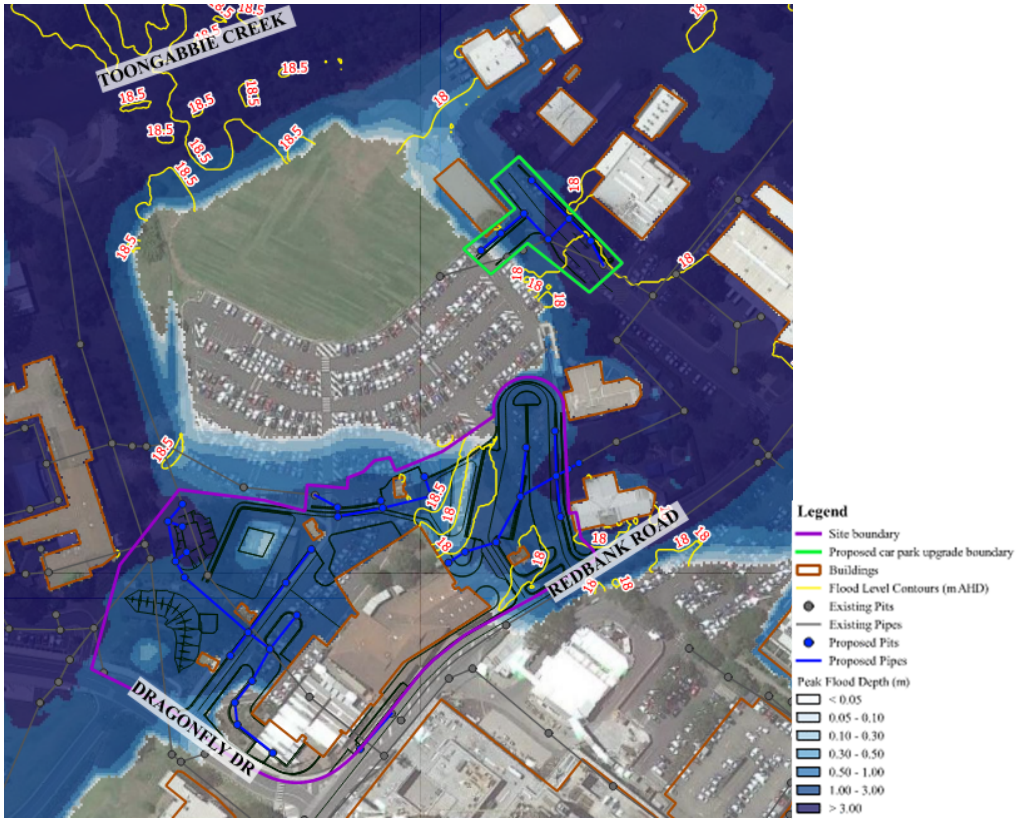


Figure 34: IMHC proposed case PMF riverine flooding peak flood depths and levels

4.1.4 Post-Development Flood Hazard

Post-development flood hazard has also been determined for the 1% AEP and PMF events, based on the hazard category recommended by the AR&R2019 guidelines.

Notable areas of flood hazard are as follows:

- 1% AEP event:
  - Generally H1 hazard (unchanged from existing) for the overland flow flooding for the site and its surrounds, which is safe flow conditions for people and vehicles.
- PMF event:
  - For the overland and riverine flooding, up to H5 and H6 hazard, respectively (unchanged from existing), can be found on Redbank Road, Dragonfly Drive and the Careflight Access Road to the proposed P14 car park ramp. These flow conditions are unsafe for people and vehicles, and buildings are vulnerable to structural damage and failure; and
  - Up to H6 hazard (unchanged from existing) can be found through the existing access road to the P14 car park and the child care car park during riverine flooding. These flows are unsafe for all vehicles, children and the elderly.

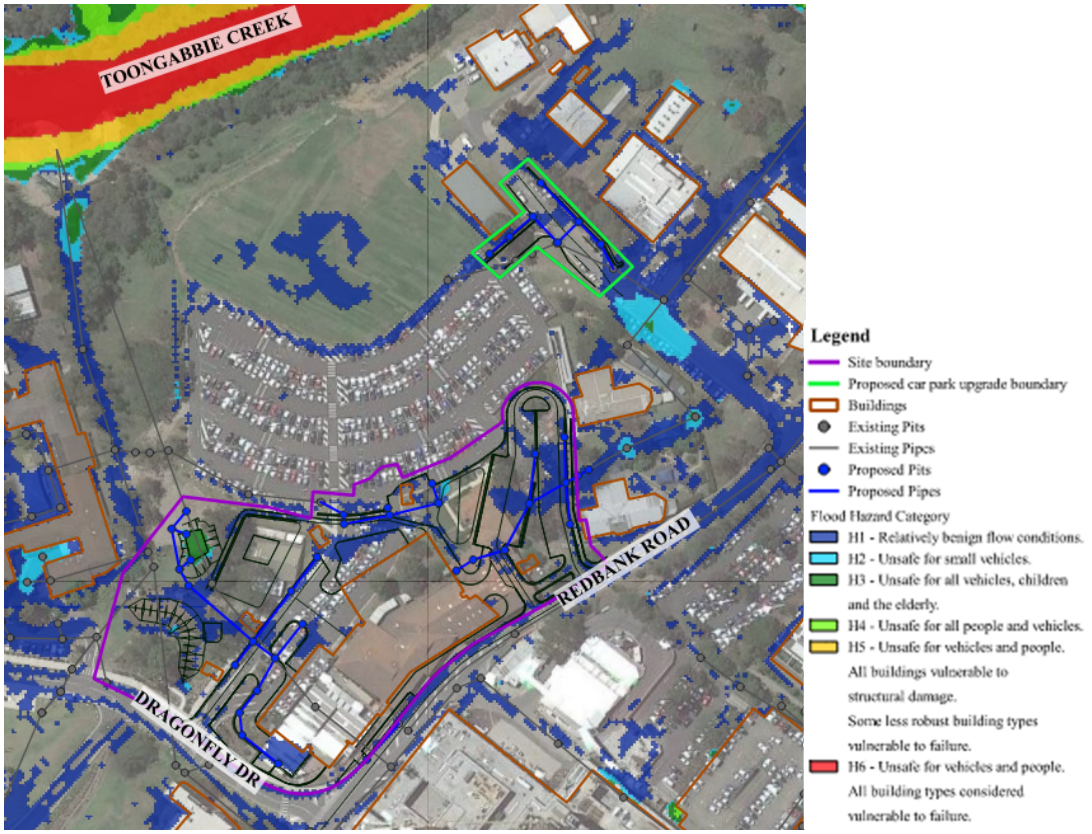


Figure 35: IMHC proposed case 1% AEP overland flooding flood hazard

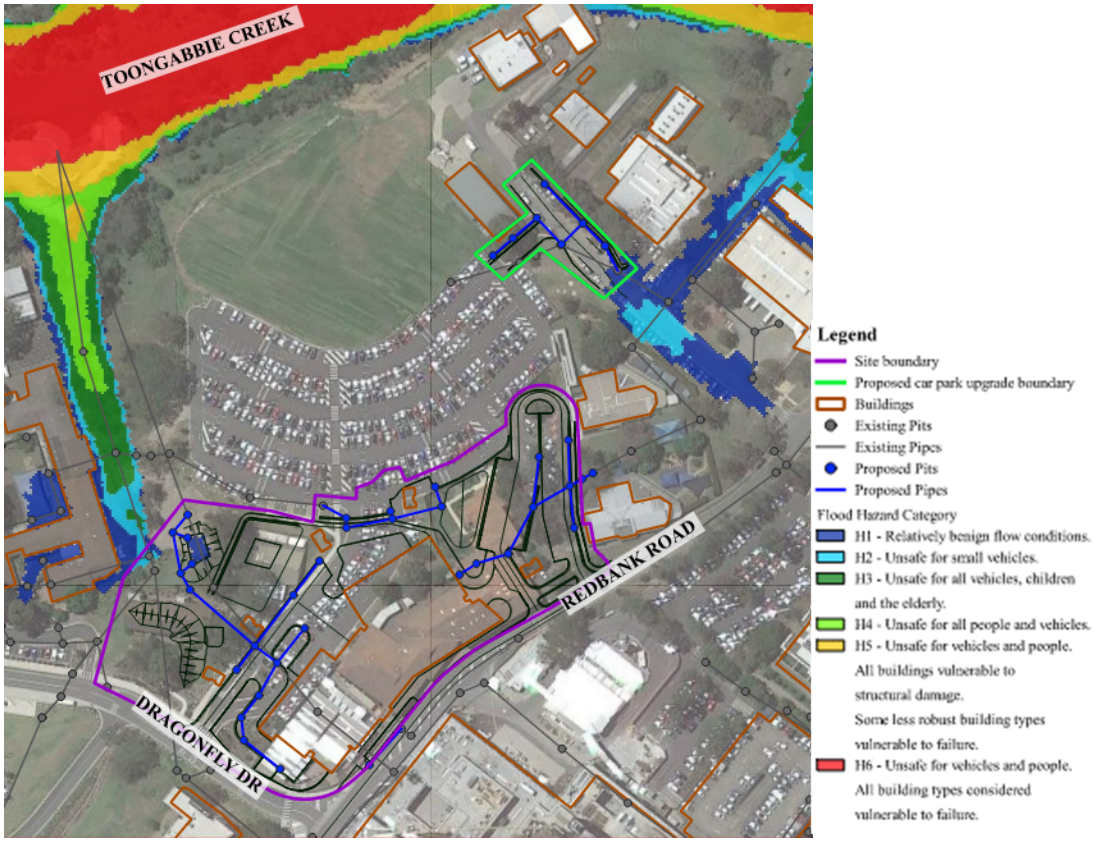


Figure 36: IMHC proposed case 1% AEP riverine flooding flood hazard

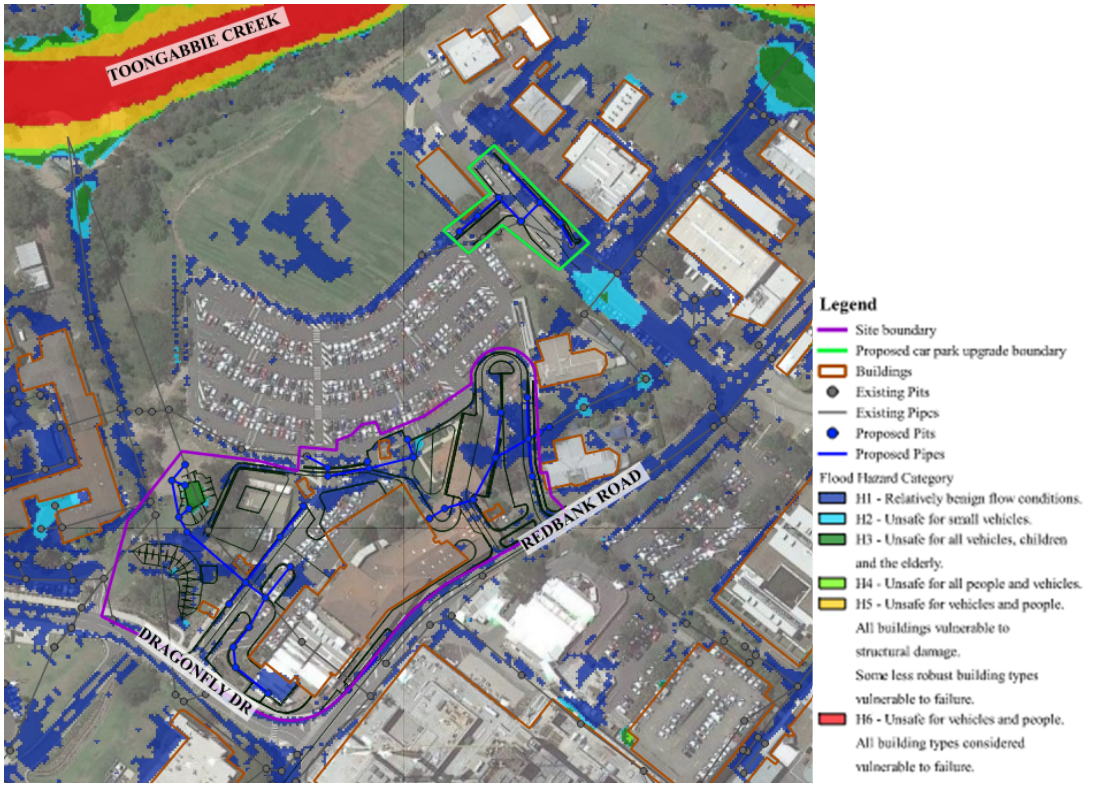


Figure 37: IMHC proposed case PMF overland flooding flood hazard

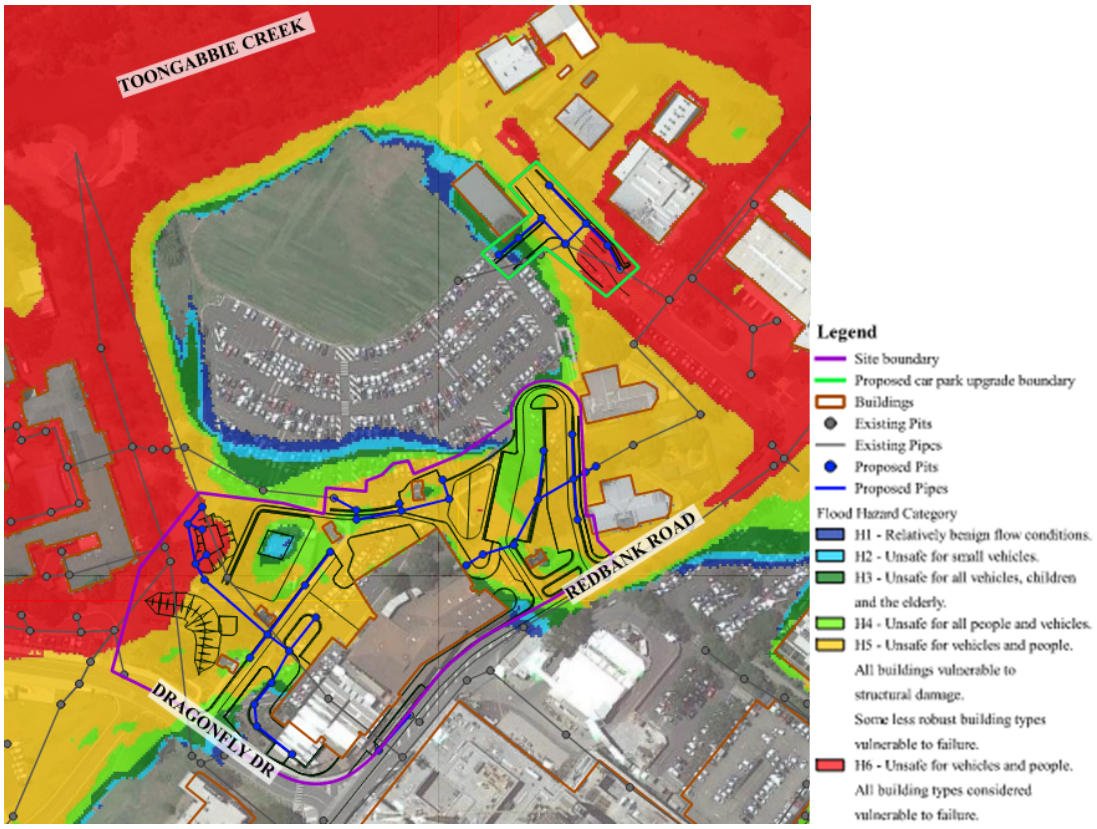


Figure 38: IMHC proposed case PMF riverine flooding flood hazard

4.2 Flood Impacts

The following sections describe flood impacts the proposed development will have compared to the pre-development conditions. Refer to Appendix B for the afflux flood results maps.

4.2.1 Changes to Flooding Behaviour

10% AEP Flood Event

- Changes in flood levels within the site boundary due to changes to site topography and altered building footprints
- No adverse impact outside of the project boundary. A small area with minor impact is shown adjacent the northern child care centre building, however flood depths are less than 50mm in this area and this impact is located away from the building entry.
- Reduction in flood levels north and east of site
- No impacts were found for the riverine flood event

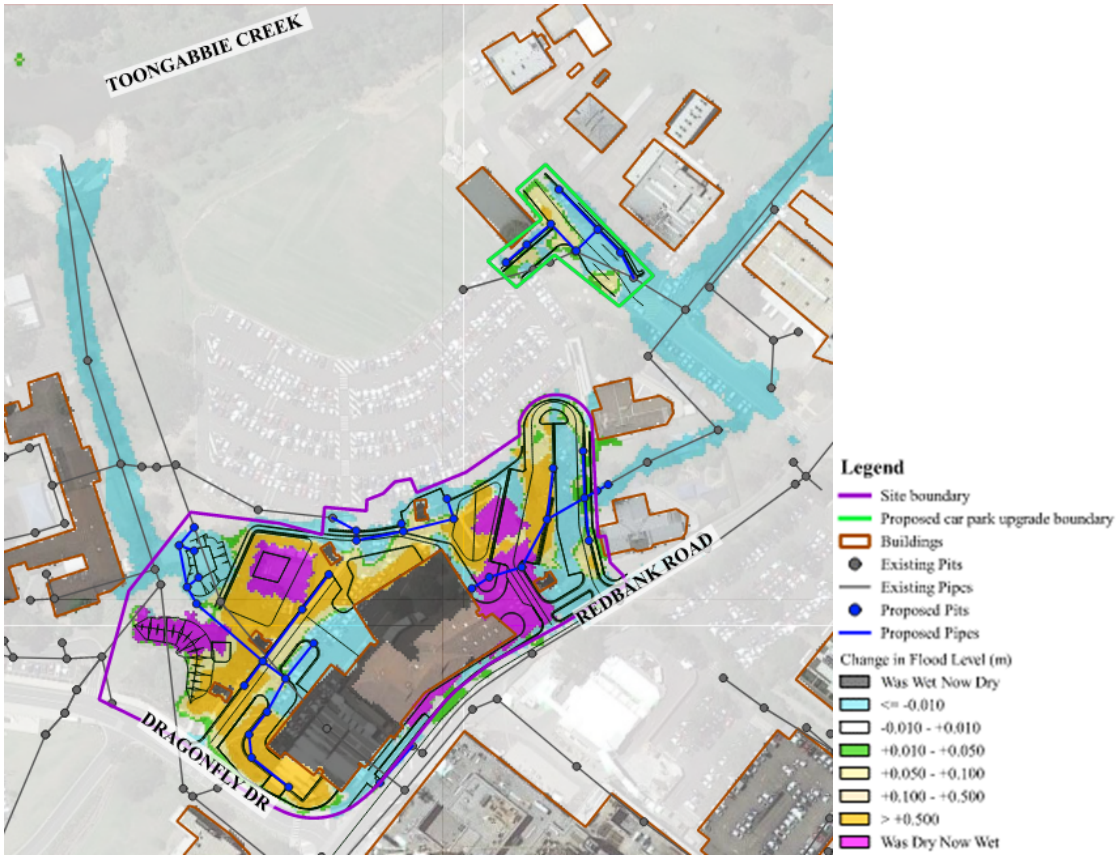


Figure 39: IMHC proposed case 10% AEP overland flooding afflux

1% AEP Flood Event

- Changes in flood levels within the site boundary due to changes to site topography and altered building footprints
- No impact for most areas surrounding the site.
- Reduction in flood levels along overland flow path to east of site south of new P14 ramp

- A small area with minor impact is shown adjacent the northern child care centre building, however flood depths are less than 50mm in this area and this impact is located away from the building entry.
- Increase in flood levels at eastern courtyard of Redbank House by approximately 17mm due to a slight increase in pipe hydraulic grade levels in this area. This area is currently flooded to a depth in excess of 300mm so this small increase would not be expected to have a material impact on the flood immunity of this building.
- No impacts were found for the riverine flood event.

