March 2026
Ref. No. 24142

Mica Cook, Principal Planner

State Assessment and Referral Agency

Department of State Development, Infrastructure and Planning

Via email: DARTsupport@dsdip.qld.gov.au

ATTENTION: Mica Cook, State Assessment and Referral Agency

Dear Mica,

Re: SARA ADVICE NOTICE – 2509-48339 SRA
30 GLENTANNA STREET & 474A GYMPIE ROAD, KEDRON QLD 4031

Please see below our responses to the hydraulic reporting items raised in SARA's Advice Notice dated 21 January 2026 (reference 2509-48339 SRA). This letter is submitted on behalf of the applicant, George Weston Foods Limited, and is accompanied by 64 updated flood mapping drawings (FM-001 through FM-064, Revision C).

This is a Preliminary Development Application (PDA). Matters requiring detailed civil design resolution are deferred to the Development Application (DA) stage, as noted against each item below.

Item 1 – Hydraulic Reporting

Item a – Model calibration and validation against BCC existing overland flow modelling

The hydraulic model provided is currently uncalibrated. As such, the results for the existing scenario need to be validated against Brisbane City Council's (BCC's) existing overland flow modelling. The validated results should be included in the report.

Consultant Response:

B&W has reviewed BCC's & TMR's overland flow model data for the Kedron catchment. However, the BCC overland flow model does not account for the piped stormwater network traversing the site, it treats the entire catchment as generating overland flow only. As the site is directly served by a substantial existing piped network, including the 3 × 1650 mm RCP trunk main, any direct calibration of the B&W model against TMR BCC's model would be technically inappropriate. Calibrating to a model that excludes piped conveyance would artificially inflate modelled depths and extents, misrepresenting the actual hydraulic behaviour of the site.

Kedron Flood Study 2024 was used to verify the flows used. The peak flows in the Kedron Flood Study Table 6.5 matches the total runoff represented in the graphs this validates the runoff model. Refer table below for Design flow used in this report vs Design flows in the Kedron report - Kedron Brook Tributary B.

Table 1: Flow Validation

Storm Event (AEP)	AR&R 2019 RAINFALL (Adopted for Modelling (m^3/s)	Kedron Brook Flood Study 2024 (m^3/s)
1%	34	28
2%	28	24
10%	19	17
20%	10	14

Drawing reference: FM-013 to FM-024 — Existing scenario results, all AEP events.

Item b – Impact maps to be derived from water level, not water depth

The impact maps (SK-027 and SK-028) have been derived from water depth rather than water level. Impact maps should be derived from water level, as maps derived from water depth are not appropriate and may misrepresent changes in topography. For example, the line of unexplained depressions along the western edge of Gympie Road in SK-027.

Consultant Response:

This is accepted and has been corrected. All impact maps have been reprocessed using water surface level (AHD) rather than water depth. The revised impact maps present the difference in water surface level (RL) between the post-development and existing scenarios:

- **Blocked RL minus Existing RL:** FM-037 (1% AEP), FM-038 (10% AEP), FM-039 (2% AEP), FM-040 (20% AEP)
- **Mitigated RL minus Existing RL:** FM-045 (1% AEP), FM-046 (10% AEP), FM-047 (2% AEP), FM-048 (20% AEP)

Item c – Afflux banding to comply with DTMR Figure 4.1

The afflux banding provided is too large. Amend to include banding as per Figure 4.1 of Department of Transport and Main Roads Hydrology and Hydraulic Modelling Guideline (available online).

Consultant Response:

Afflux banding has been refined in updated plans.

Item d – Clarification of blockage scenario definitions

Further clarification is required regarding various scenarios presented. Specifically: (i) is the 100% blockage scenario equivalent to the "Developed" scenario? (ii) is the 50% blockage scenario equivalent to the "Mitigated" scenario? (iii) confirm the blockage assumptions applied to the existing scenario.

Consultant Response:

The blockage scenarios are confirmed and clarified as follows:

Scenario label	Report scenario	Blockage assumption
Existing	Existing conditions (baseline)	50% blockage applied to all infrastructure. Consistent with QUDM industry practice.
Blocked (100% on-site)	Developed — conservative/worst case	100% blockage of all on-site inlet pits and pipes. Upstream external infrastructure at 50% blockage. Represents complete on-site drainage failure.
Mitigated (50% blockage)	Mitigated — design case	50% blockage applied to all infrastructure including proposed new pits and channel. Standard QUDM design assumption.

To confirm directly: (i) yes, the 100% blockage scenario is equivalent to the Developed scenario; (ii) yes, the 50% blockage scenario is equivalent to the Mitigated scenario; and (iii) the existing scenario applies 50% blockage to all infrastructure consistent with standard practice.

The hybrid approach, 100% blockage on-site with 50% blockage upstream, provides a conservative upper-bound assessment of on-site drainage performance while maintaining a realistic representation of the broader catchment. This is explained in Section 3.3 of the revised Flood Assessment Report (Revision D).

Item e – Water level afflux maps — both scenarios, all AEP events

Impact maps for water level afflux should be provided for the following scenarios: (i) 50% blockage minus existing for the 20%, 10%, 2% and 1% AEP events; (ii) 100% blockage minus existing for the same AEP events.

Consultant Response:

Water level afflux maps have been prepared for both scenarios across all four AEP events, presented as the difference in water surface level (AHD) between each post-development scenario and existing conditions:

- **100% on-site blockage (Blocked) minus Existing:** FM-037 (1% AEP), FM-038 (10% AEP), FM-039 (2% AEP), FM-040 (20% AEP)
- **50% blockage (Mitigated) minus Existing:** FM-045 (1% AEP), FM-046 (10% AEP), FM-047 (2% AEP), FM-048 (20% AEP)

All maps are derived from water surface level (RL) in accordance with item b. Under the mitigated scenario, water level changes within the Gympie Road corridor and on adjacent private properties are minor across all assessed AEP events.

Item f – Velocity afflux and hazard maps — both scenarios, all AEP events

Impact maps for velocity (velocity afflux) and hazard need to be provided for the same cases as per water level afflux.

Consultant Response:

Velocity afflux (ΔV) maps and hazard (Depth × Velocity, V×D) maps have been prepared for both scenarios across all four AEP events:

- **Velocity afflux — Blocked minus Existing:** FM-041 (1% AEP), FM-042 (10% AEP), FM-043 (2% AEP), FM-044 (20% AEP)
- **Velocity afflux — Mitigated minus Existing:** FM-049 (1% AEP), FM-050 (10% AEP), FM-051 (2% AEP), FM-052 (20% AEP)
- **Hazard (V×D) — Blocked scenario:** FM-053 (1% AEP), FM-054 (10% AEP), FM-055 (2% AEP), FM-056 (20% AEP)
- **Hazard (V×D) — Existing baseline:** FM-057 (1% AEP), FM-058 (10% AEP), FM-059 (2% AEP), FM-060 (20% AEP)
- **Hazard (V×D) — Mitigated scenario:** FM-061 (1% AEP), FM-062 (10% AEP), FM-063 (2% AEP), FM-064 (20% AEP)

Under the mitigated scenario, velocity conditions and hazard levels within the Gympie Road corridor are not materially worsened relative to existing conditions across any of the assessed events.

Item g – Downstream model boundary extension to Boothby Street

> *The downstream boundary for the XP Storm model appears to be along the eastern edge of Gympie Road. SARA recommends relocating the boundary several hundred metres downstream at the Boothby Street crossing (the next major hydraulic control).*

Consultant Response:

The hydraulic model has been updated to assess flood behaviour through the subject site and the immediate downstream interface with Gympie Road.

The downstream model extent has been extended beyond the site boundary to reduce the influence of the model boundary on results within the site and road corridor.

It is acknowledged that the model has not yet been extended to the next major downstream hydraulic control due to current limitations in available drainage infrastructure and survey data.

However, based on review of results, hydraulic behaviour within the site and Gympie Road corridor is governed by local controls and the defined overland flow path, with no evidence of artificial afflux or boundary-driven impacts affecting the results.

Accordingly, the current model extent is considered appropriate for the purposes of this assessment. Further refinement and extension of the model will be undertaken at detailed design (DA) stage, subject to availability of additional downstream information,

Item h – Downstream storage impact from reduced on-site storage

> *The modelled results suggest that water levels on site will be reduced in the development state. If accurate, this could result in significant downstream impacts due to reduced on-site storage. This reinforces the need to extend the downstream boundary of the model as outlined above.*

Consultant Response:

The potential for downstream impacts arising from reduced on-site storage is acknowledged. This matter is linked to items g (extended downstream model), j (trunk main diversion losses), and k (trunk main connection design), all of which require detailed design inputs not yet available at Preliminary stage.

A quantitative downstream storage impact assessment will be provided as part of the DA hydraulic report. This assessment will incorporate the extended downstream model, final earthworks levels, and confirmed trunk main design.

Item i – Pre-and post-development flows, levels, velocities and hazards at Gympie Road corridor

> *There is no reporting of pre- or post-development flows at the Gympie Road corridor. Updated reporting should confirm whether water levels, velocities and hazards have been impacted in the corridor, and whether the development impacts the total peak flows traversing the corridor. The pre- and post-development flows must be reported for all scenarios.*

Consultant Response:

The elevated velocities and hazard observed along the eastern extent of the model correspond to an existing stream adjacent to the site and Gympie Road corridor.

This feature is evident under existing conditions and represents the primary conveyance path for flows through the catchment.

As such, assessment of development impact has been undertaken based on comparison to existing conditions, rather than interpretation of absolute velocity or hazard values in isolation.

The impact mapping (including water level afflux, velocity difference and hazard comparison) indicates that changes within this corridor are generally minor and localised.

While localised variations in velocity are observed within the established flow path, these are confined to the existing corridor and do not result in a material increase in flood level or hazard within the Gympie Road corridor.

Accordingly, the proposed development does not adversely impact the function of the existing flow path or increase flood risk to the State-controlled road network.

Drawing reference: FM-001 to FM-064 — complete scenario coverage for corridor assessment.

Item j – 3 × 1500 RCP diversion — hydraulic losses and upstream impact

> *The available drawings indicate that the existing 3 x 1500 RCP trunk stormwater main traversing the site is proposed to be diverted. This diversion introduces approximately three 90-degree bends into the system which is expected to result in significant additional hydraulic losses. These changes are likely to cause significant upstream impacts. A detailed discussion on how the additional hydraulic losses introduced by the proposed design have been modelled should be included.*

The proposed diversion of the existing 3 × 1500 mm RCP trunk stormwater main has been identified and is acknowledged as introducing additional hydraulic losses associated with alignment changes and bend structures.

At the Preliminary Development Application (PDA) stage, the final alignment, geometry, and structural configuration of the diverted trunk main have not yet been resolved. As such, detailed hydraulic loss modelling associated with bend coefficients and junction losses has not been explicitly incorporated at this stage.

A detailed hydraulic assessment of the trunk main diversion, including quantification of bend losses, energy grade line impacts, and upstream afflux, will be undertaken as part of the Development Application (DA) stage. This will be supported by detailed civil design, confirmed alignment geometry, and surveyed infrastructure levels. This staged approach is consistent with the level of detail appropriate for a PDA and ensures that all trunk infrastructure impacts are rigorously assessed at detailed design stage.

Item k – New site drainage connection to existing trunk main

It is understood that the new site drainage is to be connected to the existing trunk drainage traversing Gympie Road. However, no details have been provided regarding this connection. It is presumed that this connection will result in significant surcharging of the system, which needs to occur safely.

Consultant Response:

The detailed design of the proposed connection to the existing trunk stormwater network has not been finalised at this Preliminary Development Application (PDA) stage.

This will be undertaken as part of the Development Application (DA) stage, where the connection will be designed and verified to ensure safe surcharge behaviour and compliance with relevant hydraulic criteria.

Should any further information be required, do not hesitate to contact the undersigned.

Yours faithfully,

BORNHORST & WARD PTY LTD

Per: Nicholas Jeyakumar
Civil Engineer

cc: Andrew Kennedy and Sarah Davies, Urbis Ltd (akennedy@urbis.com.au)

cc: Brisbane City Council (dalodgement@brisbane.qld.gov.au)

FLOOD ASSESSMENT REPORT

FOR THE PROPOSED MIXED-USE/ RESIDENTIAL DEVELOPMENT

LOCATED AT
30 GLENTANNA STREET &
466-488 GYMPIE ROAD,
KEDRON, QLD 4031

PREPARED FOR
GEORGE WESTON FOODS LIMITED

BORNHORST + WARD

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Bornhorst and Ward Project No: **24142**

If you have any queries regarding this proposal, then please contact: **Nicholas Jeyakumar**

Revision	Date	Description	Author	Rev.	App.
A	JULY 2024	DRAFT	NJ	NR	
B	AUGUST 2025	ISSUED FOR APPROVAL	NJ	SG	NR
C	AUGUST 2025	ISSUED FOR APPROVAL	NJ	SG	NR
D	DECEMBER 2025	RFI RESPONSE	NJ	SG	NR
E	MARCH 2026	SARA RESPONSE	NJ	NR	NR

Nicholas Rozis: RPEQ 7729

File Name: J:\2024\24142\07_REPORTS\DESIGNREPORTS\RPT_FLOOD ASSESSMENT (E).docx

BORNHORST +WARD

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1. INTRODUCTION

Bornhorst and Ward has been commissioned to investigate and report on the stormwater requirements pertaining presents a detailed flood assessment for the proposed mixed-use/residential development at 30 Glentanna Street & 466–488 Gympie Road & 474A Gympie Rd , Kedron (Lot 8 on RP897648 & 1 RP897648). The proposed development seeks to facilitate a mixed-use, residential-led precinct. While the current framework anticipates buildings in tower form up to 15 storeys in height, the precise built form and scale are subject to future detailed design and approval. Plans of the proposed development can be found in Appendix A.

The purpose is to evaluate flood risk on the site and demonstrate compliance with Brisbane City Council's planning requirements, focusing solely on flooding and flood modelling aspects. The assessment has been prepared in accordance with Brisbane City Plan 2014 (specifically the Flood Overlay Code and Stormwater Code) and relevant standards including the Queensland Urban Drainage Manual 2021 (QUDM), State Planning Policy 2017 (Natural Hazards – Flood), and Australian Rainfall and Runoff 2019 (ARR). Council's own flood information (FloodWise Property Report) indicates the site lies in an overland flow path and warrants professional flood analysis to determine flood levels and appropriate floor levels for development.

This report therefore documents the flood modelling methodology, results for the defined design events, and recommended flood mitigation measures to ensure the development is safe, flood-resilient, and has no adverse impacts on surrounding properties.

2. SITE CHARACTERISTICS

2.1 LOCATION AND EXISTING FEATURES

The development site, located at 30 Glentanna Street, & 466-488 Gympie Road & 474A Gympie Rd, Kedron, 4031 has the following existing characteristics:

- The site is bound by, Gympie Road to the east (DTMR controlled), Glentanna Street and mixed industrial/commercial lots to the south, Bradbury Park to the west, and Gallagher Terrace and mixed residential lots to the north;
- The development site comprises of an industrial lot predominantly made up of a large, discontinued factory building located approximately in the centre of the site, surrounded with various machine plant and equipment storage, concrete and gravel accessways and parking areas;
- The remaining site area consists of a small amount of grass cover with some trees mostly concentrated near the site boundaries;
- The total area of the site is approximately 36,360m^2;
- The existing site entrance is via a concrete crossover access located directly off the end of Glentanna Street formed road;
- There are no easements located over the site area, and
- The nearest waterway known as Kedron Brook Floodway is located some distance east of the development and flows east-north/east in direction away from the development site.

Refer to Figure 1: Site Locality Plan below for locality details.

Figure 1: Site Locality Plan (BCC GIS)

2.2 PROPOSED DEVELOPMENT

The following points outline the extent of works for the proposed development:

- A lot material change of use from Low Impact Industry to mixed-use/residential.
- Future built form potentially comprising multiple towers or buildings of varying height, subject to detailed design and assessment.
- Access reconfiguration subject to Traffic Assessment.
- Final layouts and building heights to be confirmed through future development permits.

2.3 TOPOGRAPHY AND CATCHMENT CHARACTERISTICS

The existing topography and catchment characteristics are as follows:

- The high point of the existing site is RL 27.8m AHD located in the south-western corner of the site;
- The development falls from the high point at an approximate grade of 4.5% to a low point of RL 16.6m AHD in the middle of the eastern boundary;
- During major storm events, runoff from the site discharges as overland flow, over the middle section of the eastern boundary of the development site onto the Gympie Road reserve (DTMR controlled);
- Roof water is currently discharged directly into the existing public stormwater pit and pipe network located within the development site; and
- The site has two main external catchments of approximately 13.2Ha & 2.4Ha, located to the north, west and south of the site, respectively.

2.4 EXISTING FLOODING CONDITIONS AND FREEBOARD REQUIREMENTS

Information obtained from the Brisbane City Councils Floodwise Property Report for the site indicates that there is no historical flood risk located within the development site, however, the site is impacted by overland flow during major storm events greater than 1%AEP.

Please refer to the Brisbane City Council's Floodwise Property Report in Appendix C and the Flood Overlay Map in Figure 2 below for more details.

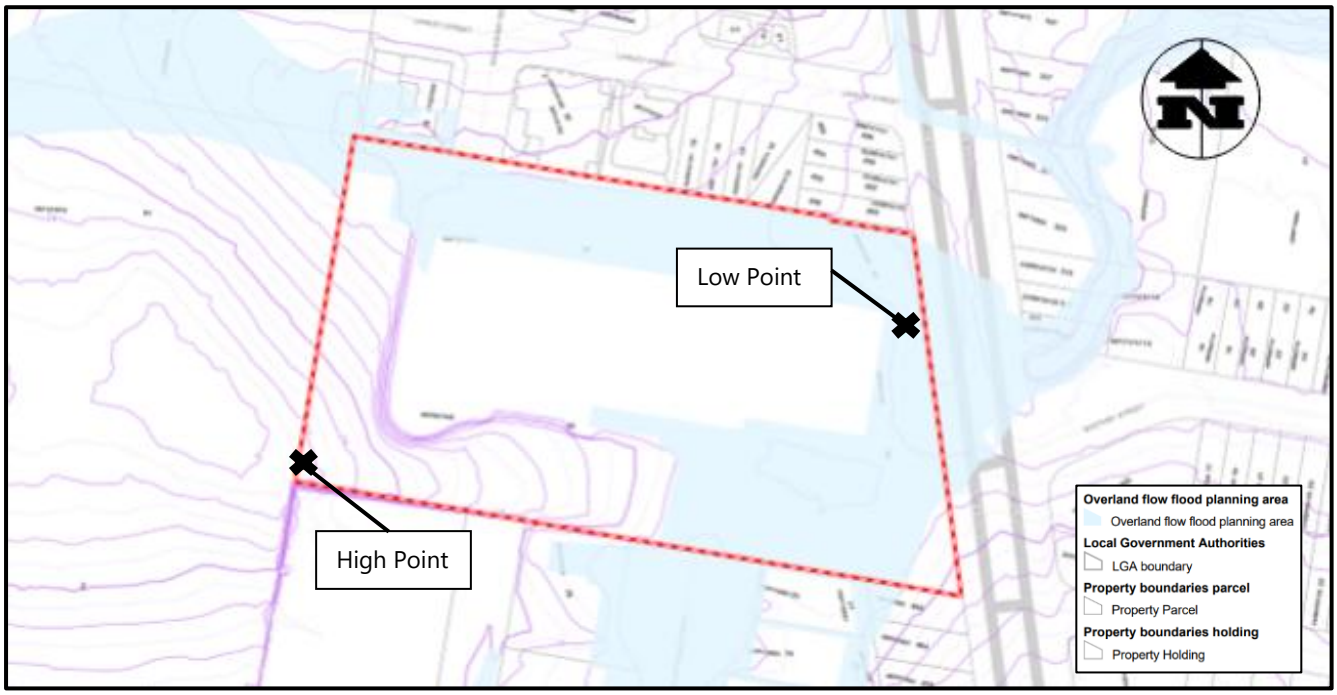


Figure 2: Brisbane City Council Interactive Flood Map (BCC GIS)

QLD Government LiDAR was used to identify the catchment area for the two overland flow paths. The catchment area contributing to the flow path on the west was 15.646 hectares and the catchment area contributing to flow path approaching the site from the south is 114.2 hectares.

