



PLANS AND DOCUMENTS
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DEVELOPMENT APPROVAL

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Flood Impact Assessment (FIA) and Stormwater Management Plan (SMP)

197-201 Teviot Road, Greenbank

Elevate Consulting Engineers

16 March 2026



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1 INTRODUCTION

1.1 Introduction

Water Technology Pty Ltd (WT) has been commissioned by Elevate Consulting Engineers (Elevate) to prepare a Flood Impact Assessment and Stormwater Management Plan for the site located at 197-201 Teviot Road, Greenbank, real property description Lot 16 SP 343224 (The Site). The site locality is generally as illustrated in Figure 1-1.

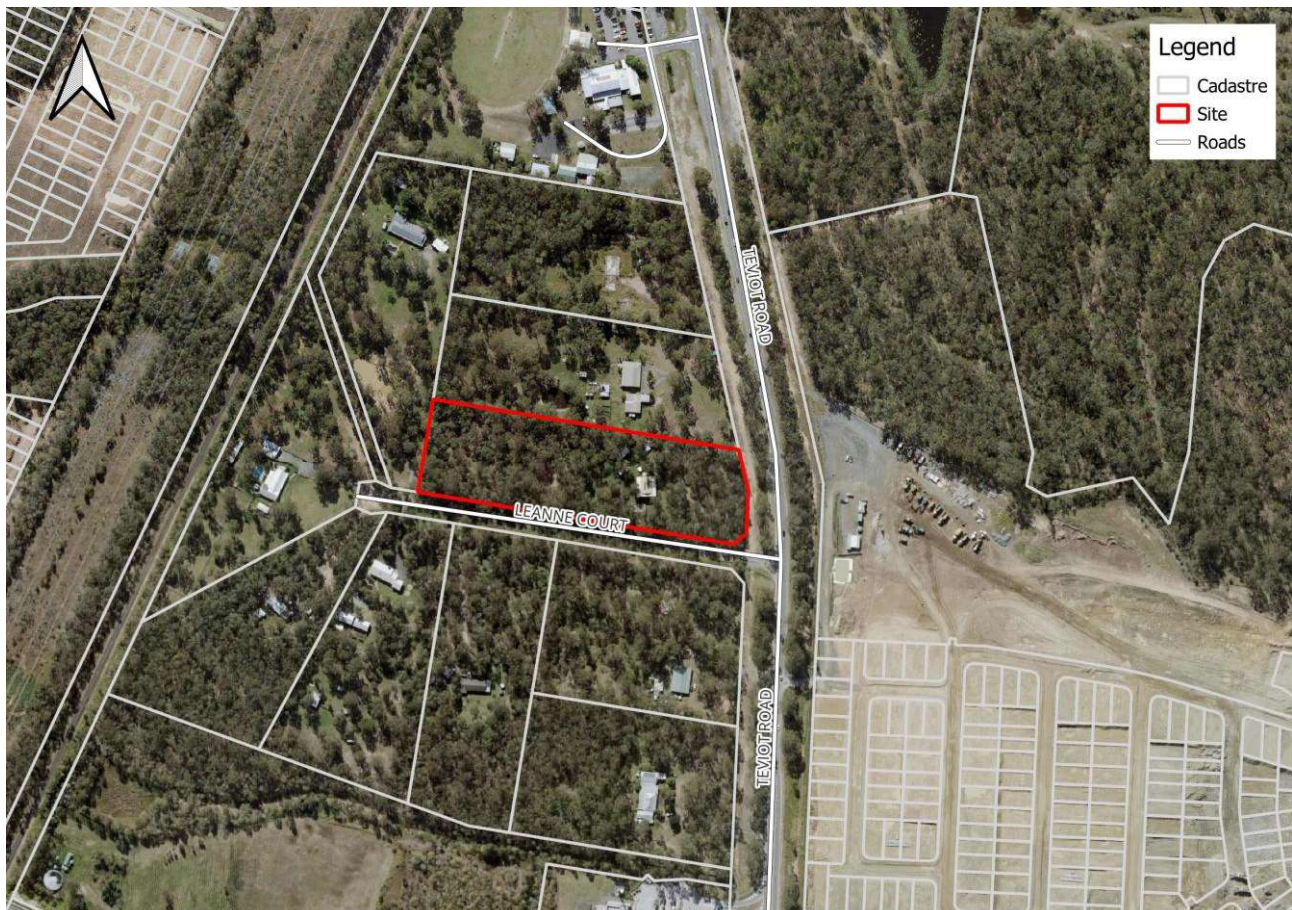


Figure 1-1 Site and Adjacent Properties

1.2 Development Application Background

The site is located within the Logan City Council (LCC) Local Government Area (LGA). The site is also located within the Greater Flagstone Priority Development Area (PDA), with the responsibility for development in the PDA administered by Economic Development Queensland (EDQ).

The proposed development includes a 1 into 42 lot reconfiguration for residential development. A development application has already been lodged to EDQ in 2025 under application reference DEV2025/1652.

On the 5 August 2025, EDQ issued an Information Request (IR) for the application. EDQ additionally issued a Further Information Request dated 5 August 2025. Item 2 of the IR requires a Flood Risk Assessment, the requirements of which are reproduced in Figure 1-2.



2. Flood Risk Assessment

Submit a Localised Flood Risk Assessment Report, certified by a suitably qualified RPEQ, to address potential adverse impacts from earthworks proposed in Flood Risk areas.

Figure 1-2 EDQ Information Request Item 2

WT has previously completed technical assessments for the proposed development which included a Flood Risk Assessment (termed Flood Impact Assessment (FIA) herein) for the purposes of addressing the IR issued by EDQ in Figure 1-2. Additionally, this report also incorporated a Stormwater Management Plan (SMP). The consolidated report addressing both the FIA and SMP components of the proposed residential development was documented in the report entitled “Flood Impact Assessment (FIA) and Stormwater Management Plan (SMP) – 197-201 Teviot Brook Road, Greenbank” dated 11 December 2025 (WT 2025).

Further to WT 2025, an Outstanding Matters information request was received from EDQ dated 9 February 2026 which raised subsequent matters associated with the FIA and SMP. These matters were also discussed with EDQ at a series of meetings which has resulted in further revisions being undertaken for the FIA and SMP. As a consequence, this revised report has been prepared to document the revisions and to provide an updated FIA and SMP report in supported of the modified residential development, with this current report superseding that previously documented in WT 2025. Further particulars are documented separately in this current report.

1.3 Relevant Guidelines

Specific outcomes to be achieved for development proposed within the PDA are outlined in the various guidelines prepared by the Department of State Development, Infrastructure and Planning (DSIP) and administered by EDQ. With respect to flooding and stormwater management for this site, the guidelines of specific interest include:

- “*Environmental Values and Sustainable Resource Use – EDQ Guideline 14*” dated May 2015 (Guideline 14); and
- “*Protection from Flood and Storm Tide Inundation – EDQ Guideline 15*” dated May 2015 (Guideline 15).

This FIA and SMP has been prepared cognisant with the relevant requirements of the above-mentioned guidelines.



2 SITE DESCRIPTION

2.1 The Site

The site is located at the corner of Leanne Court and Teviot Road, Greenbank. The local catchment is confined by Teviot Road to the east, Pub Lane to the south, the James Smith Recreation Area to the north, and an interstate rail line to the west. The local topography is illustrated in Figure 2-1 based on 1m LiDAR collected by LCC in 2023, with the local topography illustrating a local gully in the south-western portion of the site.

The land use in the area is characterised as low density bushland with scattered houses and buildings, as well as a medium density residential development north of the site. Specifically, the site was observed as medium density bushland with a house and other structures, including a small farm dam. The site encapsulates an area of just over 2 ha.

Approximately 240m west of the site is an existing railway line which is raised above the local topography to a level of approximately 61.7m AHD. Due to the elevation of the railway, the existing embankment provides a hydraulic control for flooding in areas to the west of the site, with the primary drainage from the local catchment occurring via the existing a singular 1500mm RCP culvert under the railway embankment.

Figure 2-2 illustrates the existing flood mapping reflected in the LCC planning scheme online mapping. The depression is marked on LCC's Flood Portal as the uppermost reach of a tributary of Oxley Creek.

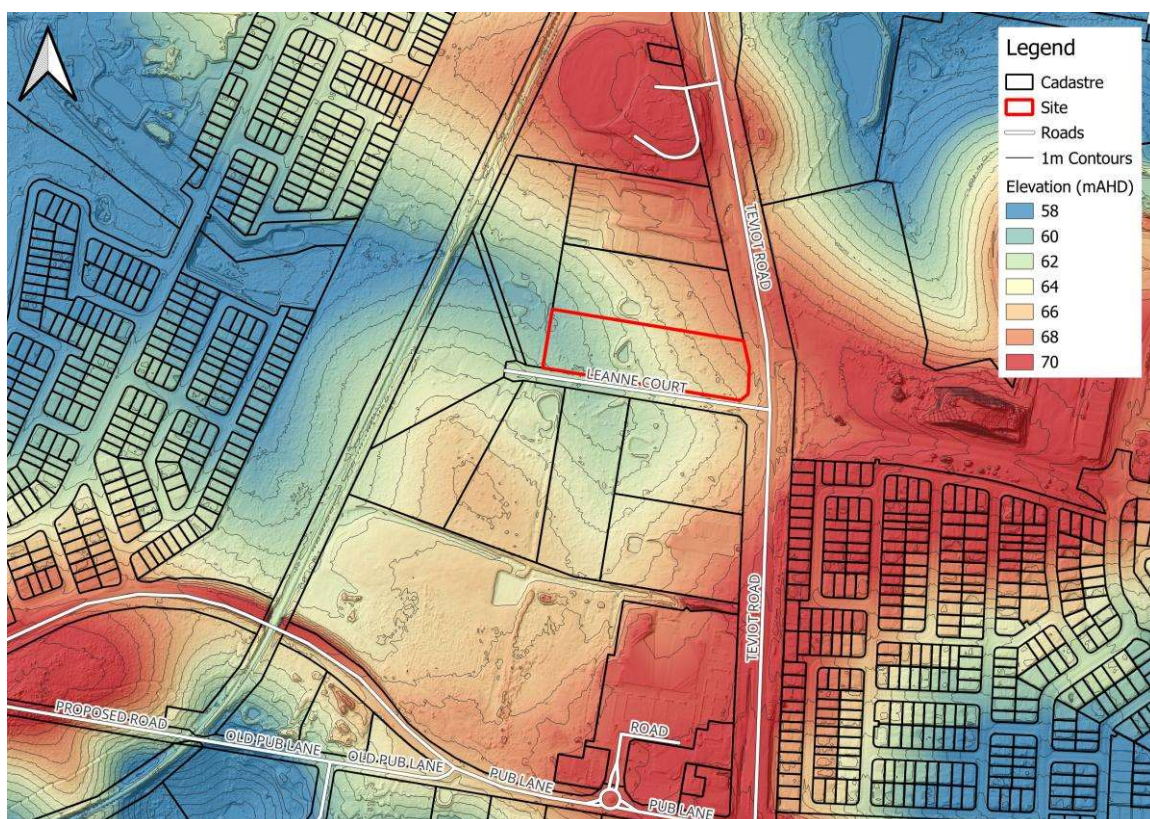


Figure 2-1 Site Topography (Source: 1m LCC LiDAR, 2023)