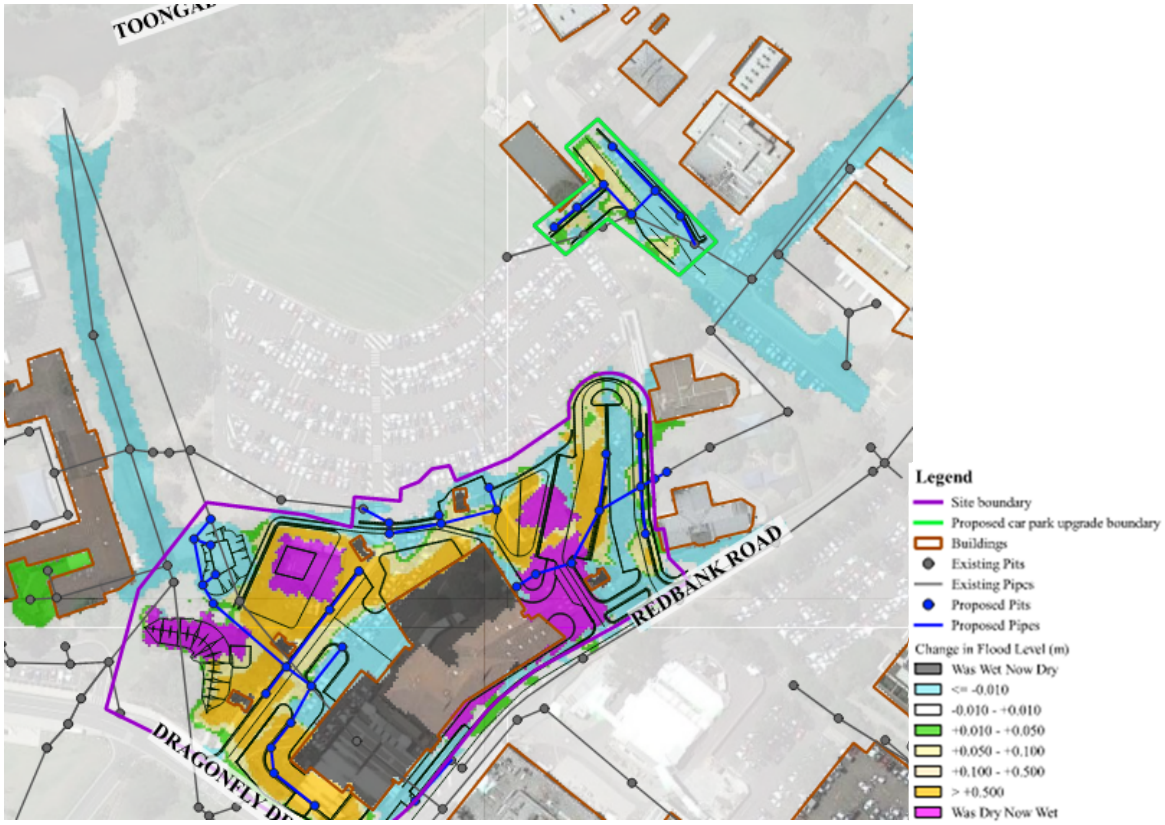


Figure 40: IMHC proposed case 1% AEP overland flooding afflux

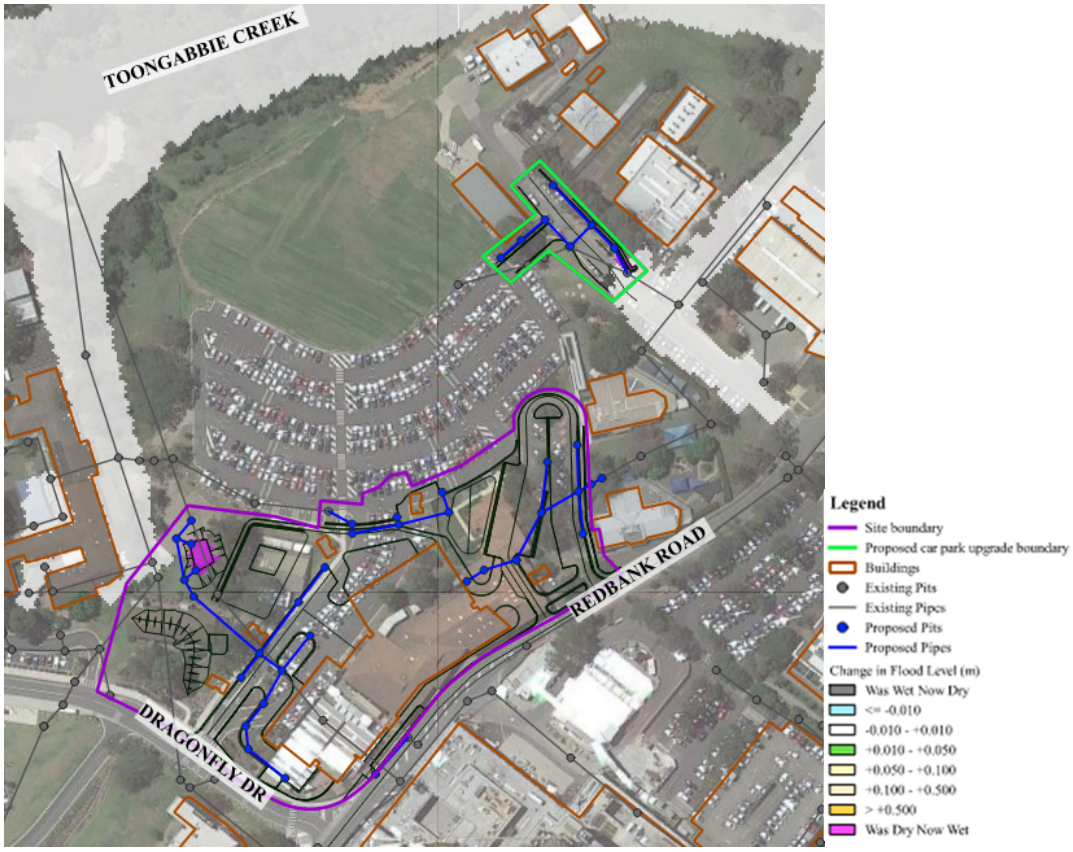


Figure 41: IMHC proposed case 1% AEP riverine flooding afflux

PMF Event

- Changes in flood levels within the site boundary due to changes to site topography and altered building footprints
- Small increases in overland flow flood depths of less than 50mm to east of site between child care buildings and near Health Share buildings. These areas are flooded in the existing case and these changes would not materially affect the flood immunity of buildings or the internal Westmead Road network
- Flood impacts experienced in the riverine PMF event occur largely due to the removal of the existing BIRS building and, in particular, its northern wing. This results in reductions in flood levels to the west of the site and increases in flood levels of less than 50mm to the east of the site. In areas where increases in flood depths are shown, existing flood depths are estimated to be greater than 1m and therefore, no material change in flooding in these areas is expected due to this change.

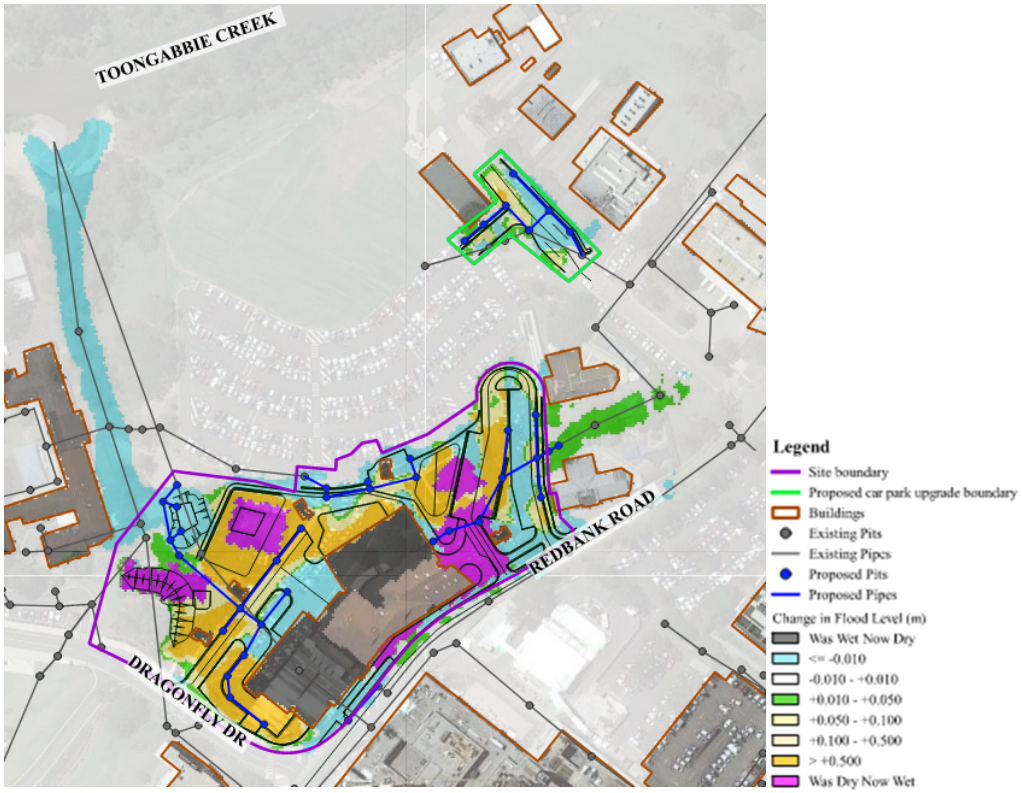


Figure 42: IMHC proposed case PMF overland flooding afflux

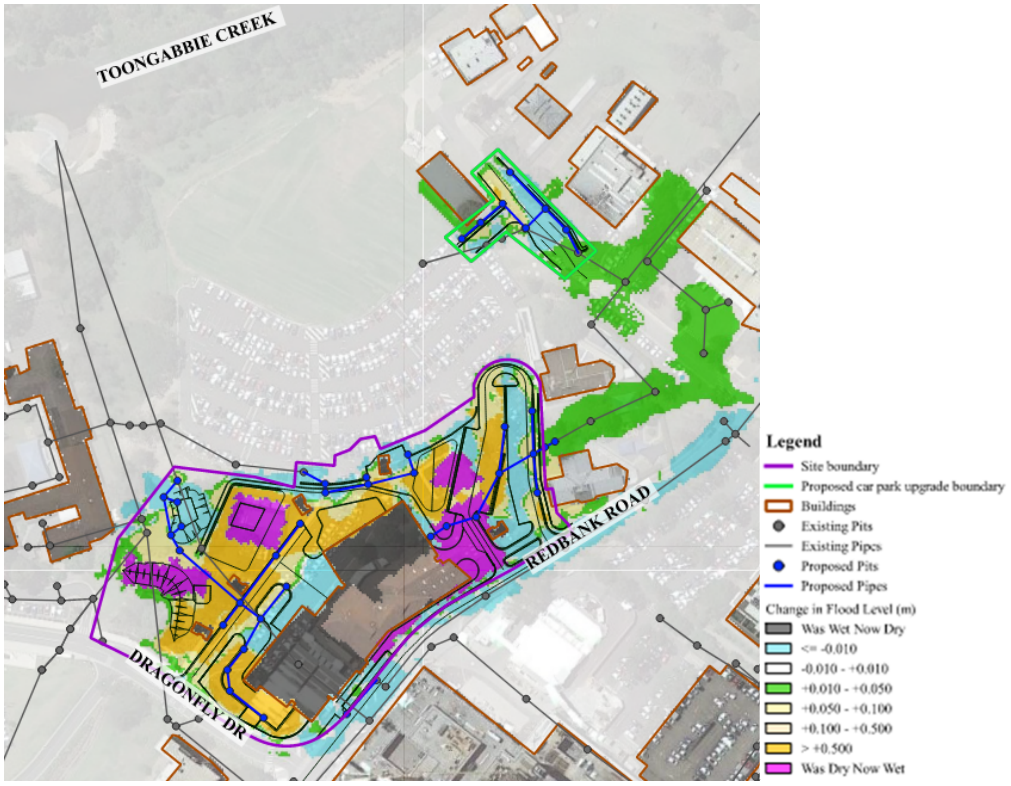


Figure 43: IMHC proposed case PMF riverine flooding afflux

Flood Hazards

- Generally minimal changes to flood hazards as discussed in Section 4.1.4.

5 Summary and Conclusion

This civil design report has summarised the proposed Early Works for the Integrated Mental Health Complex building project. The civil design involves demolition of the existing Brain Injury Unit, Casuarina Lodge and two Westmead Redevelopment Project Office buildings and subsequent regrading of the site, construction of the new P14 Access Way, construction of boom gates and parking adjustments at the Health Share car park and diversion of private and Sydney Water services. Existing trees will also be removed as part of the early works. Appropriate sediment and erosion control measures will be implemented during construction.

Most potential environmental impacts associated with the project involve erosion and sediment runoff downstream to the waterways. These impacts will be mitigated and controlled through the implementation of robust sediment and erosion control measures in accordance with the Landcom “Soil and Construction Manual” (also known as the Blue Book) as outlined in this report.

As the site is known to contain asbestos, there is a contamination risk associated with excavating asbestos during the site regrading and construction works. This risk will be managed by implementing the Remedial Action plan that has been developed for the site.

Analysis of the existing conditions reveal site flooding conditions are predominantly overland flows contained within Redbank Road and in the overland flow path to the north of the site. The exception is the PMF river flood event where the extent of flooding reaches the northern and eastern portions of the site.

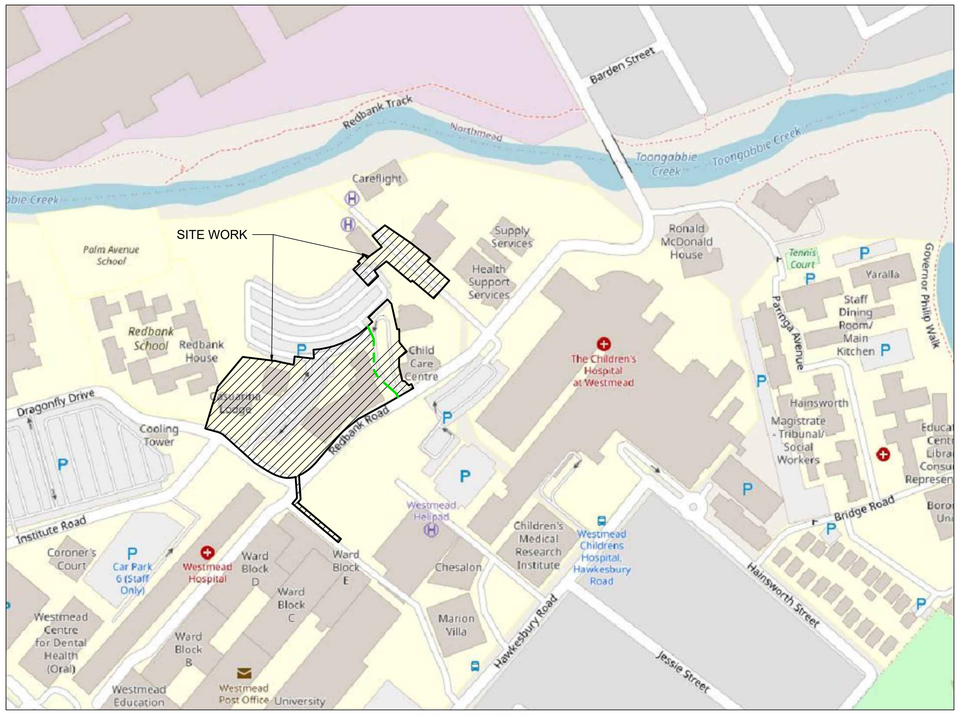
Analysis of the post-development conditions has been undertaken wholistically for the project, including the proposed IMHC building. The flood impacts of the development have been assessed for a range of flood events and the results show that the proposed building design, stormwater scheme and grading strategy for the development do not significantly impact the existing conditions flood behaviour and surrounding areas.

Appendix A Early works civil design drawings

CUMBERLAND WEST MENTAL HEALTH SERVICES RELOCATION

INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS - CIVIL WORKS

DESIGN DEVELOPMENT



LOCALITY PLAN
NOT TO SCALE

DRAWING No.	DRAWING TITLE
IMHC-CV-DG-2001	COVER SHEET, LOCALITY PLAN AND DRAWING REGISTER
IMHC-CV-DG-2006	GENERAL NOTES - SHEET 1 OF 2
IMHC-CV-DG-2007	GENERAL NOTES - SHEET 2 OF 2
IMHC-CV-DG-2011	GENERAL LEGEND
IMHC-CV-DG-2100	SEDIMENT AND EROSION CONTROL - PLAN
IMHC-CV-DG-2191	SEDIMENT AND EROSION CONTROL - DETAILS
IMHC-CV-DG-2200	BULK EARTHWORKS - OVERALL SITE - PLAN
IMHC-CV-DG-2301	CIVIL WORKS - PLAN - SHEET 1 OF 2
IMHC-CV-DG-2302	CIVIL WORKS - PLAN - SHEET 2 OF 2
IMHC-CV-DG-2601	STORMWATER - PLAN - SHEET 1 OF 2
IMHC-CV-DG-2602	STORMWATER - PLAN - SHEET 2 OF 2
IMHC-CV-DG-2700	PAVEMENT - OVERALL SITE - PLAN
IMHC-CV-DG-2791	PAVEMENT - PROFILE
IMHC-CV-DG-2800	EXISTING UTILITIES - OVERALL SITE - PLAN
IMHC-CV-DG-2806	UTILITIES DIVERSION COORDINATION - PLAN

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REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN

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PROJECT
WESTMEAD INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
COVER SHEET, LOCALITY PLAN AND DRAWING REGISTER

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
NOT TO SCALE

DRAWING NO. **IMHC-CV-DG-2001**
REVISION **3**

GENERAL

1. ALL WORKS SHALL BE IN ACCORDANCE WITH CITY OF PARRAMATTA "DEVELOP CONTROL PLAN 2011", CITY OF PARRAMATTA COUNCIL "DEVELOPMENT ENGINEERING DESIGN GUIDELINES" AND HEALTH INFRASTRUCTURE "ENGINEERING SERVICE GUIDELINES".

2. SHOULD ANY AMBIGUITY, ERROR, OMISSION, DISCREPANCY, INCONSISTENCY OR OTHER FAULT EXIST OR SEEM TO EXIST IN THE DOCUMENTS, IMMEDIATELY NOTIFY THE ENGINEER OR SUPERINTENDENT.

3. ALL WORKS ON WATERFRONT LAND AS DEFINED BY THE WATER MANAGEMENT ACT 2000 MUST BE IN ACCORDANCE WITH THE NSW NATURAL RESOURCES ACCESS REGULATOR (NRAR GUIDELINES) FOR CONTROLLED ACTIVITIES ON WATERFRONT LAND.

4. EARLY AND MAIN WORKS CONTRACTORS TO REVIEW ALL IMHC DRAWINGS TO ENSURE COORDINATION WITH EACHOTHER.

SURVEY

1. ALL SURVEY FOR THIS DESIGN IS SUPPLIED BY:
   LTS LOCKLEY (REFERENCE 32572088DT TO GDA94)
   SUITE 1, LEVEL 1, 810 PACIFIC HIGHWAY, GORDON, NSW, 2072
   PHONE 1300 587 000
   FAX 02 9499 7760

2. ALL BEARINGS AND DISTANCES BY SURVEY.

EROSION AND SEDIMENT

1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE IN ACCORDANCE WITH LANDCOM "SOILS AND CONSTRUCTION MANUAL VOLUME 1, MARCH 2004".

2. WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
   A) INSTALL EROSION AND SEDIMENT CONTROLS.
   B) STRIP AND STOCKPILE TOPSOIL AND CARRY OUT ALL BULK EARTHWORKS.
   C) TOPSOIL AND REHABILITATE BULK EARTHWORK AREAS IMMEDIATELY UPON COMPLETION.
   D) UNDERTAKE REMAINING SITE WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS.
   E) REMOVE SOIL AND WATER MANAGEMENT WORKS NOT REQUIRED FOR OTHER STAGES OF CONSTRUCTION ONCE UPSTREAM SURFACES ARE STABILISED TO THE SATISFACTION OF CITY OF PARRAMATTA COUNCIL.

3. CONTROLS AFFECTED BY WORKS ARE TO BE RE-ESTABLISHED PRIOR TO THE COMPLETION OF EACH DAYS WORK.

4. DUST CONTROL MEASURES SHALL BE IMPLEMENTED CONTINUOUSLY DURING CONSTRUCTION WORKS THROUGH REGULAR WATERING TO THE SATISFACTION OF THE PRINCIPAL'S AUTHORISED PERSON (PAP).

5. THE CONTRACTOR IS TO STABILISE TOPSOIL STOCKPILE AND BARE AREAS AS SOON AS THEY REACH FINAL LEVELS. STABILISATION TO BE BY HYDROSEEDING OR OTHER METHOD APPROVED BY CITY OF PARRAMATTA. ALL SEEDED AREAS TO BE WATERED TWICE WEEKLY UNTIL GRASS IS ESTABLISHED OR COVERED WITH BITUMEN STRAW MULCH.

6. THE CONTRACTOR SHALL TEMPORARILY REHABILITATE ANY DISTURBED AREAS WITHIN 14 DAYS. WHERE FINAL SHAPING HAS OCCURRED THE CONTRACTOR SHALL PROVIDE FINAL REHABILITATION WITHIN 7 DAYS.

7. NO MORE THAN 50 m OF TRENCH IS TO BE OPEN AT ANY ONE TIME.

8. AREAS OVER STORMWATER AND SEWER LINES NOT IN ROADS TO BE MULCHED AND SEEDED AS SOON AS POSSIBLE BUT NO LATER THAN WITHIN 14 DAYS AFTER BACKFILL.

9. AREAS OVER ELECTRICITY POWER, TELEPHONE AND GAS SUPPLY TRENCHES NOT IN ROADS ARE TO BE SEEDED AND MULCHED AS SOON AS POSSIBLE BUT NO LATER THAN WITHIN 14 DAYS AFTER BACKFILL.

10. ALL TEMPORARY EARTH BERMS, DIVERSION AND SEDIMENT BASIN EMBANKMENTS ARE TO BE TRACK ROLLED, SEEDED OR MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.