Design levels for the building must comply with the flood immunity standards specified by Brisbane City Council's City Plan (2014).

Design levels for the building must comply with the flood immunity standards specified by Brisbane City Council's City Plan (2014). The development will be assessed against the flood levels determined from our investigations. In accordance with the Brisbane City Council City Plan (2014), the minimum flood freeboard requirements would therefore be in order of:

Table 1: Flood Freeboard Requirements from BCC

Development Area	Flooding source	Council Flood Freeboard Requirements (AHD)	Min. Development Level (AHD)	Min. Development Level + Freeboard (AHD)
Minimum Lot Level	Overland Flow	2% AEP Flood Level +0.3m	18.63 +0.3m	18.93
Habitable Room		2% AEP Flood Level +0.5m	18.63 +0.5m	19.13
Building Floor level		2% AEP Flood Level	18.63m	18.63
Basement entry		2% AEP Flood Level	18.63m	18.63
Essential services (including lifts)		2% AEP Flood Level +0.5m	18.63 +0.5m	19.13

2.5 STORMWATER

2.5.1 Existing Infrastructure

A Before You Dig survey has been completed of the site and its surrounding area. The following stormwater infrastructure was noted:

- Existing pit and pipe stormwater network lines run through the site. There are two major branch lines that join to a single pit junction structure where a 3x1650mm dia pipe (triple barrelled pipe) runs from within the site to the downstream network within the Gympie Road reserve adjacent to the eastern boundary of the site.
- An existing private stormwater reticulation to collect roof water runoff is expected to be present onsite and discharge directly into the above mentioned public stormwater network, subject to a site survey.

Before You Dig of the existing stormwater infrastructure can be found in Appendix B of this report.

Figure 3: Brisbane City Council GIS Existing Stormwater Overlay (BCC GIS)

3. METHODOLOGY

3.1 GENERAL

For this study, a 2-dimensional XPstorm software package was used to determine the extent of overland flow the subject site at existing and proposed conditions.

The main objectives of this assessment are to:

- Assess the flood affectation of the site, for both the existing and developed scenarios;
- Assess the flood impact of the proposed development on the areas upstream, adjacent, and downstream of the site;
- Review the flood risk (hazard) identified at the site for the 1% AEP design event.

3.2 HYDROLOGICAL MODEL

A detailed hydrologic and hydraulic analysis was undertaken to quantify the flooding behaviour through the site for both existing conditions and developed conditions. The analysis utilized XPSTORM software, LiDAR and BCC GIS data.

3.2.1 Terrain

High-resolution topographic data was obtained from the Queensland Government LiDAR surveys to create a Digital Terrain Model (DTM) of the site and surrounding catchment. The LiDAR-based DTM (with ~1 m horizontal resolution and ±0.1 m vertical accuracy) forms the basis of the 2D flood model grid. Contour and surface analyses from this DTM confirm the general west-to-east drainage gradient and identify any local depressions or high points that control flow directions.

3.2.2 Catchment and Storms

Catchment hydrology was modelled to estimate runoff from the upstream areas draining through the site. The total contributing catchment area was delineated using the DTM; it includes the site itself (~36,360m^{2}ha) plus external urban areas to the west that naturally drain east into the site (the upstream catchment). Using *Australian Rainfall & Runoff 2019* methods, design rainfalls for various Annual Exceedance Probabilities were derived for the site's location. Intensity-Frequency-Duration (IFD) parameters for Kedron were obtained from the Bureau of Meteorology. The critical storm duration was found to be 120 mins for both the 1% AEP storm, 2% AEP storm and 10% AEP storm and the critical storm duration was 180 mins for a 20% AEP storm, this was derived from the peak duration of the tributary east of site Kedron Brook flood study found on the Council website.

Multiple storm durations were run in the model to identify which produces the highest flood levels on-site – this is consistent with ARR 2019's recommendation to consider an ensemble of temporal patterns and durations. The *burst temporal patterns* from ARR 2019 were applied - 10 temporal patterns for each duration and the envelope of the worst-case flood outcome was used. Refer Appendix B for external catchment plans.

Table 2: Rainfall intensities

Max of Mean	1% AEP
Duration	**Intensity (mm/hr)**
2hr	34.503
3hr	28.509
4.5hr	24.963
6hr	25.888
Grand Total	34.503
Critical Duration	120min
Temporal Pattern	1

Pervious area losses were applied as per ARR Data Hub guidelines for South East Queensland: an initial loss of 26 mm and a continuing loss of 1.7 mm/hr were used to represent catchment infiltration and storage for pervious surfaces. For impervious areas (roofs, pavements), no losses were applied, assuming immediate runoff.

3.2.3 Runoff

Initially the existing XP Storm model was built using the catchment parameters outlined in Table 3. The two catchments were assumed to have a 60% fraction impervious as per QUDM Table 4.5.1. Refer Appendix B for external catchment plans.

Table 3: XP Storm Existing Model Parameters

Parameter	Southern Catchment		Western Catchment	
	Pervious Data	Impervious Data	Pervious Data	Impervious Data
Area (ha)	45.68	68.52	6.27	9.406
Slope (%)	1.4	1.4	0.2	0.2
Mannings 'n'	0.013	0.035	0.013	0.035
Initial Loss (mm)	26	0	26	0
Continuing Loss (mm/hr)	1.7	0	1.7	0
Laurenson 'n'	-0.285	-0.285	-0.285	-0.285

To estimate overland runoff, the difference between the total catchment runoff and the capacity of the downstream pipe network was calculated. While the maximum capacity of the existing drainage infrastructure was considered, it was conservatively assumed that only 50% of the generated runoff would be captured by the pits and pipes, with the remaining volume contributing to overland flow. A blockage factor of 20% was also applied to account for potential inlet obstruction during storm events.

Table 4: Pipe Capacities

Catchment	Downstream Pipe Size	Pipe Capacity (m^3/s)
Western	900mm at 1% grade	1.81
Southern	3x1650mm at 0.3% grade	14.94

The graphs below show the runoff and overland flow in relation to time for a 1%,10%,2% and 20% AEP 2hour max of mean storm.