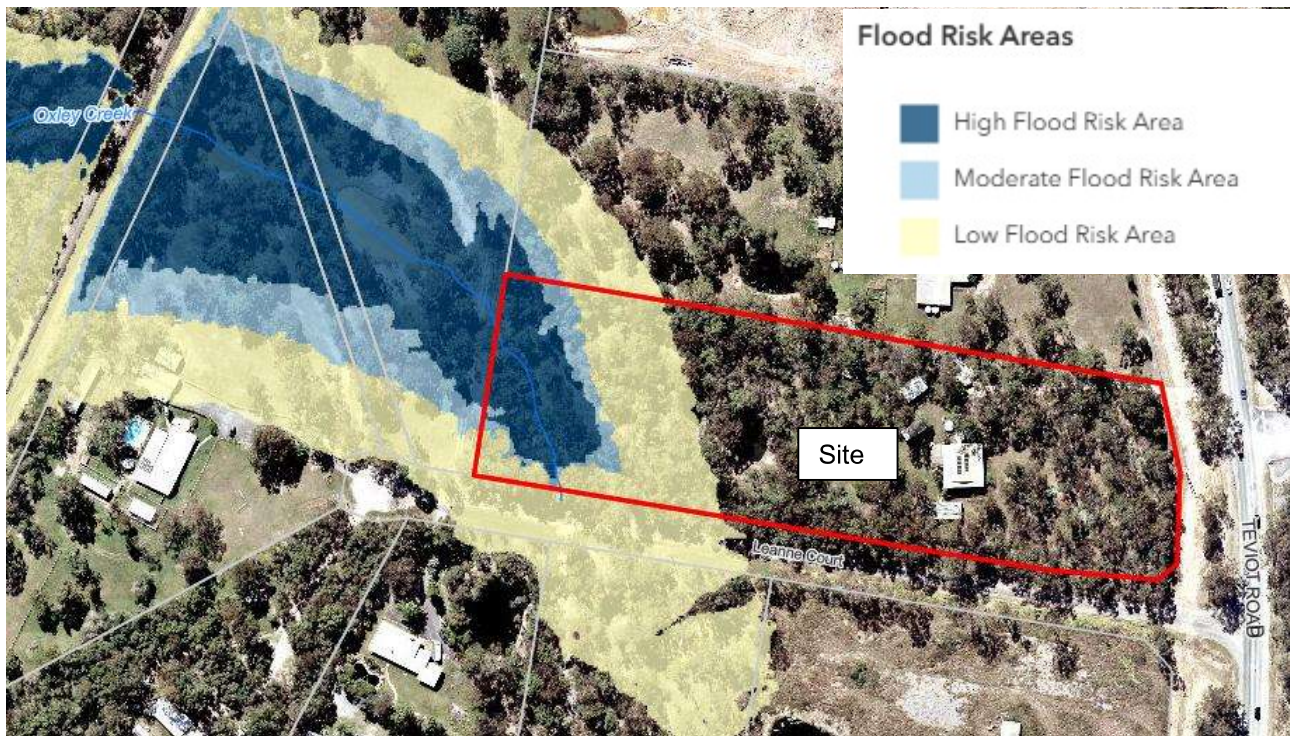


Figure 2-2 Existing LCC Flood Mapping (Source – LCC 2025)

2.2 Other Relevant Developments

To the east and west of the site are existing larger-scale developments which are progressively being delivered across the Greater Flagstone PDA. Whilst the development west of the site does not influence the assessments documented herein, the adjacent eastern development in addition with the upgrade of Teviot Road (ongoing at the time of this report) influences local hydrology and hydraulic characteristics at the site and are therefore critical considerations which are discussed and detailed separately in this report.



3 PROPOSED DEVELOPMENT

The proposed development includes a 1 into 42 lot reconfiguration for residential development. A plan of development is illustrated in Figure 3-1, with a full copy of the civil engineering drawings included in Appendix A. The proposed development includes all associated earthworks, internal roadworks, services and associated stormwater drainage and stormwater management devices including detention and bio-retention measures.

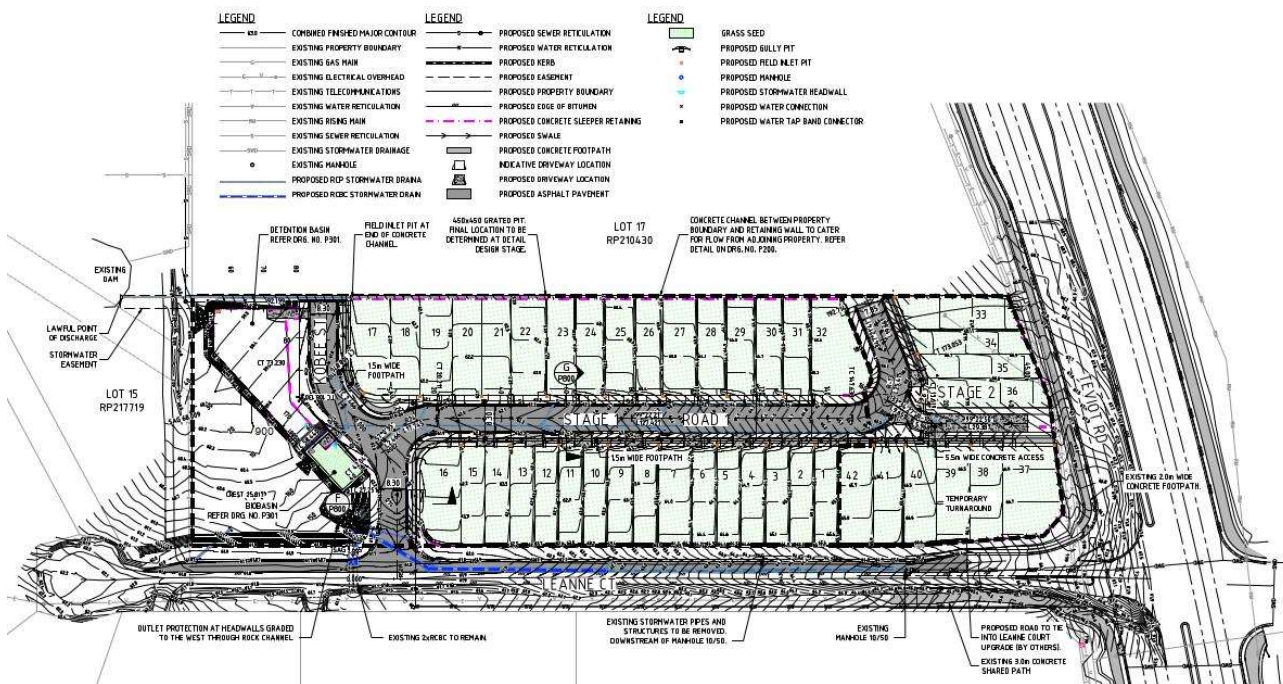


Figure 3-1 Proposed Roadwork and Stormwater Drainage Layout (Source: Elevate, 2026)

The proposed works also include frontage works to Leanne Court in addition with the extension of the existing stormwater drainage. Part of the stormwater drainage and existing table drain has already been constructed on Leanne Court as a consequence of the upgrade works that were occurring to Teviot Road at the time of inspection in August 2025. The status of these works as on the 9th of March are illustrated in Figure 3-2 and Figure 3-3.



Figure 3-2 Existing constructed stormwater and table drain on Leanne Court (Source: WT 2025)



Figure 3-3 Existing constructed stormwater on Leanne Court (Source: WT 2025)



4 STORMWATER MANAGEMENT

4.1 Stormwater Quantity

4.1.1 Catchment Hydrology

Hydrologic modelling was constructed from a combination of publicly available 2023 LiDAR and a development TIN for the ongoing Teviot Road Upgrade, both provided by LCC. Modelling included the local catchment, with inclusions of the southern and western catchments to Covella Boulevard. A map of the sub-catchments adopted are shown in Figure 4-1. The site catchment is reflected by sub-catchment name C110.

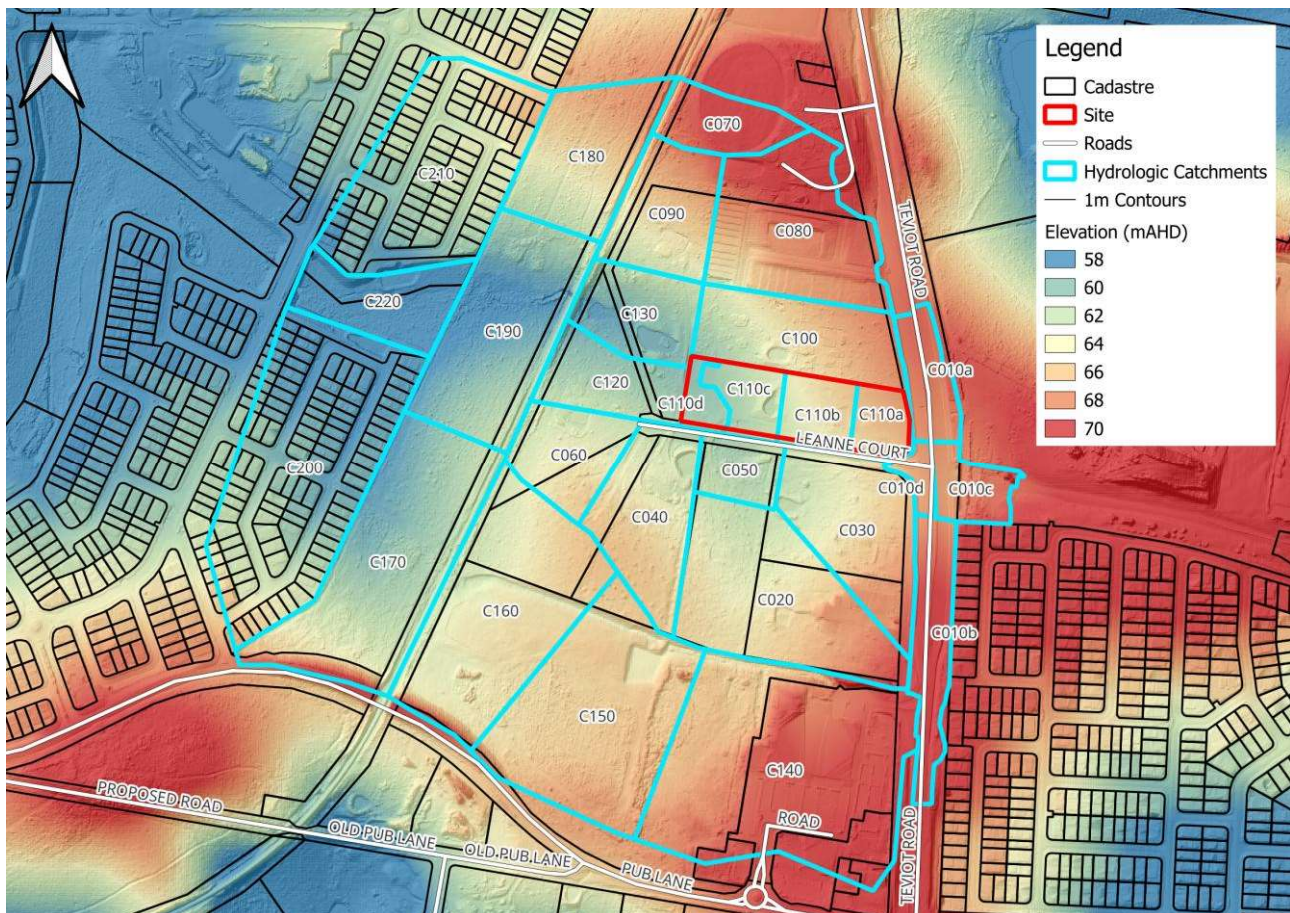


Figure 4-1 WBNM Sub-Catchment Delineation

For an improved comparison of the site's discharge for the pre- and post-development scenarios, the site's catchment (C110) was split into four parts (C110a, b, c, and d), as shown in Figure 4-2. This is in line with best practise for minimum catchments required for analysis of material changes. The pre- and post-development sub-catchment arrangement was maintained with fraction impervious values increased to reflect the proposed development. As such, sub-catchments were developed in accordance with Table 4-1. All sub-catchments adopted a lag parameter of 1.6, and a stream lag factor of 1 with the following exclusions:

- Sub-catchments C010a, C010b, C010c and C010d adopted a stream lag factor of 0.5 to reflect the impervious nature of Teviot Road.
- Following development and to simulate pipe flow, the stream lag factor for sub-catchments C010a, C010b, and C010c decreased to 0.5, 0.33, and 0.33 respectively.