SEDIMENT CONTROL MEASURES

1. DURING EARTHWORKS, CAR PARK WORKS AND ROADWORKS, TEMPORARY DIVERSION BANKS SHOULD BE CONSTRUCTED TO LIMIT SLOPE LENGTH, WHERE POSSIBLE, IN ACCORDANCE WITH THE FOLLOWING:

RECOMMENDED MAXIMUM SPACING BETWEEN CROSS BANKS ON ALL ROADS	
SLOPE	MAXIMUM SPACING (m)
0 TO 1%	150
1 TO 3%	100
3 TO 5%	70
5 TO 10%	50
10 TO 17%	16

2. ALL EXISTING STORMWATER PITS TO BE COVERED OR PROTECTED BY SEDIMENT CONTROL MEASURES AS ILLUSTRATED IN THE ENGINEERING DRAWINGS. NEWLY CONSTRUCTED DRAINAGE INLET PITS SHALL ALSO BE PROTECTED IMMEDIATELY AFTER INSTALLATION.

3. SEDIMENT TRAPS ARE TO BE MAINTAINED SUCH THAT:
   A) SEDIMENT IS REMOVED SUCH THAT NO LESS THAN 70% OF THE DESIGN CAPACITY REMAINS AT ANY ONE TIME.
   B) MATERIALS ARE REPLACED OR REPAIRED AS REQUIRED TO ENSURE SERVICEABILITY OF BOTH THE ELEMENT AND THE TRAP.

4. PERMANENT DRAINAGE STRUCTURES INCLUDING PIPES AND PITS ARE TO BE HANDED OVER IN A CLEAN CONDITION AT THE COMPLETION OF THE CONTRACT MAINTENANCE PERIOD.

5. FOLLOWING COMPLETION AND RESTORATION OF SITE, REMOVE ALL MATERIALS AND FILL DIVERSION DRAINS, WATERWAYS AND SEDIMENT TRAPS. COMPACT IN ACCORDANCE WITH SPECIFICATION TO MATCH LEVELS OF THE PREVIOUSLY COMPLETED WORKS. PROVIDE 150 mm TOPSOIL AND HYDROSEED.

6. AN ACCESS POINT TO ALLOW MACHINE ENTRY / EXIT ARE TO INCLUDE A ROUNDED EARTH MOUND 0.3 m HIGH WITH 10H:1V BATTERS.

7. THE CONTRACTOR SHALL PROVIDE A 0.4 m WIDE TURF STRIP BEHIND ALL KERB AND GUTTER AT COMPLETION OF FOOTPATH FORMATION AND 1.0 m WIDE AROUND ALL SURFACE INLET PITS.

8. THE CONTRACTOR SHALL MAINTAIN A LOG BOOK DETAILING
   - RECORDS OF ALL RAINFALL
   - CONDITION OF SOIL AND WATER MANAGEMENT STRUCTURES
   - ANY ADDITIONAL REMEDIAL WORKS REQUIRED
   THE LOG BOOK SHALL BE MAINTAINED ON A DAILY BASIS AND BE MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. THE ORIGINAL LOG BOOK SHALL BE ISSUED TO THE PROJECT MANAGER AT THE COMPLETION OF THE WORKS.

9. THE CONTRACTOR SHALL AT ALL TIMES RESTRICT CONSTRUCTION EQUIPMENT MOVEMENT TO THE ESSENTIAL CONSTRUCTION AREAS. THE CONTRACTOR SHALL NOT EXTEND LAND DISTURBANCE BEYOND 2 m FROM THE EDGE OF ANY ESSENTIAL CONSTRUCTION ACTIVITY.

10. THE CONTRACTOR SHALL PROVIDE CATCH DRAINS AT THE BOTTOM OF ALL BATTERS AND DIVERT THE CATCH DRAINS AND ANY TAIL OUT DRAINS TO DRAIN TO THE NEAREST STORMWATER PIT.

CLEARING AND GRUBBING

1. THE WORK SITE IS TO BE CLEARED OF ALL ORGANIC MATTER, RUBBISH OR OTHERWISE UNSUITABLE MATERIALS.

2. ALL TREES, OTHER THAN THOSE IDENTIFIED AND APPROVED FOR REMOVAL BY THE PROJECT ARBORIST, SHALL BE RETAINED.

3. GRUBBING OUT OF STUMPS AND ROOTS IS REQUIRED TO A MIN DEPTH OF 500 mm BELOW EXISTING GROUND LEVEL. FOLLOWING GRUBBING, ANY VOIDS OR DEPRESSIONS ARE TO BE FILLED WITH SELECTED MATERIAL AND COMPACTED IN 150 mm LAYERS TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL.

4. ALL MATERIAL DERIVED FROM CLEARING AND GRUBBING IS TO BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED DISPOSAL SITE.

DEMOLITION

1. ALL STRUCTURAL DEMOLITION WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH REQUIREMENTS OF AS 2601 AND STRUCTURAL ENGINEERING SPECIFICATIONS.

2. HAZARDOUS MATERIALS (INCLUDING ASBESTOS) ARE TO BE HANDLED, STORED, TREATED TRANSPORTED AND DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF THE WORK HEALTH & SAFETY ACT 2011 AND ANY RELEVANT REQUIREMENTS OF THE WORK COVER AUTHORITY OF NSW.

EARTHWORKS

1. ALL MATERIAL UNSUITABLE FOR USE ON SITE SHALL BE DISPOSED OF OFF SITE TO AN APPROVED DISPOSAL SITE.

2. EARTHWORKS TO BE CARRIED OUT TO THE SATISFACTION OF THE REMEDIATION ACTION PLAN. ALL TESTING OF EARTHWORKS SHALL BE UNDERTAKEN AS NOMINATED IN THE SPECIFICATION.

3. AT THE TOP OF ALL EXCAVATED BATTERS OVER 1.0m HIGH PROVIDE A BARRIER FENCE.

4. ALL EXCAVATION WORKS WITHIN TREE PROTECTION ZONES ARE TO BE HAND DUG ONLY. PROJECT ARBORIST TO CONFIRM AND APPROVE METHODOLOGY PRIOR TO CONSTRUCTION COMMENCEMENT.

5. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY WORKS INCLUDING SHORING AND BATTERS. ALL TEMPORARY WORKS ARE TO BE DESIGNED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND CODES OF PRACTICE BY A SUITABLY QUALIFIED ENGINEER.

6. THE CONTRACTOR IS RESPONSIBLE FOR MANAGING SITE RISKS ASSOCIATED WITH FALLS FROM HEIGHT INCLUDING INSTALLING SAFETY BARRIERS AROUND EXCAVATIONS WHERE APPROPRIATE.

7. EXCAVATED MATERIAL MAY BE USED AS STRUCTURAL FILL PROVIDED IT COMPLIES WITH THE SPECIFICATION FOR FILL MATERIAL AND THE PLACEMENT MOISTURE CONTENT COMPLIES WITH GEOTECHNICAL CONSULTANTS REQUIREMENTS, AND ALLOWS FILLING TO BE PLACED AND PROOFROLLED IN ACCORDANCE WITH RMS R44 SPECIFICATION.

8. FILLING IS TO BE UNDERTAKEN IN MAX 200mm LOOSE LAYERS AND 150mm LOOSE LAYERS AT DEPTHS <500mm BELOW PROPOSED BULK EARTHWORKS LEVELS.

9. SELECTED MATERIAL FOR USE AS GENERAL FILL SHALL BE UNIFORM IN CLASSIFICATION, WELL GRADED, COARSE, GRANULAR AND FREE DRAINING. MAX PARTICLE SIZE 75mm. COMPACTED IN 150mm MAX LAYERS TO OBTAIN 100% SMDD AS DETERMINED BY TEST AS 1289.5.1.1.

10. EXCAVATED SURFACES ARE TO BE CHECKED WITH A 10 TONNE ROLLER (MIN) FOR SOFT OR COMPRESSIBLE ZONES AREAS WITH MORE THAN 3 mm MOVEMENT UNDER ROLLER. SUCH ZONES ARE TO BE OVER EXCAVATED TO A MIN DEPTH OF 300 mm AND REPLACED WITH COMPACTED SELECTED MATERIAL IN ACCORDANCE WITH NOTE 8.

EXISTING SERVICES

1. THE CONTRACTOR SHALL UNDERTAKE POTHOLING AND/OR INVESTIGATION WORKS TO LOCATE ALL EXISTING SERVICES PRIOR TO COMMENCING WORKS.

2. EXISTING SERVICES INFORMATION SHOWN ON THESE PLANS ARE LOCATED FROM INFORMATION SUPPLIED BY THE SURVEYOR AND ARE NOT GUARANTEED COMPLETE OR CORRECT. ALL SERVICE LOCATIONS ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY EXCAVATION OR CONSTRUCTION WORKS. ARUP ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

3. ALL REMOVED, DIVERTED AND PROTECTED UTILITIES WORKS RELATED TO EXISTING SERVICES NEED TO BE VERIFIED AND APPROVED BY HEALTH INFRASTRUCTURE AND RELEVANT SERVICE AUTHORITIES.

4. ALL ACCESSIBLE EXISTING SERVICE PITS AND VALVES TO BE RETAINED MUST HAVE THEIR COVERS RAISED OR LOWERED TO THE PROPOSED SURFACE LEVELS TO MAINTAIN ACCESS. SERVICE PITS AND COVERS MAY NEED REPLACEMENT FOR CHANGED LOADING CONDITIONS.

5. IMPACTS ON EXISTING UTILITIES, INCLUDING REQUIRED DIVERSIONS, PROTECTION AND MODIFICATION WORKS ARE NOT SHOWN IN THIS SET OF CIVIL ENGINEERING DRAWINGS. REFER TO DOCUMENTATION OF THE RELEVANT ENGINEERING AND TECHNICAL SERVICE CONSULTANTS. UTILITIES WORKS ARE TO BE COORDINATED WITH CIVIL ENGINEERING WORKS.

ASBESTOS

1. CONTAMINATED MATERIALS ARE KNOWN TO EXIST ON SITE, REFER TO CONTAMINATION REPORT.

2. REFER TO THE REMEDIATION ACTION PLAN FOR THIS SITE. THE CONTRACTOR IS TO ATTEND TO ALL ISSUES IN THE REMEDIATION ACTION PLAN BEFORE COMMENCING ANY DEMOLITION OR CONSTRUCTION WORKS.

3. ALL AIR MONITORING EQUIPMENT TO BE IN PLACE PRIOR TO COMMENCING ANY DEMOLITION OR CONSTRUCTION WORKS,

ROADWORKS GENERAL

1. THE CONTRACTOR SHALL OBTAIN ALL LEVELS FROM ESTABLISHED BENCH MARKS ONLY AS SUPPLIED BY THE APPOINTED SURVEYORS.

2. NO WORK TO BE CARRIED OUT ON ADJOINING PROPERTIES WITHOUT THE WRITTEN PERMISSION FROM THE OWNER.

3. VEHICULAR ACCESS AND ALL SERVICES ARE TO BE MAINTAINED AT ALL TIMES TO AREAS AFFECTED BY CONSTRUCTION.

4. ALL RUBBISH, BUILDINGS, SHEDS, FENCES, AND POWER POLES ARE TO BE REMOVED IN ACCORDANCE WITH CoPC AND RMS SPECIFICATIONS.

5. CONTRACTOR TO INSTALL ROOT CONTROL BARRIERS ALONG LENGTH OF KERBS AND RETAINING WALLS ADJACENT TO LANDSCAPED AREAS.

GEOTECHNICAL INSPECTION & TESTING

1. IT IS INCUMBENT ON THE CONTRACTOR TO ENSURE ALL EARTHWORKS ARE UNDERTAKEN UNDER LEVEL 2 GEOTECHNICAL INSPECTION AND TESTING SUPERVISION AS DEFINED IN AS 3798-2007. ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.

2. THE LEVEL 2 GEOTECHNICAL AND TESTING AUTHORITY (GITA) SHALL PROVIDE A REPORT DETAILING ALL THE INSPECTIONS, SAMPLING AND TESTING IT HAS CARRIED OUT TOGETHER WITH PLAN LOCATIONS AND A SUMMARY OF RESULTS.

3. THE GITA IS ALSO REQUIRED TO EXPRESS AN OPINION ON THE COMPLIANCE OF THE SITE WORKS WITH THE SPECIFICATION AND DRAWINGS BY WAY OF EVIDENCE TO THE ENGINEER FOR CERTIFICATION PURPOSES.

DRAINAGE

1. PRIOR TO THE WORKS COMMENCING AND FOLLOWING COMPLETION OF WORKS, A CCTV INSPECTION AND REPORT IS TO BE UNDERTAKEN FOR ALL STORMWATER PIPES AND CULVERTS TO BE RETAINED AND AFFECTED BY THE PROPOSED WORKS.

2. ALL EXISTING REDUNDANT PITS AND PIPES WHICH ARE NO LONGER REQUIRED ARE TO BE GROUT FILLED UNLESS NOTED OTHERWISE.

3. ALL DRAINAGE TRENCHES WHERE PITS AND PIPES ARE REMOVED ARE TO BE BACKFILLED AND COMPACTED WITH CLEAN MATERIAL WHICH COMPLIES WITH THE CoPC SPECIFICATIONS AND IN ACCORDANCE TO THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS.

4. ALL PITS OVER 1.2 m IN DEPTH TO BE PROVIDED WITH STEP IRONS IN ACCORDANCE WITH AS 4198.

5. PIT AND PIPE CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 32 MPa AT 28 DAYS U.N.O.

6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL TEMPORARY DRAINAGE NECESSARY TO DRAIN THE SITE DURING CONSTRUCTION INCLUDING TEMPORARY DIVERSIONS OF TRUNK MAINS TO ENABLE PERMANENT WORKS.

7. CONNECT DOWNPIPES TO THE STORMWATER SYSTEM AS EARLY AS POSSIBLE.

8. CONTRACTOR TO PROVIDE ROOT CONTROL BARRIERS FOR DRAINAGE PIPES WITHIN LANDSCAPED AREAS.

9. SUBSOIL DRAINAGE PIPES TO BE PROVIDED AT STORMWATER PITS IN ACCORDANCE WITH CoPC STANDARD DRAINAGE DRAWINGS.

KERB, GUTTERS, DISH DRAINS CROSSINGS AND EDGES

1. THE SUPPLY, PLACING, FINISHING AND CURING OF IN-SITU CONCRETE FOR PAVEMENTS SHALL COMPLY WITH AS 3600. ALL CONCRETE TO BE MIN N25 AT 28 DAY COMPRESSIVE STRENGTH UNO.

2. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 100 mm GRANULAR BASE COURSE COMPACTED TO MINIMUM 98% MODIFIED DRY DENSITY (AS 1289 5.2.1), UNO.

3. CONCRETE FOOTPATHS, RAMPED AND VEHICULAR CROSSINGS SHALL BE BROOM FINISHED, UNO. ALL OTHER KERB, GUTTER AND DISH DRAINS ARE TO BE STEEL FLOAT FINISHED.

4. AT TIE INS WITH EXISTING KERBS, CONCRETE TO BE SAWCUT AND EXPANSION JOINTS ARE TO BE PROVIDED.

5. KERB EXPANSION JOINTS SHALL BE LOCATED AT 12 m CENTRES, ON TANGENT POINTS OF CURVES AND AT DRAINAGE PITS. EXPANSION JOINTS ARE TO BE FORMED FROM 10 mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE.

6. FOR INTEGRAL KERBS THE EXPANSION JOINTS MUST BE 3 mm WIDE AND LOCATED AT 3 m CENTRES AND AT LOCATIONS NOTED ABOVE.

7. WEAKENED PLANE JOINTS TO BE MIN 3 mm WIDE AND LOCATED AT 3 m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS AREA TO MATCH THE JOINT LOCATIONS IN SLABS.

8. SAWCUTTING MUST PROCEED WITHIN 24 HOURS OF PLACING CONCRETE.

9. SUBSOIL DRAINS ARE TO BE PROVIDED BEHIND ALL KERBS. FLUSHING POINTS ARE TO BE PROVIDED AT MAXIMUM 30 m SPACING AND AT END OF PIPES.

10. WHEEL STOPS ARE TO BE PRECAST CONCRETE UNITS WITH PREDRILLED HOLES LOCATED 300 mm FROM EACH END FOR FIXING TO GROUND SURFACE. SIZE: 2000 mm x 150 mm x 100 mm HIGH. DRIVE 12 mm DIAMETER GALVANISED STEEL RODS 600 mm INTO THE GROUND AND TO FINISH 25 mm BELOW THE TOP OF THE WHEEL STOP.

11. EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN. REPLACEMENT OF EXISTING KERB AND GUTTER SHALL INCLUDE;
    a. SAW CUTTING OF EXISTING ROAD PAVEMENT 600 mm MINIMUM FROM THE LIP OF GUTTER OR EDGE OF SEAL;
    b. RECONSTRUCT EXISTING ALLOTMENT DRAINAGE PIPES INTO THE NEW KERB WITH A 100 mm DIA PIPE OR TO LOCAL APPROVAL AUTHORITY STANDARD;
    c. RECONSTRUCTION OF REMOVED ROAD SURFACE (600 mm MINIMUM) WITH NEW BASECOURSE AND SURFACE TO MATCH EXISTING THICKNESSES.

FOOTPATH AND VEHICULAR ROADWAY CONCRETE FINISH

1. ALL EXPOSED CONCRETE PAVEMENTS ARE TO BE BROOM FINISHED AT RIGHT ANGLES TO THE ALIGNMENT OF THE PAVEMENT TO PROVIDE A UNIFORM SLIP-RESISTANT SURFACE.

2. ALL EDGES OF THE CONCRETE PAVEMENT INCLUDING KEYED AND DOWELED JOINTS ARE TO BE FINISHED WITH AN EDGING TOOL.

3. CONCRETE PAVEMENTS WITH GRADES GREATER THAN 10% SHALL BE HEAVILY BROOMED FINISHED.

PAVEMENT (VEHICULAR) JOINTING

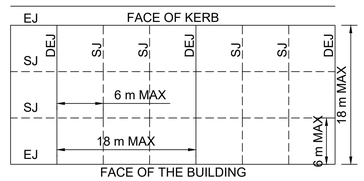
1. DOWELED EXPANSION JOINTS (DEJ) OR KEYED JOINTS SHALL BE LOCATED AT MAX 18 m CENTRES.

2. SAWN JOINTS (SJ) SHALL BE LOCATED AT MAX 6 m CENTRES OR 1.5 x THE WIDTH OF THE PAVEMENT.

3. PROVIDE 10 mm WIDE FULL DEPTH EXPANSION JOINTS (EJ) BETWEEN BUILDINGS AND ALL CONCRETE, UNO.

4. THE TIMING OF THE SAW CUT IS TO BE DETERMINED AND CONFIRMED BY THE CONTRACTOR ON SITE. SITE CONDITIONS WILL DETERMINE HOW MANY HOURS AFTER THE CONCRETE POUR BEFORE THE SAW CUTS ARE COMMENCED.

5. GENERALLY THE VEHICULAR PAVEMENT JOINTS SHOULD FOLLOW THE BELOW LAYOUT, UNLESS SHOWN OTHERWISE ON THE CIVIL DRAWINGS.



NOT FOR CONSTRUCTION

REV	DATE	AMENDMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN

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PROJECT
WESTMEAD INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
GENERAL NOTES SHEET 1 OF 2

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
NOT TO SCALE

DRAWING NO. **IMHC-CV-DG-2006**
REVISION **2**

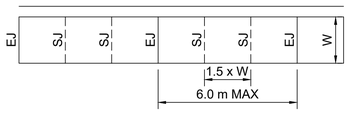
FOOTPATH JOINTING

1. EXPANSION JOINTS (EJ) ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT A MAXIMUM SPACING OF 6 m.

2. SAWN JOINTS (SJ) ARE TO BE LOCATED AT 1.5 x WIDTH OF THE PAVEMENT.

3. WHERE POSSIBLE THE JOINTS SHALL BE LOCATED TO MATCH THE KERBING AND OR ADJACENT PAVEMENT JOINTS.

4. GENERALLY THE FOOTPATH PAVEMENT JOINTS SHOULD FOLLOW THE BELOW LAYOUT, UNLESS SHOWN OTHERWISE ON THE CIVIL DRAWINGS.



LINEMARKING

1. ALL LINE MARKING TO BE IN ACCORANCE WITH ROADS AND MARITIME SERVICES QA SPEC R141 AND ROADS AND MARITIME SERVICES DELINEATION GUIDELINES.