Figure 4: Southern Catchment runoff & Overland flow for a 1% AEP Storm Event

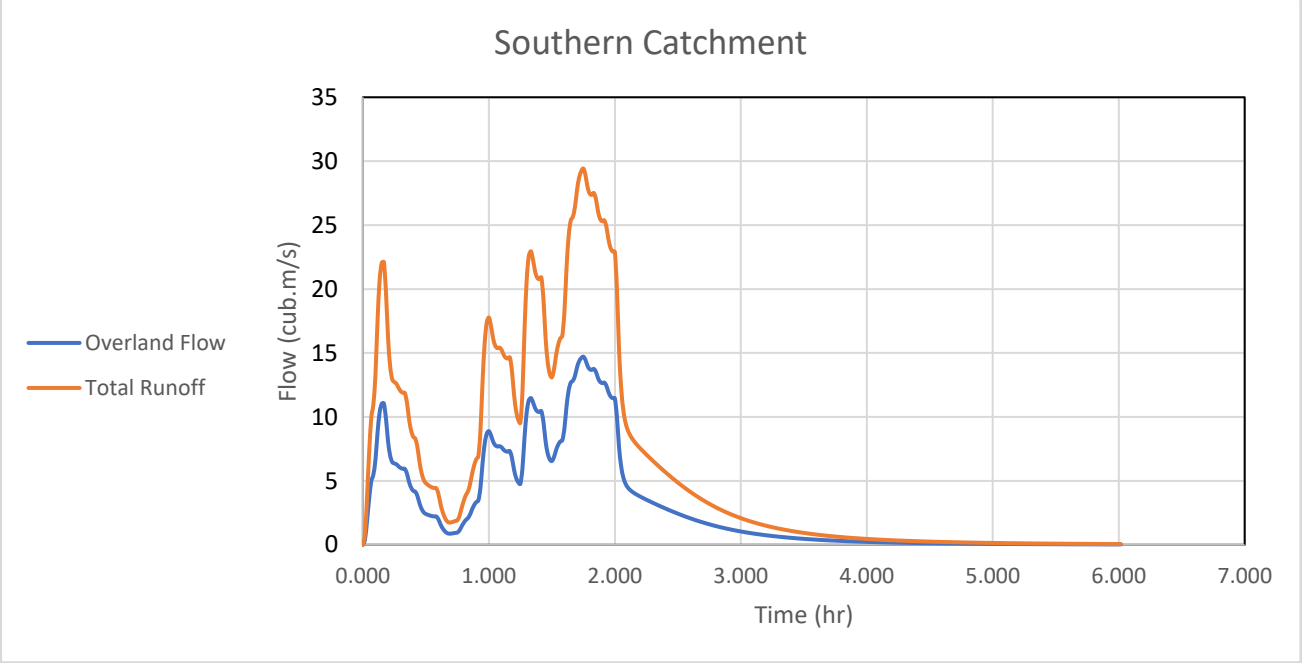


Figure 5: Western Catchment runoff & Overland flow a 1% AEP Storm Event

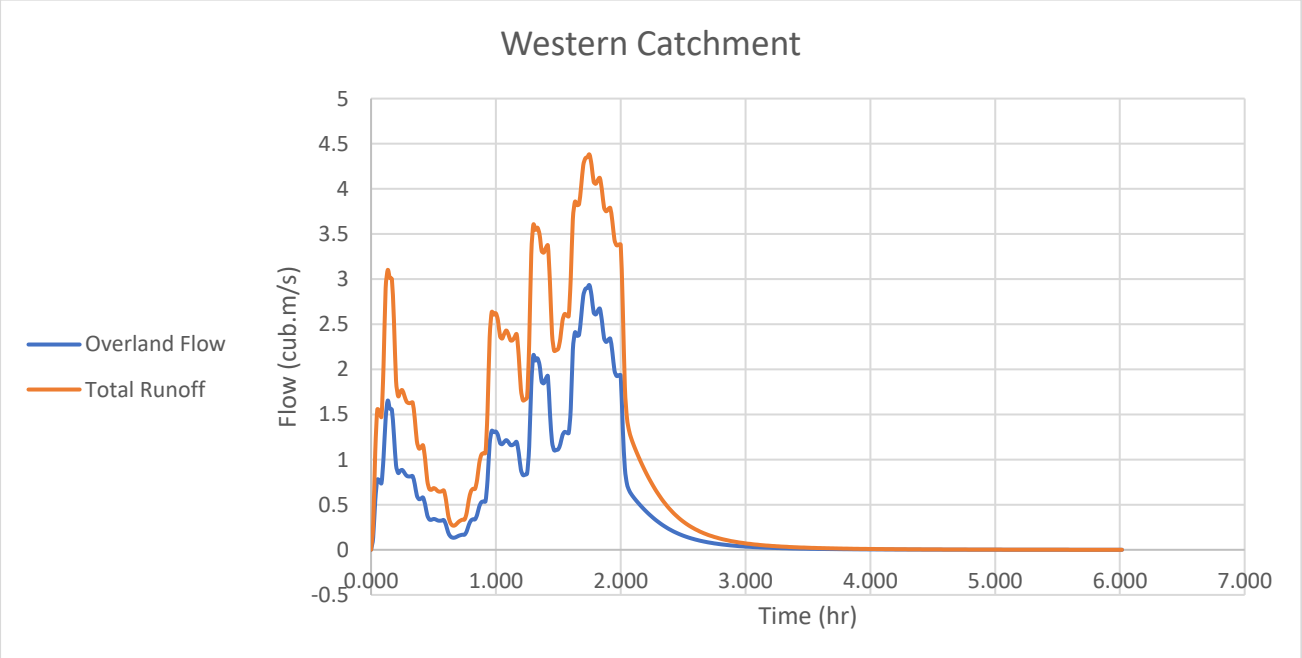


Figure 6: Southern Catchment runoff & Overland flow for a 2% AEP Storm Event

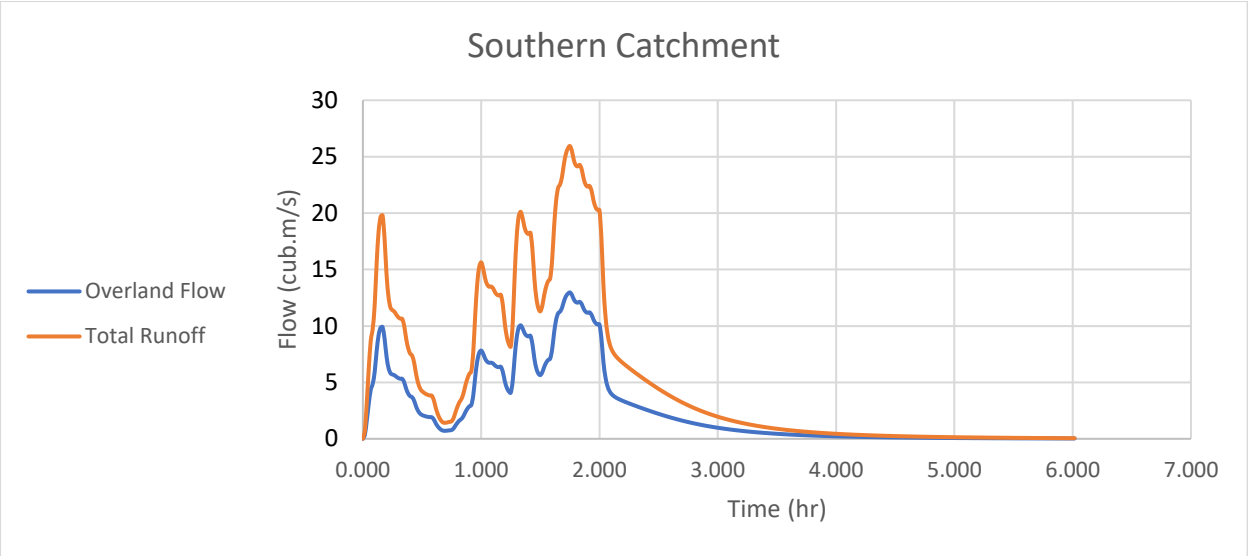


Figure 7: Western Catchment runoff & Overland flow for a 2% AEP Storm Event

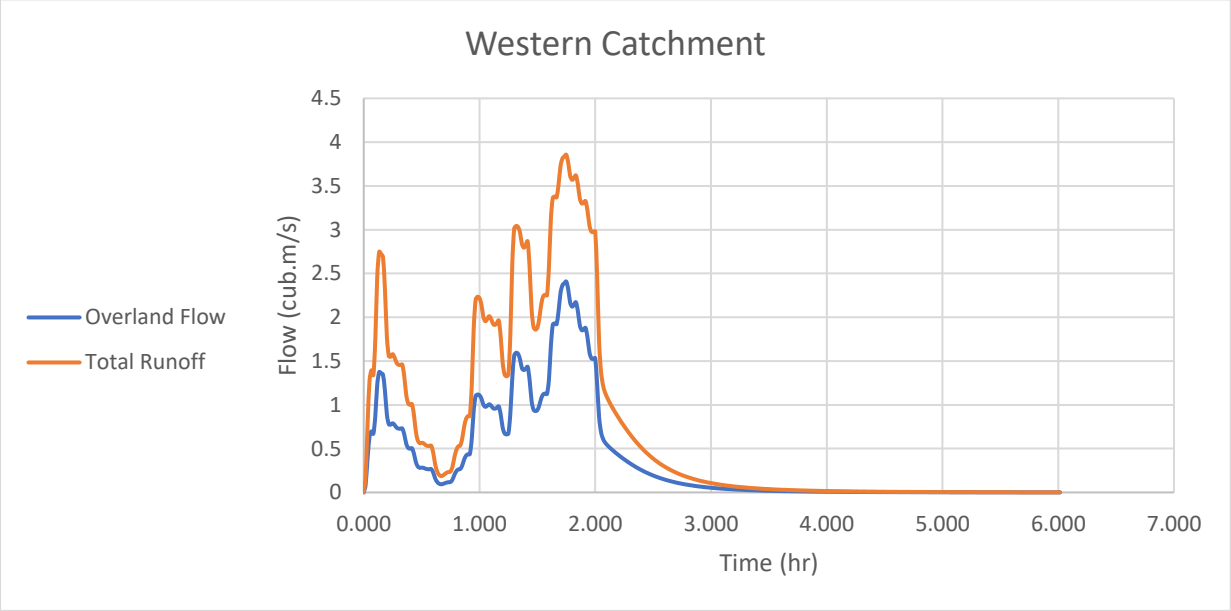


Figure 8: Southern Catchment runoff & Overland flow for a 10% AEP Storm Event

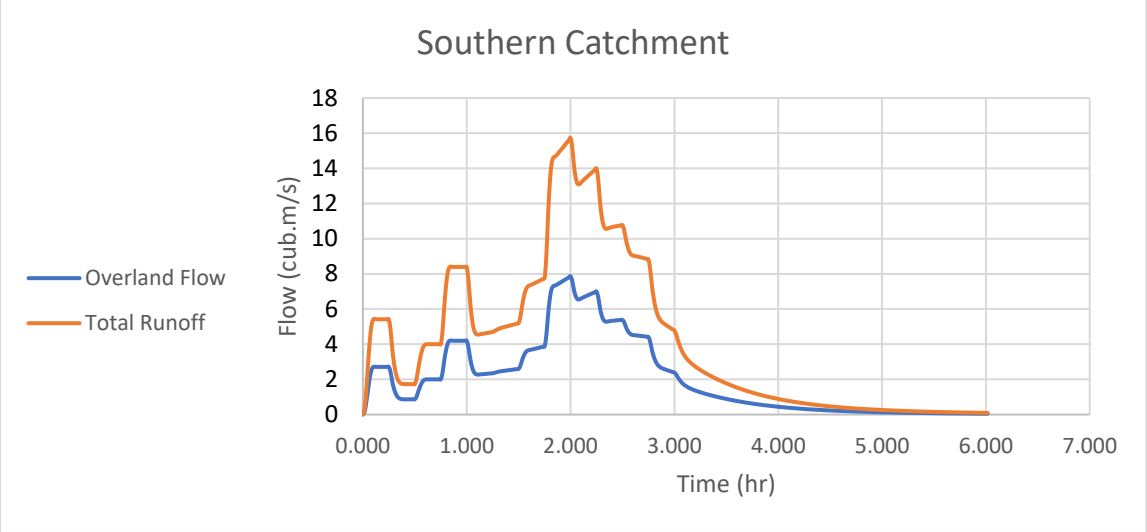


Figure 9: Western Catchment runoff & Overland flow for a 10% AEP Storm Event

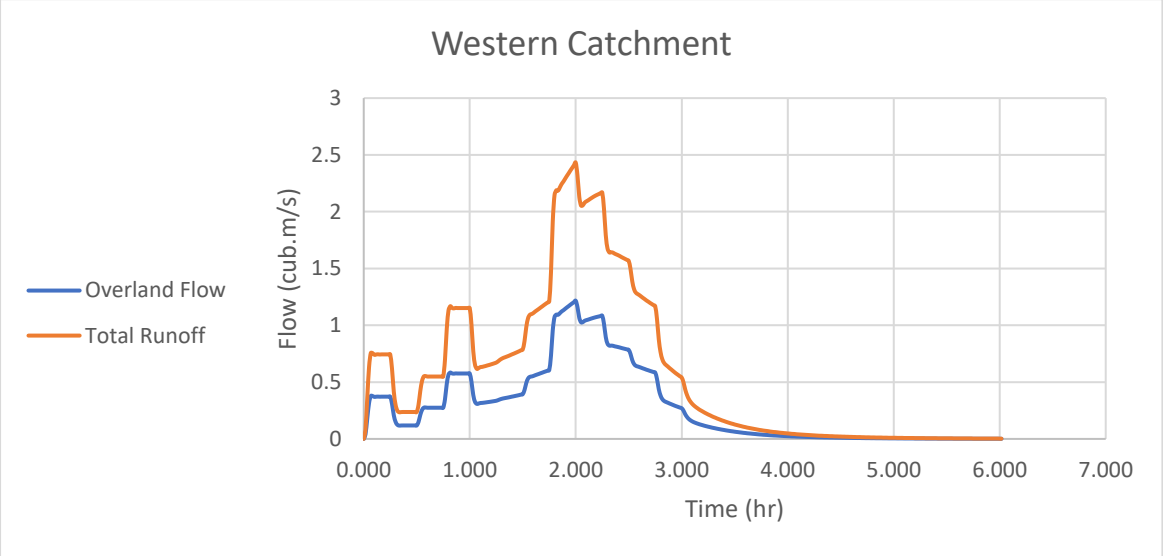


Figure 10: Southern Catchment runoff & Overland flow for a 20% AEP Storm Event

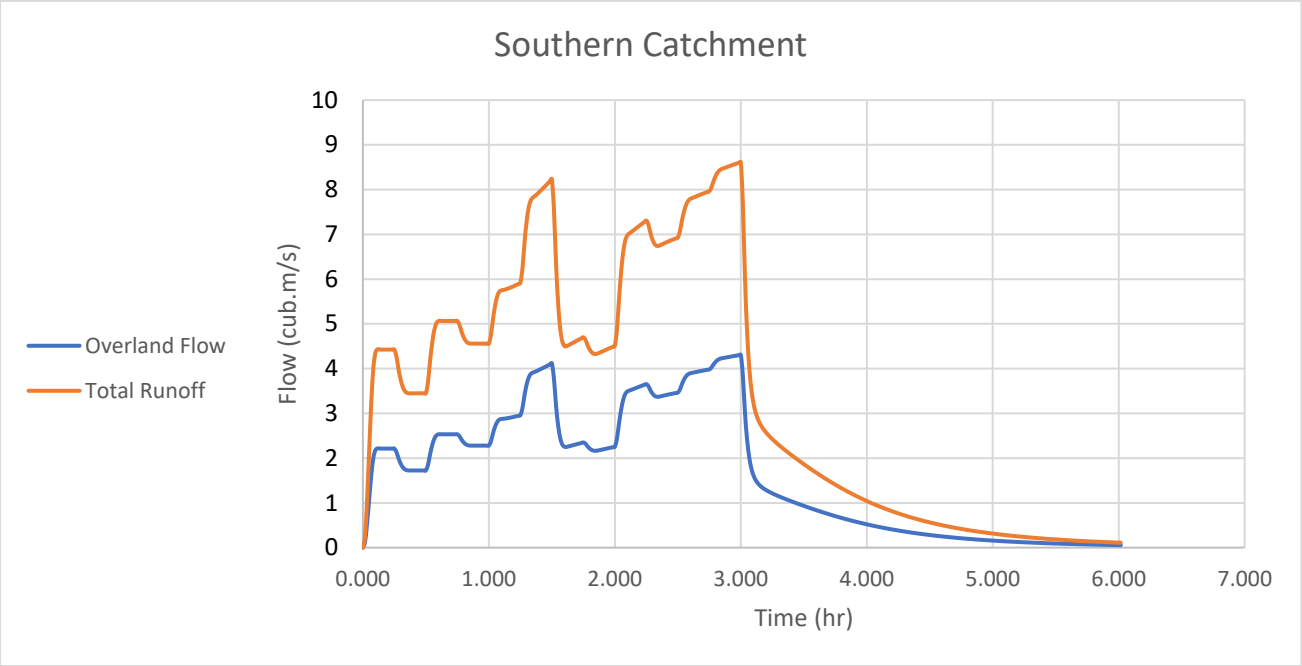
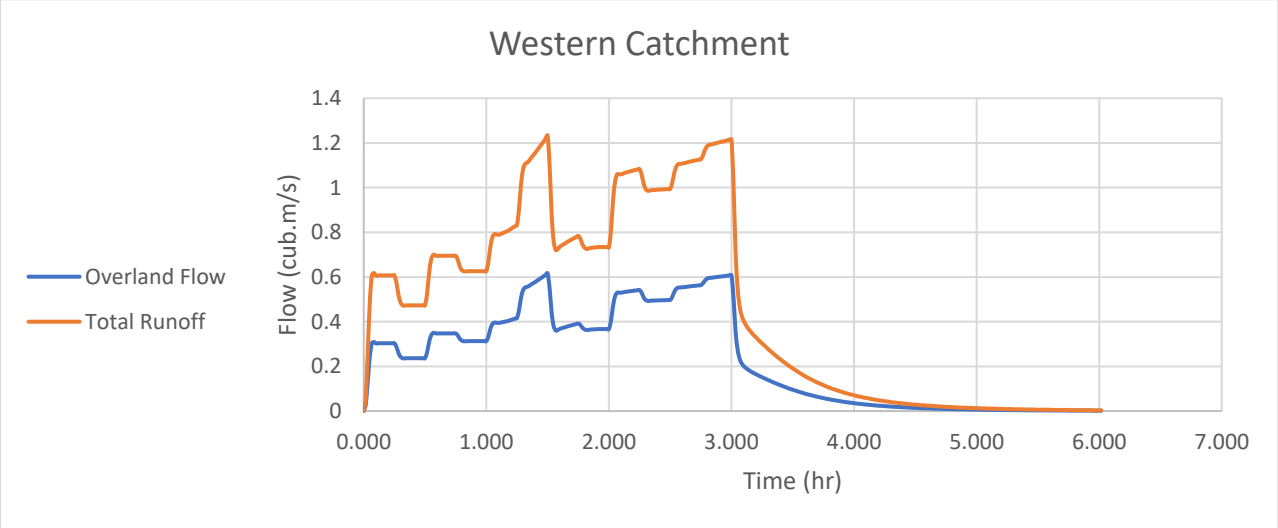


Figure 11: Western Catchment runoff & Overland flow a 20% AEP Storm Event



Runoff from the upstream catchment was modelled using XP-Storm hydrologic routing approach in the 2D model for cross-verification. In XP-Storm, the catchment was represented as sub-catchments with time-area routing to generate inflow hydrographs entering the site from the west and south as per the council flood. The hydrographs for the overland flows were then input into the XPStorm node as a lateral inflow.

Kedron Flood Study 2024 was used to verify the flows used. The peak flows in the Kedron Flood Study Table 6.5 matches the total runoff represented in the graphs this validates the runoff model. Refer table below for Design flow used in this report vs Design flows in the Kedron report - Kedron Brook Tributary B.

Table 5: Flow Validation

Storm Event (AEP)	AR&R 2019 RAINFALL (Adopted for Modelling (m^3/s)	Kedron Brook Flood Study 2024 (m^3/s)
1%	34	28
2%	28	24
10%	19	17
20%	10	14

3.3 HYDRAULIC MODEL – XPSTORM 2D

The core of the flood analysis is a XPSTROM two-dimensional hydraulic model. A 2D grid was established over the area of interest, with a fine grid resolution of 2 m to capture detailed flow patterns between buildings and along narrow corridors. The terrain was coded into the 2D grid from the LiDAR DTM, with obstructions modelled as inactive cells to represent existing buildings. Notably, the second building within the proposed sit as the modelling from council's overlay has ignored it for the existing condition.

To incorporate the influence of the stormwater pipe network in both existing and proposed, a linked 1D component was used. The triple 1650 mm pipe and key inlet pit within the site were modelled as 1D elements connected to the 2D domain. This allows simulation of flow entering the stormwater pipes when capacity permits and overtopping into 2D overland flow when the pipe capacity is exceeded. In the model, the 1D pipes were given invert levels and diameters as per council records; their outlet is effectively the eastern boundary of the model (Gympie Road) where water then continues in the pipe or discharges if surcharged. This integrated 1D/2D approach is in line with best practice for urban flood modelling, capturing both underground and above-ground flow routes.

Land use and surface cover were mapped to assign Manning's roughness coefficients (n values) across the domain. GIS & Aerial imagery most of the area in the existing scenario is hardstand therefore a Mannings roughness of 0.013 was used. In the proposed model a Mannings roughness of 0.03 was used for the proposed grassed channel on adjacent the northern boundary and the remaining area was assumed to be hardstand and a Mannings roughness of 0.013 was used.

Overland flow for the 1%, 2%, 10%, and 20% AEP storm events has been modelled for the proposed mitigated scenarios, with the results provided in Appendix D.

4. FLOOD MODELING RESULTS AND ANALYSIS

4.1 EXISTING SCENARIO

Simulation of the Existing scenario 1% AEP event indicates that the flood waters largely confined to the in the internal carpark and driveway. The overland flow path enters at the western & southern boundary and flows east northeasterly across the site toward the Gympie Road outlet. Depths and extents are summarized as follows:

4.1.1 Flood Depths

The figure below illustrated existing 1% AEP flood depth map for the site. In the existing scenario, overland flow enters the site from the south (Glentanna Street) and west, converging toward the eastern boundary at Gympie Road. Floodwaters are largely confined to an internal corridor through the central carpark/driveway. The water depth north of the existing building remains shallow (light blue areas <0.3 m), whereas on the southern side of the building the flow accumulates to greater depths before spilling out to Gympie Road. In fact, at the southern entry the model indicates ponding on the order of ~1.5–2.0 m deep (shown in orange/red zones), which was used as the critical flood level for existing conditions.

Figure 12: Existing 1% AEP Depths

4.1.2 Flood Extents

The lateral flood extent on site is relatively limited – at peak flow the inundation spreads to roughly 15–20 m width in the middle of the site. Upon exiting to Gympie Road, the combined flow from the south and west expands to about a 130 m wide sheet before entering the roadway drainage system. There is minimal off-site impact in the existing case; aside from a minor spill into a corner of the neighbouring carpark to the northeast, floodwaters are contained within the site and the designated overland flow path.

4.1.3 Flow Velocity

Flow velocities under existing 1% AEP conditions are mostly low to moderate. As water enters from the west and spreads out, velocities are around 0.5–0.7 m/s near the western boundary. Through the central part of the site (the main flow corridor), velocities remain on the order of 0.5 m/s or less in wide, shallow flow sections. The flow accelerates modestly as it approaches the outlet: in the middle of the site where ground slopes toward Gympie Road, velocities can reach roughly 3.0 m/s (the velocity map shows a localized dark red jet at the eastern outlet) before dropping off where water either enters the curb inlet pit or spreads out at the frontage. Overall, the existing scenario's velocity "hotspots" are limited – the highest velocities occur at the Gympie Road outlet, while most of the inundated area on site experiences slow-moving water.

Figure 13: Existing 1% AEP Velocity

4.2 100% BLOCKED SCENARIO DEVELOPED SCENARIO

The 100% on-site blockage scenario represents a conservative worst-case condition in which all inlet pits and pipe infrastructure within the development site are assumed to be fully blocked and unavailable for drainage. The upstream external catchment is retained at 50% blockage, consistent with standard QUDM practice. This scenario establishes an upper-bound assessment of flood behaviour and provides the basis for the hydraulic impact comparison with existing conditions.

4.2.1 Flood Depths

In the 100% blocked developed case, the presence of new buildings and altered ground levels changes how water flows through the site. Some flow is obstructed by the building footprints, leading to slightly deeper pooling upstream of the overland flow path. Figure 8 illustrates the 1% AEP flood depths with the development in a 100% blocked scenario:

Figure 14: 100% Blocked 1% AEP Depth

Comparing Figure 14 to the existing depths Figure 12, a slight increase in the flood extent can be observed in the upstream end of the southern catchment. The overall pattern of the main flow path remains through the centre of the site, but now water is partially redirected around building structures**.** This outward movement occurs because the reduced internal storage forces shallow sheet flow to skirt the building edges before reconverging at the downstream hydraulic control on the main road. The increase in external inundation is minor, limited to shallow depths generally below 0.3–0.6 m, and is contained entirely within existing hardstand and carpark areas. No habitable structures are affected, and there is no material increase in hazard or redirection of flow towards sensitive land uses. Similarly, the slight expansion of inundation to the south occurs only across commercial carparking areas where flood immunity requirements are lower. Overall, while the development marginally shifts the flow paths under a conservative blockage scenario, the impacts are low-depth, low-velocity and operationally acceptable with no adverse effects on surrounding properties.

4.2.2 Flood Velocities

Figure 15 presents the 1% AEP developed-case velocity map under the 100% blocked pit scenario**.** The results show that flow velocities across the majority of the site remain low, generally below 1.0 m/s, which is expected given the shallow, broad overland flow path and the relatively flat grades across the development footprint. The defined internal flow corridor effectively disperses the incoming overland flow, reducing concentrated high-velocity channels and maintaining safe flow conditions adjacent to building edges.

At the upstream western entrance to the site, a small area of moderate velocity is visible where the external catchment inflow enters the widened drainage corridor. However, once within the designated flow path, velocities reduce quickly and remain within acceptable thresholds for overland flow conditions.

Overall, the velocity distribution indicates that the proposed development maintains a safe and well-controlled overland flow regime, with higher velocities limited to the established hydraulic outlet and low velocities across all developed land areas.

The velocities have also improved at the location where the overland flow path crosses the eastern property boundary and into Gympie Road.

Figure 15: 100% Blocked Developed 1% AEP Velocity

4.2.3 Impact Assessment — 100% On-Site Blockage versus Existing

The water level afflux maps (FM-037 to FM-040) show the change in water surface level between the 100% on-site blockage scenario and existing conditions across all assessed AEP events.

At the 1% AEP event (FM-037), water level increases of 0.1–0.2 m (orange) and locally greater than 0.2 m (red) are evident in the southern portion of the site and along the Glentanna Street frontage, where the building podiums concentrate inflows from the upstream southern catchment in the absence of operational drainage. A zone of water level decrease of less than or equal to −0.2 m (dark green) is present at the main outlet on the eastern boundary, where the concentration of flow through the central corridor produces a more efficient discharge than the diffuse sheet flow of existing conditions. Along the Gympie Road frontage to the north-east, water level increases of 0.1–0.2 m extend onto the adjacent private carpark property, consistent with the minor redirection of flows around the northern building footprint. These increases are confined to private property and do not extend to the Gympie Road carriageway.

At the 2% AEP event (FM-039), the pattern is comparable with slightly greater increases in the southern entry zone, reflecting the higher proportion of southern catchment inflows at this critical duration. At the 10% AEP event (FM-038), the increases in the southern zone persist but are reduced in extent, and the north-east property increase remains in the 0.1–0.2 m range. By the 20% AEP event (FM-040), the afflux across the site is predominantly within ±0.1 m and the north-east property increase reduces to the 0.0–0.1 m range, consistent with the lower inflow volumes at this lesser storm severity.

The velocity afflux maps (FM-041 to FM-044) show velocity increases of greater than 0.2 m/s (red) along the edges of building podiums where flow is locally accelerated around corners, with corresponding velocity decreases (green) in the flow shadow immediately downstream of each structure. Across the broader central corridor and at the Gympie Road frontage, velocity changes are predominantly in the ±0.1 m/s range. At the 20% AEP event (FM-044), the velocity redistribution pattern is less pronounced as flows reduce.

Refer: FM-037 to FM-040 — Blocked water level afflux (all AEPs); FM-041 to FM-044 — Blocked velocity afflux (all AEPs)

4.2.4 Mitigated Scenario (50% Blockage — Design Case)

The proposed development layout establishes a structured internal road network and clearly defined service corridors for stormwater, sewerage and water infrastructure. A key feature of the design is the provision of a drainage and overland flow reserve along the southern portion of the site, which provides sufficient space to accommodate both piped stormwater drainage infrastructure and a dedicated overland flow path. This wider allowance ensures that major overland flow from the upstream catchment can pass through the development safely and efficiently without being obstructed by building footprints.

Internal stormwater drainage is directed to multiple collection points using a series of DN1050 stormwater lines and major inlet pits (4 m × 1.2 m) with 50% blockage. These outlets ultimately discharge to the existing stormwater network on Gympie Road. The proposed network is arranged so that minor flows are captured and conveyed via the piped system, while major flows are directed along the overland flow corridor combined with the proposed network. This approach aligns with Brisbane City Council's requirement for safe overland flow conveyance under blockage conditions.

Along the northern boundary, a designated flow overland flow and drainage reserve is also maintained to intercept and pass the upstream overland flow travelling east–west across the site. This northern overland flow corridor prevents uncontrolled breakout into private properties and keeps velocities and depths contained within a controlled alignment.

Finished floor levels (FFLs) for all proposed buildings have been set above the major overland flow level, with typical FFLs ranging from 19.10 m to 19.90 m, ensuring immunity from 1% AEP overland flow and compliance with flood planning requirements as stated in section 2.4 of this report.

Overall, the proposed layout provides a coordinated servicing arrangement and a robust overland flow management system that maintains safe conveyance through the site, protects adjoining properties, and supports the hydraulic outcomes demonstrated in the flood modelling.

Refer appendix B for engineering drawings.