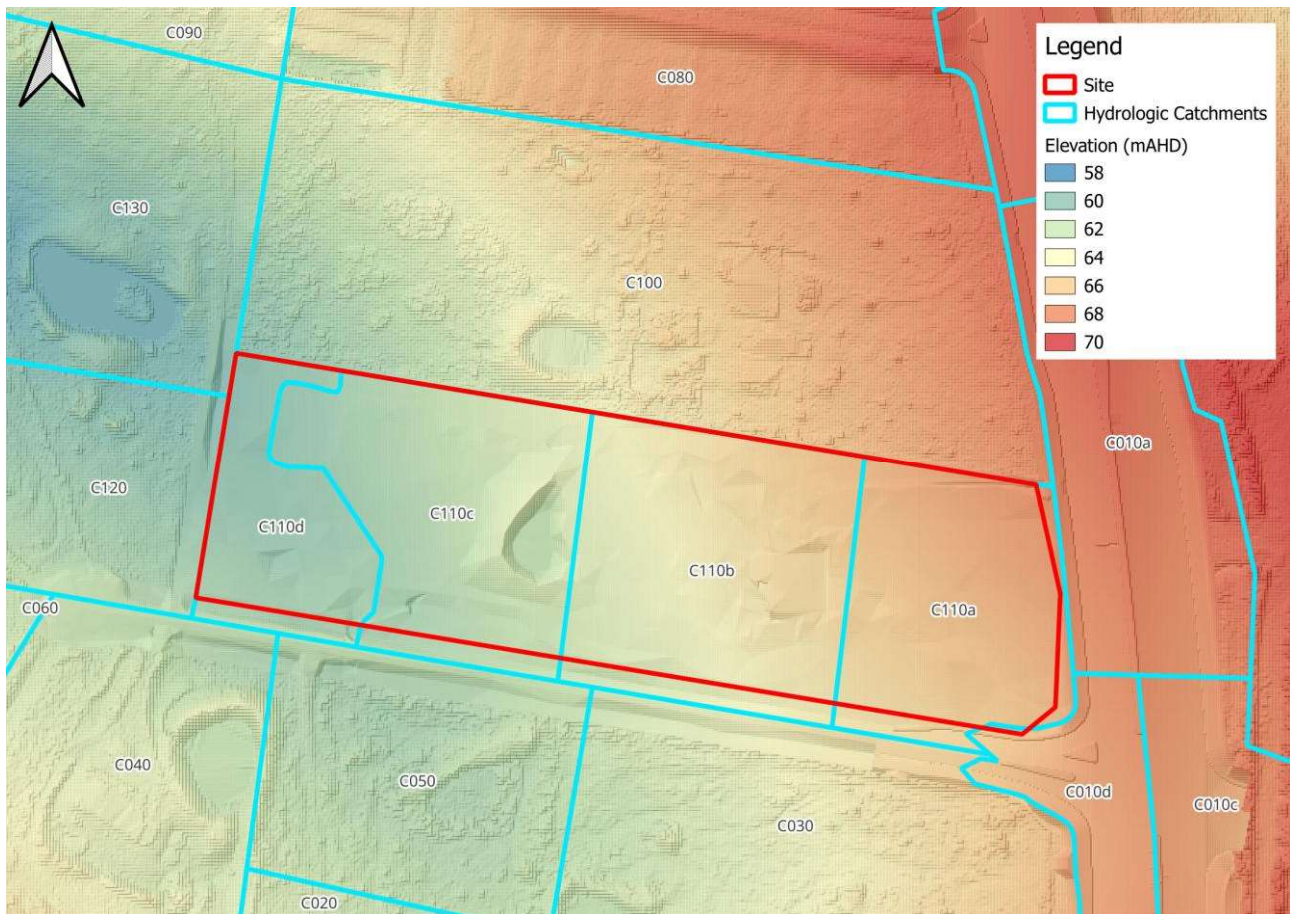


Figure 4-2 Site's Sub-Catchment Arrangement



Table 4-1 WBNM Sub-Catchment Details

Sub-Catchment ID	Area (ha)	Fraction Impervious (%) Pre-Development / Post-Development	Downstream Sub-Catchment
C010a	0.793	90 / 90	C010d
C010b	1.292	90 / 90	C010d
C010c	0.691	90 / 90	C010d
C010d	0.275	90 / 90	C030
C020	3.67	10 / 10	C050
C030	2.91	10 / 10	C050
C040	2.07	5 / 5	C050
C050	0.73	0 / 0	C110d
C060	1.33	5 / 5	C120
C070	0.98	0 / 0	C090
C080	3.76	60 / 60	C130
C090	1.67	5 / 5	C130
C100	2.33	5 / 5	C130
C110a	0.80	5 / 70	C110b
C110b	0.72	5 / 70	C110c
C110c	0.63	5 / 70	C110d
C110d	0.32	5 / 5	C120
C120	1.29	5 / 5	C130
C130	1.37	0 / 0	C190
C140	6.46	50 / 50	C150
C150	4.40	0 / 0	C160
C160	4.30	0 / 0	C170
C170	4.39	0 / 0	C190
C180	2.24	0 / 0	C190
C190	3.35	0 / 0	C220
C200	5.51	70 / 70	C220
C210	4.16	70 / 70	C220
C220	1.50	0 / 0	SINK
Total	62.09		



4.1.2 Rainfall Intensity and Losses

The Australian Rainfall and Runoff (ARR) Data Hub was accessed to obtain Intensity-Frequency-Duration (IFD) data and associated loss values for this assessment. We note that the initial loss from the ARR Data Hub was 25mm and the continuing loss was 1.1mm/hour.

4.1.3 WBNM and Rational Method Validation

Being a site-specific investigation of an ungauged local catchment, there is no site-based data to validate the WBNM modelled discharges from the site. Accordingly, the WBNM hydrologic model has been validated against the Rational Method (RM) as per the Queensland Urban Drainage Manual (QUDM, 2017).

The RM was assessed for two catchments: C130, and C110c. Catchment C130 was selected due to its location at the outlet of the local gully, receiving flows from the entire local catchment. Further, C110c would represent flows from the site anticipated to enter a detention basin and would quantify the increases in runoff due to the site's development. The parameters listed for each catchment and respective pre- and post-development factors are listed in Table 4-2.

Table 4-2 Rational Method Parameters

Catchment – Scenario	Area (ha)	I10 (mm/hour)	Tc (mins)	FI %	C10
C130 – Existing	24.87	58.4	27.4	23	0.61
C130 – Developed	As above	As above	27.4	28	0.64
C110c – Existing	1.89	As above	10	5	0.53
C110c – Developed	As above	As above	7	70	0.8

The RM yielded results that validated the WBNM model well for the C130 catchment and C110c catchment across a range of Annual Exceedance Probability (AEP) design events from the 63% AEP through to the 1% AEP. Details of the validation of C130 are articulated in Table 4-3 and Table 4-4 below, detailing that flows were typically within 10% to 15% variation, with the development models generally varying by 5% or less. The strong match of C130 demonstrates an appropriate validation to the WBNM model. Notably, both the RM and WBNM model indicate an increase in flow throughout the local catchment due to the site's development and necessitates a detention basin being included for the development as is discussed further in this report.

Table 4-3 Catchment C130 RM and WBNM Validation – Existing Conditions

AEP (%)	Rational Method (m3/s)	WBNM (m3/s)	Difference (%)
63.2	1.73	1.51	15%
50	2.02	2.00	2%
20	3.23	3.69	-12%
10	4.09	4.74	-13%
5	4.97	5.74	-13%
2	6.39	6.95	-8%
1	7.40	8.32	-11%



Table 4-4 Catchment C130 RM and WBNM Validation – Developed Conditions

AEP (%)	Rational Method (m3/s)	WBNM (m3/s)	Difference (%)
63.2	1.81	1.59	24%
50	2.12	2.08	11%
20	3.39	3.77	-2%
10	4.29	4.89	-5%
5	5.21	5.89	-4%
2	6.70	7.43	-2%
1	7.76	8.77	-4%

4.2 Detention Basin Sizing and Analysis

The proposed peak discharge mitigation strategy includes provision of a detention basin located at the western end of the development footprint. The location of the detention basin is illustrated in Figure 4-3. The basin has been designed to mitigate any increases in peak flow associated with the site's development, with the increases occurring as a consequence of:

- The increase in impervious surface area on the site; and
- The accelerated conveyance of flows from the eastern side of Teviot Road via the extension of stormwater infrastructure due to development.

As a result, the detention basin will be required to over attenuate flows from the site, compensating for the increased conveyance of the extended stormwater infrastructure due to frontage works on Leanne Court. That is, the detention basin is proportionally larger than what would otherwise be required to simply mitigate the increase in flows from the site development only. Mitigated flows will be discharged immediately west, downstream of the site, with the approval of the neighbouring landowner via discharge consent. This constitutes the lawful point of discharge for flows from the site.

Sizing of the detention basin has been undertaken using the WBNM model. The hydrologic evaluation of the basin considered both the 50% and 1% AEP events, and assessed both the outflow from sub-catchment C110c, and the total flow through C130. Critically, as the hydrologic model could not accurately evaluate the increased conveyance due to the stormwater infrastructure extensions, any hydrologically designed basin required further evaluation via the hydraulic model where the hydraulic effects were assessed for the 50%, 10%, and 1% AEP events to confirm detention basin performance. The hydraulic model is discussed separately in Section 5.

The detention basin design underwent extensive iteration and the optimised design is summarised in Table 4-5.