NOT FOR CONSTRUCTION

REV	DATE	AMENDMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
GENERAL
NOTES
SHEET 2 OF 2

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT

CHECKED	APPROVED
AC	AC

SCALE @ B1
NOT TO SCALE

DRAWING NO. **IMHC-CV-DG-2007**
REVISION **2**

EXISTING FEATURES

- BOUNDARY
- DRIVEWAY, PATH OR CYCLEWAY
- TOP OF BATTER
- BOTTOM OF BATTER
- KERB AND GUTTER
- KERB ONLY
- KERB INLET PIT
- DISHED CROSSING
- FENCE
- EDGE OF GARDEN
- SPOT LEVEL
- BOLLARDS
- CONTOURS
- TREE
- BENCH MARK
- TEL TELSTRA PIT
- COM COMMS PIT
- ELP ELECTRIC LIGHT POLE
- EPIT ELECTRICITY PIT
- SWB ELECTRICITY SWITCHBOARD
- EPLQ ELECTRICAL PLAQUE
- EROD EARTHING ROD
- EL ELECTRICITY BOX
- SWIPE CARD SWIPE
- AC AIR CONDITIONER UNIT
- POLE POLE
- TM TICKET MACHINE
- VM VENDING MACHINE
- SS STREET SIGN
- BOL BOLLARD
- CLID PIT WITH CONCRETE LID
- MLID PIT WITH METAL LID
- GIP GRATED INLET PIT
- KIP KERB INLET PIT
- SWLID STORMWATER PIT
- MH MANHOLE
- IC INTERCOM
- BG BOOM GATE
- GATE
- SIP SEWER INSPECTION POINT
- SEV SEWER VENT
- MW MONITOR WELL
- SMH SEWER MANHOLE
- LH LAMP HOLE
- SV STOP VALVE
- HYD HYDRANT
- FHYD FIRE HYDRANT
- FHR FIRE HOSE REEL
- WM WATER METER
- TAP WATER TAP
- ICV IRRIGATION CONTROL VALVE
- GAS GAS VALVE
- PLQ GAS PLAQUE
- GMKR GAS MARKER
- GPIL GAS PILLAR
- NVL NITRO VALVE
- IO INSPECTION OPENING
- IP INSPECTION PIT
- DIP DIP POINT
- (VC) VEHICLE CROSSING
- (PC) PRAM CROSSING
- TFCE TOP OF FENCE LEVEL
- SCAM SECURITY CAMERA
- I.L. INVERT LEVEL
- (D0.8) DEPTH TO SERVICE
- UTO UNABLE TO OPEN PIT
- EOT END OF TRACE OF SERVICE
- QLD QUALITY LEVEL 'D' TRACE

EXISTING UTILITIES

- E ELECTRICAL
- E(D) ELECTRICAL - DETECTED
- LV ELECTRICAL - LOW
- HV ELECTRICAL - HIGH
- P ELECTRICAL - DBYD
- S SEWER
- S(D) SEWER - DETECTED
- IS SEWER - TUNNEL
- D STORMWATER
- SW STORMWATER
- SW(D) STORMWATER - DETECTED
- G GAS
- G(D) GAS - DETECTED
- C COMMS - DBYD
- C(D) COMMS - DETECTED
- W(D) WATER - DETECTED
- TW TRADE WATER
- F WATER - FIRE

* IMPACTS ON EXISTING UTILITIES, INCLUDING REQUIRED DIVERSIONS, PROTECTION AND MODIFICATION WORKS ARE NOT SHOWN IN THIS SET OF CIVIL ENGINEERING DRAWINGS. REFER TO DOCUMENTATION OF THE RELEVANT ENGINEERING AND TECHNICAL SERVICE CONSULTANTS. UTILITIES WORKS ARE TO BE COORDINATED WITH CIVIL ENGINEERING WORKS

** EXISTING AND PROPOSED STORMWATER IS COVERED IN THIS CIVIL DESIGN PACKAGE

SEDIMENT AND EROSION

- TEMPORARY CONSTRUCTION EXIT
- SEDIMENT FENCE
- SEDIMENT TRAP
- FABRIC STOCKING KERB INLET
- DIVERSION BANK AND CHANNEL
- STOCKPILE
- OVERLAND FLOW
- SEDIMENT BASIN

CIVIL WORKS

- EXTENT OF WORKS BOUNDARY
- EDGE OF BITUMEN
- K&G KERB AND GUTTER TO PCC STD DRG No DS1
- KO KERB ONLY TO PCC STD DRG No DS1
- T1 TURNING LINE
- C1 CONTINUITY LINE
- BB DIVIDING BARRIER LINE
- MINOR CONTOUR
- MAJOR CONTOUR
- X X DISUSE / REMOVE
- FENCE

PROPOSED DRAINAGE

- STORMWATER PIPE
- Ø375 PIPE SIZE AND FLOW ARROW
- STORMWATER GRATED INLET PIT
- INSPECTION PIT
- KERB INLET PIT
- TRENCH DRAIN
- 01-1 PIT LABEL LINE NUMBER 01 / PIT NUMBER 1
- D EXISTING STORMWATER
- SW EXISTING STORMWATER
- SW(D) EXISTING STORMWATER - DETECTED

RETAINING WALL

RW2 TYPE 2 - > 1 m

CITY OF PARRAMATTA COUNCIL (COPC) STANDARD DRAWINGS TO BE REFERRED TO AS NOTED ON PLANS AND SPECIFICATION

DRAWING No.	TITLE
DS1	KERBS AND LAYBACKS
DS2	ROOFWATER OUTLET
DS3	FOOTPATH
DS4	KERB RAMP
DS5	DISH DRAIN CROSSING DETAIL
DS6	TYPICAL CYCLEWAY/SHARED PATHWAY
DS8	STANDARD VEHICULAR CROSSING
DS9	HEAVY DUTY VEHICULAR CROSSING
DS10	VEHICULAR CROSSING PROFILES
DS11B	SIGN SUPPORT POST
DS21	STANDARD KERB INLET PIT (ON GRADE)
DS23	STANDARD SURCHARGE PIT
DS24	GRATED SAG PIT USING PRECAST LINTEL
DS25	SURFACE INLET PIT FOR FOOTPATHS
DS25	SURFACE INLET PIT FOR OPEN SPACE AREAS
DS26	STANDARD JUNCTION PIT
DS26	HEAVY DUTY JUNCTION PIT
DS31	TWIN GRATED GULLY PIT WITH EXTENDED KERB INLET
DS33	SUBSOIL DRAINAGE DETAILS
DS36	HEADWALLS FOR CULVERTS UP TO 900 DIAMETER
DS37	STANDARD FOR INSTALLATION OF PIPELINES AND RESTORATION OF TRENCHES
DS43	TREE PROTECTION TIMBER HOARDING

TRANSPORT FOR NEW SOUTH WALES (TfNSW) STANDARD DRAWINGS TO BE REFERRED TO AS NOTED ON PLANS AND SPECIFICATION

DRAWING REF No.	TITLE
DS2012/000293	PAVEMENT STANDARD DRAWINGS RIGID PAVEMENT BICYCLE PATH DESIGN
DS2014/005559	PAVEMENT STANDARD DRAWINGS RIGID PAVEMENT VOLUME CJ - JOINTED REINFORCED CONCRETE PAVEMENT

NOT FOR CONSTRUCTION

REV	DATE	AMENDMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/9/22	DESIGN DEVELOPMENT

KEY PLAN

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NSW GOVERNMENT Health Infrastructure

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PROJECT
WESTMEAD INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS CIVIL WORKS

PROJECT NO.
281916-00

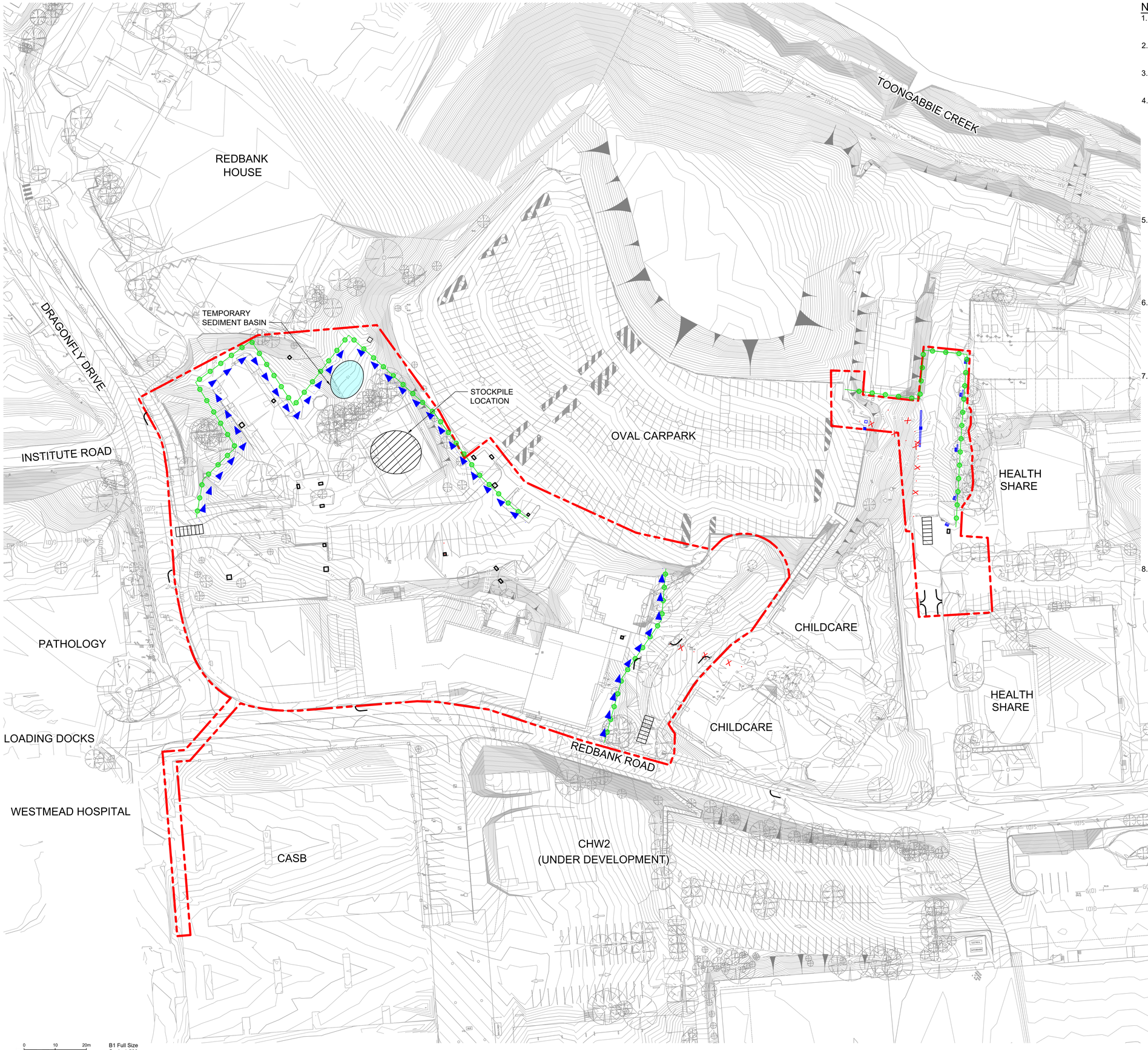
DRAWING TITLE
GENERAL LEGEND

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
NOT TO SCALE

DRAWING NO. **IMHC-CV-DG-2011**
REVISION **2**

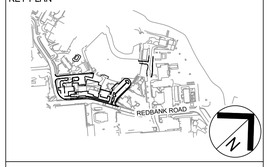


NOTES

1. FOR GENERAL NOTES REFER TO DRG NO. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRG NO. IMHC-CV-DG-2011.
3. FOR EROSION AND SEDIMENT CONTROL DETAILS REFER TO DRG NO. IMHC-CV-DG-2191.
4. IT IS THE CONSTRUCTION CONTRACTOR'S RESPONSIBILITY TO DEVELOP AND ADAPT THIS ESCP TO SUIT THE SITE CONDITIONS, CONSTRUCTION STAGING AND ANY REQUIREMENTS OF COPC AND OTHER RELEVANT AUTHORITIES. THE ESCP HAS BEEN PREPARED TO BE USED AS A GUIDE ONLY. CHANGES MAY MATERIALISE FOR SEVERAL REASONS INCLUDING ONGOING DESIGN DEVELOPMENT, CONSTRUCTION METHODOLOGY AND THE SEQUENCING OF WORKS.
5. MANAGEMENT AND STAGING OF PERMANENT AND TEMPORARY ESCP STORMWATER IS SUBJECT TO THE CONSTRUCTION METHODOLOGY TO ENSURE THE MAXIMUM AMOUNT OF THE SITE CATCHMENT AREA IS DIRECTED TO SEDIMENT BASINS BEFORE DISCHARGING TO THE EXISTING STORMWATER NETWORK.
6. THE CONTRACTOR IS TO VERIFY THE LOCATION AND DEPTH OF INGROUND SERVICES BEFORE DISTURBING GROUND FOR ESCP WORKS. EXISTING INGROUND UTILITIES INDICATED ON THIS DRAWING ARE BASED ON LTS LOCKLEY SURVEY AND ARUP ACCEPTS NO RESPONSIBILITY FOR ITS ACCURACY.
7. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL NECESSARY PROTECTIVE/DIVERSIONARY WORKS FOR THE ESCP TOGETHER WITH ASSOCIATED APPROVALS WHICH SHOULD BE AGREED PRIOR TO WORKS COMMENCEMENT THE CONTRACTOR SHALL FAMILIARISE THEMSELVES WITH THE LOCAL STORMWATER FLOODING CONDITIONS AND RISKS PRIOR TO COMMENCING WORKS ON SITE. AN APPROPRIATE FLOOD RISK MANAGEMENT PLAN SHALL BE DEVELOPED FOR EACH STAGE OF THE PROJECT TO MINIMISE THE RISK OF FLOODING INJURING SITE STAFF OR MEMBERS OF THE PUBLIC, DAMAGING WORKS OR PLANT OR CARRYING MATERIALS OR DEBRIS DOWNSTREAM INTO THE EXISTING STORMWATER NETWORK. THE PROPOSED SYSTEMS MUST BE REVIEWED AND APPROVED BY HI PRIOR TO COMMENCEMENT.
8. SEDIMENT BASINS ARE PROPOSED FOR CONTRUCTION PHASE ONLY AND ARE TO BE REMOVED AND REINSTATED AS PER EXISTING CONDITION UPON COMPLETION OF WORKS

REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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PROJECT
WESTMEAD INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
EROSION AND SEDIMENT CONTROL OVERALL SITE PLAN

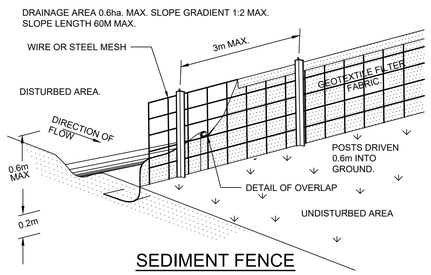
STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

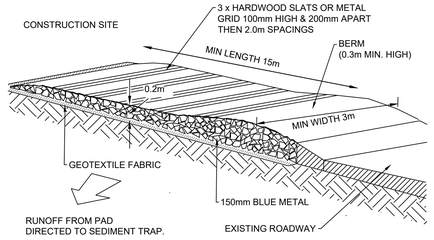
SCALE @ B1
1:500m

DRAWING NO.
IMHC-CV-DG-2100

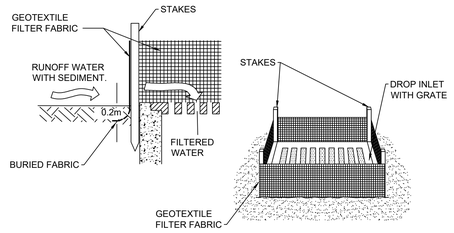
REVISION
3



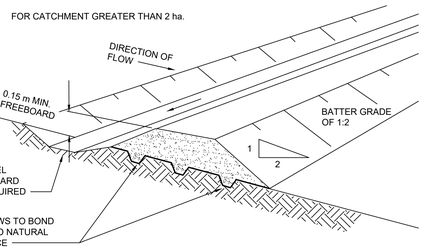
SEDIMENT FENCE



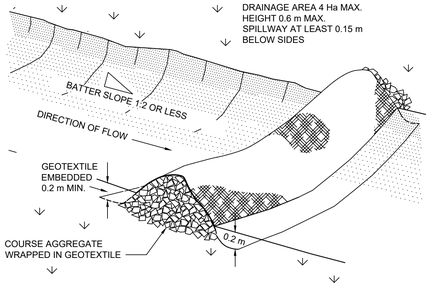
TEMPORARY CONSTRUCTION EXIT



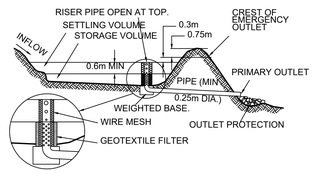
GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP



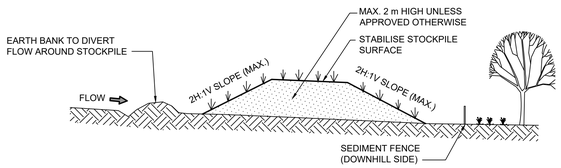
DIVERSION BANK AND CHANNEL



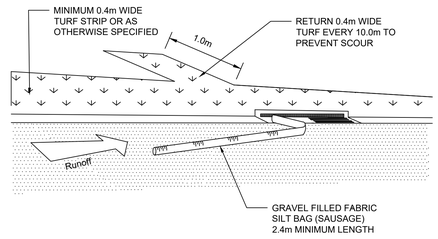
ROCK CHECK DAM



CROSS SECTION OF TYPICAL SEDIMENT BASIN



STOCKPILE



FABRIC STOCKING
KERB INLET SEDIMENT TRAP

NOT FOR CONSTRUCTION

REV	DATE	AMENDMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN

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PROJECT
WESTMEAD INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
EROSION AND SEDIMENT CONTROL DETAILS

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
NOT TO SCALE

DRAWING NO.
IMHC-CV-DG-2191

REVISION
2

	CUT VOLUME (m^3)	FILL VOLUME (m^3)	NET CUT/FILL INCLUDING EXCAVATION DEPTHS (m^3)
CAREFLIGHT ACCESS ROAD RAMP TO P14	-500	0	-500
EXISTING BUILDING PAD AREAS	-3300	100	-3200
SERVICE TRENCHES	-1500	N/A	-1500
TOTAL PROPOSED DESIGN	-5300	100	-5200

NOTES

1. FOR GENERAL NOTES REFER TO DRG NO. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRG NO. IMHC-CV-DG-2011.
3. LEVELS AND ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
4. COLOURS FOR THE CAREFLIGHT ACCESS ROAD RAMP TO P14 REPRESENT DEPTHS OF CUT AND FILL FROM THE EXISTING GROUND SURFACE TO THE BULK EARTHWORKS SURFACE.
5. COLOURS FOR ALL EARLY WORKS SCOPE EXCLUDING CAREFLIGHT ACCESS ROAD RAMP TO P14 REPRESENT DEPTHS OF CUT AND FILL FROM THE EXISTING GROUND SURFACE TO THE BULK EARTHWORKS SURFACE WITH AN ALLOWANCE FOR A 300mm DEEP CAPPING LAYER.
6. NON-SHADED AREAS HAVE NOT BEEN INCLUDED UNLESS NOTED OTHERWISE.
7. CUT AND FILL DEPTH BANDS INDICATE BULK EXCAVATIONS ONLY. THE DESIGN DOES NOT TAKE INTO CONSIDERATION DETAILED EXCAVATION, INCLUDING BUT NOT LIMITED TO:
   - UTILITY SERVICES (UNO)
   - TEMPORARY WORKS AND SITE ACCESS
   - MARKER/CAPPING LAYERS OR CONTAMINATION MANAGEMENT WORKS (UNO)
   - CONSTRUCTION STAGING AND PROGRAM OF WORKS
8. ALL CUT MATERIAL IS ASSUMED TO BE GEOTECHNICALLY AND ENVIRONMENTALLY SUITABLE FOR FILLING. DETAILS OF MATERIAL MANAGEMENT IS SUBJECT TO CONFIRMATION WITH THE GEOTECH AND CONTAMINATION CONSULTANTS.
9. THE FOLLOWING EXCAVATION DEPTHS HAVE BEEN ADOPTED;
   - 525 mm DEPTH BELOW TOP OF ASPHALT FOR PAVEMENT PROFILE F1
   - 300 mm DEPTH BELOW TOP OF PAVEMENT FOR PAVEMENT PROFILE R1
   - 320 mm DEPTH BELOW TOP OF PAVEMENT FOR PAVEMENT PROFILE RP2.
   - 300 mm DEPTH BELOW TURF
   - 300 mm DEPTH BELOW TEMPORARY CAPPING
10. EARTHWORKS VOLUMES INCLUDE 10% ALLOWANCE FOR CONTINGENCY.
11. EXISTING BRAIN INJURY UNIT BUILDING SURVEY INFORMATION IS NOT CONSIDERED TO BE RELIABLE. GROUND LEVELS UNDER BUILDING MAY DIFFER FROM SURVEY

REDBANK HOUSE
DRAGONFLY DRIVE
INSTITUTE ROAD
OVAL CARPARK
HEALTH SHARE
SURVEY OF EXISTING BUILDING NORTH-EAST BLOCK NOT CONSIDERED RELIABLE. EXISTING LEVEL ASSUMED TO BE 17.0mAHD BASED ON RECEIVED 'BRAIN INJURY UNIT SITE PLANS'
PROPOSED LEVELS TO MATCH EXISTING LEVELS. WORKS TO INCLUDE RESURFACING AND KERB ALIGNMENT ADJUSTMENTS.
PATHOLOGY
CHILDCARE
SURVEY OF EXISTING BUILDING UNDERCROFT DRIVEWAY NOT CONSIDERED RELIABLE.
HEALTH SHARE
CHILDCARE
LOADING DOCKS
REDBANK ROAD
SURVEY INFORMATION FOR EXISTING BUILDING NOT CONSIDERED RELIABLE
WESTMEAD HOSPITAL
CASB
CHW2 (UNDER DEVELOPMENT)

CUT/FILL LEGEND

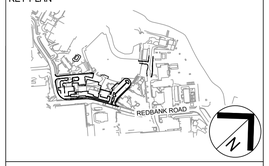
Lower_value		Upper_value		Colour
-3.0	to	-2.8	m	
-2.8	to	-2.6	m	
-2.6	to	-2.4	m	
-2.4	to	-2.2	m	
-2.2	to	-2.0	m	
-2.0	to	-1.8	m	
-1.8	to	-1.6	m	
-1.6	to	-1.4	m	
-1.4	to	-1.2	m	
-1.2	to	-1.0	m	
-1.0	to	-0.8	m	
-0.8	to	-0.6	m	
-0.6	to	-0.4	m	
-0.4	to	-0.2	m	
-0.2	to	0.0	m	
0.0	to	0.2	m	
0.2	to	0.4	m	
0.4	to	0.6	m	
0.6	to	0.8	m	
0.8	to	1.0	m	
1.0	to	1.2	m	
1.2	to	1.4	m	
1.4	to	1.6	m	
1.6	to	1.8	m	
1.8	to	2.0	m	

NOT FOR CONSTRUCTION

0 10 20m
B1 Full Size
Scale 1:500

REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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Health Infrastructure

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PROJECT
WESTMEAD INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
BULK EARTHWORKS OVERALL SITE PLAN

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
1:500m

DRAWING NO. **IMHC-CV-DG-2200**
REVISION **3**

EXISTING CASUARINA LODGE
GROUND LEVEL BUILDING
SLAB TO BE REMOVED

EXISTING WESTMEAD
PROJECT OFFICE
GROUND LEVEL BUILDING
SLAB TO BE REMOVED

OVAL CARPARK

OVAL CARPARK

CHILDCARE

REDBANK ROAD

EXISTING GROUND UNDER
DEMOUNTABLE WESTMEAD
PROJECT OFFICE BUILDING
TO BE RETAINED

EXISTING BIRS BUILDING
SLAB TO BE REMOVED

NOTES

1. FOR GENERAL NOTES REFER TO DRAWING No. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRAWING No. MHC-CV-DG-2011.
3. IMPACTS ON EXISTING UTILITIES, INCLUDING REQUIRED DIVERSIONS, PROTECTION AND MODIFICATION WORKS ARE NOT SHOWN IN THIS SET OF CIVIL ENGINEERING DRAWINGS. REFER TO DOCUMENTATION OF THE RELEVANT ENGINEERING AND TECHNICAL SERVICE CONSULTANTS. UTILITIES WORKS ARE TO BE COORDINATED WITH CIVIL ENGINEERING WORKS.
4. REFER TO TRAFFIC ENGINEER'S DOCUMENTATION FOR VEHICLE AND PEDESTRIAN TRAFFIC DESIGN.