4.2.5 Flood Depths

The 1% AEP flood depth map with mitigation shows that the inundation extent and depth are significantly reduced compared to the 100% blocked scenario case. Most of the site now sees water depths below 0.5 m (blue zones), and only a few isolated pockets reach the 0.5–1.5 m range (green to yellow tones). Essentially, the deep pooling that was observed between buildings in the unmitigated scenario has been eliminated or greatly shrunken – there are no large red patches indicating >1.5 m depth on site. The improved inlet capacity within the internal roads and the drainage corridor is capturing a bulk of the incoming flow, preventing it from building up: as a result, even the previously high pond at the southern boundary is lowered well below the prior ~2 m level. The underground drainage provides safer conditions compared to the existing conditions.

Figure 16: 50% Blocked Developed 1% AEP Depths

4.2.6 Flood Velocities

Flow velocities under the mitigated scenario remain generally low across most of the site, with improved conveyance reducing excessive flow constriction and ponding. The velocity map shows that the majority of inundated areas experience velocities below 1.0 m/s, especially within the internal site areas. High-velocity zones have been largely eliminated due to the redistribution of flows through the newly introduced pits and internal channels.

Notably, there are no longer high-speed hotspots between buildings, and velocities within the central portions of the site remain mild (typically < 0.5 m/s), consistent with widespread shallow flow.

Importantly, this high-velocity area is confined to the outlet structure and roadway, with no adverse velocities observed across the internal development footprint. Overall, the upgraded pit and channel network has improved flow distribution, reduced flow constriction, and ensured flood velocities remain low across the developed site, with the fast-moving water effectively channelled to the intended outlet.

Figure 17: 50% Blocked Developed 1% Velocity

4.2.7 Impact Assessment — 50% Blockage (Mitigated) versus Existing

The water level afflux maps for the mitigated scenario (FM-045 to FM-048) demonstrate the overall no-worsening outcome of the development with the proposed drainage improvements in place.

At the 1% AEP event (FM-045), water level changes across the internal site are predominantly minor decreases (blue, −0.1 to 0.0 m) in areas where the new inlet pits are most effective, with localised minor increases (orange, 0.0–0.1 m) adjacent to building podiums where flows are slightly redistributed. A residual water level increase of 0.1–0.2 m is identified on the north-east adjoining private property, arising from the concentration of flows around the northern building footprint. This increase is bounded in extent, confined to private property, and does not extend to the Gympie Road carriageway or the State-controlled road corridor.

At the 2% AEP event (FM-047), the residual increase on the north-east property is marginally more prominent, with a small area locally exceeding 0.2 m, consistent with the higher inflow volumes at this critical event. At the 10% AEP event (FM-046), the afflux on the north-east property reduces to the 0.1–0.2 m range. By the 20% AEP event (FM-048), the pattern transitions to water level decreases and negligible change across the frontage, with the residual north-east property increase reducing to the 0.0–0.1 m range. The progressive diminishment of the residual increase across reducing AEP events confirms that the drainage system operates comfortably within its design capacity at lower storm severities.

The velocity afflux maps (FM-049 to FM-052) show a broadly beneficial outcome. At the 1% AEP event (FM-049), velocity decreases of greater than 0.2 m/s (green) dominate the central flow corridor, reflecting the reduction in overland flow volume achieved by the inlet pit interception. Velocity increases of greater than 0.2 m/s (red) are confined to the edges of building podiums and the immediate outlet zone. At the Gympie Road frontage, velocity changes are predominantly in the ±0.1 m/s range across all assessed AEP events. By the 20% AEP event (FM-052), the velocity impact pattern shows predominantly decreases and negligible change across the site, with residual increases confined to the outlet zone.

Overall, the mitigated scenario produces a net improvement in flood conditions relative to existing across the site and its immediate surrounds. The residual water level and velocity increases on the north-east adjoining property at the 1% and 2% AEP events are bounded, occur on private property only, and diminish at lower storm severities — they do not represent a material worsening of hydraulic conditions within the Gympie Road State-controlled road corridor.

Refer: FM-045 to FM-048 — Mitigated water level afflux (all AEPs); FM-049 to FM-052 — Mitigated velocity afflux (all AEPs)

4.3 GYMPIE ROAD CORRIDOR — HYDRAULIC CONDITIONS

This section summarises hydraulic conditions within the Gympie Road State-controlled road corridor for the 1% AEP and 10% AEP design events, based on the modelled existing, 100% on-site blockage (Blocked), and mitigated scenarios. The full suite of corridor drawings is provided in Appendix D (FM-001 to FM-064).

The modelling demonstrates that the proposed development with mitigation in place does not materially worsen hydraulic conditions within the Gympie Road State-controlled road corridor at either the 1% or 10% AEP design events. Water levels at the frontage are reduced or unchanged under the mitigated scenario relative to existing, the flood footprint in the road reserve is reduced in lateral extent, and the outlet high-velocity and high-hazard zone is a pre-existing feature present under all scenarios. The development is assessed as achieving a no-worsening outcome at the Gympie Road corridor. Further detailed assessment incorporating the extended downstream model will be provided at DA stage.

4.3.1 1% AEP Event

Under existing conditions, overland flow from the site and upstream catchments discharges across the eastern site boundary as a broad sheet into the Gympie Road reserve, with water levels and velocities consistent with the established overland flow path. A localised high-velocity zone exists at the main outlet pit where the existing 3 × 1650 mm RCP discharges to the road reserve. This is a pre-existing feature of the outlet hydraulics.

Under the 100% on-site blockage scenario, water levels and velocities at the Gympie Road frontage are broadly comparable to existing conditions. The high-velocity outlet zone is present at the same location and magnitude as existing. The flood footprint in the road reserve is similar in extent to existing, with minor changes in the distribution of flow resulting from the proposed building footprints redirecting flows through the central corridor.

Under the mitigated scenario, the proposed inlet pits intercept the majority of overland flow from the southern catchment before it reaches the road frontage. As a result, the flood extent at the Gympie Road boundary is reduced relative to existing conditions and water levels along the frontage are marginally lower. The outlet high-velocity zone is retained, reflecting the continued operation of the existing outlet structure. Background velocities across the broader road reserve frontage are reduced. The water level afflux maps (FM-037, FM-045) confirm that water level changes within the road corridor are minor. A residual water level increase is present on the north-east adjoining private property but does not extend to the road carriageway.

Refer: FM-014, FM-002, FM-026 (Water levels — 1% AEP); FM-015, FM-003, FM-027 (Velocities — 1% AEP); FM-057, FM-053, FM-061 (V×D — 1% AEP); FM-037, FM-045 (Afflux — 1% AEP)

4.3.2 10% AEP Event

At the 10% AEP event, flood volumes and extents in the road reserve are reduced across all scenarios relative to the 1% AEP, consistent with the lower inflow volumes from the upstream catchment. Under existing conditions, the inundated area in the road reserve is narrower and water levels are lower than the 1% AEP outcome. The high-velocity outlet zone is present but reduced in intensity.

Under the blocked scenario, conditions at the corridor at the 10% AEP are essentially unchanged from existing, with water levels and velocities comparable across the frontage. Under the mitigated scenario, the corridor impact is further reduced relative to the blocked and existing conditions — at this lesser storm severity the drainage system operates well within its design capacity, and the reduction in flood extent and water levels at the road frontage is clearly evident in the modelling results.

Hazard (V×D) across the broad flow zone in the road reserve is within the low hazard band for all three scenarios at the 10% AEP event. The outlet hazard zone is reduced in both magnitude and spatial extent compared to the 1% AEP, and no high hazard areas are present in the road reserve under any scenario at this event.

Refer: FM-017, FM-005, FM-029 (Water levels — 10% AEP); FM-018, FM-006, FM-030 (Velocities — 10% AEP); FM-058, FM-054, FM-062 (V×D — 10% AEP); FM-038, FM-046 (Afflux — 10% AEP)

4.4 RISK ASSESSMENT — DEPTH × VELOCITY (V×D)

The product of flood depth and velocity (V×D, expressed in m^2/s) is the adopted measure of flood hazard to people and vehicles under QUDM (2021). This assessment evaluates V×D across the site and its immediate surrounds for the existing, 100% on-site blockage, and mitigated scenarios at the 1%, 2%, 10%, and 20% AEP design events. The hazard thresholds applied are consistent with QUDM Section 12 and are summarised in Table X below.

V×D (m^2/s)	Hazard classification	Risk to people	Risk to vehicles
≤ 0.4	Low	Safe	Safe
0.4 – 0.8	Moderate	Unsafe for children	Safe with caution
0.8 – 1.2	High	Unsafe for adults	Unsafe
> 1.2	Extreme	Unsafe for all	Unsafe

4.4.1 Existing Conditions

Under existing conditions, V×D values across the broad inundated area of the site are predominantly within the low hazard band (≤ 0.4 m^2/s) at all assessed AEP events (FM-057 to FM-060). This reflects the nature of overland flow at this site — relatively shallow, wide sheet flow moving at moderate velocities through the open industrial yard. The broad ≤ 0.4 m^2/s extent is consistent with conditions that are considered safe for pedestrian movement and does not present risk to vehicles in most of the inundated area.

The exception is a localised high-hazard zone (> 2.0 m^2/s) at the main outlet on the eastern boundary of the site, at the point where flow from the 3 × 1650 mm RCP discharges to the Gympie Road reserve. This zone is present at the 1% and 2% AEP events (FM-057, FM-059), reducing to the 1.6–2.0 m^2/s band at the 10% AEP event (FM-058) and the 1.2–1.6 m^2/s band at the 20% AEP event (FM-060). The spatial extent of this hotspot is confined to the outlet throat and does not extend broadly into the road reserve or onto the site itself. It is a pre-existing feature of the outlet hydraulics and is present under all scenarios.

Refer: FM-057 (Existing 1% VxD), FM-059 (Existing 2% VxD), FM-058 (Existing 10% VxD), FM-060 (Existing 20% VxD)

4.5 100% BLOCKED SCENARIO DEVELOPED SCENARIO

Under the 100% on-site blockage scenario, the V×D pattern across the site closely mirrors existing conditions at all assessed AEP events (FM-053 to FM-056). The vast majority of the inundated area remains within the low hazard band (≤ 0.4 m^2/s), consistent with the broad shallow flow regime through the central corridor. The building footprints do not materially alter the relationship between depth and velocity in the open flow areas, as the flow concentrates through the gap between structures rather than backing up to create combined deep and fast conditions.

The outlet hotspot (> 2.0 m^2/s) is present at the 1% and 2% AEP events (FM-053, FM-055), identical in location and comparable in spatial extent to existing conditions. It reduces to > 2.0 m^2/s at the 10% AEP (FM-054) and > 2.0 m^2/s at the 20% AEP (FM-056), with the spatial footprint of the high-hazard zone remaining confined to the outlet structure throughout. No areas within the internal development footprint — including the space between building podiums — exceed 0.8 m^2/s under the blocked scenario, indicating that even under worst-case drainage failure the flow regime through the site does not reach high or extreme hazard levels.

Refer: FM-053 (Blocked 1% VxD), FM-055 (Blocked 2% VxD), FM-054 (Blocked 10% VxD), FM-056 (Blocked 20% VxD)

4.5.1 Mitigated Scenario (50% Blockage — Design Case)

Under the mitigated design case, V×D conditions across the site are equivalent to or improved from existing conditions at all assessed AEP events (FM-061 to FM-064). The interception of overland flows by the proposed Glentanna Street inlet pits reduces both depth and velocity through the central corridor, resulting in a general reduction in V×D values relative to existing conditions across the internal site area. The broad inundated area remains firmly within the low hazard band (≤ 0.4 m^2/s) across all AEP events, consistent with conditions that are safe for pedestrian movement and do not present risk to vehicles.

The outlet high-hazard zone (> 2.0 m^2/s) is present at the 1% and 2% AEP events (FM-061, FM-063) in a comparable extent to existing conditions. At the 10% AEP event (FM-062), the hotspot reduces to the 1.6–2.0 m^2/s band, and at the 20% AEP event (FM-064) it further reduces to the 1.2–1.6 m^2/s band — both consistent with the existing pattern at the same AEP events. This confirms that the outlet high-hazard zone is a function of the existing outlet structure hydraulics and is not created or worsened by the development.

No part of the internal development footprint exceeds 0.8 m^2/s (high hazard threshold) under the mitigated scenario across any of the four assessed design events. The development therefore satisfies the QUDM Section 12 requirement that on-site flood conditions do not create unacceptable hazard risk to future occupants or maintenance personnel. No structural barriers or public exclusion measures are required within the site under design storm conditions.

Refer: FM-061 (Mitigated 1% VxD), FM-063 (Mitigated 2% VxD), FM-062 (Mitigated 10% VxD), FM-064 (Mitigated 20% VxD)

4.5.2 Risk Summary

Table Y below summarises the V×D outcomes for all scenarios and AEP events. The results confirm that the proposed development, with drainage mitigation in place, does not increase flood hazard risk to people or vehicles on the site or on adjacent properties relative to existing conditions. The outlet high-hazard zone is a pre-existing feature that is consistent across all scenarios and is confined to the outlet structure.

AEP	Scenario	Max V×D on-site (m^2/s)	Area > 0.4 m^2/s on-site	Outlet hotspot (m^2/s)	Drawing
1%	Existing	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-057
2%	Existing	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-059
10%	Existing	≤ 0.4 (broad area)	Negligible	1.6 – 2.0 (outlet)	FM-058
20%	Existing	≤ 0.4 (broad area)	Negligible	1.2 – 1.6 (outlet)	FM-060
1%	Blocked (100% on-site)	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-053
2%	Blocked (100% on-site)	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-055
10%	Blocked (100% on-site)	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-054
20%	Blocked (100% on-site)	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-056
1%	Mitigated (50% blockage)	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-061
2%	Mitigated (50% blockage)	≤ 0.4 (broad area)	Negligible	> 2.0 (outlet only)	FM-063
10%	Mitigated (50% blockage)	≤ 0.4 (broad area)	Negligible	1.6 – 2.0 (outlet)	FM-062
20%	Mitigated (50% blockage)	≤ 0.4 (broad area)	Negligible	1.2 – 1.6 (outlet)	FM-064

5. CONCLUSION

The proposed development and its flood mitigation strategy comply with Brisbane City Council's flood and stormwater policies. The design has been prepared in accordance with City Plan 2014's Flood Overlay Code and Stormwater Code and relevant standards. By implementing the engineered mitigation measures, the project will achieve the no-worsening outcome – there will be no adverse off-site flood impacts on upstream or downstream properties even in the defined 1% AEP event. In fact, the modelling shows a net improvement, with reduced flood levels at the site boundaries compared to existing conditions.

The internal flood hazard is also mitigated, ensuring safe building operation and egress during extreme rainfall events. All proposed floor levels and critical infrastructure will be set to meet or exceed Council's required flood immunity. For this location (categorized as a Category C overland flow area), Brisbane City Council requires a minimum 500 mm freeboard above the defined flood level for habitable floor levels. Based on the flood assessment, this corresponds to a minimum design floor level on the order of RL 19 m AHD (DFL + 0.5 m). The development will ensure all new building floor levels satisfy this requirement, providing the necessary safety margin above the 2% AEP flood. Additionally, the new drainage network provides a lawful point of discharge and capacity in line with the Queensland Urban Drainage Manual (QUDM) guidelines, addressing the major/minor storm events as required under the Stormwater Code.

In conclusion, the stormwater and flood mitigation measures for this project have been demonstrated to effectively reduce flood depths, extents, and velocities on the site and surrounding areas in the 1% AEP event. The proposed system safely conveys overland flow without causing nuisance or instability elsewhere, thereby achieving compliance with Brisbane City Council's stormwater management and flood hazard objectives. The development will be flood-resilient and is designed to meet all relevant standards and code provisions, ensuring that future residents and neighbouring properties are protected from flood risk. The outcomes of the flood assessment confirm that, with the outlined mitigation in place, the project can proceed without worsening flooding and with appropriate flood immunity, consistent with Council's overlay code requirements.

APPENDIX A

DEVELOPMENT DRAWINGS

Proposed Site Plan

Legend

01 All directions signalised intersection

02 Pedestrian green link

(Services and overland flow path corridor)

03 Bradbury Blvd (new main street)

04 New laneway

05 Residential terraces & courtyards

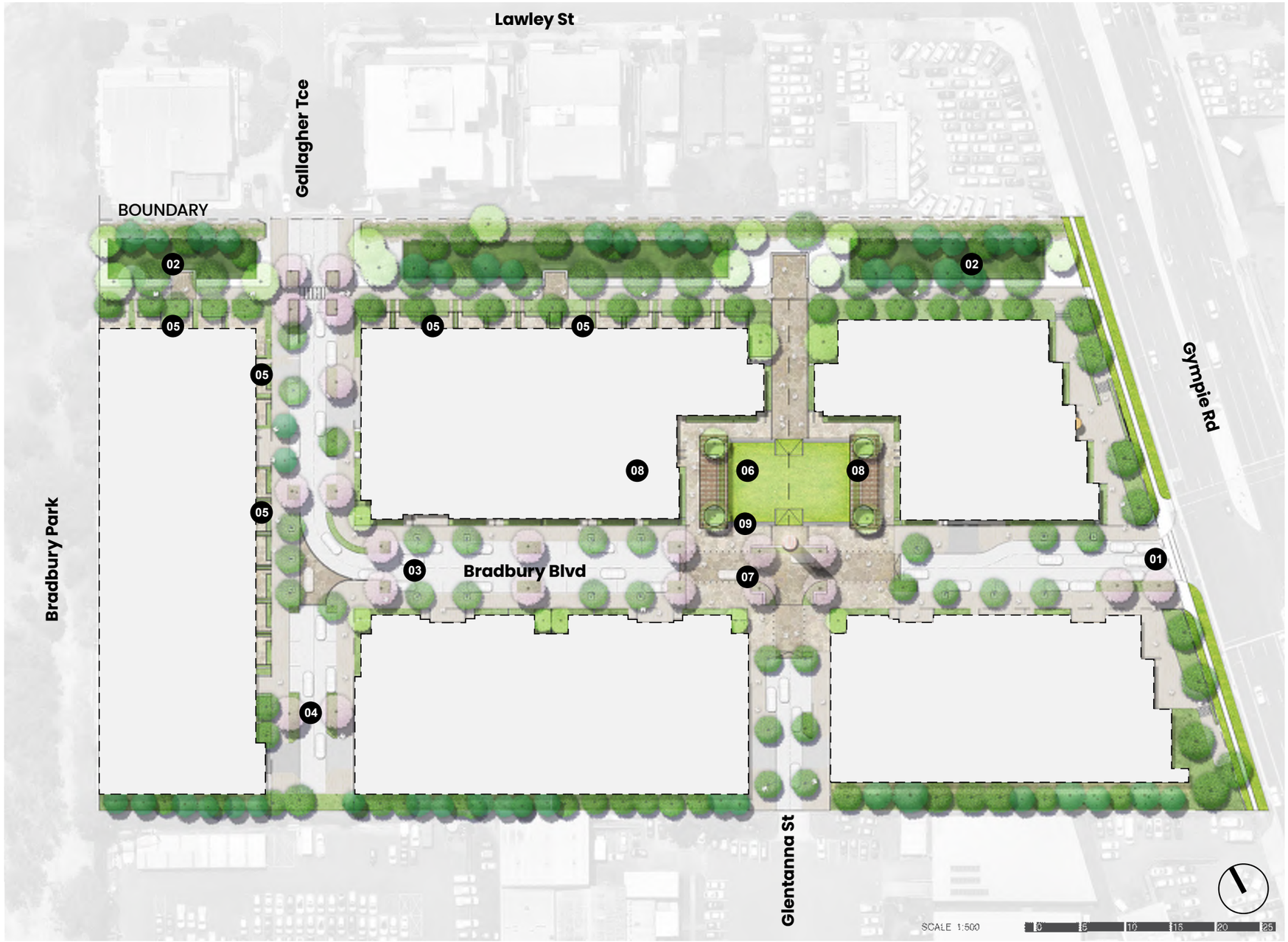
06 Bakery Square (approx 2524m² community green)