Table 4-5 Detention Basin Design Arrangements

Design Element	Design Requirement
Total Depth (m)	1.65
Spillway Level (mRL to base of basin)	1.35
Spillway Width (m)	3
Low Flow Configuration	No. 1 375mm RCP at 0mRL
Total Volume (m ³)	905
Volume to Spillway (m ³)	705

The analysis indicates that the detention basin can attenuate peak discharge from the development to below pre-development flow rates for all design events as summarised in Table 4-6. The resulting peak discharge and water depths for the detention basin are summarised in Table 4-7. We note that the 1.43m depth in the 1% AEP design event provides 220mm of freeboard which does not satisfy the recommendations outlined in Section 5.7 of QUDM (2017) which ordinarily requires a 300mm freeboard. However, analysis of the detention basin with a fully blocked low-flow outlet and all discharge via the overflow weir indicated that the peak depth within the detention basin reached 1.6m which provides 50mm freeboard to the top of the detention basin embankment. As such, the detention basin arrangements are considered to be satisfactory given that the 1% AEP event can be passed via the detention basin spillway even under a 100% blocked low flow without overtopping the basin crest level.

Table 4-6 Detention Basin Mitigation Performance Downstream of Site (Hydraulic Modelling)

Design Event (AEP)	Existing Case Discharge (m ³ /s)	Mitigated Developed Case Discharge (m ³ /s)	Change in Flow (%)
1% AEP	4.30	4.40	2.3
10% AEP	3.42	3.41	-0.3
50% AEP	1.75	1.75	0

Table 4-7 Detention Basin Peak Values (Hydrologic Modelling)

Event	Peak Depth (m)	Peak Storage (m ³)	Active Detention Volume (m ³)	Spillway Activation
1% AEP	1.43	760	760	Yes
50% AEP	0.48	260	260	No

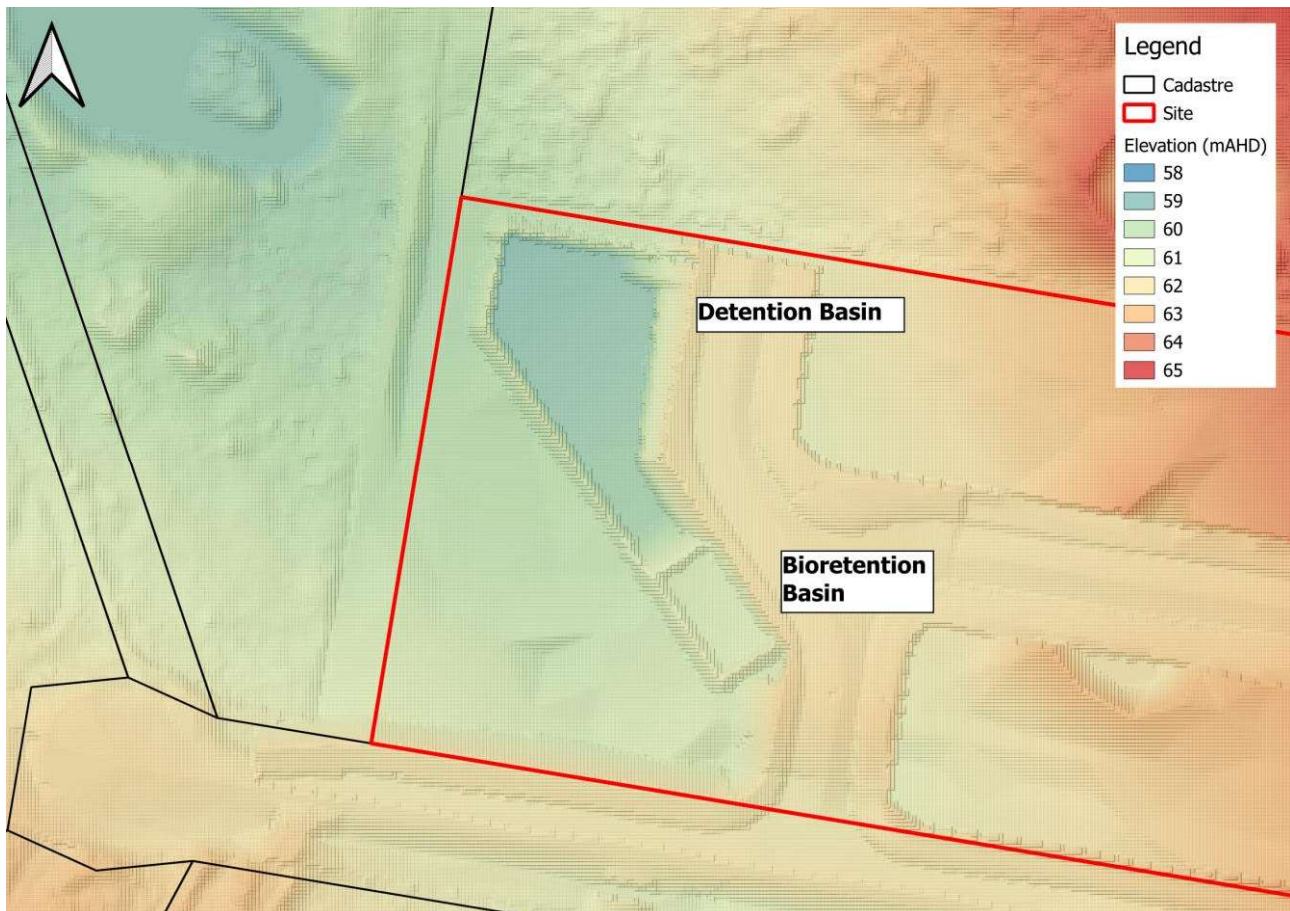


Figure 4-3 Proposed Detention Basin and Bio-Retention Basin Arrangement

4.3 Stormwater Quality

4.3.1 Proposed Strategy

The proposed stormwater management strategy for the development is for the required water quality objectives to be achieved using a bio-retention basin. As has been illustrated previously in Figure 4-3, the bio-retention basin is a stand-alone basin separate to the detention basin and is located immediately south of the detention basin. Inflows to these two basins will be governed by the following:

- A flow splitter will portion stormwater flows equal to the $Q_{3\text{-month}}$ flow to the bioretention basin.
- The bioretention basin primary outlet will be piped into the detention basin, noting that the primary outlet will have greater capacity than the $Q_{3\text{-month}}$ inflow. Therefore, the bioretention basin spillway will only operate should a blockage of the bioretention basin's primary outlet occur.
- The detention basin will have a 375mm diameter RCP low flow outlet, located at the base of the basin at 59.2m AHD, draining to the lawful point of discharge. The detention basin will feature a spillway located at 60.55m AHD, permitting 1.35m of attenuation prior to activation.
- Flows will be discharged immediately west, downstream of the site, with the approval of the neighbouring landowner via discharge consent. This constitutes the lawful point of discharge for flows from the site.
- The embankments of the detention basin will be no lower than 60.85m AHD.



4.3.2 MUSIC Modelling

A preliminary water quality analysis utilising MUSIC has been completed to establish the likely land-take requirements for water quality treatment. A summary of the input parameters adopted for the water quality analysis is provided as follows:

- A nominal 1.67ha urban residential catchment has been adopted based on a density of 15 dwellings per hectare.
- The split catchment approach, assuming 25% as road, 32.5% as roof and 42.5% as ground level.
- Pollutant export parameters as per the MUSIC by Design Guidelines (2010) for urban residential.
- Climate data from the Bureau of Meteorology (BoM) for Logan City Council (west) representative gauges, being Greenbank Thompson Rd (Station Number 40659) and covered the period from the 1st January 1980 to the 31st December 1989.
- Bioretention basin parameters as follows:
 - No low-flow bypass or high-flow bypass;
 - Extended detention depth of 0.3m;
 - Saturated hydraulic conductivity of 200 mm/hr;
 - Filter depth of 0.6m;
 - TN Content of Filter Media of 400 mg/kg;
 - Orthophosphate Content of Filter Media of 30 mg/kg;
 - Vegetated with effective nutrient removal plants;
 - Basin lined with underdrain present;
 - Equal area (surface area and filter media area); and
 - Weir as 1/10th of surface area.
- MUSIC model schematic as illustrated in Figure 4-4.

4.3.3 Results of MUSIC Modelling

The MUSIC modelling analysis indicated that 110m² of bio-retention filter media area was sufficient to treat stormwater runoff to achieve the State Planning Policy (SPP) 2017 pollutant load reduction targets from a nominal 1.67ha catchment, with the pollutant load reduction target compliance illustrated in Figure 4-4. A bio-retention basin filter media area of 110m² represents approximately 0.7% of the contributing development area. The resulting bio-retention basin topography is shown previously in Figure 4-3, with the civil engineering arrangements for the bio-retention basin shown in the plans contained in Appendix A.

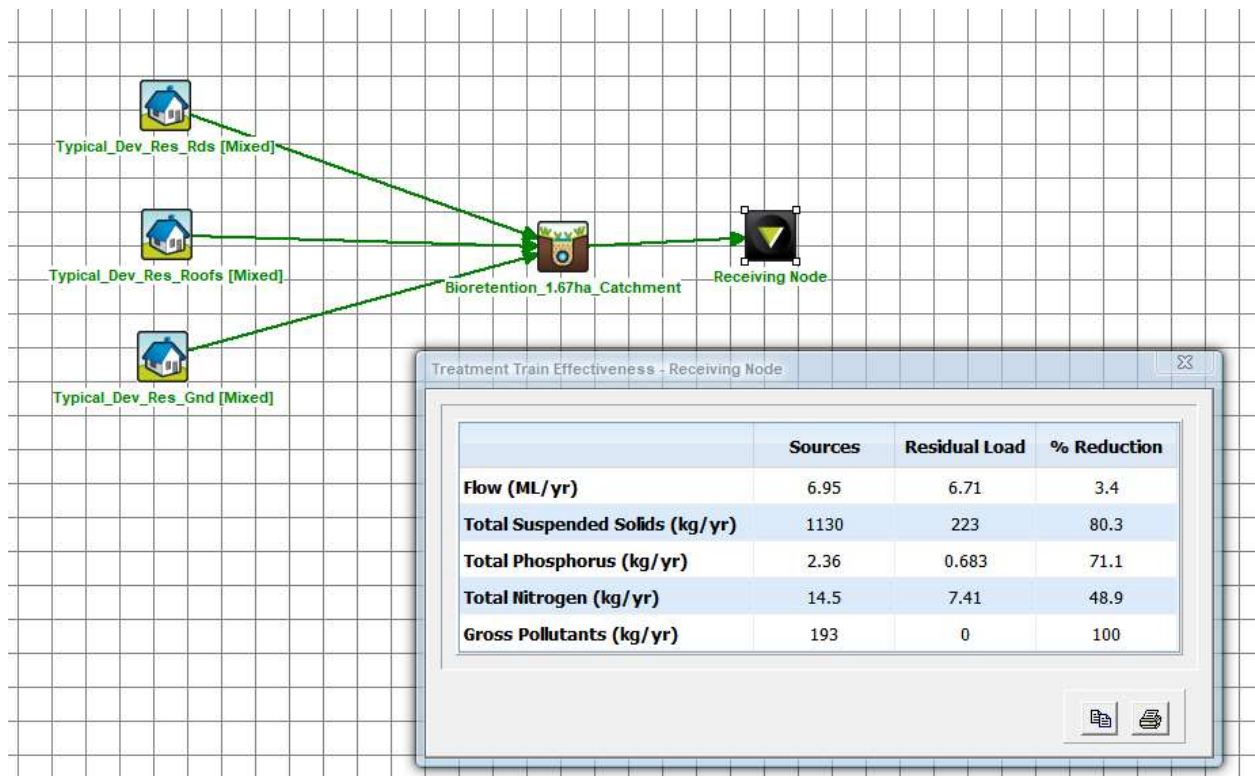


Figure 4-4 MUSIC Model Schematic and Results of 110m² Filter Media Area



5 FLOOD IMPACT ASSESSMENT AND HYDRAULIC MODELLING

5.1 Overview

A flood impact assessment has been prepared for the development in order to demonstrate non-worsening provisions which form part of the flood risk assessment IR requirements that were raised by EDQ. A standalone TUFLOW hydraulic model (version SP-2025.1.0) has been used, with the hydraulic model used to assess the pre- and post-developed arrangements for the flood impact assessment. Further particulars on the detailed modelling completed for this study are outlined separately below.