ADJOINS DRG No. IHMC-CV-DG-2302

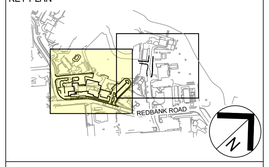
WARNING - ELECTRICAL CABLES IN THIS VICINITY.

NOT FOR CONSTRUCTION

0 5 10m
B1 Full Size
Scale 1:250

REV	DATE	AMENDMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
CIVIL WORKS
PLAN
SHEET 1 OF 2

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

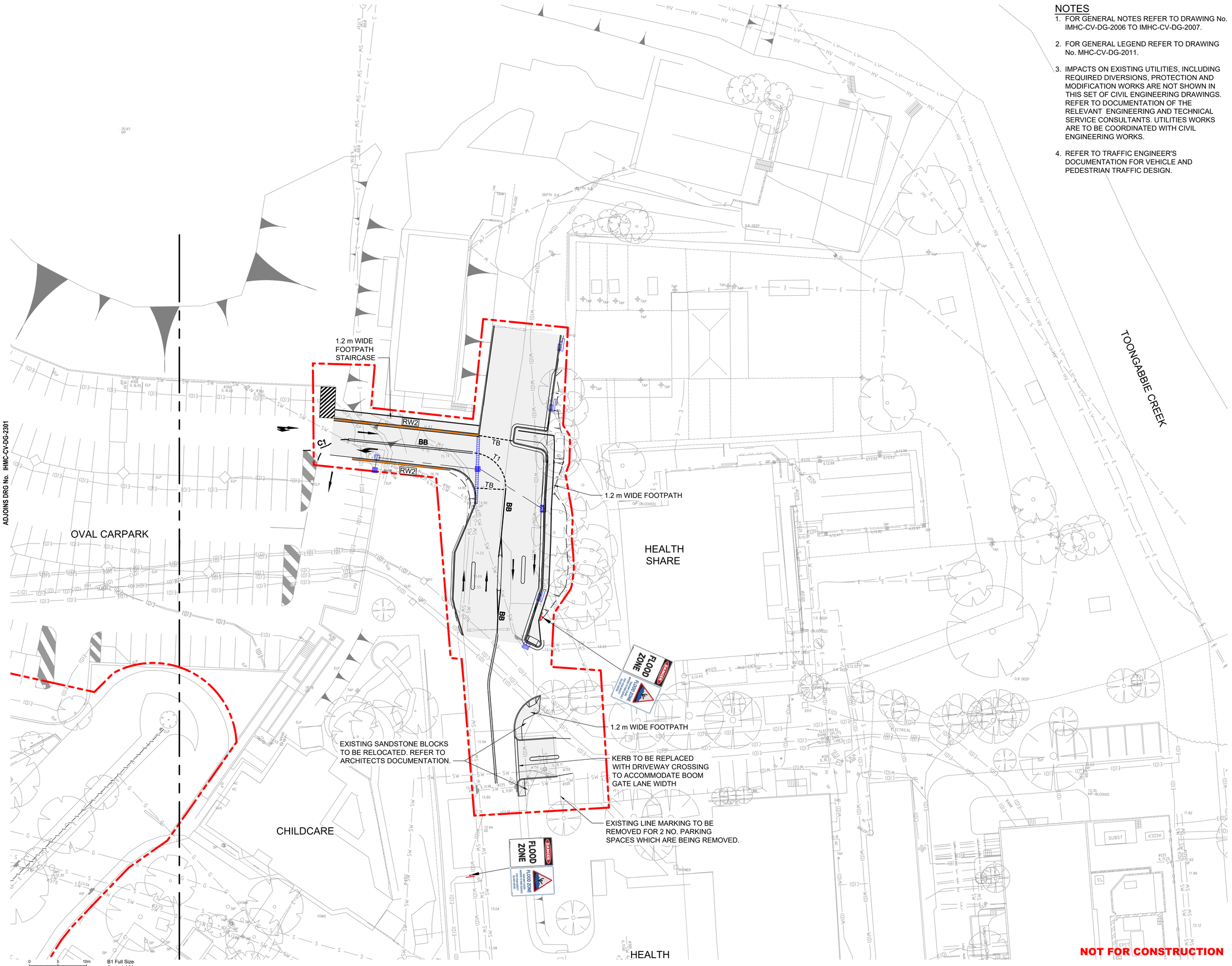
SCALE @ B1
1:250m

DRAWING NO.
IMHC-CV-DG-2301

REVISION
2

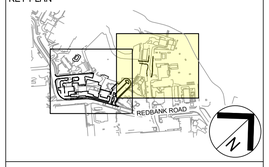
NOTES

1. FOR GENERAL NOTES REFER TO DRAWING No. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRAWING No. MHC-CV-DG-2011.
3. IMPACTS ON EXISTING UTILITIES, INCLUDING REQUIRED DIVERSIONS, PROTECTION AND MODIFICATION WORKS ARE NOT SHOWN IN THIS SET OF CIVIL ENGINEERING DRAWINGS. REFER TO DOCUMENTATION OF THE RELEVANT ENGINEERING AND TECHNICAL SERVICE CONSULTANTS. UTILITIES WORKS ARE TO BE COORDINATED WITH CIVIL ENGINEERING WORKS.
4. REFER TO TRAFFIC ENGINEER'S DOCUMENTATION FOR VEHICLE AND PEDESTRIAN TRAFFIC DESIGN.



REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
CIVIL WORKS
PLAN
SHEET 2 OF 2

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
1:250m

DRAWING NO. **IMHC-CV-DG-2302**
REVISION **3**

EXISTING CASUARINA LODGE BUILDING PAD TO BE SMOOTHLY GRADED TO TIE INTO SURROUNDING LEVELS

500 mm HIGH MOUND TO DIVERT OVERLAND FLOW TOWARDS TOONGABBIE CREEK

CASUARINA LODGE TO BE DEMOLISHED AND GRADED

EXISTING WESTMEAD PROJECT OFFICE BUILDING PAD TO BE SMOOTHLY GRADED TO TIE INTO SURROUNDING LEVELS

OVAL CARPARK

OVAL CARPARK

CHILDCARE

REDBANK ROAD

EXISTING GROUND LEVELS TO BE RETAINED UNDER DEMOUNTABLE WESTMEAD PROJECT OFFICE BULDING

EXISTING BUILDING PAD TO BE SMOOTHLY GRADED TO TIE INTO SURROUNDING LEVELS

ADJOINS DRG No. IMHC-CV-DG-2602

WARNING: ELECTRICAL CABLES IN THIS VICINITY.

NOT FOR CONSTRUCTION

0 10 20m

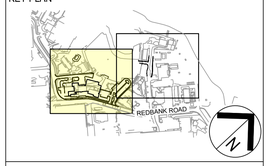
B1 Full Size
Scale 1:500

NOTES

1. FOR GENERAL NOTES REFER TO DRAWING No. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRAWING No. MHC-CV-DG-2011.
3. PROPOSED STORMWATER PIPES TO BE REINFORCED CONCRETE CLASS 4.
4. PROPOSED PITS TO BE AS PER CoPC STD DRG DS26 WITH CLASS D GRATED INLET LIDS.
5. WATER QUALITY DEVICES WILL BE FURTHER DEVELOPED SUBJECT TO WATER QUALITY MODELING AND DEVELOPMENT OF BUILDING AND LANDSCAPE ARCHITECTURAL DESIGN.
6. THIS STORMWATER STRATEGY MAY CHANGE SUBJECT TO CONSULTATIONS WITH CITY OF PARRAMATTA COUNCIL.
7. CONTRACTOR IS RESPONSIBLE ENSURING EXISTING UNDERGROUND RETAINED STORMWATER ASSETS ARE PROTECTED AND OPERATIONAL THROUGH ALL STAGES OF THE PROJECT.
8. CONTRACTOR IS RESPONSIBLE FOR MANAGING EXISTING UNDERGROUND RETAINED STORMWATER ASSETS WITH RESPECT TO TEMPORARY CONSTRUCTION ACTIVITIES AND FINISHED SURFACE LEVELS.

REV	DATE	AMENDMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
STORMWATER
PLAN
SHEET 1 OF 2

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
1:250m

DRAWING NO.
IMHC-CV-DG-2601

REVISION
2

NOTES

1. FOR GENERAL NOTES REFER TO DRAWING No. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRAWING No. MHC-CV-DG-2011.
3. PROPOSED STORMWATER PIPES TO BE REINFORCED CONCRETE CLASS 4.
4. PROPOSED PITS TO BE AS PER CoPC STD DRG DS26 WITH CLASS D GRATED INLET LIDS.
5. WATER QUALITY DEVICES WILL BE FURTHER DEVELOPED SUBJECT TO WATER QUALITY MODELING AND DEVELOPMENT OF BUILDING AND LANDSCAPE ARCHITECTURAL DESIGN.
6. THIS STORMWATER STRATEGY MAY CHANGE SUBJECT TO CONSULTATIONS WITH CITY OF PARRAMATTA COUNCIL.
7. CONTRACTOR IS RESPONSIBLE ENSURING EXISTING UNDERGROUND RETAINED STORMWATER ASSETS ARE PROTECTED AND OPERATIONAL THROUGH ALL STAGES OF THE PROJECT.
8. CONTRACTOR IS RESPONSIBLE FOR MANAGING EXISTING UNDERGROUND RETAINED STORMWATER ASSETS WITH RESPECT TO TEMPORARY CONSTRUCTION ACTIVITIES AND FINISHED SURFACE LEVELS.

ADJOINS DRG No. IMHC-CV-DG-2601

OVAL CARPARK

CHILDCARE

HEALTH SHARE

HEALTH

TOONGABBIE CREEK

EXISTING LOCAL DRAINAGE TO BE REMOVED

CONNECT TO EXISTING PIT DOWNSTREAM AND DISCHARGE TO EXISTING STORMWATER NETWORK

EXISTING KERB INLET PIT TO BE RECONFIGURED INTO A GRATED INLET PIT

EXISTING DRAINAGE PIT TO REMAIN.

15-1 15-2 15-3 15-4 15-5 16-1 17-1 17-2 RW2

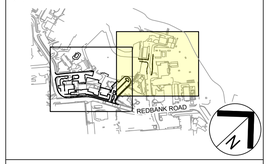
Ø375

0 10 20m
B1 Full Size
Scale 1:500

NOT FOR CONSTRUCTION

REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
STORMWATER
PLAN
SHEET 2 OF 2

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
1:250m

DRAWING NO. **IMHC-CV-DG-2602**
REVISION **3**

NOTES

1. FOR GENERAL NOTES REFER TO DRG NO. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRG NO. IMHC-CV-DG-2011.
3. PAVEMENT PROFILE SUBJECT TO REVISION FOLLOWING ASSESSMENT FROM GEOTECHNICAL AND CONTAMINATION INPUT.
4. FOR LANDSCAPE PAVEMENTS AND FINISHES REFER TO LANDSCAPE ARCHITECT DRAWINGS FOR DETAILS.

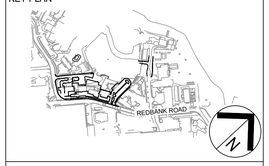
REDBANK HOUSE
TOONGABBIE CREEK
DRAGONFLY DRIVE
INSTITUTE ROAD
OVAL CARPARK
HEALTH SHARE
PATHOLOGY
CHILDCARE
CHILDCARE
HEALTH SHARE
SECTION OF EXISTING FOOTPATH TO BE REMOVED.
LOADING DOCKS
REDBANK ROAD
WESTMEAD HOSPITAL
CASB
CHW2
(UNDER DEVELOPMENT)

NOT FOR CONSTRUCTION

0 10 20m
B1 Full Size
Scale 1:500

REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

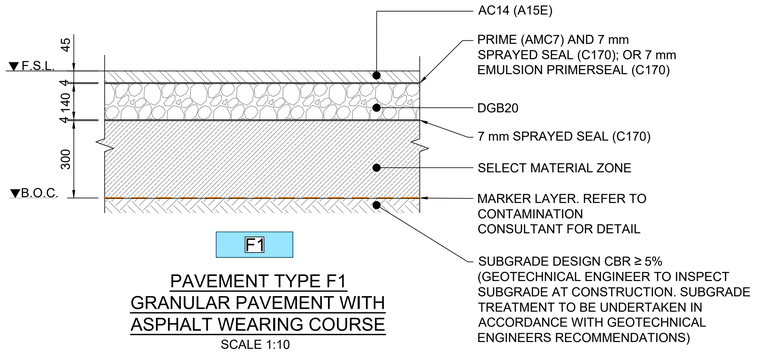
DRAWING TITLE
PAVEMENT
OVERALL SITE
PLAN

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
1:500m

DRAWING NO. **IMHC-CV-DG-2700**
REVISION **3**

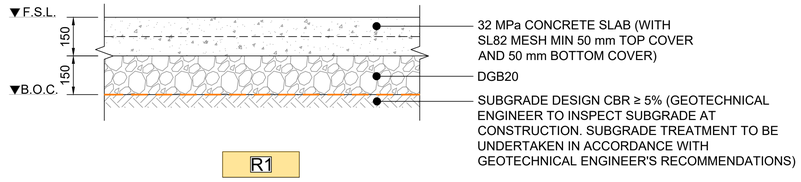


F1

PAVEMENT TYPE F1
GRANULAR PAVEMENT WITH ASPHALT WEARING COURSE

SCALE 1:10

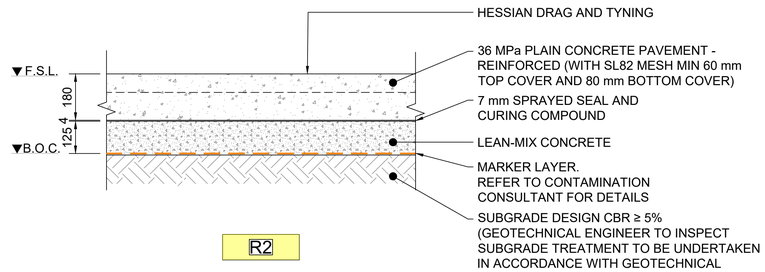
NOTE: PAVEMENT TRAFFIC LOADINGS HAVE BEEN ASSUMED TO BE A LOCAL ACCESS IN INDUSTRIAL AREA, AS DEFINED IN AGTP02_17.



R1

PAVEMENT TYPE R1
CONCRETE PEDESTRIAN FOOTPATH PAVEMENT

SCALE 1:10

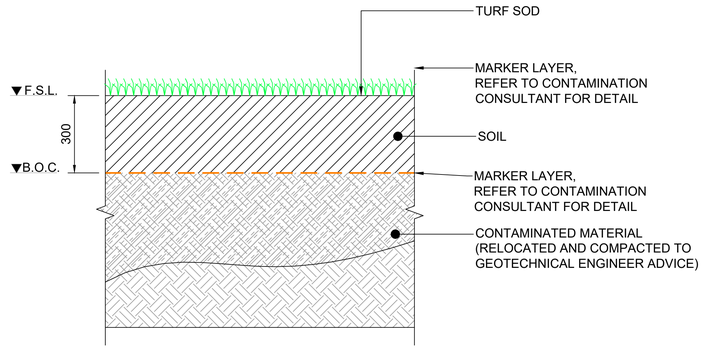


R2

PAVEMENT TYPE R2
PLAIN CONCRETE PAVEMENT - REINFORCED (PCP-R)

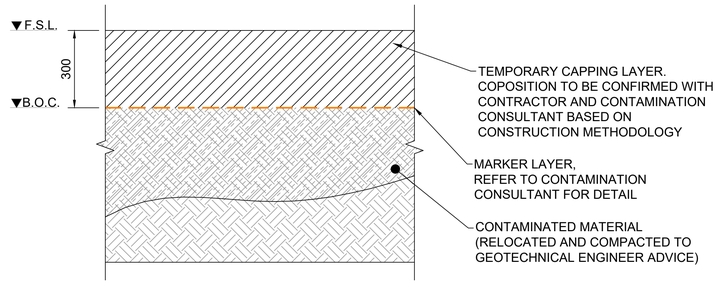
SCALE 1:10

NOTE: PAVEMENT TRAFFIC LOADINGS HAVE BEEN ASSUMED TO BE A LOCAL ACCESS AREA, AS DEFINED IN AGPT02_17



LAWN SOIL ON CONTAMINATED FILL

SCALE 1:10



TEMPORARY CAPPING LAYER ON CONTAMINATED FILL

SCALE 1:10

NOTES

1. FOR GENERAL NOTES REFER TO DRG NO. IMHC-CV-DG-2006 TO IMHC-CV-DG-2007.
2. FOR GENERAL LEGEND REFER TO DRG NO. IMHC-CV-DG-2011.
3. FOOTPATH PAVEMENT JOINT DETAILS SHALL FOLLOW CoPC TYPICAL FOOTPATH DRAWING DS3. TYPICAL JOINT SPACINGS ARE AS FOLLOWS:
   - EXPANSION JOINTS (EJ) - EVERY 6.0 m (MAX) INTERVALS
   - TOOLED DUMMY JOINT - EVERY 1.5 m (MAX) INTERVALS
4. ROAD PAVEMENT JOINT DETAILS SHALL FOLLOW CoPC CBD PAVING, DRIVEWAY AND KERB RAMP DETAILS (DS40). TYPICAL JOINT SPACINGS ARE AS FOLLOWS:
   - ISOLATIONS JOINTS (IJ) - BETWEEN PAVEMENT AND CONCRETE KERB OR BUILDING LINE
   - EXPANSION JOINTS (EJ) - EVERY 6.0 m (MAX) INTERVALS
   - CONTROL JOINTS (CJ) - EVERY 2.0 m (MAX) INTERVALS
3. PAVEMENT SUBSOIL DRAINS SHALL FOLLOW CoPC SUBSOIL DRAINAGE DETAILS (DS33).
4. PAVEMENT WORKS SHALL BE UNDERTAKEN ACCORDING TO THE RECOMMENDATIONS OF THE GEOTECHNICAL INVESTIGATION.
5. PAVEMENT PROFILES SUBJECT TO REVISION FOLLOWING ASSESSMENT OF GEOTEHNICAL AND CONTAMINATION INPUT.