07 Shared zone (raised pedestrian crossing)

08 Outdoor dining zone

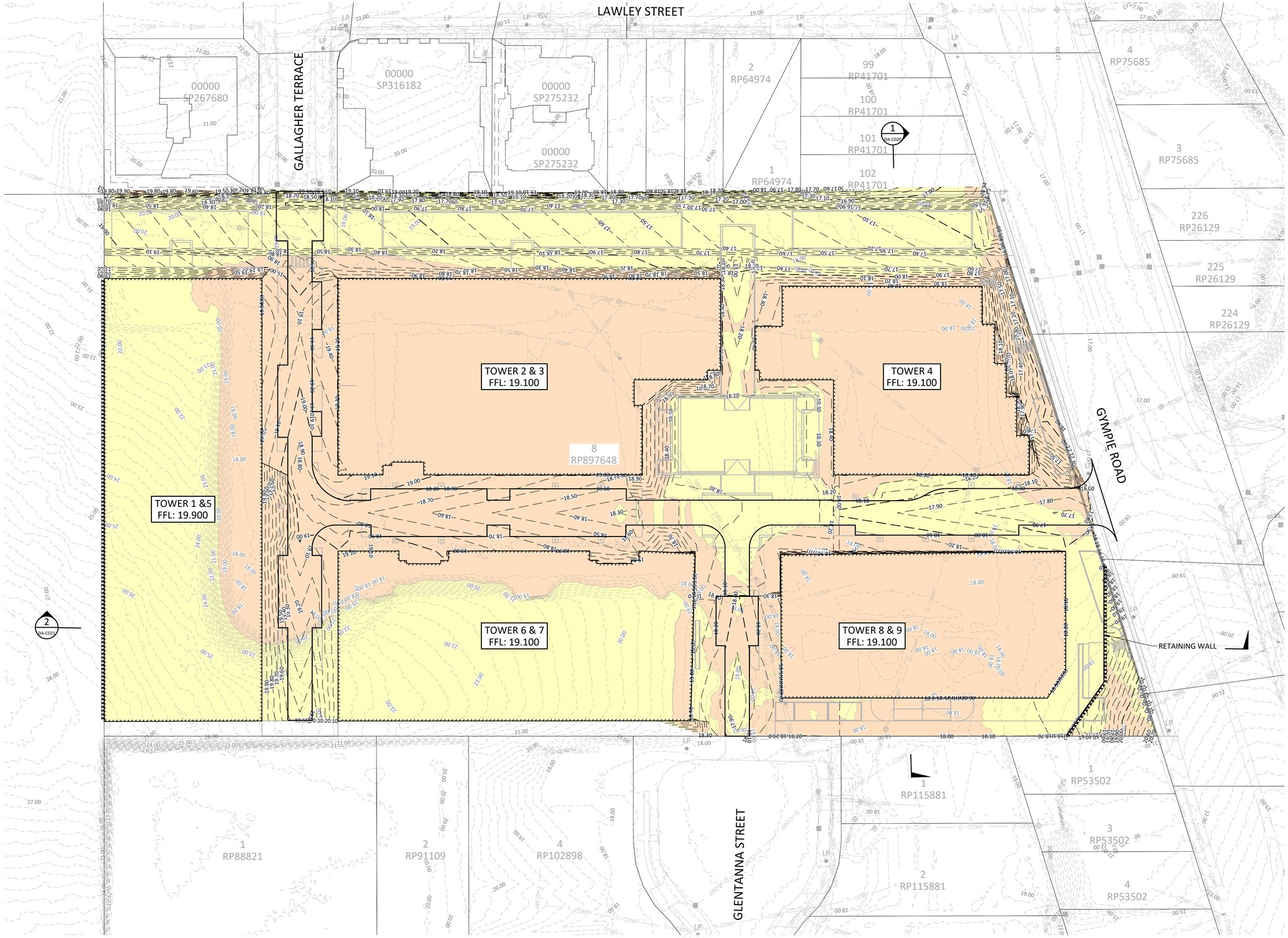
09 Possible community art

Future Developable Area



APPENDIX B

ENGINEERING DRAWINGS



PLAN
SCALE 1:500

EARTHWORKS

EXISTING	PROPOSED	
		CUT
		FILL

THIS DRAWING IS BEST VIEWED IN COLOUR AND ON AN ELECTRONIC DEVICE

PROJECT NORTH

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES — A1 UNREDUCED, A3 REDUCED

SCALES — UNREDUCED / REDUCED

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STATUS
FOR APPROVAL

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B	01.08.25	ISSUE FOR APPROVAL	HM	NJ	SG	NR
A	04.07.25	ISSUE FOR CLIENT REVIEW	HM	NJ		

ASSOCIATED CONSULTANTS

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DATE

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DATE

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CLIENT: GEORGE WESTON FOODS (GWF) LIMITED

PROJECT: TOP TASTE REDEVELOPMENT KEDRON

SUBJECT: EARTHWORKS LAYOUT

PROJECT No. 24142

DRAWING No. DA-C010

REVISION D

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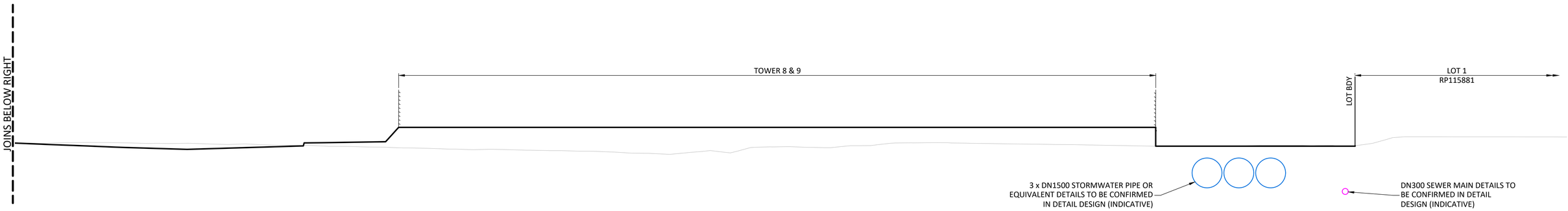

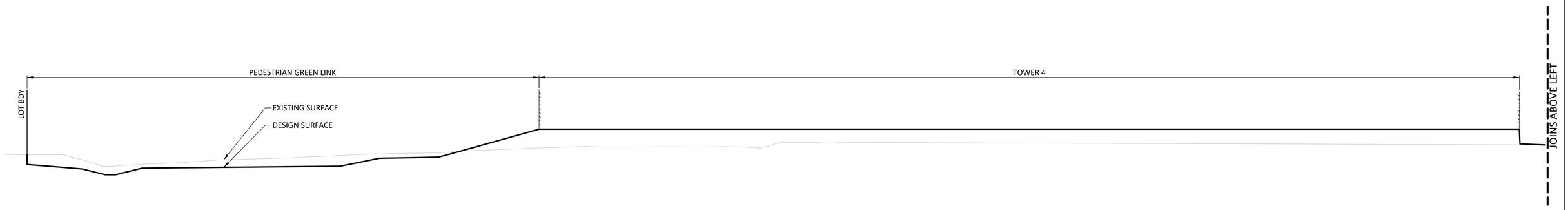

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SCALES	UNREDUCED / REDUCED

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STATUS
DEVELOPMENT APPLICATION

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CLIENT
GEORGE WESTON FOODS (GWF) LIMITED

PROJECT
TOP TASTE REDEVELOPMENT KEDRON

SUBJECT
EARTHWORKS SECTIONS SHEET 1

PROJECT No. 24142
DRAWING No. DA-C020
REVISION A

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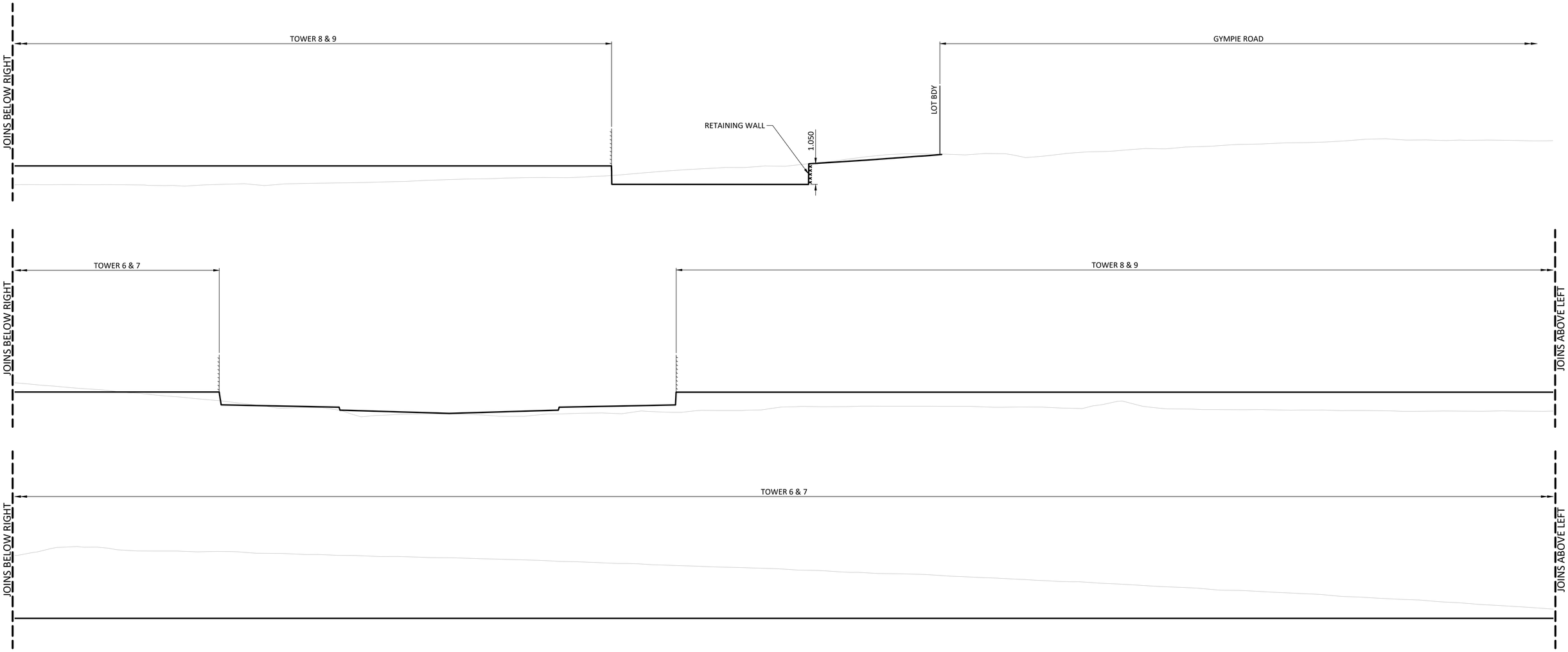

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SCALES — UNREDUCED / REDUCED

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STATUS

DEVELOPMENT APPLICATION

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ASSOCIATED CONSULTANTS

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CLIENT: GEORGE WESTON FOODS (GWF) LIMITED

PROJECT: TOP TASTE REDEVELOPMENT KEDRON

SUBJECT: EARTHWORKS SECTIONS SHEET 2

PROJECT No. 24142

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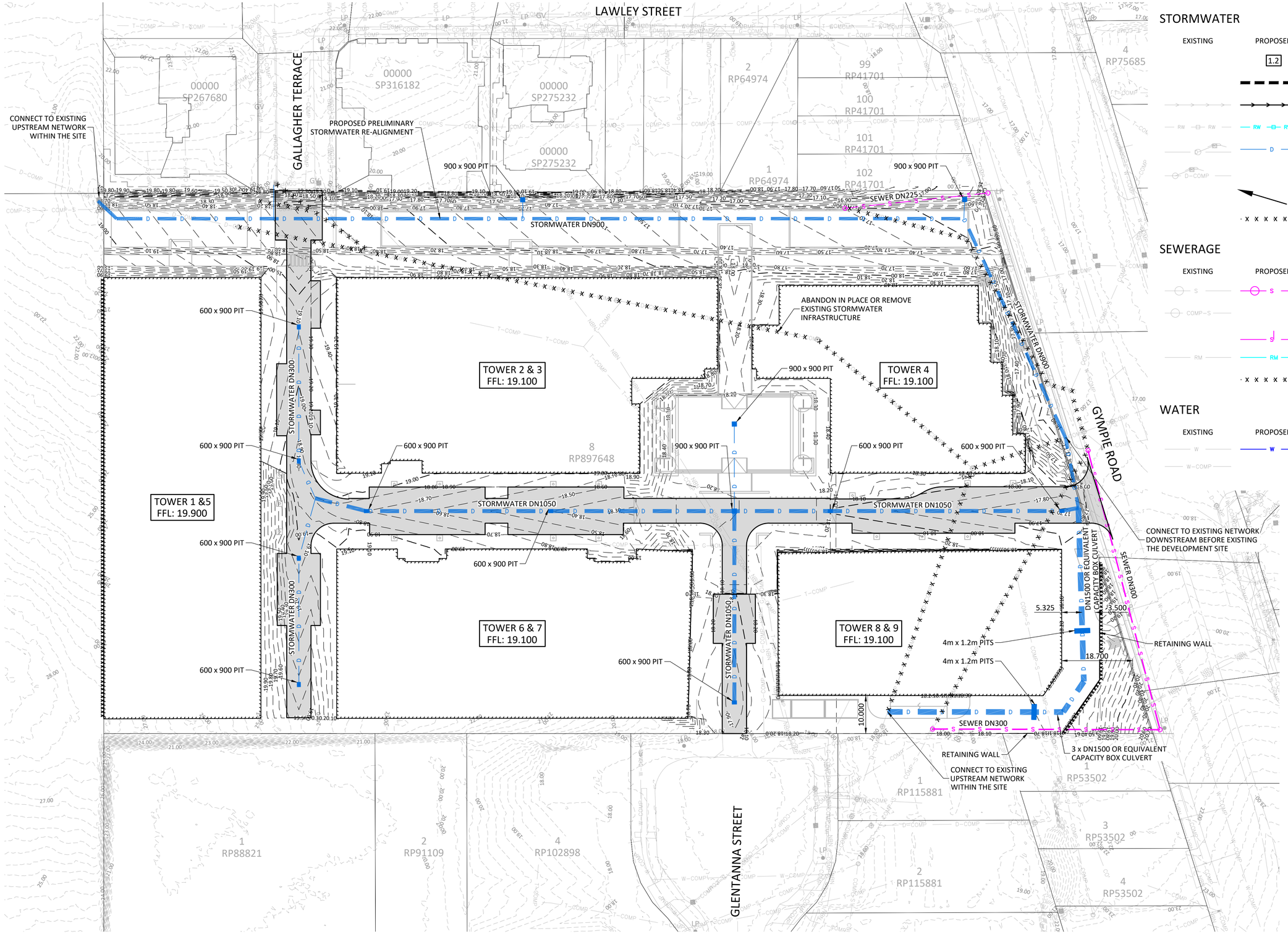

PLAN
SCALE 1:500

STORMWATER

EXISTING	PROPOSED	
	1.2	CATCHMENT NUMBER
		CATCHMENT BOUNDARY
		OPEN CHANNEL
RW RW	RW RW	ROOFWATER DRAINAGE
D	D	STORMWATER DRAINAGE
D-COMP		STORMWATER DRAINAGE (FROM RECORDS)
		DIRECTION OF FLOW
		ABANDONED STORMWATER DRAINAGE

SEWERAGE

EXISTING	PROPOSED	
S	S	SEWERAGE
COMP-S		SEWERAGE (FROM RECORDS)
	S	SEWERAGE PROPERTY CONNECTION
RM	RM	SEWERAGE RISING MAIN
		ABANDONED SEWER

WATER

EXISTING	PROPOSED	
W	W	WATER
W-COMP		WATER (FROM RECORDS)

THIS DRAWING IS BEST VIEWED IN COLOUR AND ON AN ELECTRONIC DEVICE

PROJECT NORTH

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES — A1 UNREDUCED; A3 REDUCED

SCALES — UNREDUCED / REDUCED

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FOR APPROVAL

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B	01.08.25	ISSUE FOR APPROVAL	HM	NJ	SG	NR
A	04.07.25	ISSUE FOR CLIENT REVIEW	HM	NJ		

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CLIENT: GEORGE WESTON FOODS (GWF) LIMITED