5.2 TUFLOW Model Details

A brief overview of the local TUFLOW model developed for this assessment is provided below, with the model extents and details illustrated in Figure 5-1:

- The model includes the local catchment and extends some 300m downstream to immediately east of Covella Boulevard, which is located further downstream and to the west of the existing railway.
- Inflow hydrographs have been applied from the local catchment WBNM model discussed previously in Section 4.
- Model topography is based on the 2023 LCC LiDAR data, noting that the model was run on a fine scale 1m grid size.
- A downstream HQ boundary with a slope of 1.2% has been adopted for the downstream edge of the model immediately east of Covella Boulevard.
- A global depth varying Manning's roughness value to represent low density vegetation, which is consistent with the generally cleared nature of the site.
- Initial water levels applied for relevant farm dams, including the two (2) dams present downstream of the site.
- Several key culverts were included into the model as follows:
 - Existing – The culvert details are provided in Table 5-1 and are as illustrated in Figure 5-2. This includes the existing 1 No. 1500mm RCP under the railway line.
 - Teviot Road - There are extensive stormwater piped drainage associated with the Teviot Road upgrade as summarised in Table 5-2 and are as illustrated in Figure 5-3. Teviot Road was part through construction at the time of this report and thus has been assumed to be reflected as being completed for the purposes of the existing case analysis.

Table 5-1 Observed Hydraulic Structure Details – Existing Conditions

Structure ID	Number and Size (mm)	US / DS Invert (m, AHD)	Manning's 'n' Roughness
LeanneCt_01	2 No. 1200x450 RCBC	60.875 / 60.8	0.013
QR_01	1 No. 1500mm RCP	57.89 / 57.83	0.013

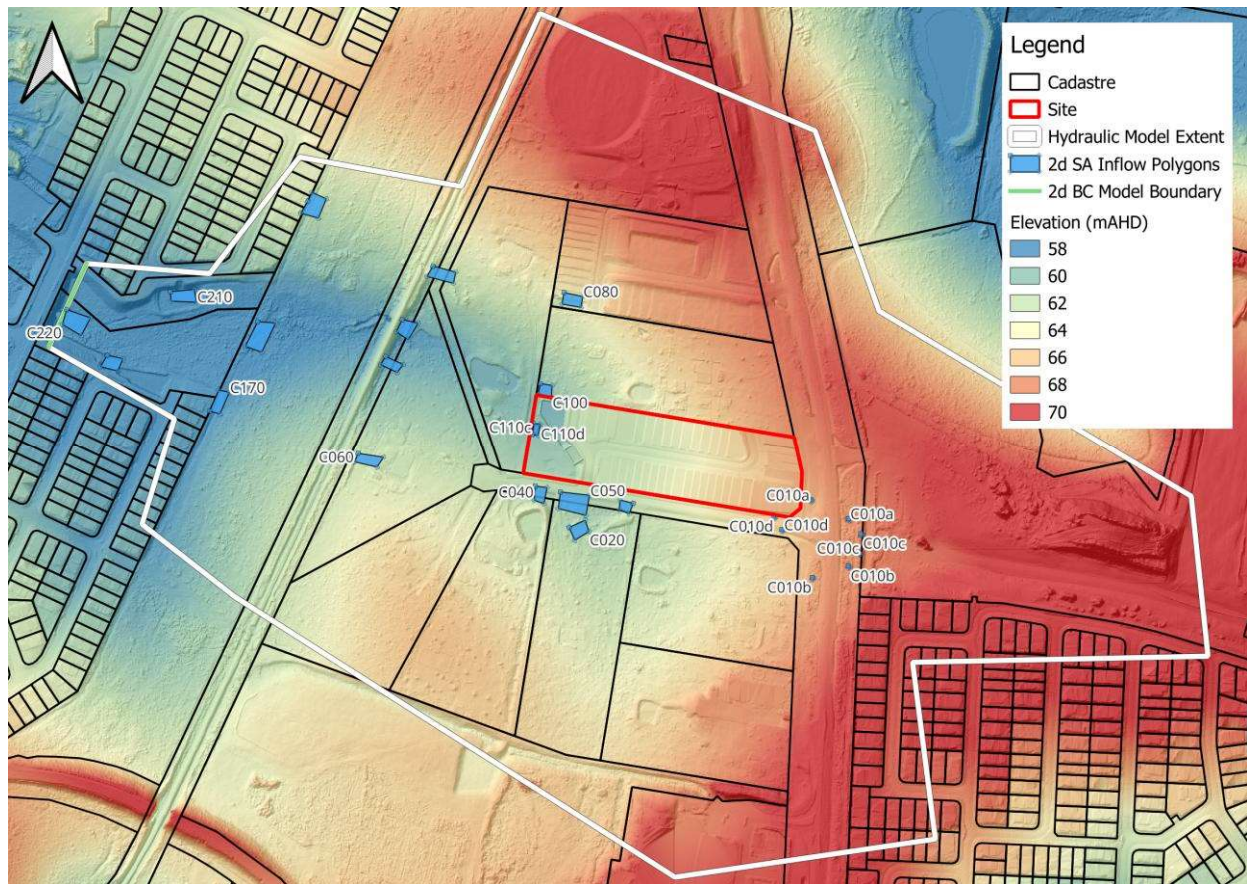


Figure 5-1 TUFLOW Model Setup



Figure 5-2 Key Hydraulic Structures – Existing Conditions



Table 5-2 Teviot Road Upgrade Stormwater Network – Upstream of East_01 Structure Listed Above

Structure ID	Number and Size (mm)	US / DS Invert (m, AHD)	Manning's 'n' Roughness
Pipe4	375mm RCP	66.248 / 63.004	0.013
Pipe9	450mm RCP	65.948 / 64.818	0.013
Pipe10	525mm RCP	65.27 / 65.212	0.013
Pipe11	600mm RCP	65.152 / 64.968	0.013
Pipe18	600mm RCP	65.725 / 65.307	0.013
Pipe19	600mm RCP	65.9 / 65.307	0.013
Pipe20	750mm RCP	64.818 / 64.362	0.013
Pipe21	600mm RCP	65.307 / 63.004	0.013
Pipe22	900mm RCP	63.004 / 62.945	0.013
Pipe23	375mm RCP	65.666 / 63.5	0.013
Pipe24	375mm RCP	63.5 / 62.915	0.013
Pipe25	375mm RCP	65.4 / 63.5	0.013
Pipe26	375mm RCP	63.5 / 62.915	0.013
Pipe27	900mm RCP	62.915 / 62.784	0.013
Pipe28	1200mm x 600mm RCBC	62.784 / 62.505	0.013

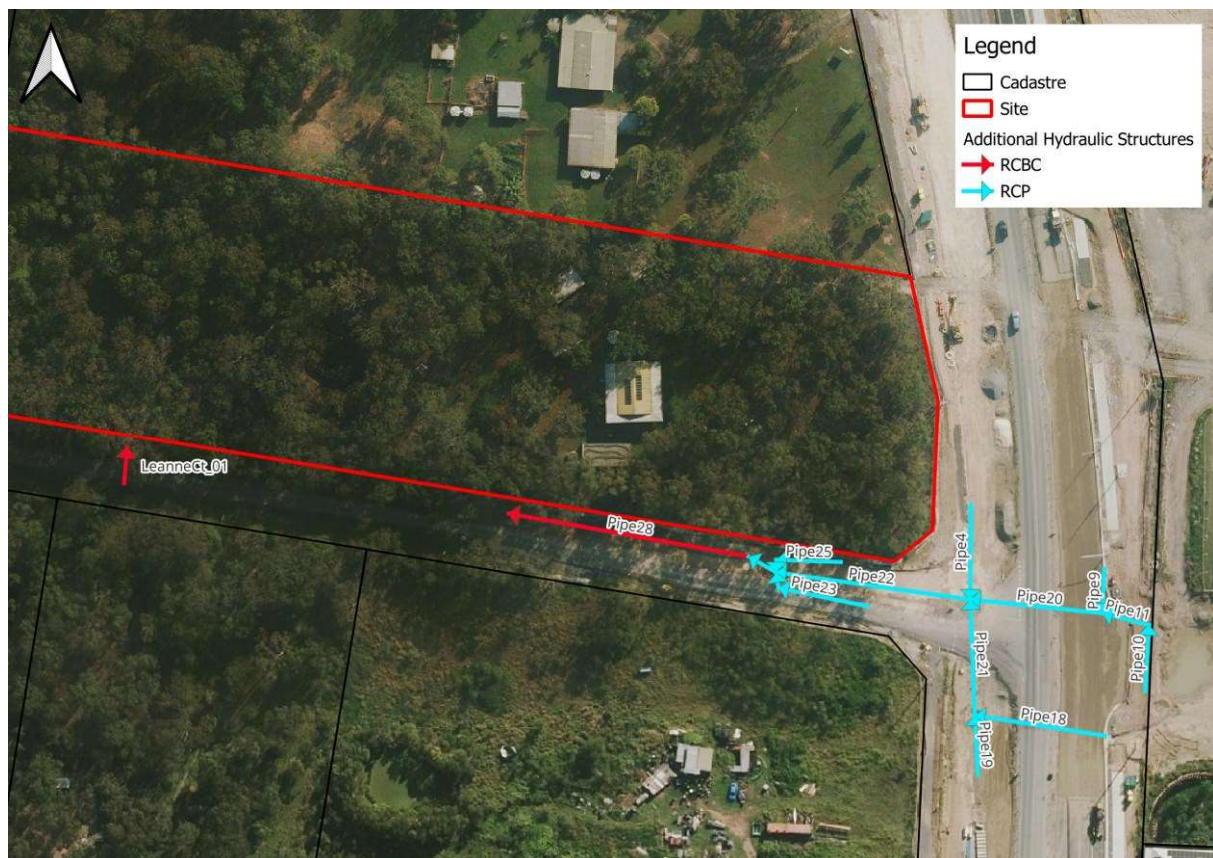


Figure 5-3 Key Hydraulic Structures – Existing Conditions – Teviot Road Infrastructure



5.3 Developed Case Scenario

The hydraulic model was updated to incorporate the proposed development, with the details provided by the design engineer which included a 3D design TIN earthworks arrangement. The particulars of the TUFLOW model as described as follows:

- Developed case topography to include the developed landform which is illustrated in Figure 5-4. Notably, the earthworks TIN includes a detention basin and bio-retention basin located at the western edge of the site.
- Updated hydraulic structures associated with the road works on Leanne Court as illustrated in detail in Figure 5-5, with key structure details outlined in Table 5-3. The Teviot Road stormwater piped arrangement illustrated previously in Figure 5-3 was incorporated in both the existing and post developed scenarios.