REV	DATE	AMENDMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN

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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
PAVEMENT
PROFILES

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
1:10mm

DRAWING NO.
IMHC-CV-DG-2791

REVISION
2

NOT FOR CONSTRUCTION

0 250 500mm B1 Full Size
Scale 1:10

REDBANK HOUSE

TOONGABBIE CREEK

DRAGONFLY DRIVE

INSTITUTE ROAD

OVAL CARPARK

HEALTH SHARE

PATHOLOGY

CHILDCARE

HEALTH SHARE

CHILDCARE

LOADING DOCKS

REDBANK ROAD

WESTMEAD HOSPITAL

CASB

CHW2
(UNDER DEVELOPMENT)

0 10 20m

B1 Full Size
Scale 1:500

NOTES

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4. SERVICE CONSULTANTS. UTILITIES WORKS ARE TO BE COORDINATED WITH CIVIL ENGINEERING WORKS.
5. TOPOGRAPHIC AND UTILITIES SURVEY BASED FROM LTS LOCKLEY SURVEY REFERENCE 32572088DT REV M.
6. FOR STORMWATER WORKS REFER TO DRG SERIES IMHC-CV-DG-2600.
7. REFER TO HYDRAULIC ENGINEER PACKAGE FOR POTABLE WATER, SEWER AND GAS SERVICES WORKS.
8. REFER TO ELECTRICAL/LIGHTING ENGINEER PACKAGE FOR ELECTRICAL/LIGHTING WORKS.
9. CONTRACTOR IS RESPONSIBLE FOR ENSURING UNDERGROUND UTILITIES ARE PROTECTED AND OPERATIONAL THROUGH ALL RELEVANT STAGES OF THE PROJECT.

EXISTING UTILITIES

- E — ELECTRICAL
- E(D) — ELECTRICAL - DETECTED
- LV — ELECTRICAL - LOW
- HV — ELECTRICAL - HIGH
- P — ELECTRICAL - DBYD
- S — SEWER
- S(D) — SEWER - DETECTED
- IS — SEWER - TUNNEL
- D — STORMWATER
- SW — STORMWATER
- SW(D) — STORMWATER - DETECTED
- G — GAS
- G(D) — GAS - DETECTED
- C — COMMS - DBYD
- C(D) — COMMS - DETECTED
- W(D) — WATER - DETECTED
- TW — TRADE WATER
- F — WATER - FIRE

NOT FOR CONSTRUCTION

REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
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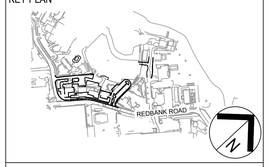
KEY PLAN



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PROJECT
WESTMEAD
INTEGRATED MENTAL
HEALTH COMPLEX (IMHC) EARLY WORKS
CIVIL WORKS

PROJECT NO.
281916-00

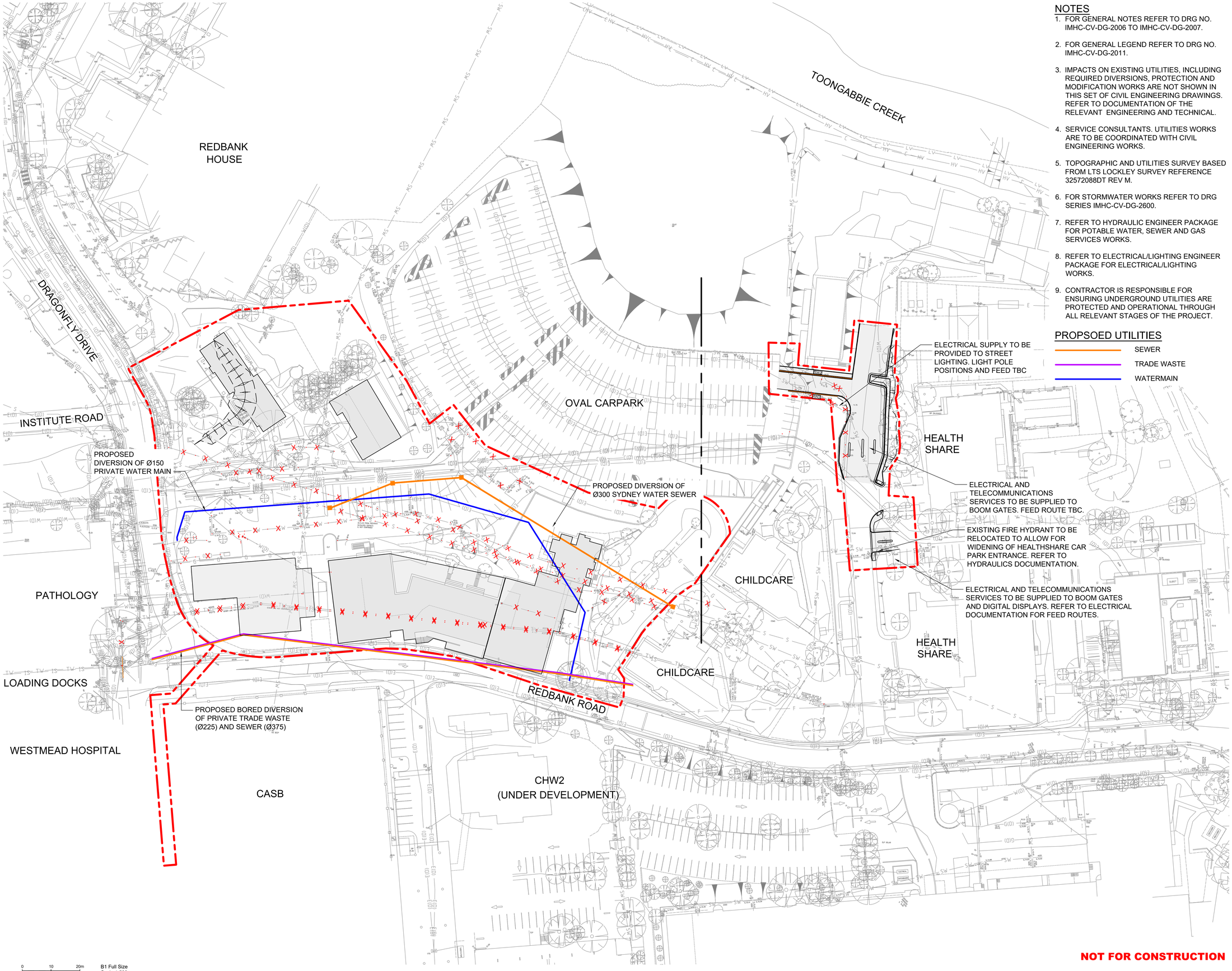
DRAWING TITLE
EXISTING UTILITIES
OVERALL SITE
PLAN

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	DT
CHECKED	APPROVED
AC	AC

SCALE @ B1
1:500m

DRAWING NO. **IMHC-CV-DG-2800**
REVISION **3**



NOTES

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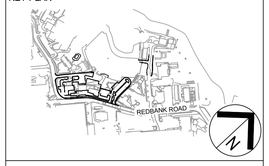
8. REFER TO ELECTRICAL/LIGHTING ENGINEER PACKAGE FOR ELECTRICAL/LIGHTING WORKS.
9. CONTRACTOR IS RESPONSIBLE FOR ENSURING UNDERGROUND UTILITIES ARE PROTECTED AND OPERATIONAL THROUGH ALL RELEVANT STAGES OF THE PROJECT.

PROPSOED UTILITIES

- SEWER
- TRADE WASTE
- WATERMAIN

REV	DATE	AMENDMENT
3	28/03/23	DESIGN DEVELOPMENT
2	21/02/23	DESIGN DEVELOPMENT
1	25/11/22	DESIGN DEVELOPMENT
0	30/09/22	DESIGN DEVELOPMENT

KEY PLAN



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PROJECT
WESTMEAD INTEGRATED MENTAL HEALTH COMPLEX (IMHC) EARLY WORKS CIVIL WORKS

PROJECT NO.
281916-00

DRAWING TITLE
UTILITIES DIVERSIONS COORDINATION PLAN

STATUS
DESIGN DEVELOPMENT

DRAWN	DESIGNED
CPL	**DT**
CHECKED	APPROVED
AC	**AC**

SCALE @ B1
1:500m

DRAWING NO.
IMHC-CV-DG-2806

REVISION
3

Appendix B IMHC Flood Impact Assessment flood maps

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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Client
Health Infrastructure

Job Title
Integrated Mental Health Complex

10 0 10 20 m

Scale at A3 1:1,500

N

Figure No. E.D.1
Existing Case 10% AEP Overland Flooding Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Notes:
1. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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Job Title
Integrated Mental Health Complex

10 0 10 20 m

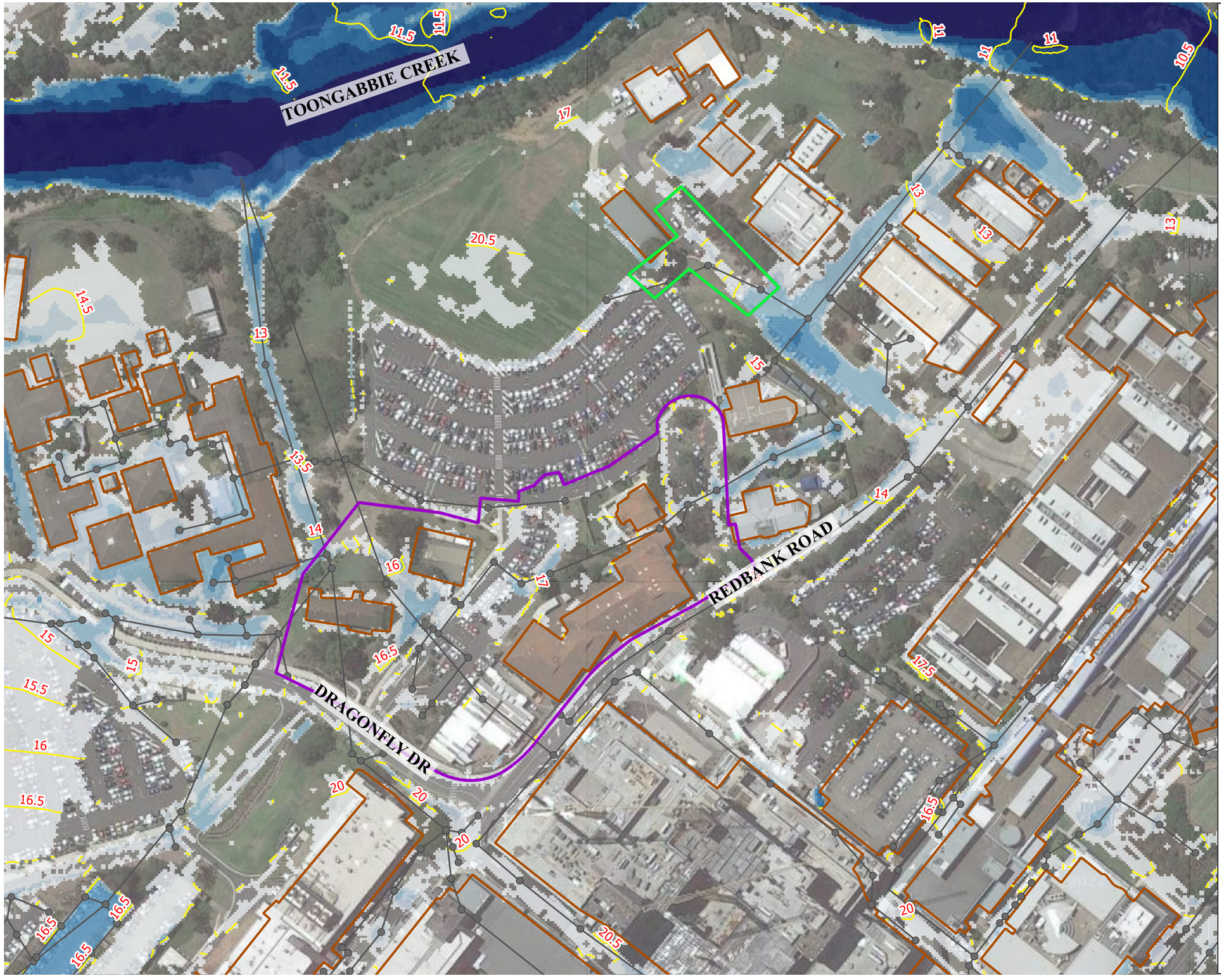
Scale at A3 1:1,500

N

Figure No. E.D.2
Existing Case 10% AEP Riverine Flooding Peak Flood Depths and Levels

Job No.
281916

Figure Status
For SSDA



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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Scale at A3 1:1,500

N

Figure No. E.D.3
Existing Case 1% AEP Overland Flooding Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Notes:
1. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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N

Figure No. E.D.4
Existing Case 1% AEP Riverine Flooding Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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N

Figure No. E.D.5
Existing Case 0.05% AEP Overland Flooding Peak Flood Depths and Levels

Job No.
281916

Figure Status
For SSDA

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Notes:
1. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
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Scale at A3 1:1,500

N

Figure No. E.D.6
Existing Case 0.05% AEP Riverine Flooding Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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Scale at A3 1:1,500

N

Figure No. E.D.7

Existing Case PMF Overland Flooding
Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**

TOONGABBIE CREEK

REDBANK ROAD

DRAGONFLY DR

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Notes:
1. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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Scale at A3 1:1,500

N

Figure No. E.D.8

Existing Case PMF Riverine Flooding
Peak Flood Depths and Levels

Job No.
281916

Figure Status
For SSDA

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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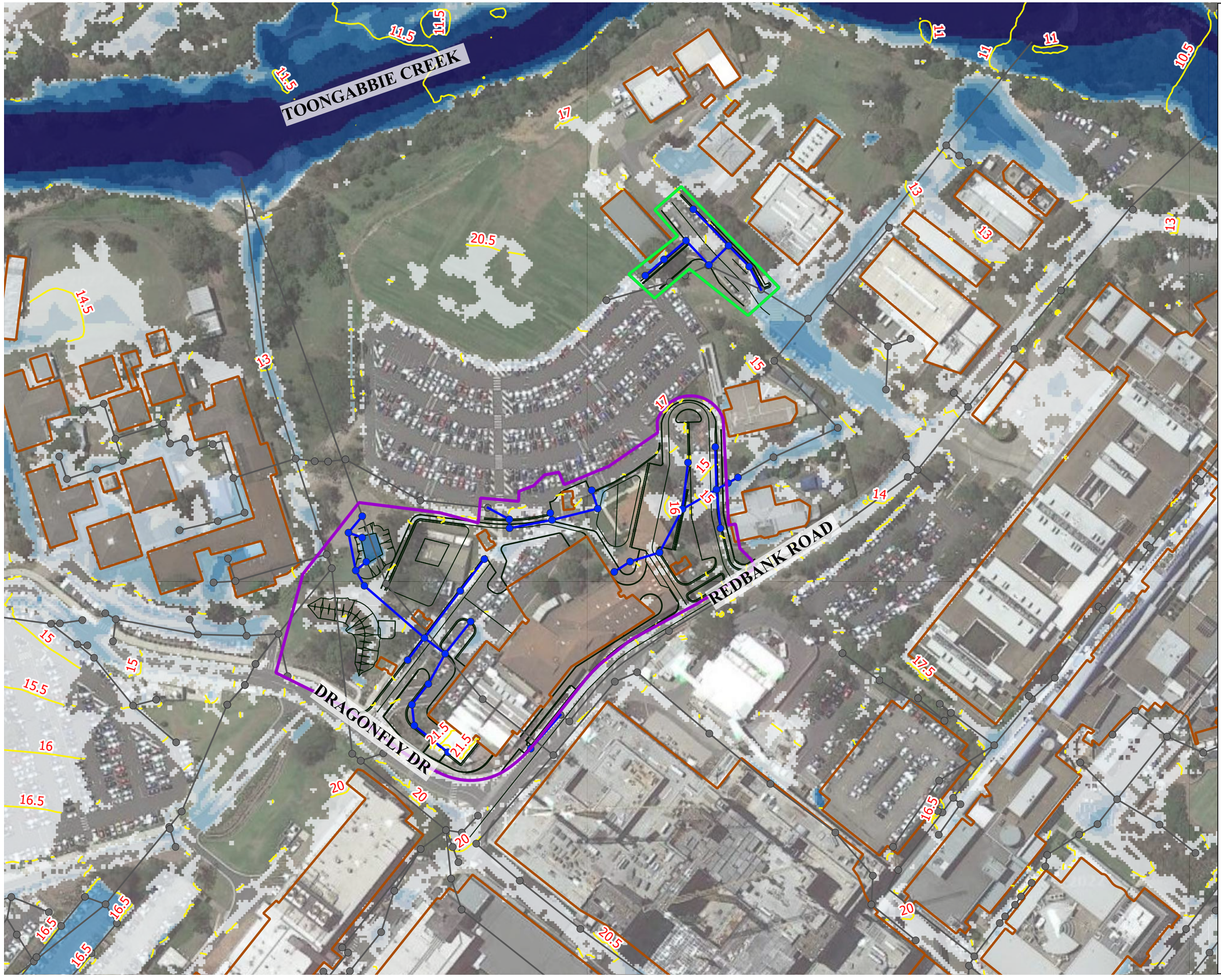
Scale at A3 1:1,500

N

Figure No. P.D.1

IMHC Proposed Case 10% AEP Overland Flooding Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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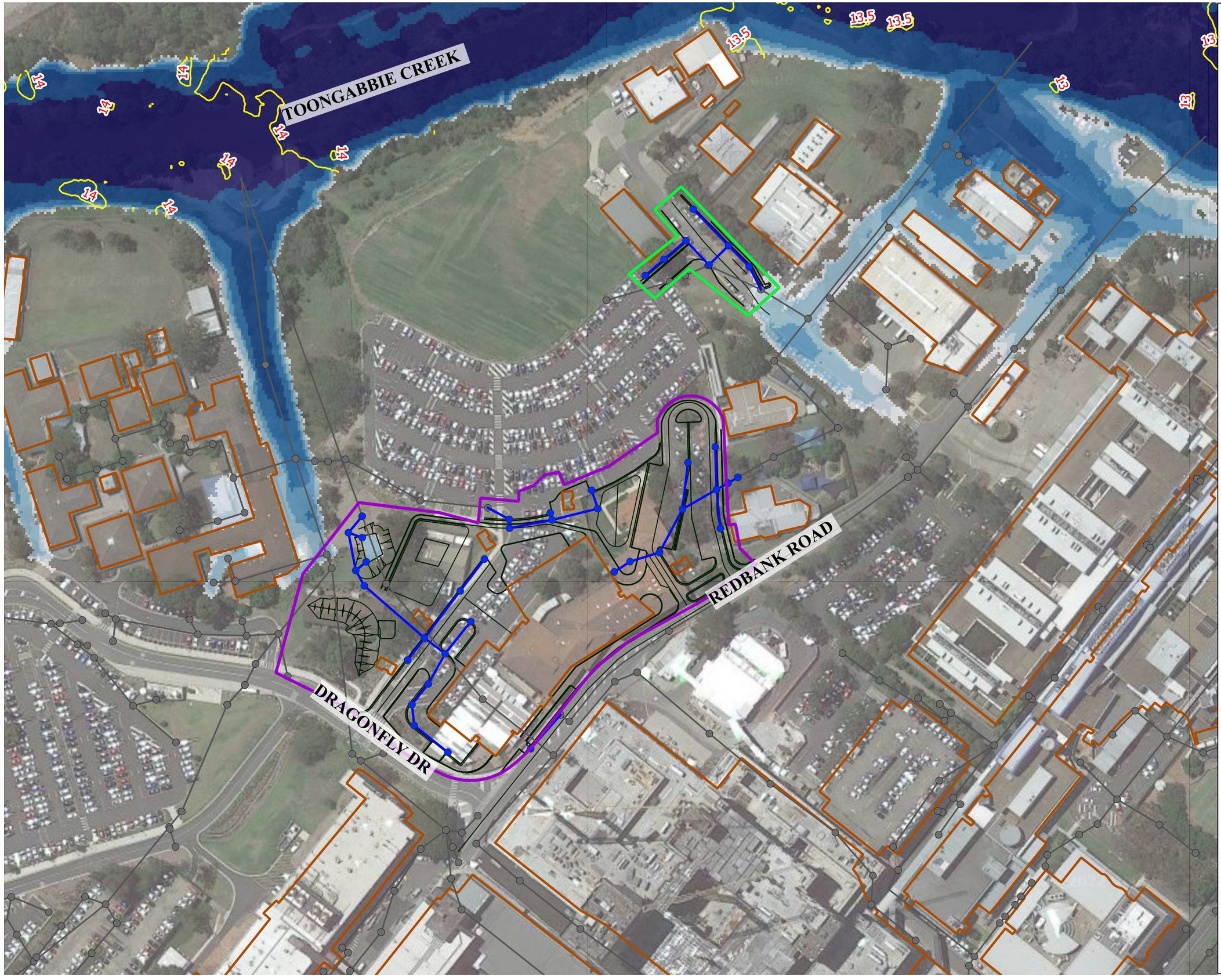
Scale at A3 1:1,500