PROJECT: TOP TASTE REDEVELOPMENT KEDRON

SUBJECT: SITEWORKS AND DRAINAGE LAYOUT

PROJECT No. 24142

DRAWING No. DA-C030

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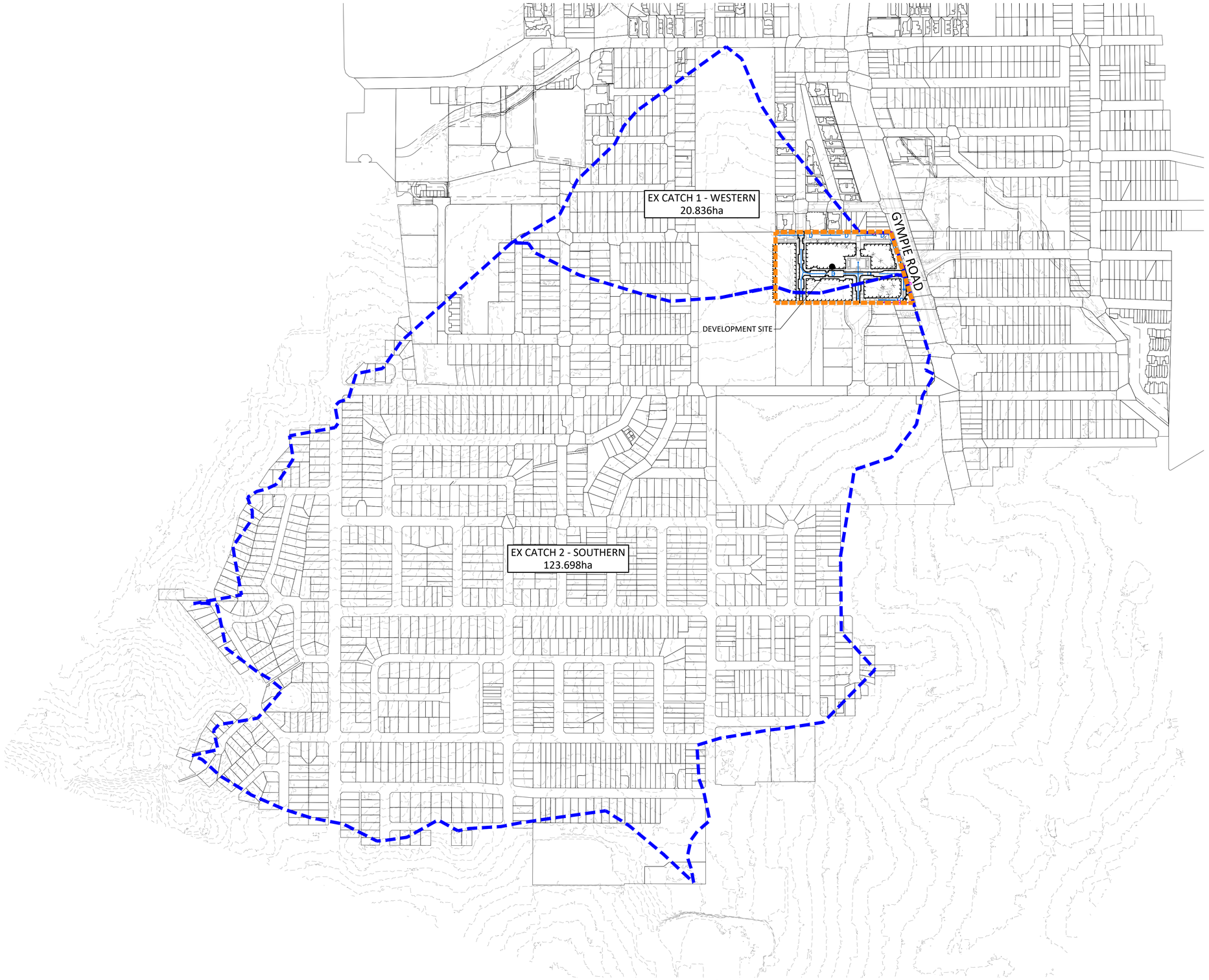

PLAN
SCALE 1:4000

STORMWATER

EXISTING	PROPOSED	
		CATCHMENT BOUNDARY
		OPEN CHANNEL
		STORMWATER DRAINAGE
D-COMP		STORMWATER DRAINAGE (FROM RECORDS)
		DIRECTION OF FLOW

THIS DRAWING IS BEST VIEWED IN COLOUR AND ON AN ELECTRONIC DEVICE

PROJECT NORTH

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES — A1 UNREDUCED, A3 REDUCED

SCALES — UNREDUCED / REDUCED

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STATUS
FOR APPROVAL

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A	04.07.25	ISSUE FOR CLIENT REVIEW	HM	NJ		

ASSOCIATED CONSULTANTS

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CLIENT: GEORGE WESTON FOODS (GWF) LIMITED

PROJECT: TOP TASTE REDEVELOPMENT KEDRON

SUBJECT: EXISTING CATCHMENT LAYOUT

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DRAWING No. DA-C035
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APPENDIX C

EXISTING SITE INFORMATION

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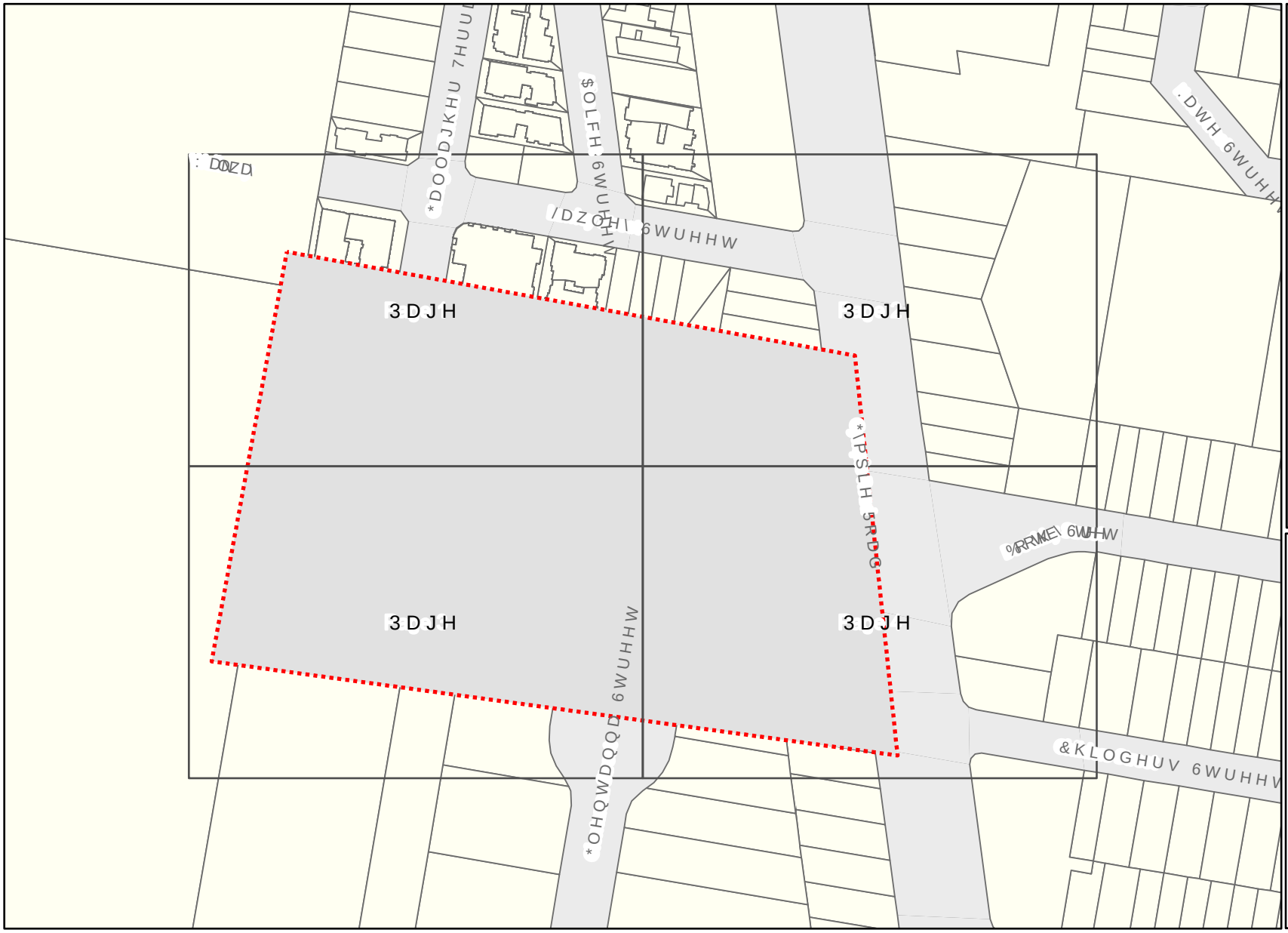

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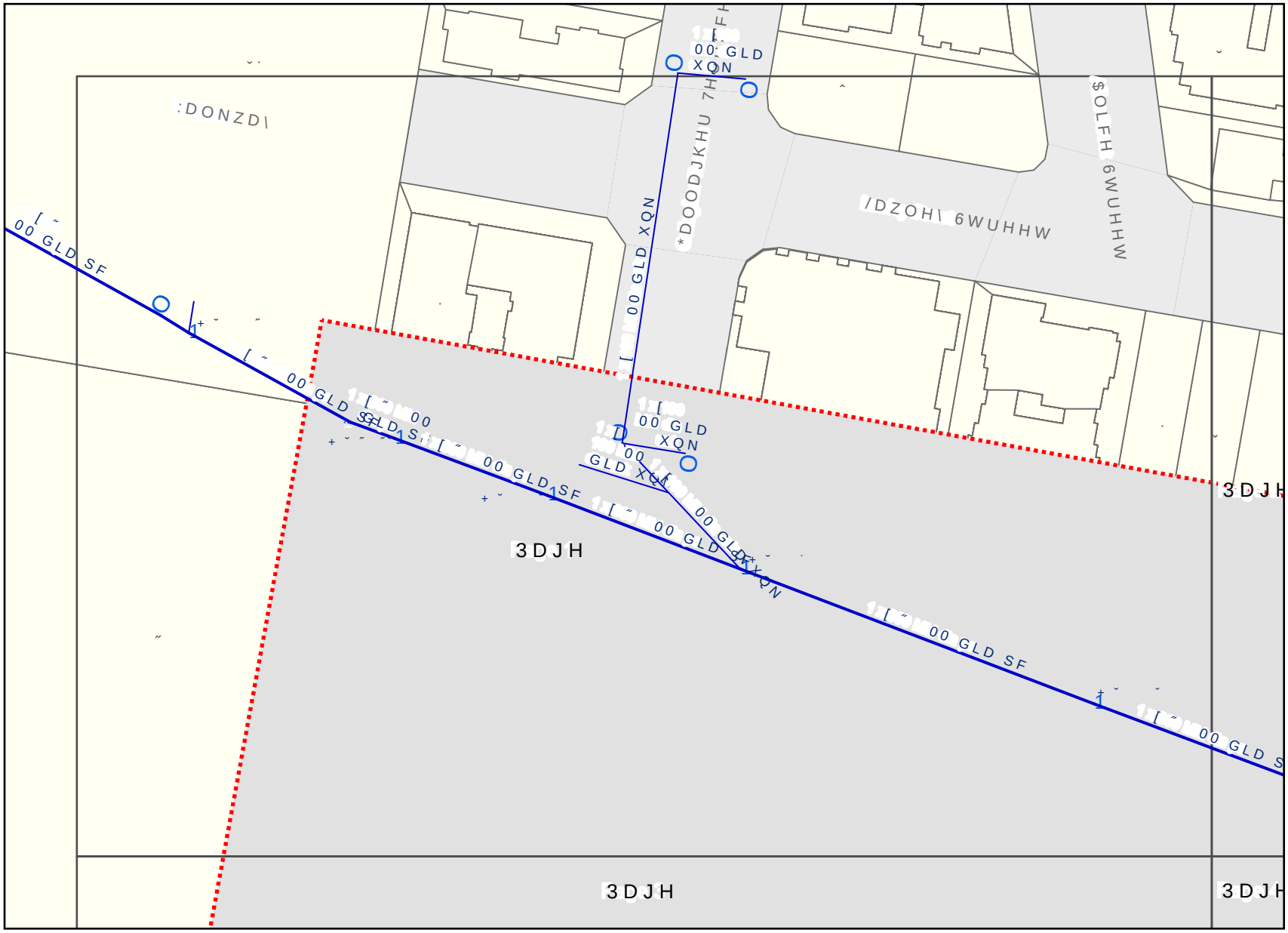

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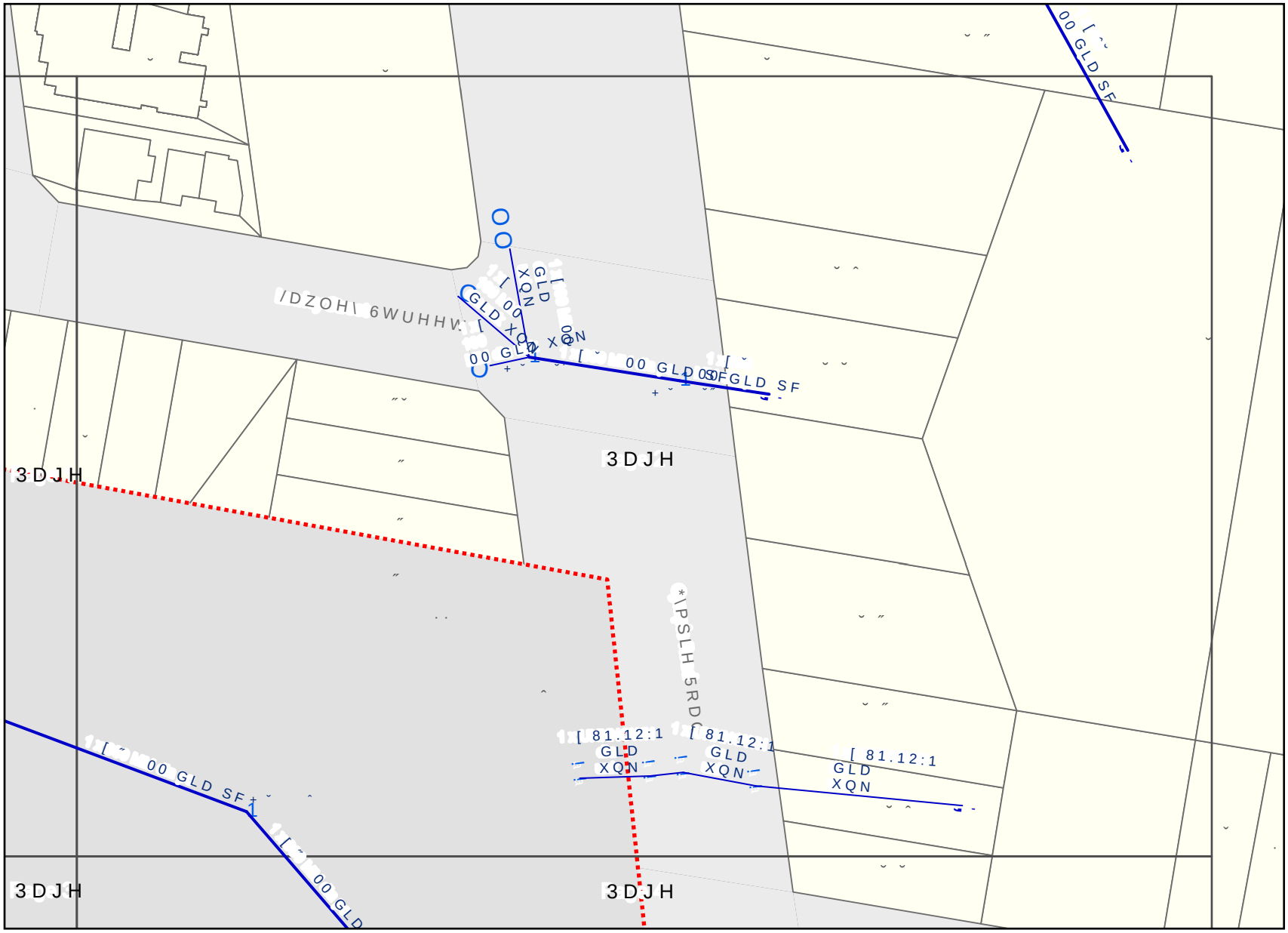

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BRISBANE CITY

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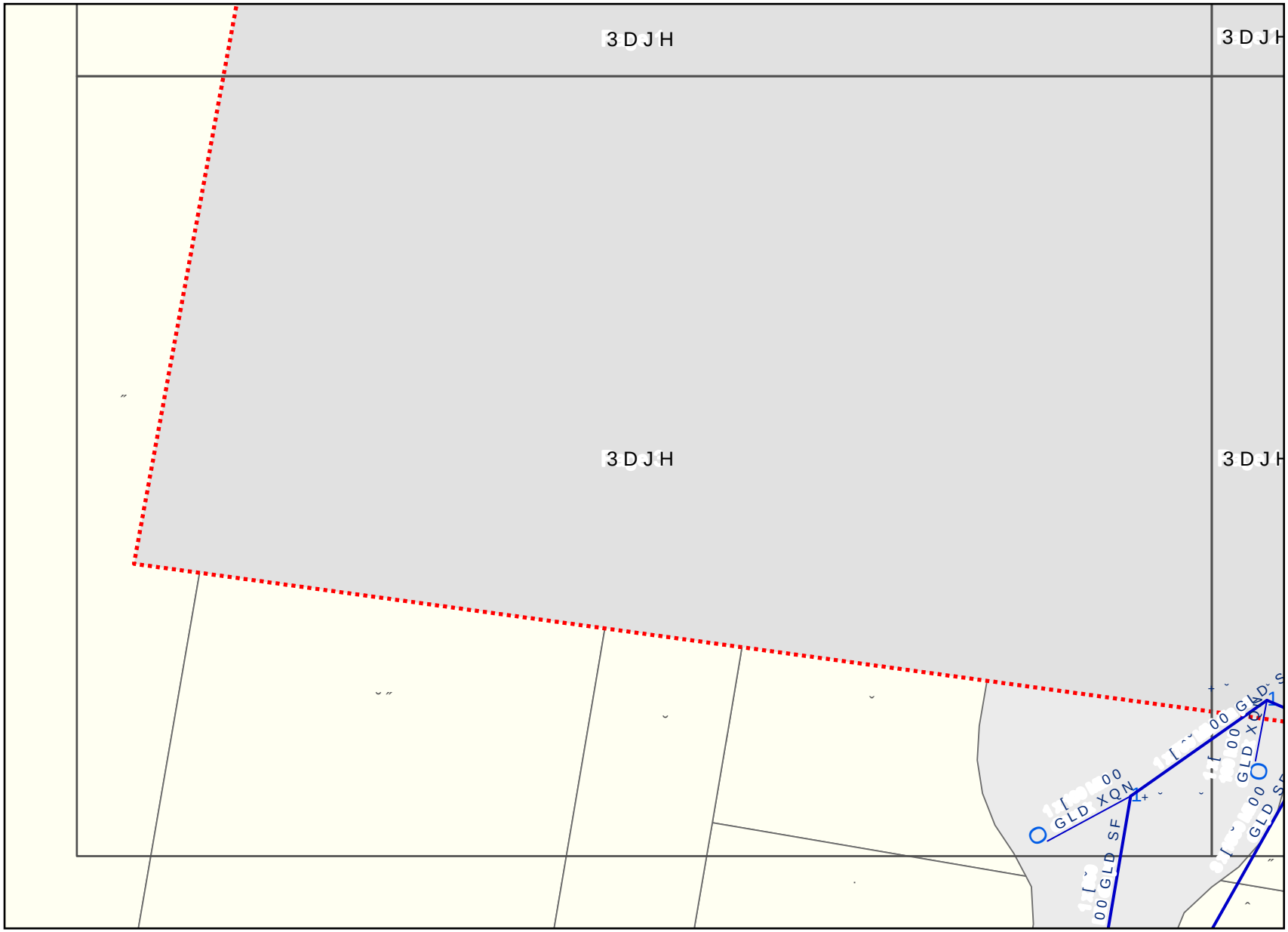