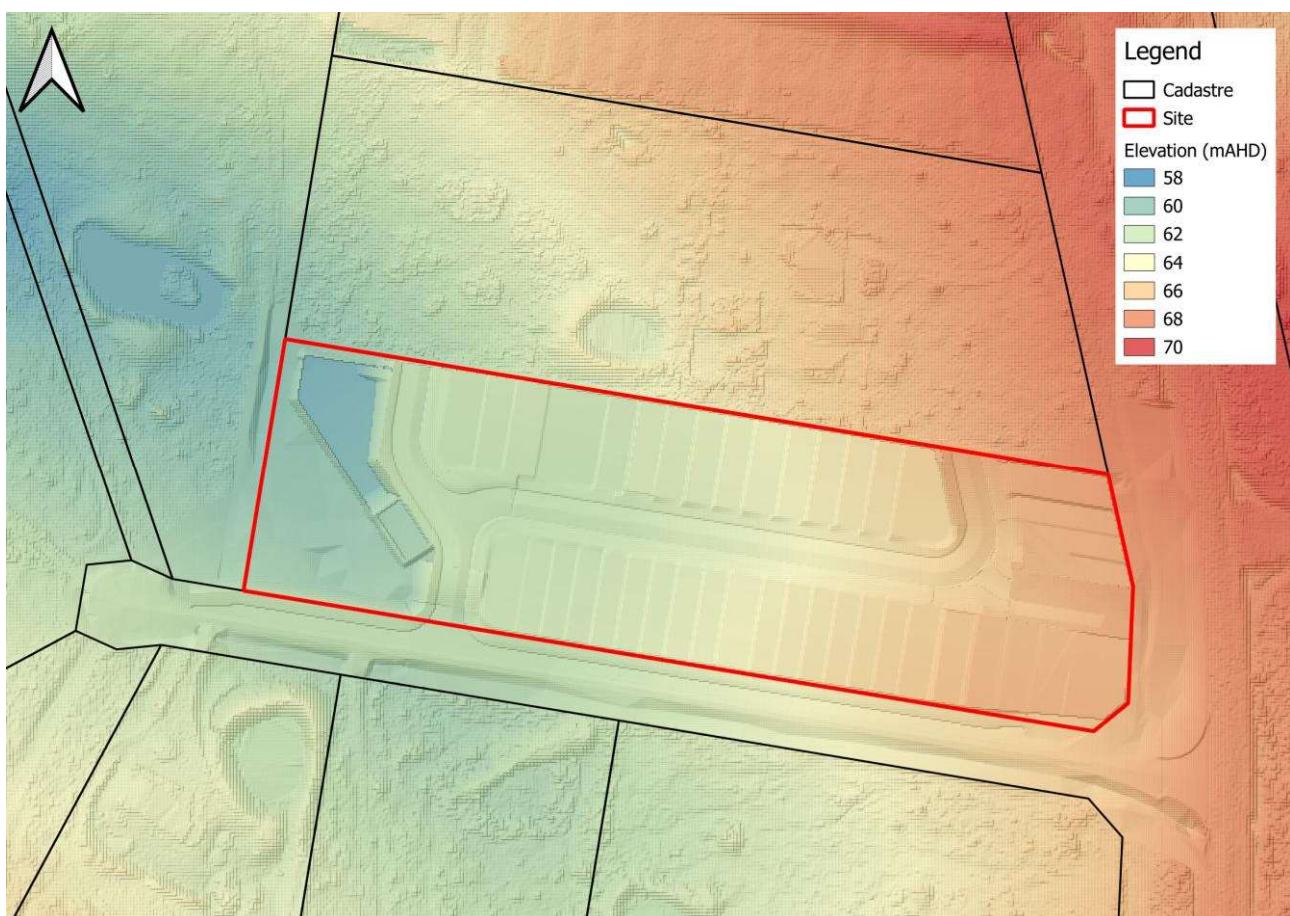


Figure 5-4 Developed Case Site Topography



Table 5-3 Hydraulic Structures – Developed Scenario

Structure ID	Number and Size (mm)	US / DS Invert	Manning's 'n' Roughness
East_02	900 RCP	62.705 / 62.5	0.013
East_03	900 RCP	62.5 / 61.53	0.013
East_04	900 RCP	61.53 / 60.9	0.013
LeanneCt_01	x2 1200x450 RCBC	60.875 / 60.87	0.013
LeanneCt_02	375 RCP	62.63 / 62.5	0.013
LeanneCt_03	375 RCP	61.77 / 61.53	0.013
LeanneCt_05	450x300 RCBC	61.4 / 61.2	0.013
LeanneCt_06	450x300 RCBC	61.2 / 60.98	0.013
LeanneCt_07	375 RCP	61.11 / 61.08	0.013
QR_01	1500mm RCP	57.89 / 57.83	0.013

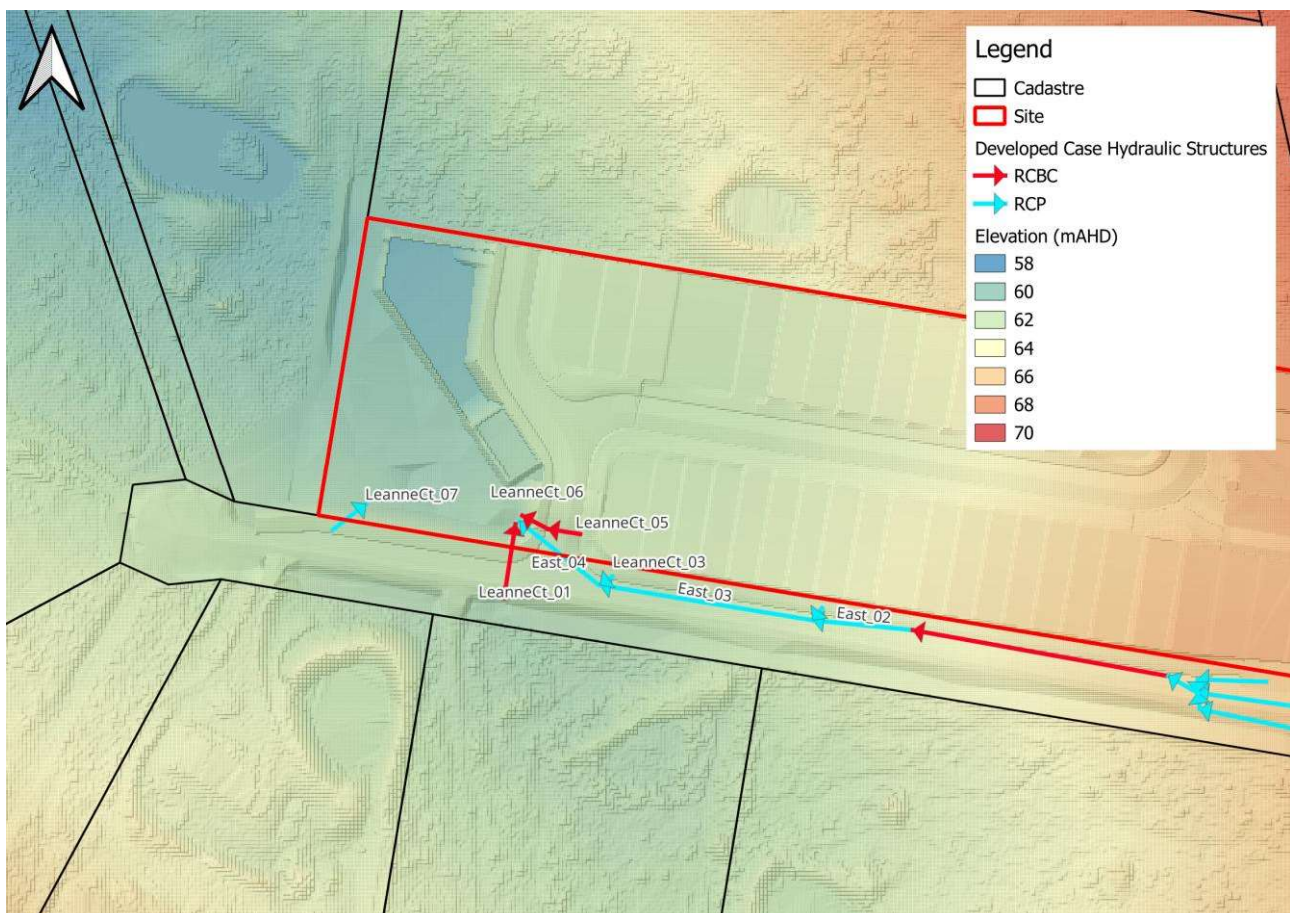


Figure 5-5 Additional Hydraulic Structures for Developed Scenario



5.4 Hydraulic Model Results

The TUFLOW model was simulated for both the existing and developed scenarios, with the developed case including the on-site detention arrangements discussed previously in Section 4.2. The model was run for the 1% AEP, 10% AEP and 50% AEP events, with the results presented as a series of GIS maps included in Appendix B which is inclusive of flood impact maps.

The flood impact map for the 1% AEP event is illustrated in Figure 5-6. There are no flood impacts shown to occur as a consequence of the development within a tolerance of $\pm 10\text{mm}$, with this tolerance being general industry practise for the assessment of flood impacts such that the impacts are negligible, of no practical significance and achieved non-worsening provisions. Flood impact results for the 10% AEP and 50% AEP were also found to be within the $\pm 10\text{mm}$ tolerance which were also assessed to achieve non-worsening provisions.



Figure 5-6 1% AEP Design Event Afflux Results



6 RESPONSE TO INFORMATION REQUEST

As stated previously, EDQ is the assessment manager for the development application which was made over land located in the Greater Flagstone PDA. In this regard, EDQ has issued the following information requests:

- Information Request dated 5 August 2025; and
- Further Issues dated 5 August 2025.

The following sections provide detailed responses to the items raised in both the Information Request and Further Issues Request which were previously documented in WT 2025 and have been retained herein for completeness.

6.1 Request for Information – August 5th, 2025

Request for Information

2. Flood Risk Assessment

Submit a Localised Flood Risk Assessment Report, certified by a suitably qualified RPEQ, to address potential adverse impacts from earthworks proposed in Flood Risk areas.

WT Response

This report, and the analysis contained herein, is inclusive of a flood impact assessment which is commensurable to and consistent with the EDQ requirement for a local flood assessment. The results of the flood assessment have demonstrated that there are no adverse flood impacts as a consequence of the development and the local flood assessment has demonstrated non-worsening provisions with respect to flooding. This report is also provided with RPEQ certification. Accordingly, we are of the view that the EDQ requirement for a flood risk assessment outlined in the Information Request is duly satisfied.