N

Figure No. P.D.2
IMHC Proposed Case 1% AEP Overland Flooding Peak Flood Depths and Levels

Job No.
281916

Figure Status
For SSDA



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Notes:
1. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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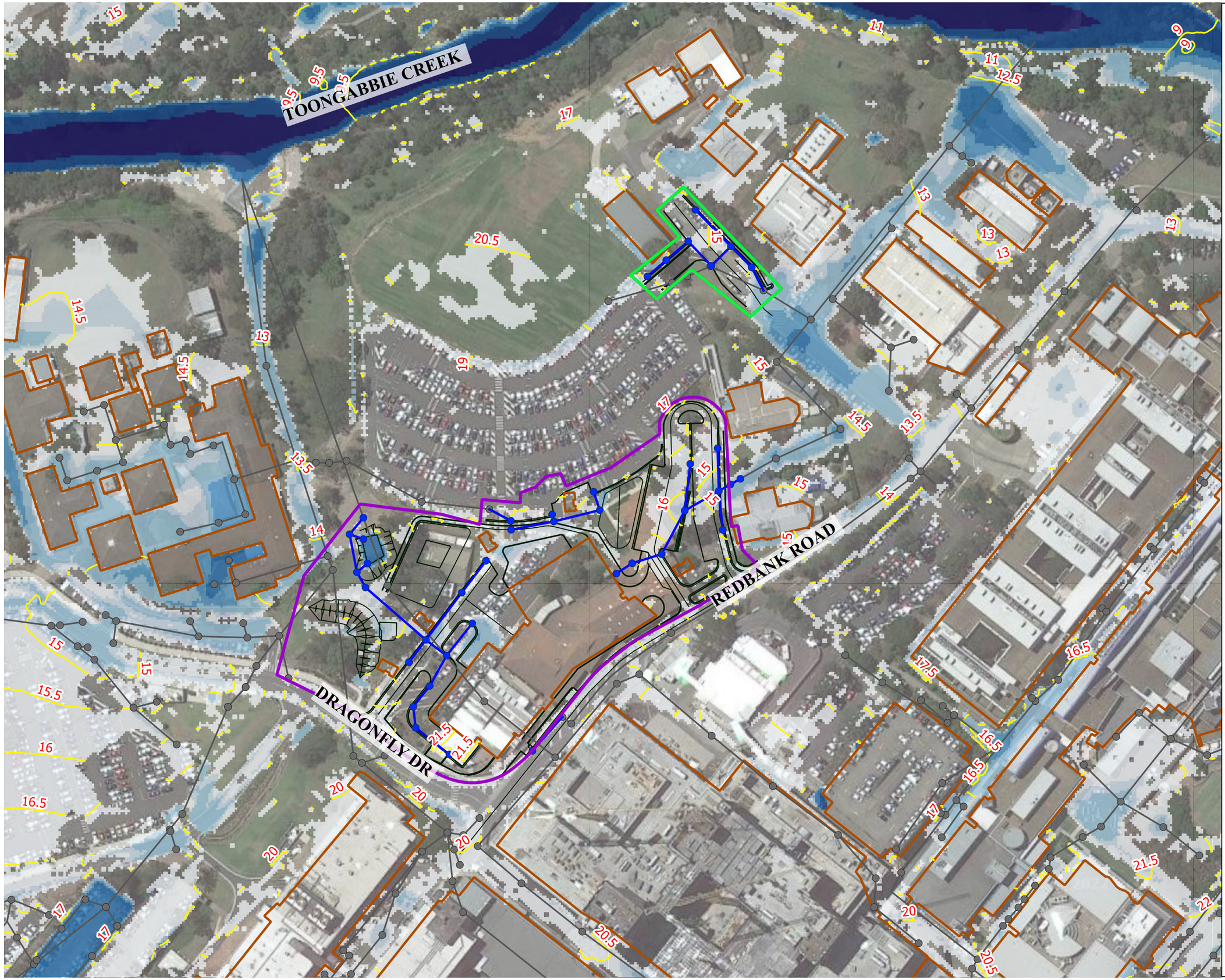
Scale at A3 1:1,500

N

Figure No. P.D.3
IMHC Proposed Case 1% AEP Riverine Flooding Peak Flood Depths and Levels

Job No.
281916

Figure Status
For SSDA



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
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Scale at A3 1:1,500

N

Figure No. P.D.4

IMHC Proposed Case 0.05% AEP Overland Flooding Peak Flood Depths and Levels

Job No.
281916

Figure Status
For SSDA

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Issue	Date	By	Chkd	Appd
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Scale at A3 1:1,500

N

Figure No. P.D.5
IMHC Proposed Case PMF Overland Flooding Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Flood Level Contours (m AHD)
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Peak Flood Depth (m)

- < 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 3.00
- > 3.00

Notes:
1. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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Scale at A3 1:1,500

N

Figure No. P.D.6

IMHC Proposed Case PMF
Riverine Flooding
Peak Flood Depths and Levels

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Change in Flood Level (m)

- Was Wet Now Dry
- <= -0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.100
- +0.100 - +0.500
- > +0.500
- Was Dry Now Wet

Notes:

1. This figure has been produced by comparing the proposed development flooding levels presented in Figure P.D.1 with the levels as presented in Figure E.D.1. Flooding impacts report changes in peak flood levels (mAHD). Note this is not the same as peak water depth.

Issue	Date	By	Chkd	Appd
1	22-07-2021	MWB	AC	AC

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10 0 10 20 m

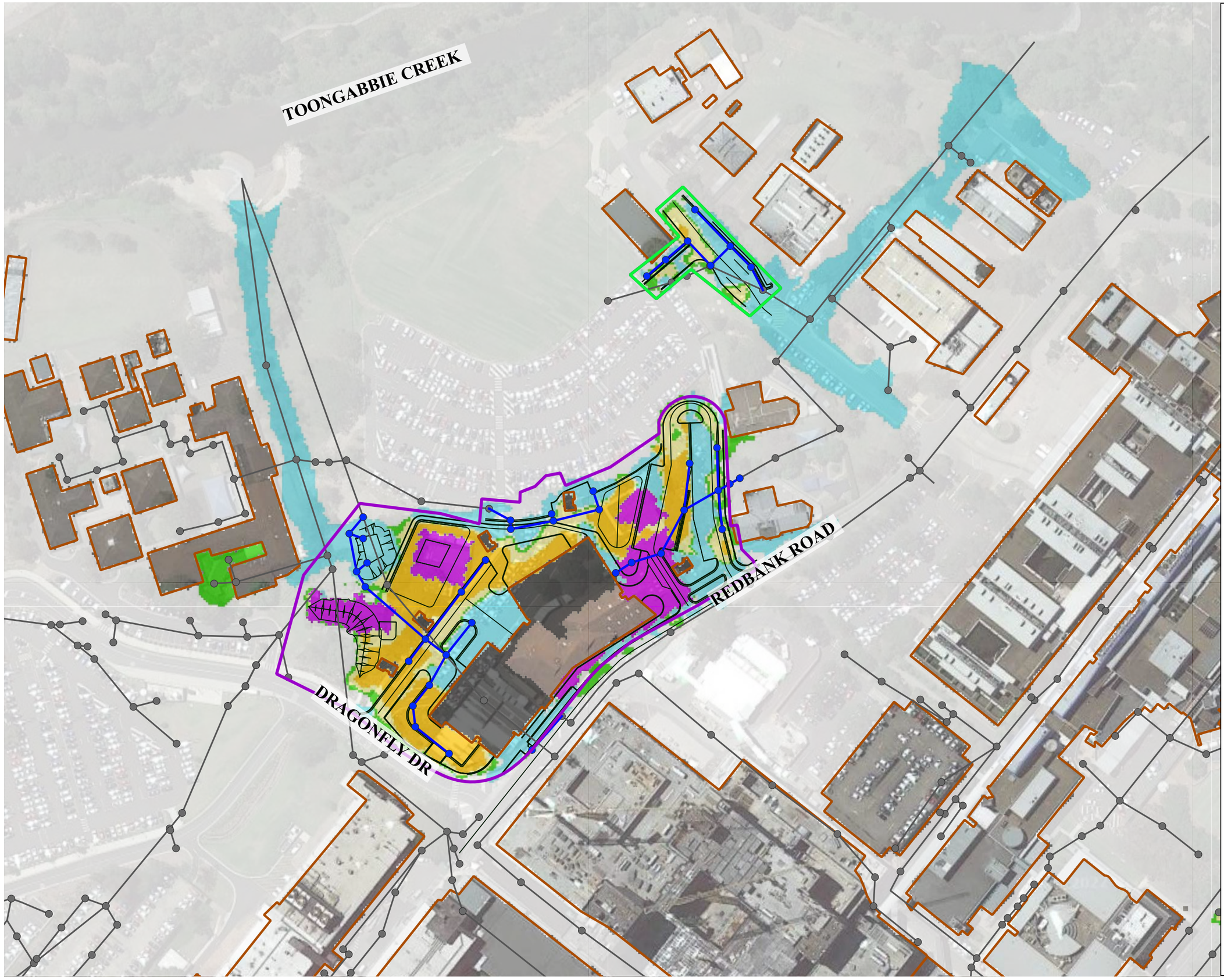
Scale at A3 1:1,500

N

Figure No. P.A.1
IMHC Proposed Case 10% AEP Overland Flooding Afflux

Job No.
281916

Figure Status
For SSDA



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Change in Flood Level (m)

- Was Wet Now Dry
- <= -0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.100
- +0.100 - +0.500
- > +0.500
- Was Dry Now Wet

Notes:

1. This figure has been produced by comparing the proposed development flooding levels presented in Figure P.D.2 with the levels as presented in Figure E.D.3. Flooding impacts report changes in peak flood levels (mAHD). Note this is not the same as peak water depth.

Issue	Date	By	Chkd	Appd
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Scale at A3 1:1,500

N

Figure No. P.A.2
IMHC Proposed Case 1% AEP Overland Flooding Afflux

Job No.
281916

Figure Status
For SSDA

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Change in Flood Level (m)

- Was Wet Now Dry
- <= -0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.100
- +0.100 - +0.500
- > +0.500
- Was Dry Now Wet

Notes:

1. This figure has been produced by comparing the proposed development flooding levels presented in Figure P.D.3 with the levels as presented in Figure E.D.4. Flooding impacts report changes in peak flood levels (mAHD). Note this is not the same as peak water depth.
2. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
1	22-07-2021	MWB	AC	AC

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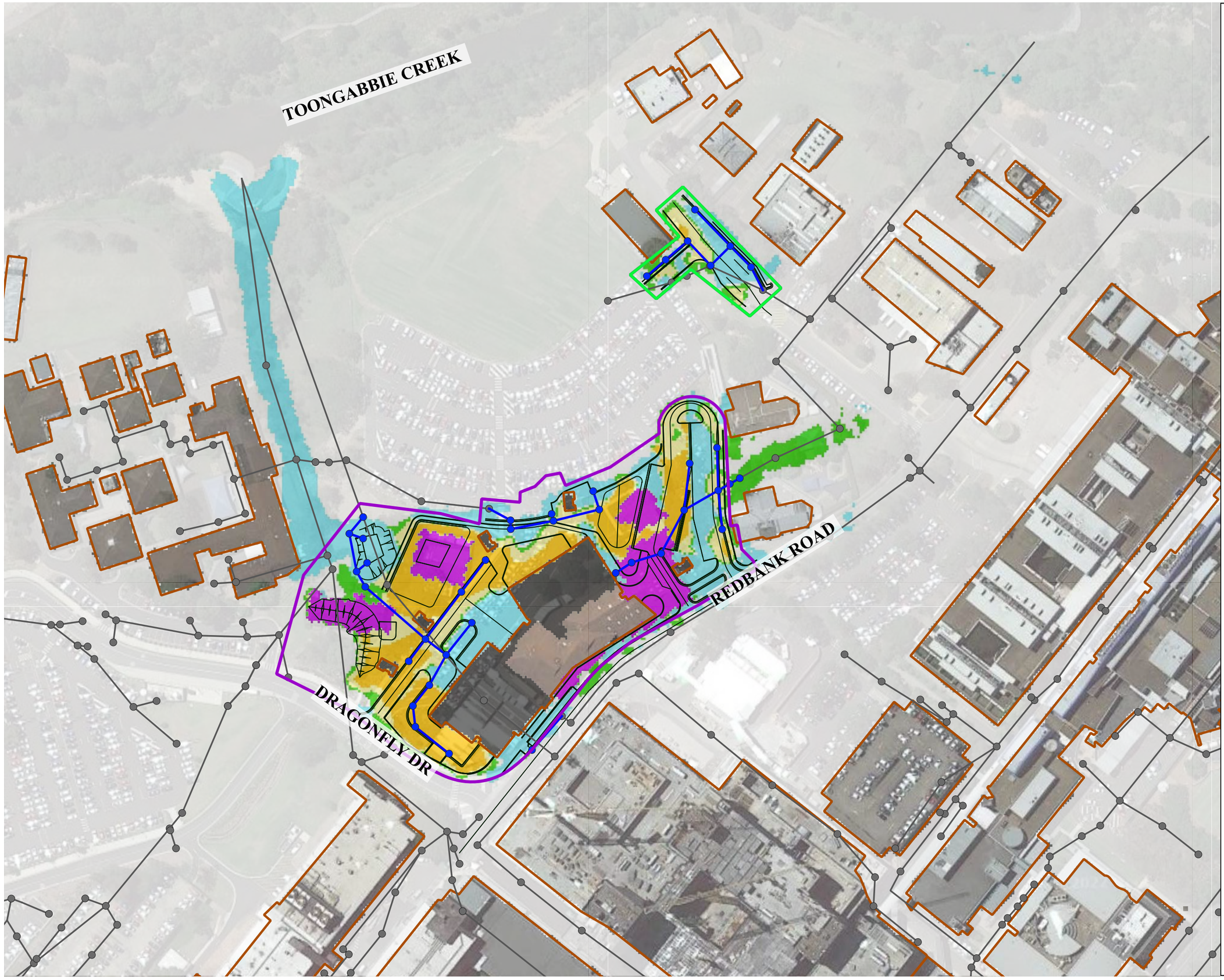
Scale at A3 1:1,500

N

Figure No. P.A.3
IMHC Proposed Case 1% AEP Riverine Flooding Afflux

Job No.	Figure Status
281916	**For SSDA**



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Change in Flood Level (m)

- Was Wet Now Dry
- <= -0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.100
- +0.100 - +0.500
- > +0.500
- Was Dry Now Wet

Notes:

1. This figure has been produced by comparing the proposed development flooding levels presented in Figure P.D.4 with the levels as presented in Figure E.D.5. Flooding impacts report changes in peak flood levels (mAHD). Note this is not the same as peak water depth.

Issue	Date	By	Chkd	Appd
1	22-07-2021	MWB	AC	AC

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Scale at A3 1:1,500

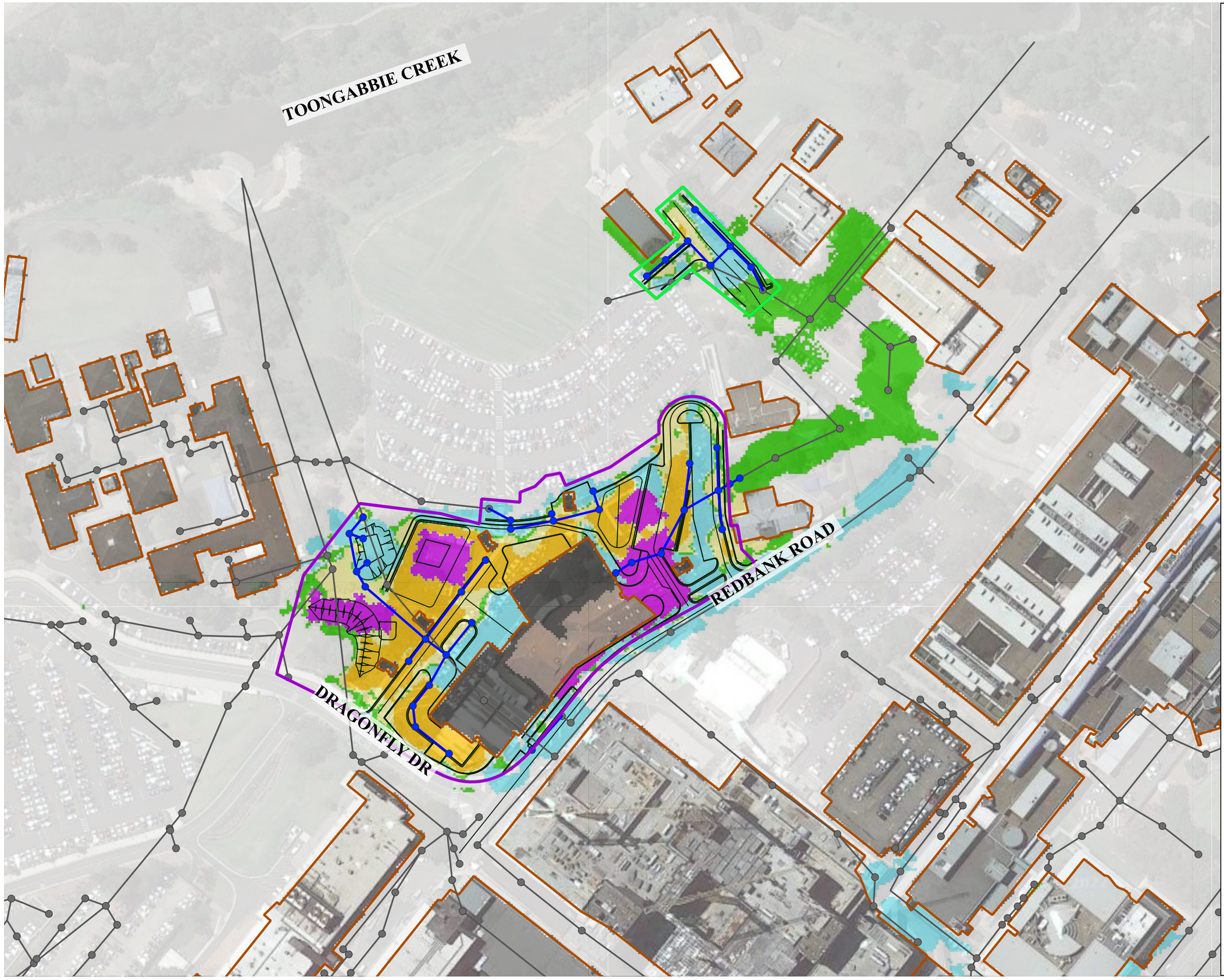
N

Figure No. P.A.4

IMHC Proposed Case 0.05% AEP Overland Flooding Afflux

Job No.
281916

Figure Status
For SSDA



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Change in Flood Level (m)

- Was Wet Now Dry
- <= -0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.100
- +0.100 - +0.500
- > +0.500
- Was Dry Now Wet

Notes:

1. This figure has been produced by comparing the proposed development flooding levels presented in Figure P.D.5 with the levels as presented in Figure E.D.7. Flooding impacts report changes in peak flood levels (mAHD). Note this is not the same as peak water depth.