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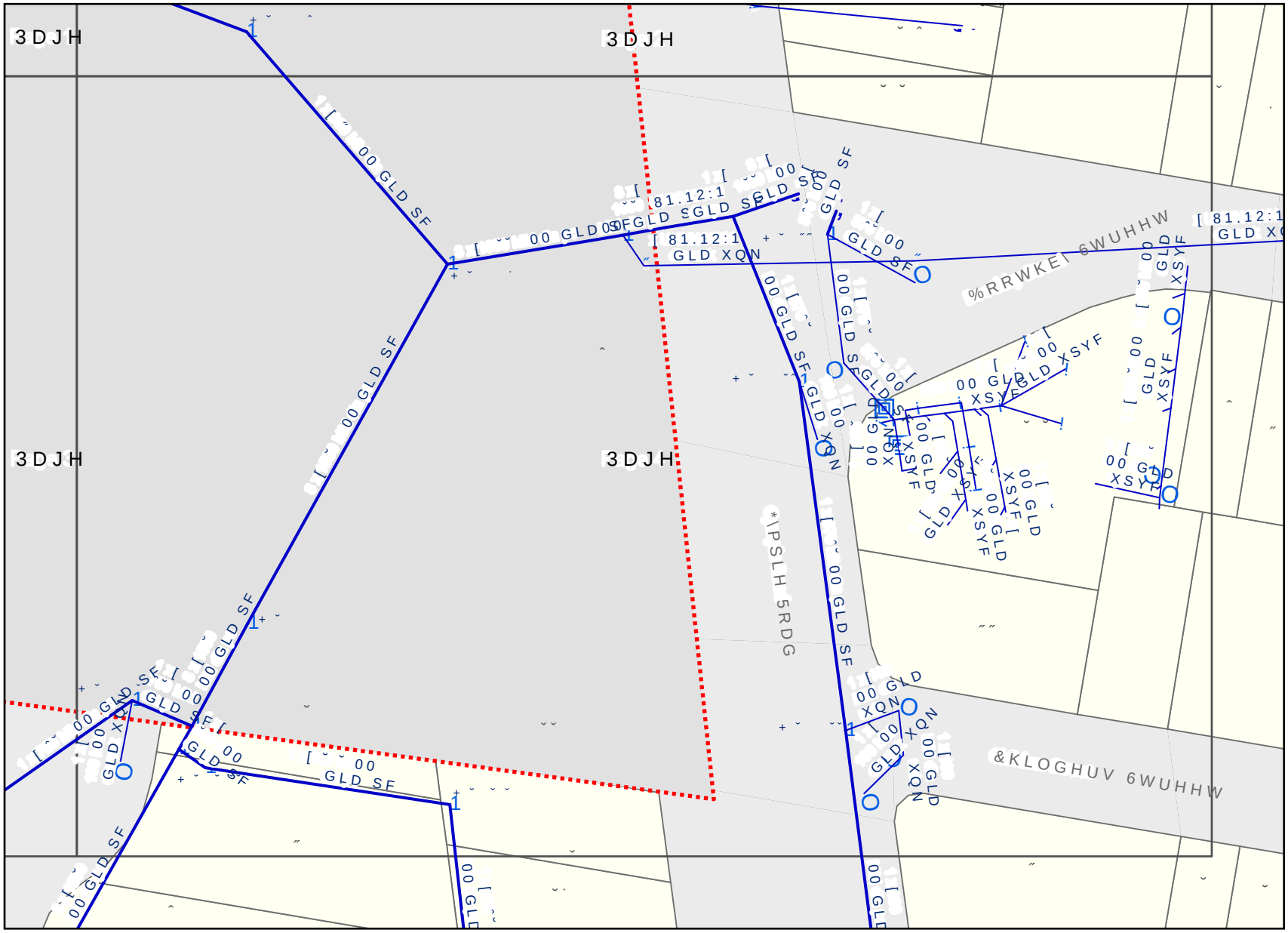

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FloodWise Property Report

30 GLENTANNA ST, KEDRON 4031
Lot 8 on RP897648

Dedicated to a better Brisbane

THE PURPOSE OF THIS REPORT IS FOR BUILDING AND DEVELOPMENT

Brisbane City Council's FloodWise Property Report **provides technical flood planning information** including estimated flood levels, habitable floor level requirements and more. **This report uses the adopted flood planning information in Brisbane City Plan 2014**, that guides how land in Brisbane is used and developed for the future. Find out more about planning and building. To understand how to be **resilient and prepare for floods**, visit Council's Be Prepared webpage. Find more information about how to read a FloodWise Property Report.

This property has no flood levels

Brisbane City Council has not assigned flood level information for this property however it may be affected by one or more flood or property development flags. Please refer to the Flood Planning and Development Information below for details. The property may have 0.2% AEP flood level which will appear on the Flood Planning Information table if applicable. For professional advice or detailed assessment of a property contact a Registered Professional Engineer of Queensland.

Visit the Be Prepared page to find more information on how to prepare your home or business for potential flooding.

Combined 1% AEP for river, creek and storm tide flood extent (if applicable) from the adopted Brisbane City Plan 2014.
Read more about Brisbane City Plan 2014.

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Technical Summary

This section of the FloodWise Property Report contains more detailed flood information for this property so **surveyors, builders, certifiers, architects, and engineers can plan and build** in accordance with Council's planning scheme.

Find more information about planning and building in Brisbane or talk to a Development Services Planning Information Officer via Council's Contact Centre on (07) 3403 8888.

Property Information Summary

The following table provides a summary of flood information for this property. More detailed flood level information is provided in the following sections of this report.

Property Summary	Level (mAHD) / Comment	Data Quality Code
Minimum ground level	16.6	C
Maximum ground level	27.8	C
Indicative existing floor level	18.6	C

Flood Planning and Development Information

This section of the FloodWise Property Report contains information about Council's planning scheme overlays. Overlays identify areas within the planning scheme that reflect distinct themes that may include constrained land and/or areas sensitive to the effects of development.

Flood overlay code

The Flood overlay code of Council's planning scheme uses the following information to provide guidelines when developing properties. The table below summarises the flood planning areas (FPAs) that apply to this property. Development guidelines for the FPAs are explained in **Council's planning scheme**.

Flood planning areas (FPA)		
River	**Creek / waterway**	**Overland flow**
		Applicable

To find more information about Council's flood planning areas (FPAs) for Brisbane River and Creek/waterway flooding to guide future building and development in flood prone areas, please review **Council's Flood Planning Provisions**.

Coastal hazard overlay code

The Coastal hazard overlay code of Council's planning scheme uses the following information to provide guidelines when conducting new developments. The table below summarises the coastal hazard categories that apply to this property. Development guidelines for the following Coastal hazard overlay sub-categories are explained in Council's **planning scheme**.

Coastal hazard overlay sub-categories
There are currently no Coastal hazard overlay sub-categories that apply to this property.

Note: Where land is identified within one for more flood planning areas on the Flood overlay or is identified within one of the Storm tide inundation area sub-categories on the Coastal hazard overlay, the assessment criteria that provides the highest level of protection from any source of flooding applies.

Property development flags
Overland flow path - Mapping indicates this property may be located within an overland flow path. Overland flow flooding usually occurs when the capacity of the underground piped drainage system is exceeded and/or when the overland flow path is blocked. It is recommended you consult a Registered Professional Engineer of Queensland (RPEQ) to determine this property's habitable floor level and flooding depth. Please refer to Council's planning scheme for further information.
Large allotment - This property is either a Large Allotment of over 1000 square metres or is located within a Large Allotment. Flood levels may vary significantly across allotments of this size. Further investigations may be warranted in determining the variation in flood levels and the minimum habitable floor level across the site. For more information or advice, please consult a Registered Professional Engineer of Queensland (RPEQ).

APPENDIX D

FLOOD ASSESSMENT DRAWINGS

BORNHORST +\WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 1% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-001	C

BORNHORST +WARD

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PROJECT

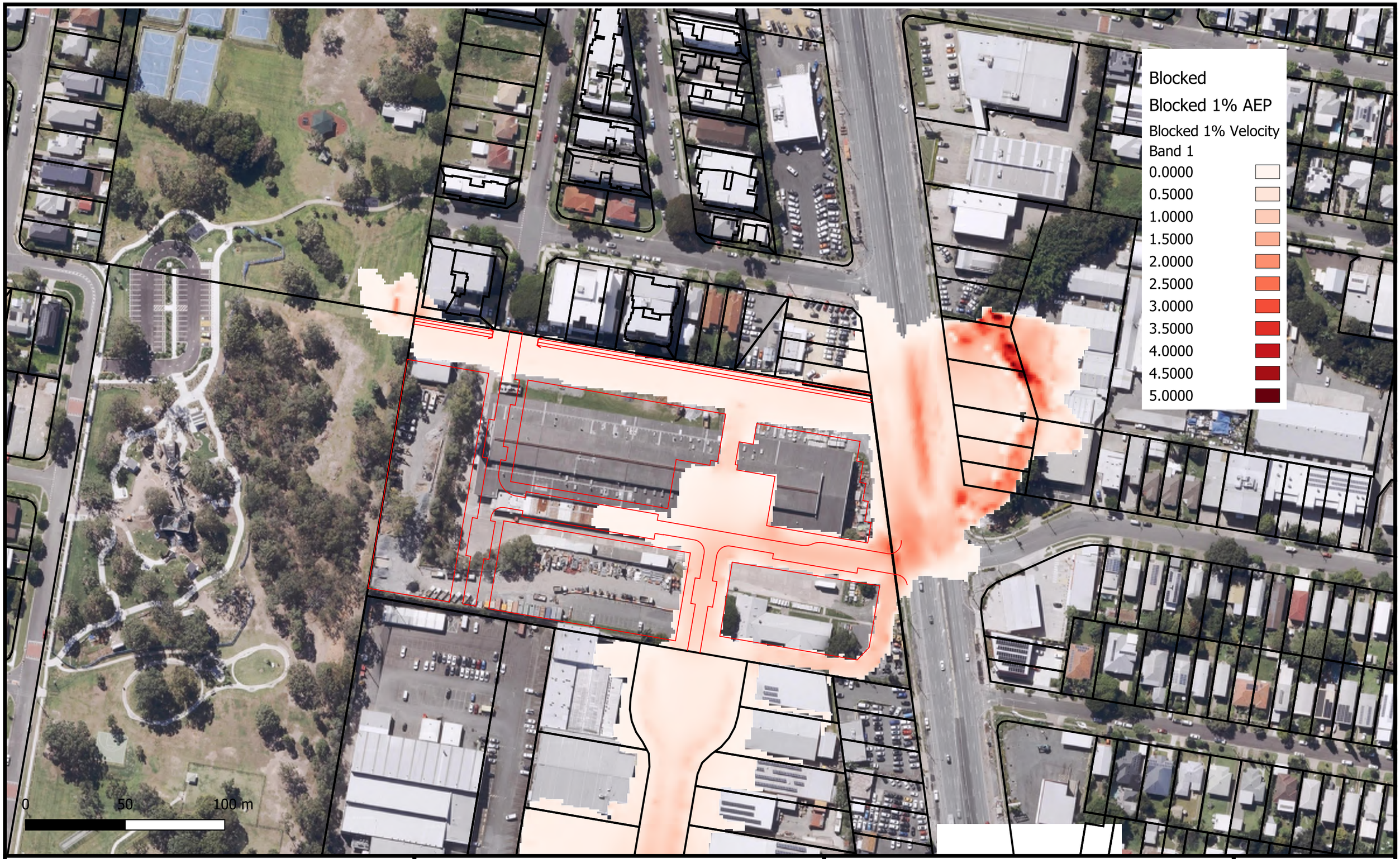
Top Taste Redevelopment Kedron

SUBJECT

Blocked 1% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-002	C



BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 1% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-003	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 10% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-004	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 10% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-005	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 10% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-006	C

BORNHORST +\WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 2% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-007	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 2% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-008	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 2% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-009	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
Blocked 20% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-010	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 20% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-011	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Blocked 20% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-012	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 1% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-013	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 1% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-014	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 1% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-015	C

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
Existing 10% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-016	C

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
Existing 10% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-017	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 10% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-018	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 2% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-019	C

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
Existing 2% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-020	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 2% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-021	C

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
Existing 20% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-022	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 20% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-023	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Existing 20% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-024	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 1% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-025	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 1% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-026	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 1% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-027	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 10% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-028	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 10% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-029	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
Mitigated 10% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-030	C

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
Mitigated 2% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-031	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 2% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-032	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 2% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-033	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 20% AEP Depths (m)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-034	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 20% AEP Elevation (RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-035	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

Mitigated 20% AEP Velocity (m/s)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-036	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Blocked elevation 1% (Blocked RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-037	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Blocked elevation 10% (Blocked RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-038	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Blocked elevation 2% (Blocked RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-039	C

BORNHORST +\WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Blocked elevation 20% (Blocked RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-040	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Blocked Velocity 1% (Blocked v - Existing v)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-041	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Blocked Velocity 10% (Blocked v - Existing v)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-042	C

IMPACT Blocked

VELOCITY BLOCKED

IMPACT Blocked Velocity 2% AEP
Band 1 (Gray)

<= -0.2
-0.2 - -0.1
-0.1 - 0.0
0.0 - 0.1
0.1 - 0.2
> 0.2

0 50 100 m

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z. IMPACT Blocked Velocity 2% (Blocked v - Existing v)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-043	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Blocked Velocity 20% (Blocked v - Existing v)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-044	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Mitigated elevation 1% (Mitigated RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-045	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Mitigated elevation
10% (Mitigated RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-046	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Mitigated elevation 2% (Mitigated RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-047	C

BORNHORST +\WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Mitigated elevation 20% (Mitigated RL - Existing RL)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-048	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z. IMPACT Mitigated Velocity 1% (Mitigated v - Existing v)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-049	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Mitigated Velocity 10% (Mitigated v - Existing v)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-050	C

BORNHORST +\WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Mitigated Velocity 2% (Mitigated v - Existing v)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-051	C

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z. IMPACT Mitigated Velocity 20% (Mitigated v - Existing v)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-052	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z0. Hazard Blocked Velocity 1% (VxD)

PROJECT No.	SCALE
24142	1:1541
DRAWING No.	REVISION
FM-053	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z0. Hazard Blocked Velocity 10% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-054	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Blocked Velocity 2% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-055	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z0. Hazard Blocked Velocity 20% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-056	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Existing Velocity 1% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-057	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Existing Velocity 10% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-058	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Existing Velocity 2% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-059	C

BORNHORST +WARD

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PROJECT

Top Taste Redevelopment Kedron

SUBJECT

z0. Hazard Existing Velocity 20% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-060	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Mitigated Velocity 1% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-061	C

BORNHORST +WARD

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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Mitigated Velocity 10% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-062	C

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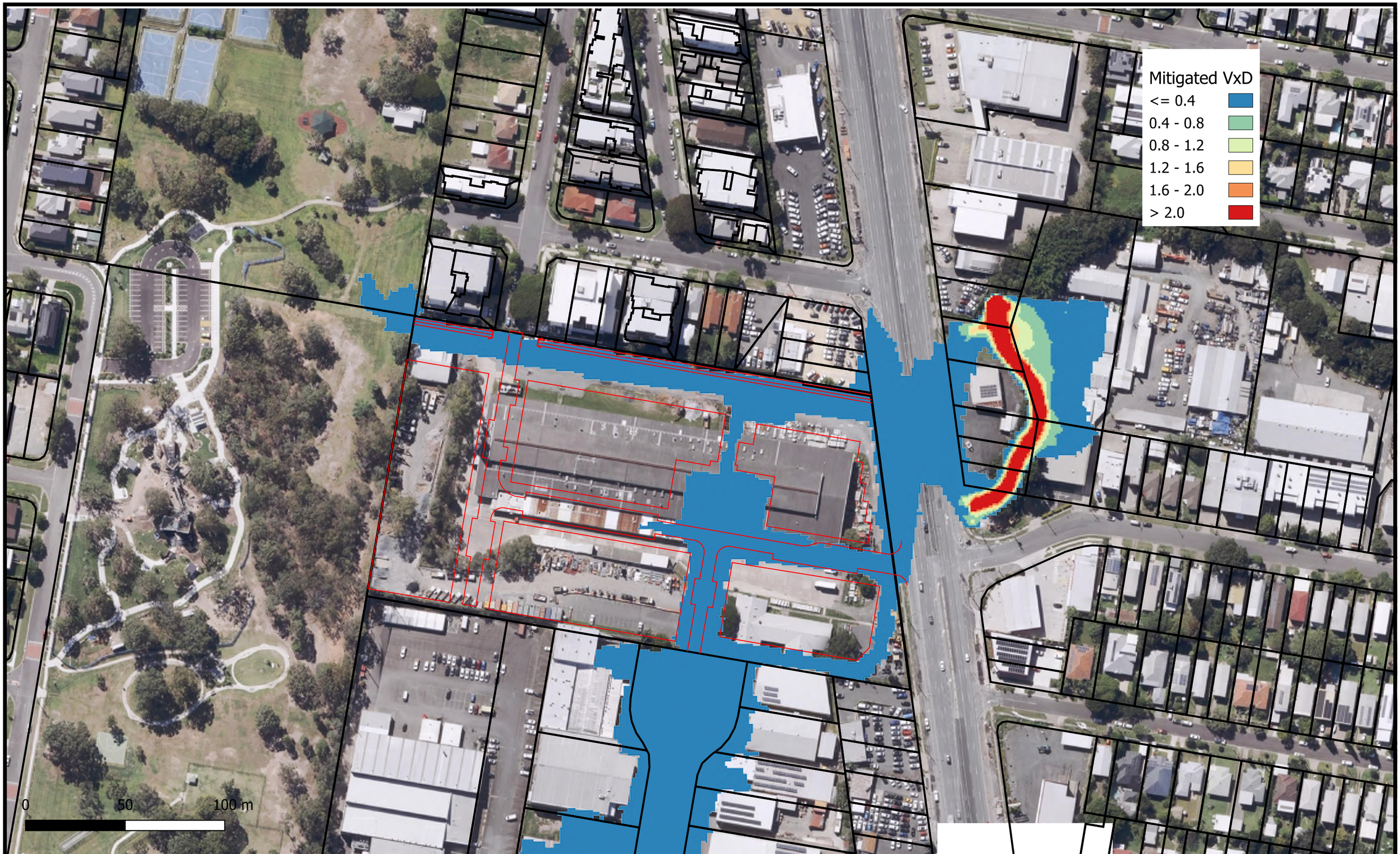
PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Mitigated Velocity 2% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-063	C



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PROJECT
Top Taste Redevelopment Kedron

SUBJECT
z0. Hazard Mitigated Velocity 20% (VxD)

PROJECT No.	SCALE
24142	1:1541

DRAWING No.	REVISION
FM-064	C

APPENDIX E

FLOOD OVERLAY CODE

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Section A—If for self-assessable or assessable development for a dwelling house including any secondary dwelling Note—Development for a dwelling house does not require assessment against any other sections of this code.				
PO1 Development involving any habitable or non-habitable part of a dwelling house, including any secondary dwelling, is located and designed to: (a) minimise the risk to people from flood hazard; (b) achieve acceptable flood immunity; (c) minimise property impacts from a flood event up to and including the defined flood event; (d) minimise disruption to residents, recovery time and rebuilding or restoration costs after a flood event up to and including the defined flood event.	**AO1.1** Development for a dwelling house including anysecondary dwelling: (a) is not located in the Brisbane River flood planning area 1, 2a or 2b sub-categories or the Creek/waterway flood planning area 1 or 2 sub-categories; or (b) is only located in these sub-categories, if a Registered Professional Engineer Queensland certifies that thedwelling house and any secondary dwelling are structurally designed to be able to resist hydrostatic and hydrodynamic loads associated with flooding up to and including thedefined flood event. **AO1.2** Development for a dwelling house and any secondary dwelling complies with the minimum flood planning levels inTable 8.2.11.3.B. Note—If located in an area that has no flood level information available from the Council such as an overland flow path, a Registered Professional Engineer of Queensland with expertise in undertaking flood studies is to certify	N/A		

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	that the flood level and development levels for the dwelling house and any secondary dwelling achieve the required flood planning levels in Table 8.2.11.3.B. **AO1.2** Development involving a building undercroft complies with the minimum clearance requirements in Table 8.2.11.3.E. Editor's note—For creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council's FloodWise Property Report. Note—The Flood planning scheme policy provides guidance on undercroft design.			
PO2 Development within the Creek/waterway flood planning area sub-categories or Overland flow flood planning area sub-category: (a) maintains the conveyance of flood waters to allow them to pass predominantly unimpeded through the site; (b) does not concentrate, intensify or divert floodwater onto upstream, downstream or adjacent properties;	**AO2** Development: (a) is not located within the Creek/waterway flood planning area 1, 2 or 3 sub-categories or the Overland flow flood planning area sub-category; or (b) provides an open undercroft area from natural ground level to habitable floor level for any area inundated by the defined flood event; or ote—This undercroft area is not suitable	N/A	The site is currently within the flood planning area however, this development occurs after a subdivision that is currently being undertaken which brings the entire development above the flood planning level. This criteria would have been applicable to that subdivision development.	