6.2 Further Issues – August 5th, 2025

Further Issues Letter

7. Stormwater Management

Submit an amended Stormwater Management Strategy to address the following:

- a) Updated drawings of the detention basin, including cross sections showing suitable batters, retaining walls, detention levels and weir levels, as a minimum, to demonstrate detention is achieved in accordance with the submitted modelling, and suitable space within the site is achieved for the basin.
- b) Consideration of upstream catchments and their flow volumes. It is unclear what volume of stormwater flows shall be discharged to Lot 900.
- c) Demonstrate the retaining wall on the site's northern boundary will not block and redirect existing stormwater surface flows. Include relevant calculations.
- d) Amend the stormwater solution as basin batters extending into the overland flow path and medium/high risk flood area within the proposed rehabilitation area is not suitable.
- e) Clarify why lots 38-41 appear to discharge to the driveway surface passing through several private properties and have not been provided with kerb or underground connections to a lawful point of discharge.
- f) Confirm the proposed drainage works on Leanne Court tie-in with Council's current upgrade works.



WT Response

This report, and the analysis contained herein, is inclusive of a Stormwater Management Plan (SMP) which has been prepared to address the matters raised by EDQ in the Further Information Request. Specifically, the SMP documented herein demonstrates that the matters raised by EDQ are satisfactorily addressed and the following responses are provided in that regard:

- 7a) response – Revised civil engineering arrangements are included in Appendix A for the proposed detention basin arrangements. The detention basin design, including such aspects as batters, retaining walls, detention levels and weir levels, including the updated modelling that has been prepared as is documented herein, demonstrates suitable and adequate space for the detention basin and moreover that the detention basin is operationally effective such that an effective mitigation effect is provided which prevents any adverse flood impacts external to the development.
- 7b) response - Revised civil engineering arrangements are included in Appendix A for the proposed detention basin arrangements. The modelling documented herein including upstream catchment plans clearly outline the stormwater arrangements and inflows to the detention basin. The revised detention basin arrangements are further supported by the detailed hydraulic modelling.
- 7c) response – Revised civil engineering arrangements are included in Appendix A which now include an interallotment drainage arrangement along the northern property boundary. The drainage includes a concrete lined diversion channel which flows to the west to discharge into a field inlet and piped arrangement that ultimately drains to the lawful point of discharge to the west being the downstream property and secured discharge consent. The drainage arrangement are fully contained within the subject site and will not result in any blockage of upslope flows from the neighbouring properties to the north.
- 7d) response – The extent of the earthworks and batters associated with the detention and bio-retention basin with respect to the Council medium/high flood risk area mapping is illustrated in Figure 6-2. It is acknowledged that the batters extend into the high flood risk area identified in the Council flood overlay mapping, which we understand is the context of the reference made by EDQ as to the medium/high risk flood area. Notwithstanding the fact that this application is submitted to EDQ as the assessment manager separate to Council, the following comments are relevantly made:
 - Performance Outcome 6 (PO6) of the Council Flood Overlay code provisions allow for the development envelope to be located within a high flood risk area to create a lot for drainage purposes (refer Planning Scheme extract provided in Figure 6-1). The plan of development is inclusive of a Balance Lot 900 which is proposed for drainage purposes and fully encapsulates the proposed detention and bio-retention basin, and which is also practically entirely inundated in the 1% AEP event;
 - The hydraulic assessment including detailed TUFLOW modelling as is documented herein has demonstrated that there are no adverse flood impacts external to the site and as a consequence of the earthworks projecting into the flood risk area as described above; and
 - Given the above, we are of the view that the proposed works satisfactorily address 7d) and moreover is compliant with the Council flood overlay code provisions relating to filling within the medium/high risk flood area.

PO6 Each lot has a development envelope area located outside a High flood risk area identified on Flood hazard overlay map OM-05.04 , except where limited to: a. the rearrangement of boundaries and flood risk is not materially increased on new lots; or b. creating an additional lot for the purpose of a drainage or environmental reserve.	AO6 No acceptable outcome provided.
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Figure 6-1 Performance Outcome 6 of Section 8.2.5 of the LCC Planning Scheme (2015)

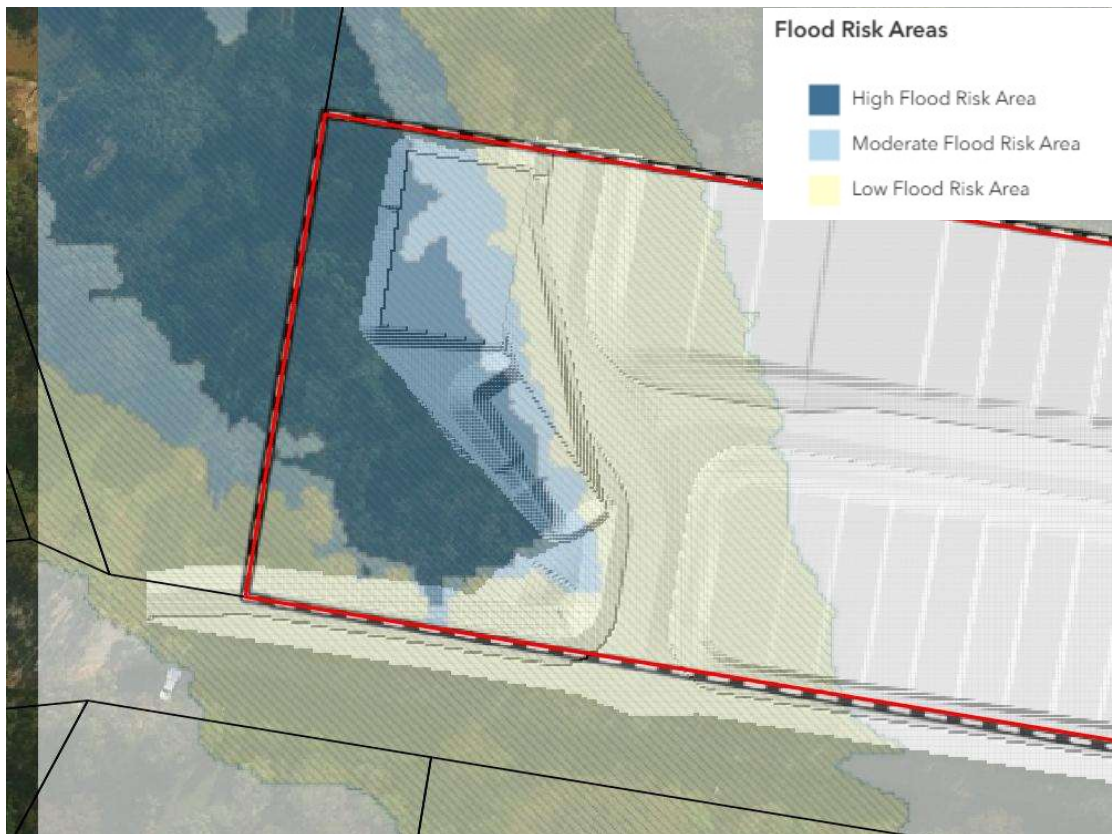


Figure 6-2 LCC Flood Risk Mapping Overlayed with Proposed Development – Note: This Does Not Show the Final Basin Design.

- 7e) response – This aspect is a civil engineering matter and will be responded to separate to this flood and stormwater management plan.
- 7f) response – As is outlined in detailed in this report, the existing stormwater arrangements on Leanne Court are incorporated into the design arrangements for the civil engineering arrangements, the details of which are included in Appendix A. We note that the Teviot Road upgrade works involve road widening and a subsequent increase in urbanisation but does not include any on-site detention provisions. It is likely that there are increases in Leanne Court as a consequence of the works. At this stage, WT has not prepared a detailed assessment of these aspects to quantify such changes in discharge rather have simply addressed downstream non-worsening provisions by providing corresponding detention to account for the cumulative changes in flow characteristics. If such arrangements are not acceptable, it is possible that with more detailed modelling that on-site detention provisions could be minimised and the flood impacts resulting from the road upgrade works quantified separately which would quite arguably and reasonably form the updated baseline existing flows on which the development otherwise ought to be assessed.

Overall, we are of the view that the EDQ requirements associated with the amended SMP outlined in the Further Information Request are now duly satisfied.



7 RESPONSE TO OUTSTANDING MATTERS

7.1 Introduction

Following submission of the initial report documented in WT 2025, EDQ provided an Outstanding Matters on 9 February, 2026. Item 2 of these outstanding matters pertained specifically to Stormwater Management and Flooding and has been reproduced below in Figure 7-1. Clarification was sought on these matters via several meetings with EDQ which resulting in clarifications and a discernible desired outcome that could be achieved. Responses to the outstanding matters are provided separately below.

In summary, the discussions with EDQ resulted in a modified detention basin arrangement being prepared which accommodated the bio-retention basin within the same overall footprint. Additionally, the revised detention basin provides an opportunity to consolidate detention provisions from the property to the north as well as providing a design arrangement which was more sympathetic to floodplain conveyance of the local floodway. The revised arrangements have been hydraulically assessed and found to maintain a non-worsening of local flood conditions across the 1%, 10%, and 50% AEP conditions. Further design iteration was undertaken to reduce external basin batters to a grade of 1:3 and provide internal basin batters to a grade of 1:3 as far as possible without compromising the required detention volume provisions.

2. Stormwater Management and Flooding

Submit an updated stormwater and flooding assessment report to address the following:

- a) To ensure stormwater solutions are integrated across the Greenbank section of the PDA, the basin is to be designed to ensure stormwater detention and treatment can be combined with other basins, particularly for Lot 17 on RP210430 to the north of the site.
- b) Basin batters need to be relocated out of the floodway.
- c) Stormwater quality and quantity basins have been separated resulting in further encroachment into the floodway. Provide clarification on the reason for this separation as this configuration exacerbates the encroachment into the floodway.
- d) The stormwater detention basin has expanded on the assumption that the development must cater for increase in stormwater flows from the Teviot Road upgrade. The detention basin should only cater for the development site's mitigation.
- e) Redesign the basin as a 2.4m high retaining wall adjoining the road reserve is not a safe or desirable maintenance outcome. It is anticipated a combined planted batter/retaining wall solution and re-alignment of the north-south road to accommodate stormwater infrastructure and eliminate floodway encroachment is proposed.
- f) Drainage basins to be included in a separate drainage lot.

Figure 7-1 Outstanding Matters Received from EDQ 9 February, 2026



7.2 Item 2a – Basin Interoperability

The basin design has been revised and pushed closer to the northern property boundary in order to provide an opportunity for consolidation of the detention facility that may be contended for the northern lot on Lot 17 RP210430. Whilst the opportunity for consolidation of detention is available, due consideration of the sewer servicing will also need to be made. This item is considered to now be suitably addressed.

7.3 Item 2b – Floodway Encroachment

The encroachment of the detention basin facility within the floodplain was previously discussed in the outstanding issues response in Section 6.2 previously, with encroachment allowable based on the Council planning scheme. The detention basin arrangements have since been revised to minimise the extent of the projection into the floodplain whereby the external edge of the basins would run southeast to northwest and therefore have less impact on the conveyance of flow. The revised arrangements have been subject to a flood impact assessment which has demonstrated that there are no adverse flood impacts as a consequence of the revised basin arrangement. The revised arrangements are understood to be acceptable to EDQ and accordingly this item is considered to now be suitably addressed.

7.4 Item 2c – Split vs Combined Basin Design

The proposal is now inclusive of a single detention basin facility which is inclusive of the bio-retention basin such that both facilities are consolidated within the same overall footprint. The revised arrangements are understood to now be acceptable to EDQ and accordingly this item is considered to now be suitably addressed.