Issue	Date	By	Chkd	Appd
1	22-07-2021	MWB	AC	AC

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Scale at A3 1:1,500

N

Figure No. P.A.5
IMHC Proposed Case PMF Overland Flooding Afflux

Job No.
281916

Figure Status
For SSDA

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Change in Flood Level (m)

- Was Wet Now Dry
- <= -0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.100
- +0.100 - +0.500
- > +0.500
- Was Dry Now Wet

Notes:

1. This figure has been produced by comparing the proposed development flooding levels presented in Figure P.D.6 with the levels as presented in Figure E.D.8. Flooding impacts report changes in peak flood levels (mAHD). Note this is not the same as peak water depth.
2. The riverine flooding shown excludes local catchment runoff

Issue	Date	By	Chkd	Appd
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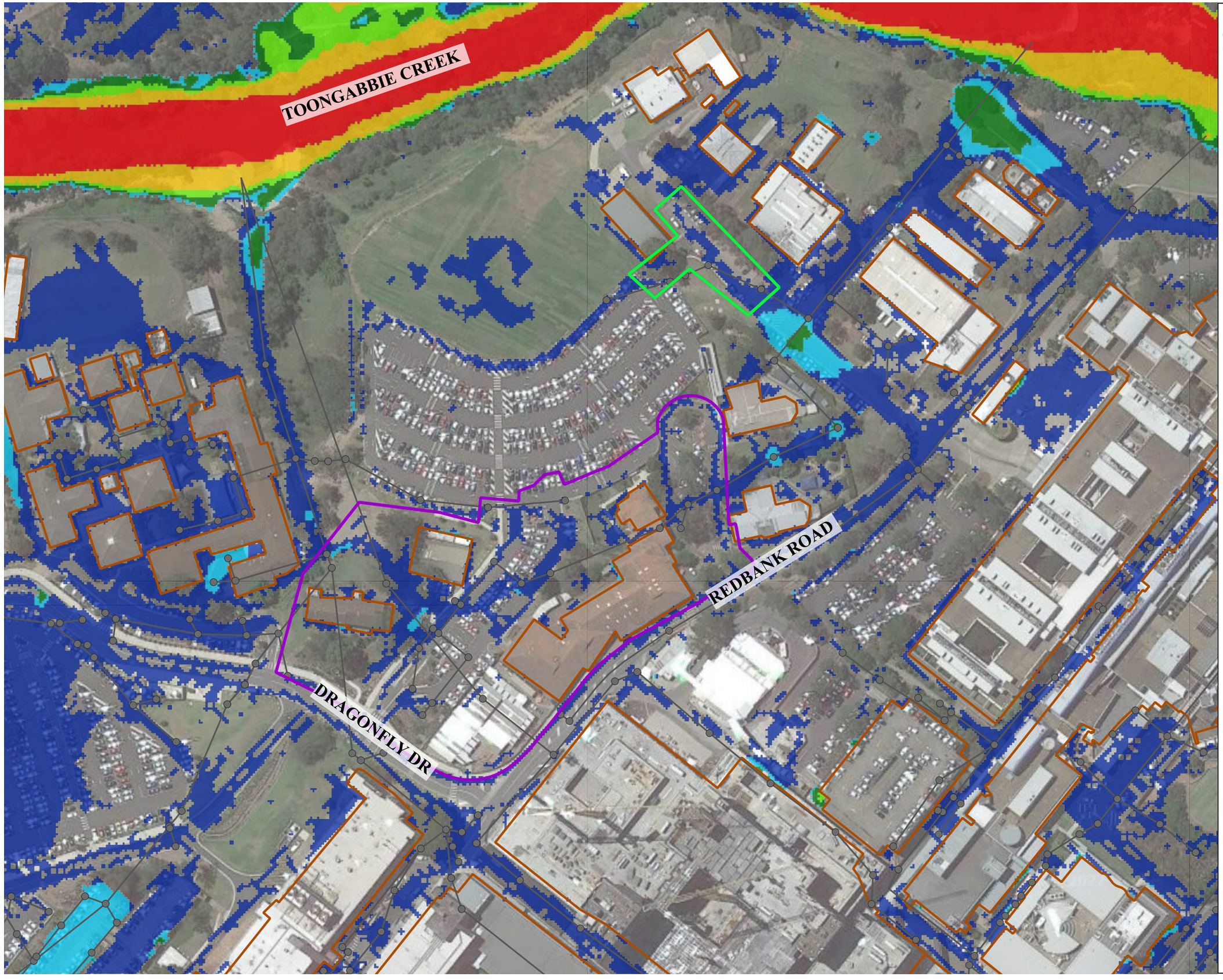
Scale at A3 1:1,500

N

Figure No. P.A.6
IMHC Proposed Case PMF Riverine Flooding Afflux

Job No.	Figure Status
281916	**For SSDA**



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
- H2 - Unsafe for small vehicles.
- H3 - Unsafe for all vehicles, children and the elderly.
- H4 - Unsafe for all people and vehicles.
- H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.

Issue	Date	By	Chkd	Appd
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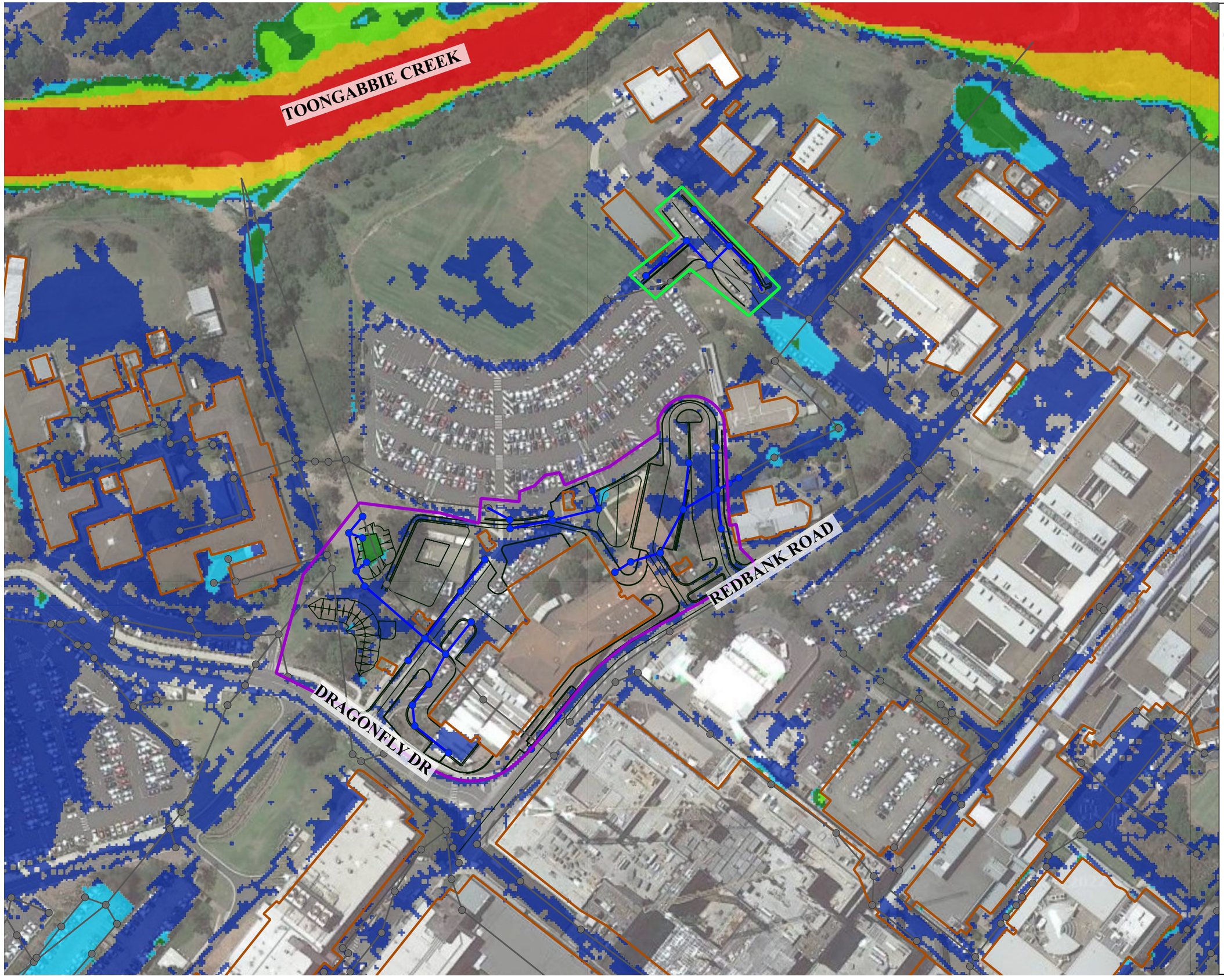
Scale at A3 1:1,500

N

Figure No. E.H.1
Existing Case 1% AEP Overland Flooding Flood Hazard

Job No.	Figure Status
281916	**For SSDA**



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
- H2 - Unsafe for small vehicles.
- H3 - Unsafe for all vehicles, children and the elderly.
- H4 - Unsafe for all people and vehicles.
- H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.

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Scale at A3 1:1,500

N

Figure No. P.H.1

IMHC Proposed Case 1% AEP Overland Flooding Flood Hazard

Job No.	Figure Status
281916	**For SSDA**

TOONGABBIE CREEK

REDBANK ROAD

DRAGONFLY DR

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
- H2 - Unsafe for small vehicles.
- H3 - Unsafe for all vehicles, children and the elderly.
- H4 - Unsafe for all people and vehicles.
- H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.

Issue	Date	By	Chkd	Appd
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Client
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Job Title
Integrated Mental Health Complex

10 0 10 20 m

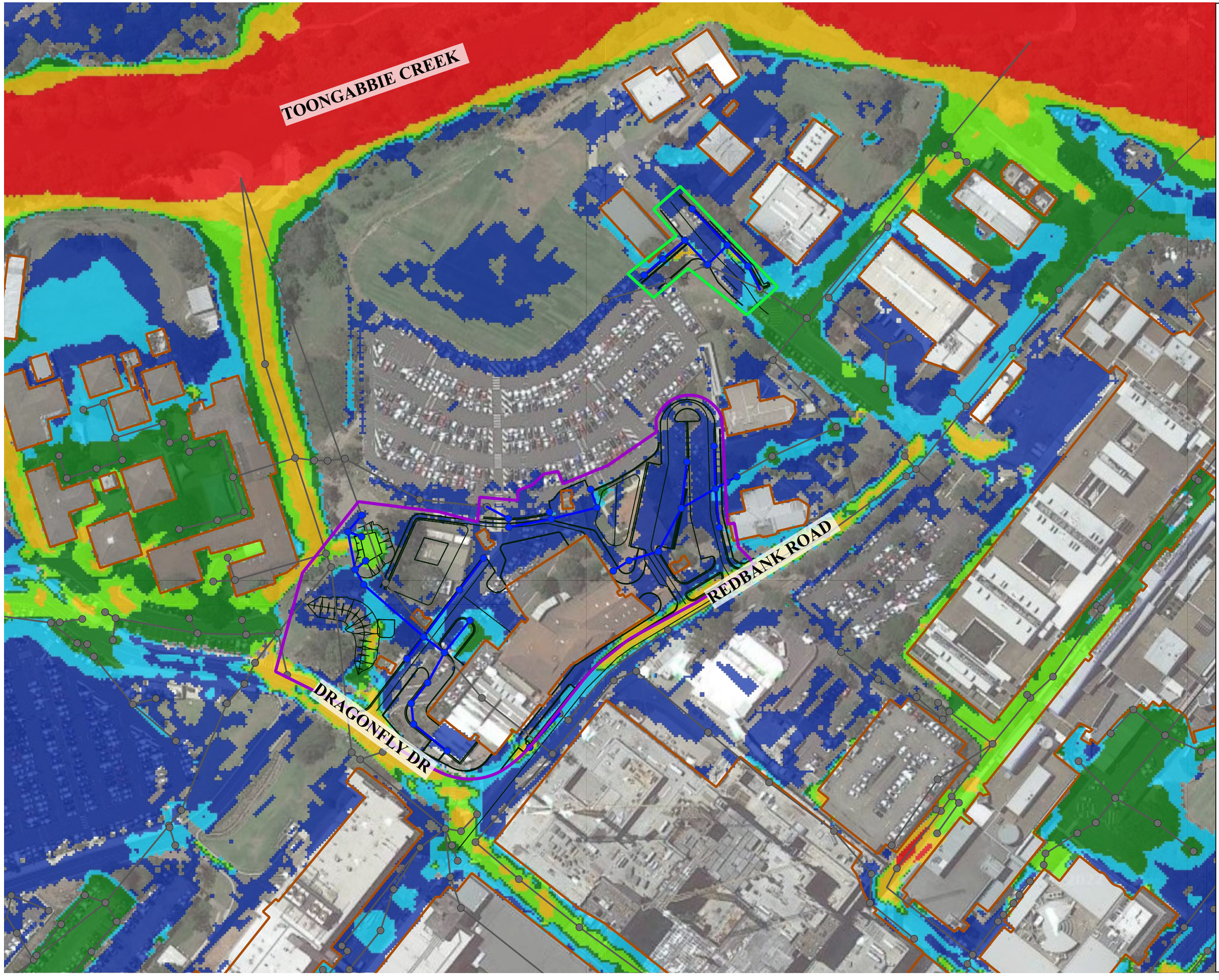
Scale at A3 1:1,500

N

Figure No. E.H.3
Existing Case PMF Overland Flooding Flood Hazard

Job No.
281916

Figure Status
For SSDA



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
- H2 - Unsafe for small vehicles.
- H3 - Unsafe for all vehicles, children and the elderly.
- H4 - Unsafe for all people and vehicles.
- H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.

Issue	Date	By	Chkd	Appd
1	22-07-2022	MWB	AC	AC

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www.arup.com

Client
Health Infrastructure

Job Title
Integrated Mental Health Complex

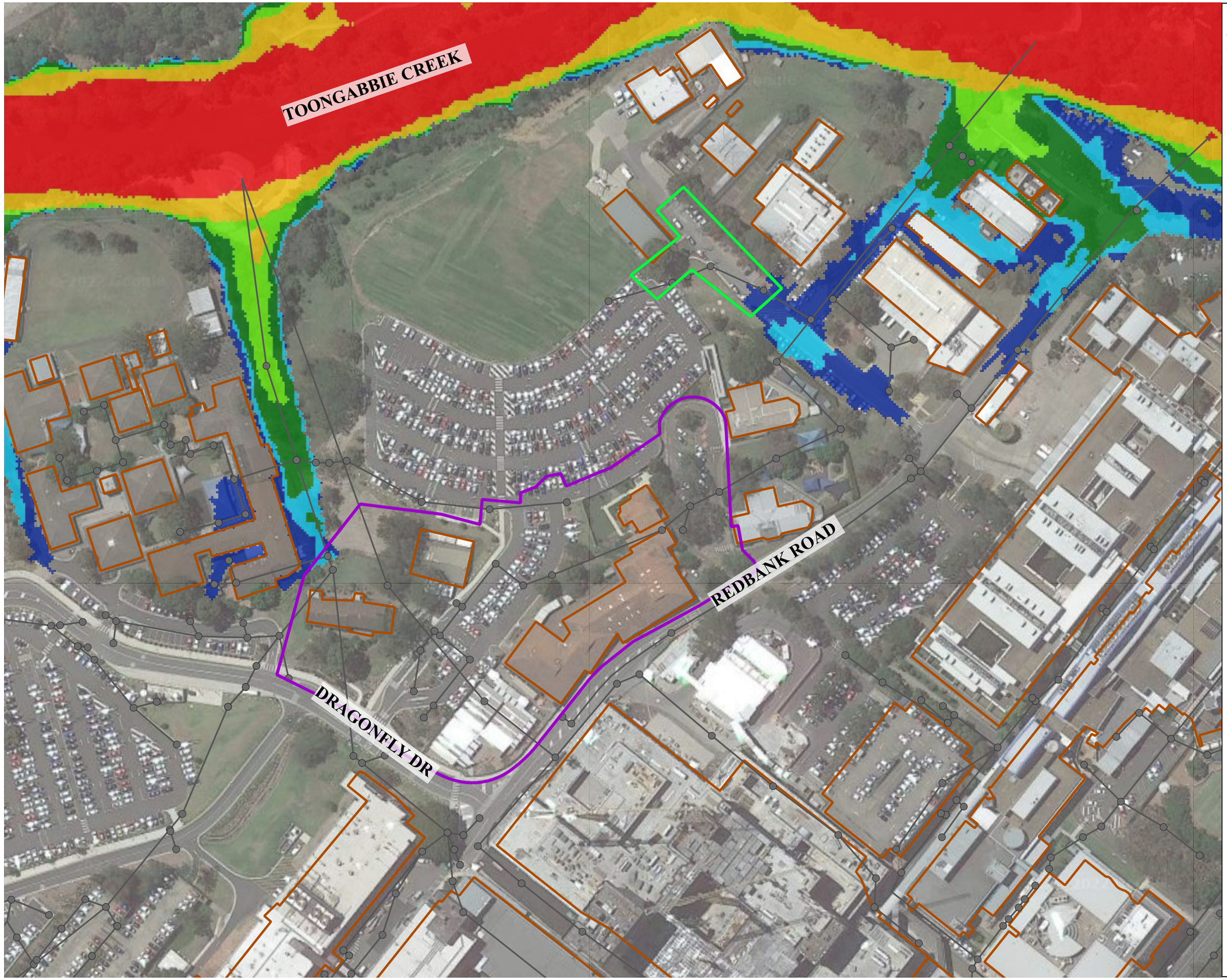
10 0 10 20 m

Scale at A3 1:1,500

N

Figure No. P.H.3
IMHC Proposed Case PMF Overland Flooding Flood Hazard

Job No.	Figure Status
281916	**For SSDA**



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
- H2 - Unsafe for small vehicles.
- H3 - Unsafe for all vehicles, children and the elderly.
- H4 - Unsafe for all people and vehicles.
- H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.

Notes:
1. The riverine flooding shown excludes local catchment runoff

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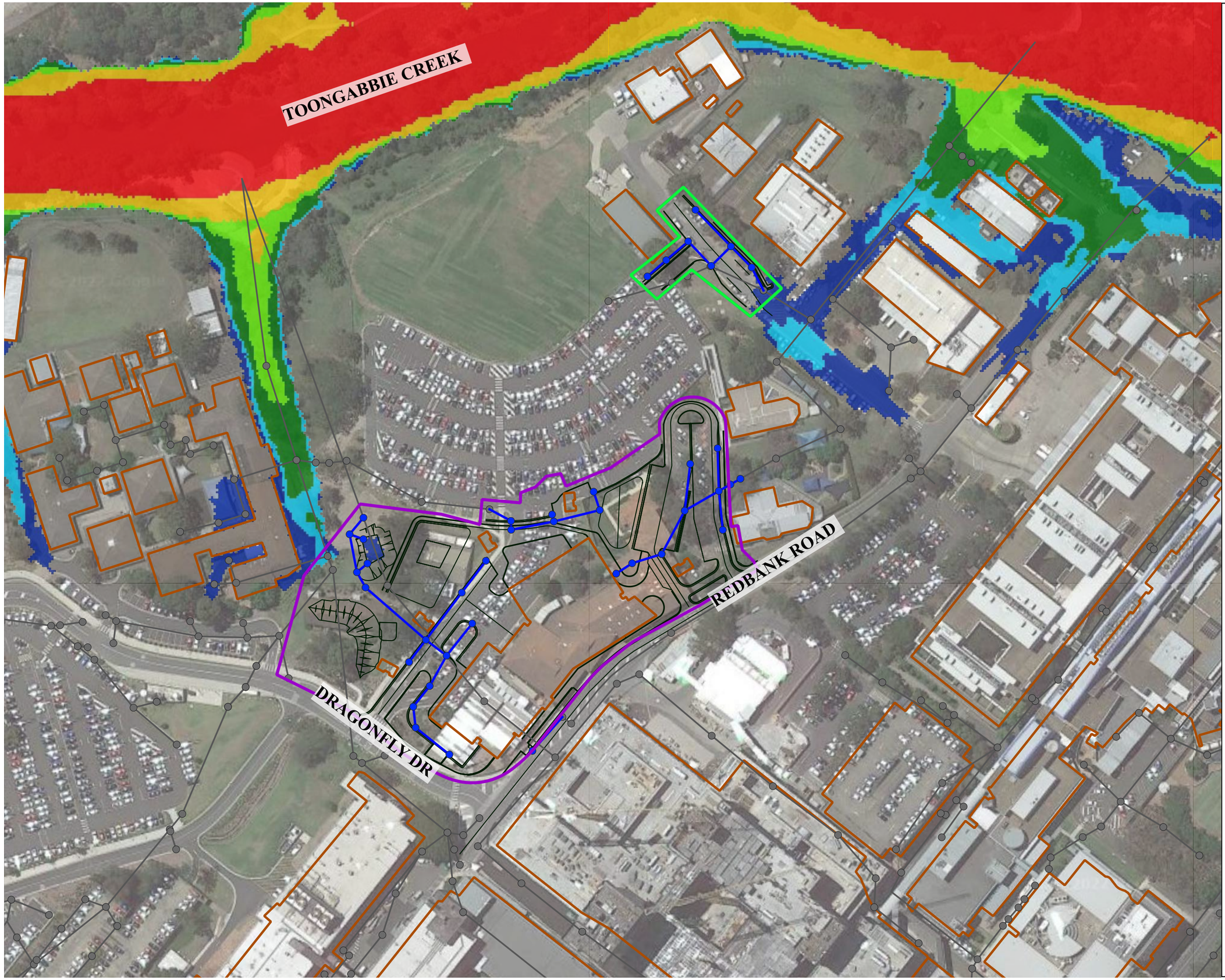
Scale at A3 1:1,500

N

Figure No. E.H.2
Existing Case 1% AEP Riverine Flooding Flood Hazard

Job No.
281916

Figure Status
For SSDA



Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
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Notes:
1. The riverine flooding shown excludes local catchment runoff

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Scale at A3 1:1,500

N

Figure No. P.H.2
IMHC Proposed Case 1% AEP Riverine Flooding Flood Hazard

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
- H2 - Unsafe for small vehicles.
- H3 - Unsafe for all vehicles, children and the elderly.
- H4 - Unsafe for all people and vehicles.
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- H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.

Notes:
1. The riverine flooding shown excludes local catchment runoff

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Scale at A3 1:1,500

N

Figure No. E.H.4
Existing Case PMF Riverine Flooding Flood Hazard

Job No.	Figure Status
281916	**For SSDA**

Legend

- Site boundary
- Proposed car park upgrade boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes

Flood Hazard Category

- H1 - Relatively benign flow conditions.
- H2 - Unsafe for small vehicles.
- H3 - Unsafe for all vehicles, children and the elderly.
- H4 - Unsafe for all people and vehicles.
- H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.

Notes:
1. The riverine flooding shown excludes local catchment runoff

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N

Figure No. P.H.4
IMHC Proposed Case PMF Riverine Flooding Flood Hazard

Job No.	Figure Status
281916	**For SSDA**