1. Solution: ✓ = Acceptable Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
(c) will not result in a material increase in flood levels or flood hazard on upstream, downstream or adjacent properties.	for providing non-habitable rooms, secure storage of valuables, or future enclosing for storage or car parking. The clear area may include structural elements such as columns and floor substructure. The Flood planning scheme policyprovides guidance on undercroft design. Editor's note—An open undercroft design may be achieved through a 'valance' treatment around the perimeter of an otherwise internally clear undercroft. Editor's note—For Creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council'sFloodWise Property Report. (c) report from a Registered Professional Engineer Queensland certifies that the development in the Creek/waterway flood planning area or Overland flow flood planning area sub-categories will not result in a material increase in flood level or flood hazard on upstream, downstream or adjacent properties. Note—Flood studies demonstrate that the development and engineering design methods conform to the			

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.			
Section B—If self-assessable or assessable development other than for a dwelling house or reconfiguring a lot Note—If self-assessable development complies with the acceptable outcomes of this part, no further assessment against this code is required.				
PO3 Development: (a) is compatible with flood hazard in a defined flood event; (b) minimises the risk to people from flood hazard; (c) does not reduce the ability of evacuation resources including emergency services to access and evacuate the site in a flood emergency, with consideration to the scale of the development; (d) minimises impacts on property from flooding; (e) minimises disruption to residents, business or site operations and recovery time due to flooding; (f) minimises the need to rebuild structures after a flood event greater than the defined flood event. Note—Where Table 8.2.11.3.C identifies that a flood risk assessment is required, compliance with this performance outcome can be achieved by submitting a	**AO3** Development for a material change of use complies with Table 8.2.11.3.C.	✓	Freeboard requirements for buildings are satisfied.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
flood risk assessment, which may be included within a flood study, addressing the criteria within this performance solution. Preparing flood risk assessments and flood studies is required to be in accordance with the Flood planning scheme policy. Note—An emergency management plan prepared in accordance with the Flood planning scheme policy, which sets out procedures for evacuation due to flooding may be used to demonstrate compliance with this performance outcome.				
PO4 Development for a park ensures that the design of a park and location of structures and facilities responds to the flood hazard and balances the safety of intended users with: (a) maintaining continuity of operations; (b) impacts of flooding on asset life and ongoing maintenance costs; (c) efficient recovery after flood events; (d) recreational benefits to the city; (e) availability of suitable land within the park.	**AO4.1** Development involving a building or structure in a park complies with the flood planning levels specified in Table 8.2.11.3.D. **AO4.2** Development involving a building or structure where Table 8.2.11.3.D does not apply: (a) is not located within the 20% AEP flood extent of any creek/waterway or overland flow path; or (b) is located above the 20% AEP flood level of any creek/waterway or overland	**N/A**	No building or structure in park.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	flow path.			
Section C—If for assessable development other than for a dwelling house				
PO5 Development is located and designed to: (a) minimise the risk to people from flood hazard on the site; (b) minimise flood damage to the development and contents of buildings up to the defined flood event; (c) provide suitable amenity; (d) minimise disruption to residents, recovery time and the need to rebuild structures after a flood event up to and including the defined flood event.	**AO5.1** Development complies with the flood planning levels specified in Table 8.2.11.3.D. Note—If located in an area with no Council-derived flood levels such as an overland flow path, a Registered Professional Engineer Queensland with expertise in undertaking flood studies is to derive the applicable flood level and certify that the development meets the required flood planning levels in Table 8.2.11.3.D. The study is to demonstrate that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy. **AO5.2** Development is: (a) not located in the: i. Brisbane River flood planning area 1, 2a, or 2b sub-categories; ii. Creek/waterway flood planning area 1 or 2 sub-categories; iii. Overland flow flood planning area sub-category; or	✓	Development complies with the flood planning levels specified in Table 8.2.11.3.D.	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	(b) only located in these sub-categories if a Registered Professional Engineer Queensland with expertise in undertaking flood studies certifies that: i. the development design, siting and any mitigation measures will ensure the development is structurally adequate to resist hydrostatic, hydrodynamic and debris impact loads associated with flooding up to the defined flood event; and ii. the risk to people is managed to an acceptable level.			
PO6 Development involving essential electrical services or a basement storage area is suitably located and designed to ensure public safety and minimise flood recovery and economic consequences of damage during a flood.	**AO6.1** Development ensures that: (a) all areas containing essential electrical services comply with the flood planning levels in Table 8.2.11.3.D; or (b) if a basement contains essential electrical services or a private basement storage area, the basement is a waterproof structure with walls and floors impermeable to the passage of water with all entry points and services located at or above the relevant flood planning level in Table 8.2.11.3.D. Note—A basement storage area does not include a bike storage room, change room, building maintenance storage and	**N/A**		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	non-critical electrical services. **AO6.2** Development involving a basement that relies on a pumping solution to manage floodwater ingress or for dewatering after a flood provides a redundant pump system with a backup power source for those pumps.			
PO7 Development does not directly or indirectly create a material adverse impact on flood behaviour or drainage on properties that are upstream, downstream or adjacent to the development.	**AO7.1** Development: (a) does not block, or divert floodwaters for any area affected by creek/waterway or overland flow flooding, excluding storm-tide flooding and Brisbane River flooding sources; or (b) does not result in a material increase in flood level or hydraulic hazard on upstream, downstream or adjacent properties. Note—Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure	✓	The development will not cause adverse impact to upstream, downstream or adjacent properties. The development will discharge flows as per existing conditions and provide detention. Overland flow did not pass through the site prior to this development and is not expected to pass through as a consequence of this development.	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	design planning scheme policy. **AO7.2** Development retains existing overland flow paths and does not rely wholly on piped solutions to manage major flows. **AO7.3** Development which creates a new overland flow path or significantly modifies an existing overland flow path via earthworks does not materially worsen hydraulic hazard on the site from existing conditions. Note—Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.			
PO8 Development for filling or excavation in an area affected by creek/waterway flooding does not directly, indirectly or cumulatively cause any material increase	**AO8** Development ensures that no filling or excavation greater than 100mm is located in the Creek/waterway flood planning area 1, 2 or 3 sub-categories if	✓	Note that this development is after the current subdivision that is occurring at the moment on site which lifts the whole site above the 1% AEP flood level.	

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   N/A = Not applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
in flooding or hydraulic hazard or involve significant redistribution of flood storage from high to lower areas in the floodplain. Note—This can be demonstrated by undertaking earthworks in compliance with the Compensatory earthworks planning scheme policy. Note—This part of the code applies to all development other than a dwelling house and any secondary dwelling which involves filling or excavation, whether or not the development application comprises a separate development application for operational work involving filling or excavation.	contained in the 5% AEP flood extent of any Creek/waterway flood planning area sub-category for which no waterway corridor has been mapped in the Waterway corridors overlay.			
PO9 Development ensures that the building and site design: (a) maintains the conveyance capacity of existing overland flow paths and creek/waterways; (b) ensures floodwaters and flood debris can pass predominantly unimpeded under a structure or building to minimise property or building damage, including for a flood larger than the defined flood event; (c) mitigates flood impacts by ensuring	**AO9.1** Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub-category: (a) complies with the minimum building undercroft clearance requirements in Table 8.2.11.3.E; (b) not located directly above any part of a waterway corridor as mapped in the Waterway corridors overlay.	✓	The development is not expected to affect the conveyance capacity of overland flow through the site.	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
that filling, excavation and location of services are designed to allow for the conveyance of floodwater across the site. Note—The Flood planning scheme policy provides guidance on relevant considerations in determining minimum undercroft clearances and treatment of ground level in undercroft areas where floodwater conveyance is required underneath development.	**AO9.2** Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub category: (a) has a ground level within the undercroft area is free draining; (b) does not involve excavation below ground level of more than 300mm within the undercroft area.			
PO10 Development for vulnerable uses, difficult to evacuate uses or assembly uses optimises vehicular access and efficient evacuation from the development to parts of the road network unaffected by flood hazard, in order to: (a) protect safety of users and emergency services personnel; (b) upport efficient emergency services access and site evacuation with consideration to the scale of development.	**AO10.1** Development for vulnerable uses, difficult to evacuate uses or assembly uses: (a) is not isolated in any event up to the relevant flood planning level specified in Table 8.2.11.3.L; or (b) has direct vehicle access to a critical route or interim critical route in the Critical infrastructure and movement network overlay for evacuation in a flood; or (c) can achieve vehicular evacuation to a suitable flood-free location.	**N/A**		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Note—A flood risk assessment may be required to address the performance outcomes or acceptable solutions which deal with evacuation and isolation arrangements, and the ability to take refuge. The Flood planning scheme policy provides information for undertaking flood risk assessments.	Note—A suitable flood-free location is of a size and nature sufficient to provide for the size and characteristics of the population likely to need evacuation to that area.			
PO11 Development has access which, having regard to hydraulic hazard, provides for safe vehicular and pedestrian movement and emergency services access to adjoining roads.	**AO11.1** Development provides an access or driveway into the site which is: (a) trafficable during the defined flood event; (b) not located in the Creek/waterway flood planning area 1 sub-category; (c) not located in the Overland flow flood planning area sub-category if the hydraulic hazard is unsafe in the defined flood event; (d) the access or driveway is not inundated by a 10% AEP flood. **AO11.2** Development located in the Creek/waterway flood planning area 1, 2, 3 or 4 sub-categories locates any disabled access in the highest part of the site. Note—explanation of hydraulic hazard provided in the Flood planning scheme	✓	The site is expected to be trafficable in the events required.	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	policy.			
PO12 Development involving a new road, a bridge or culvert is designed to minimise impacts to flood behaviour, minimise disruption to traffic during a flood and allow for emergency access.	**AO12** Development involving a new road complies with the flood planning levels in Table 8.2.11.3.F.	✓	The proposed development includes new internal roads which have been designed to comply with the flood planning levels outlined in Table 8.2.11.3.F of the Brisbane City Plan 2014. The road design provides flood immunity for the defined storm events, ensuring minimal impact on flood behaviour, uninterrupted traffic movement during a flood, and safe access for emergency services. Accordingly, the development complies with both Performance Outcome PO12 and Acceptable Outcome AO12.	
PO13 Development for pedestrian and cyclist paths: (a) provides a suitable level of trafficability; (b) manages the impacts of flooding on asset life and ongoing maintenance costs; (c) balances route availability with recreational and transport connectivity benefits to the city.	**AO13.1** Development for cyclist and pedestrian facilities other than on public roads, including those traversing through a park and adjacent to a watercourse and overland flow path, are located above the 39% AEP (2 year ARI) flood immunity from all flooding sources. Note—If the site is subject to more than one type of flooding, the requirement that affords the greatest level of protection will apply. **AO13.1** All new on-road cyclist and pedestrian	**N/A**	Development of cyclist and pedestrian facilities other than on public roads, including those traversing through a park and adjacent to a watercourse and overland flow path, will be located above the 39% AEP (2 year ARI) flood immunity from all flooding sources.	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
	facilities comply with the flood planning levels and trafficability standards for the applicable category of road in Table 8.2.11.3.F or Table 8.2.11.3.K.			
PO14 Development which increases the residential population within the Brisbane River flood planning area sub-categories minimises the risk to people in all flood events with consideration to flood hazard, including warning time.	**AO14** Development in the Brisbane River flood planning area sub-categories in areas where the residential flood level is greater than 12.8m AHD involving: (a) an increase in the number of residential dwellings; or (b) additional residential lots; or (c) is not subject to an unsafe hydraulic hazard in the 0.2% AEP flood event. Note—Explanation of a hydraulic hazard is provided in the Flood planning scheme policy.	**N/A**		
Additional criteria for essential community infrastructure				
PO15 Development involving essential community infrastructure: (a) remains functional to serve community need during and immediately after a flood event, or is part of a network that is able to maintain the function of the essential community infrastructure when parts of the development are	**AO15** Development involving essential community infrastructure: (a) is ancillary to and not relied upon for the provision of the essential service during a flood; or (b) is located above the flood planning levels in Table 8.2.11.3.G; (c) has access to or provides the	**N/A**		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
unable to function during or after a flood; (b) is designed, sited and operated to avoid adverse impacts on the community or the environment due to the impacts of flooding on infrastructure, facilities or access and egress routes; (c) is able to remain functional or is part of a network which is able to remain functional even when other infrastructure or services (such as electricity supply) may be compromised in a flood event; (d) contains mitigation measures which are not entirely dependent on human activation to respond to a flood event. Note—Protection of function is required up to and including the flood event in Table 8.2.11.3.G.	necessary back-up emergency electricity and communications supply in times of flood; (d) is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the flood event listed for the development type in Table 8.2.11.3.G; (e) that services a local area: i. is able to be accessed in times of flood to service local community needs up to the event listed for that development type in Table 8.2.11.3.G; or ii. is consistent with the standards contained in the Management of hazardous chemicals in flood prone areas planning scheme policy and can operate without risk of environmental harm during a flood event. Note—The Management of hazardous chemicals in flood prone areas planning scheme policy sets out further information and processes including risk assessment for the management of hazardous chemicals in flood planning areas.			
Additional criteria if development involves the processes in Table 8.2.11.3.H				

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
PO16 Development involving the storage and handling of hazardous materials avoids or minimises risks to public health and safety and the environment, by: (a) protecting underground tanks for hazardous materials against the forces of buoyancy, velocity flow and debris impacts; (b) securing above-ground tanks for hazardous materials against flotation and lateral movement; (c) preventing damage to hazardous materials pipework or entry of floodwater into hazardous materials pipework; (d) preventing damage to or off-site release of packages, drums or containers storing hazardous materials. Note—A chemical hazards flood risk report prepared in accordance with the Management of hazardous chemicals in flood prone areas planning scheme policy can assist in demonstrating achievement of this performance outcome. Note—A pump drainage system is not an acceptable measure to meet the performance outcome.	**AO16** (a) Development does not include the storage or handling of hazardous chemicals that are equivalent to or exceed the threshold quantities in Table 8.2.11.3.M. (b) Development involving the processes listed in Table 8.2.11.3.H: i. where located in the Flood overlay area, occurs only in the Creek/waterway flood planning area 5 sub-category or the Brisbane River flood planning area 5 sub-category; or ii. is consistent with the standards contained in the Management of hazardous chemicals in flood prone areas planning scheme policy and can operate without risk of environmental harm during a flood event. Note—The Management of hazardous chemicals in flood prone areas planning scheme policy sets out further information and processes including risk assessment for the management of hazardous chemicals in flood planning areas.	**N/A**		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION[1]	COMMENTS	COUNCIL USE ONLY
Additional criteria for reconfiguring a lot				
PO17 Development locates and designs all lots resulting from reconfiguring a lot to: (a) minimise the risk to people from flood hazard; (b) minimise damage to property from flood hazard; (c) facilitate safe and efficient evacuation. Note— • Consideration of all floods up to the probably maximum flood is relevant to minimising the risk to people. • Flood warning time is not considered sufficient in the Creek/waterway planning area sub-categories or the Overland flow flood planning area sub-category. • Filling above the flood planning	**AO17.1** Development creating new lots is to comply with Table 8.2.11.3.I. **AO17.2** Development provides for reconfiguring a lot design that achieves a road and lot layout which: (a) provides trafficable vehicular egress for evacuation during a defined flood event; (b) optimises hazard-free movement away from sources of flood hazard within the development. Note—Further advice on road and lot layout is contained in the Flood planning scheme policy. **AO17.3** Development which creates a new residential lot in an area subject to Brisbane River flooding, if the residential	**N/A**	No reconfiguration of a lot.	

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A/S = Alternative Solution
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level for a flood event greater than the defined flood event cannot be assumed to mitigate the flood hazard.	flood level is greater than 12.8m AHD is not subject to a hydraulic hazard greater than 0.6m^2/s DV or 0.6m deep in a 0.2% AEP flood. Note—Refer to the Flood planning scheme policy for further explanation on the 0.2% AEP flood.			
PO18 Development involving reconfiguring a lot: (a) minimises the risk to people from flood hazard; (b) creates safe evacuation routes or avoids isolation of the development during a flood greater than the defined flood event; (c) minimises damage to property and services;	**AO18.1** Development involving reconfiguring a lot ensures: (a) all lots comply with the flood planning levels in Table 8.2.11.3.J; (b) a new road complies with the flood planning levels in Table 8.2.11.3.F. **AO18.2** Development involving reconfiguring a lot creating more than 6 residential lots	**N/A**	No reconfiguration of a lot	

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(d) provides lots and roads that are not frequently flooded or subject to nuisance ponding or seepage; (e) ensures lots created for park or private open space minimise the risk to people from flood hazard and are fit for purpose; (f) provides a lot that is not substantially burdened by flood mitigation infrastructure.	or a lot for industry ensures the flood planning levels of a dedicated road fronting the development or providing primary access within 200m of the development: (a) complies with Table 8.2.11.3.K; or (b) has acceptable trafficability in accordance with the requirements in the Flood planning scheme policy and the Queensland Urban Drainage Manual. Note—The Flood planning scheme policy contains supporting information about trafficability on existing roads and serviceability during floods. **AO18.3** Development protects the conveyance of flood hazard area by providing an easement over the: (a) 2% AEP flood extent for overland flow flooding; (b) 1% AEP flood extent for creek/waterway flooding.			

1. Solution: ✓ = Acceptable Solution
   A/S = Alternative Solution
   N/A = Not applicable to this Proposal