7.5 Item 2d – Teviot Road Flows

WT has since discussed this aspect with EDQ and confirm that the detention facility only receives stormwater from the proposed development and with all flows from Teviot Road bypassing the basin. In that way the detention facility does not accommodate any stormwater flows from Teviot Road or Leanne Court. We understand that this clarification is acceptable to EDQ and accordingly this item is considered to now be suitably addressed.

7.6 Item 2e and 2f – Retaining Walls and Drainage Lot

These items are separate civil and lot reconfiguration matters which are now addressed with the revised development arrangements which is inclusive of the revised detention basin arrangements described above. These items are considered to now be suitably addressed.



8 CONCLUSION

Water Technology Pty Ltd (WT) has been commissioned by Elevate Consulting Engineers (Elevate) to prepare a Flood Impact Assessment and Stormwater Management Plan for the site located at 197-201 Teviot Road, Greenbank, real property description Lot 16 SP 343224 (The Site).

The site is located within the Logan City Council (LCC) Local Government Area (LGA). The site is also located within the Greater Flagstone Priority Development Area (PDA), with the responsibility for development in the PDA administered by Economic Development Queensland (EDQ).

The proposed development includes a 1 into 42 lot reconfiguration for residential development. A development application has already been lodged to EDQ in 2025 under application reference DEV2025/1652. On the August 5th 2025, EDQ issued an Information Request (IR) for the application. On the February 9th 2026, EDQ additionally issued an Outstanding Matters (OM) notice, which was followed by two meetings with EDQ.

This report has been prepared to provide the Flood Risk Assessment (termed Flood Impact Assessment (FIA) herein) for the purposes of addressing the IR and OM issued by EDQ. Additionally, this report also incorporates a Stormwater Management Plan (SMP) which was commissioned by the client and has been prepared to address the separate matters outlined in the Further Information Request by EDQ. As a consequence, this report provides a consolidated report to address both the FIA and SMP for the proposed residential development.

Detailed modelling has been prepared relating to stormwater management (comprising both water quantity and quality) in addition with flooding, the details of which are documented in this report. Specifically, this has included detailed WBNM hydrologic modelling and TUFLOW hydraulic modelling.

The key findings of the assessments documented herein are summarised as follows:

- Due to the extension of stormwater assets connected to the upgraded Teviot Road, and due to the development of the site, a detention basin is proposed to be incorporated in the development of the site. The detention basin has been sized to maintain non-worsening in downstream discharge as a consequence of development of the site as well as the modified drainage works on Leanne Court and Teviot Road external to the development.
- The combined detention and bioretention basin infrastructure were aligned with the waterway to minimise conveyance loss.
- Flood modelling including the detention basin arrangements has been completed which demonstrates that the flood impacts are negligible, of no practical significance, and achieve non-worsening provisions.
- A bioretention basin has been provided as part of the development. It has been demonstrated via water quality modelling that the bio-retention basin satisfactorily achieves the LCC required water quality reduction targets.
- The site will discharge to the downstream lot, due west of the development, with a discharge consent already provided by the downstream property owner which provides the lawful point of discharge.
- Detailed responses to the EDQ Information Request, and Outstanding Matters have been outlined and are addressed within this report.

Given the above, it is contended that the proposed plan can be readily supported by EDQ and approved subject to reasonable and relevant conditions.



APPENDIX A CIVIL ENGINEERING DRAWINGS



PROPOSED SUBDIVISION
197-201 TEVIOT ROAD, GREENBANK, QLD

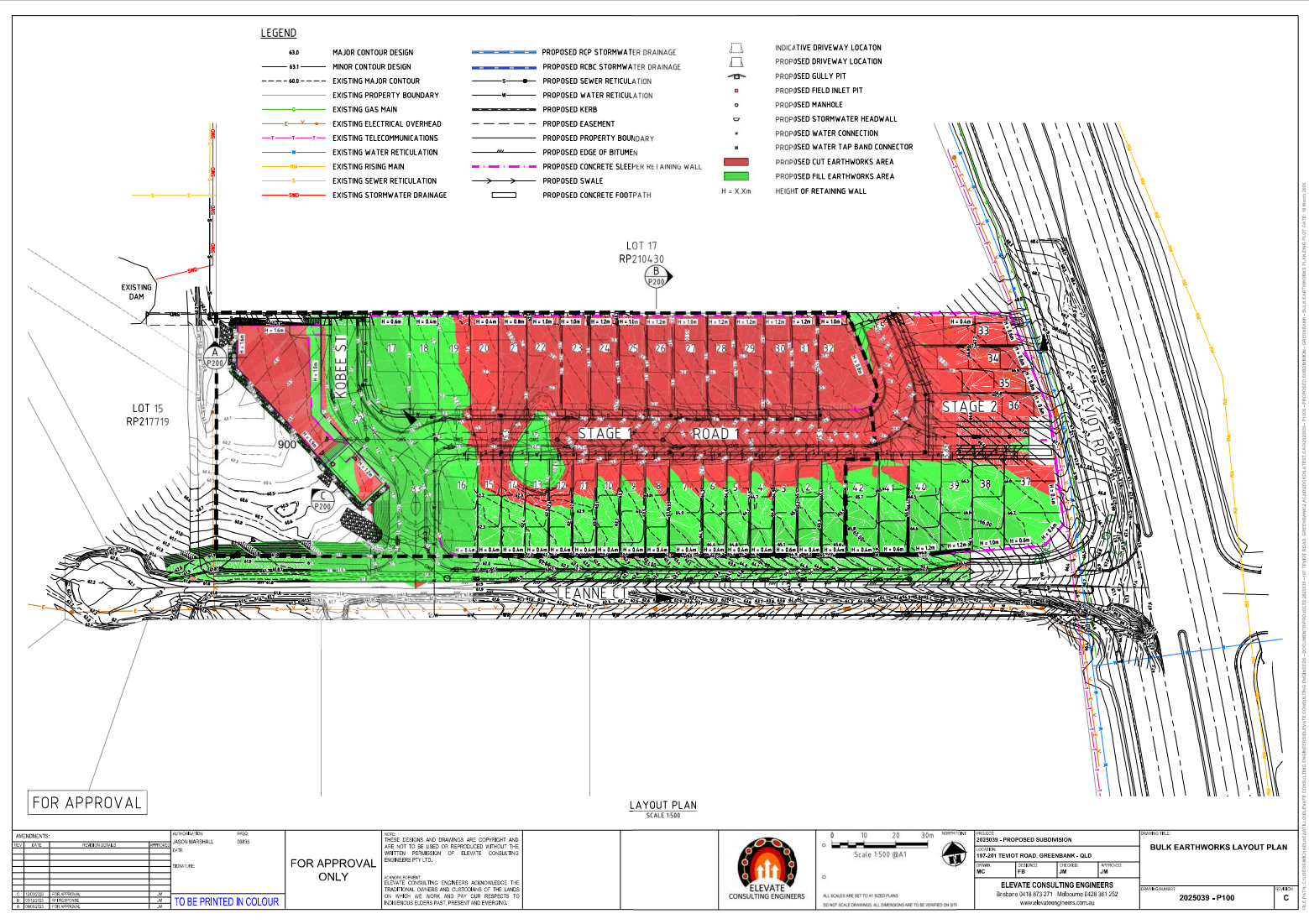


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SCALE 1:5000

DRAWING SCHEDULE		
SHEET NO	REV	SHEET TITLE
P000	C	COVER SHEET
P100	C	BULK EARTHWORKS LAYOUT PLAN
P200	C	EARTHWORKS CROSS SECTIONS
P300	D	ROADWORKS AND STORMWATER DRAINAGE PLAN
P301	C	Basin Layout Plan and Cross Sections
P400	C	LONGITUDINAL SECTION - SHEET 1 OF 3
P401	C	LONGITUDINAL SECTION - SHEET 2 OF 3
P402	C	LONGITUDINAL SECTION - SHEET 3 OF 3
P500	C	STORMWATER CATCHMENT PLAN
P600	C	WATER RETICULATION LAYOUT PLAN
P700	C	SEWER RETICULATION LAYOUT PLAN
P800	C	TYPICAL CROSS SECTIONS
P900	A	SERVICES LAYOUT PLAN - SHEET 1 OF 2
P901	A	SERVICES LAYOUT PLAN - SHEET 2 OF 2

FOR APPROVAL

AMENDMENTS:		APPROVED:		DATE:		FOR APPROVAL ONLY		NOTES:		ELEVATE CONSULTING ENGINEERS		PROJECT:		DRAWING TITLE:	
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						TO BE PRINTED IN COLOUR		APPROVED:		DATE:		PROJECT:		DRAWING TITLE:	



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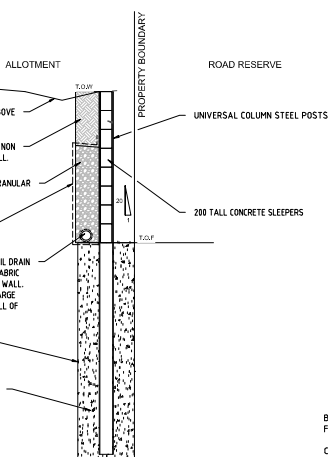
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OWNER: MC
DESIGNED: FB
CHECKED: JM
APPROVED: JM
ELEVATE CONSULTING ENGINEERS
Brisbane 0418 872 271 Melbourne 0428 381 252
www.elevate-engineers.com.au

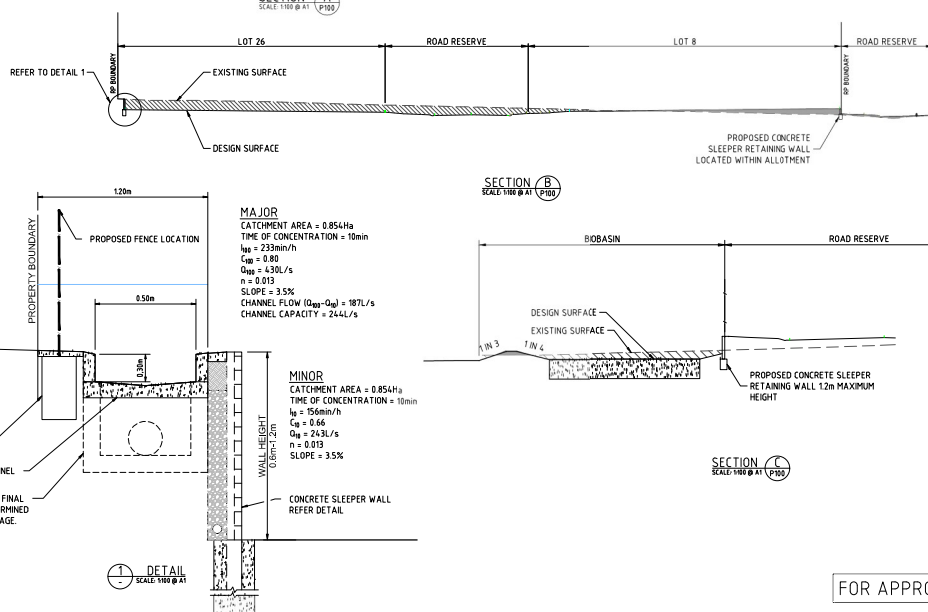
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DRAWING NUMBER: 2025039 - P100
REVISION: C

 CUT
 FILL



TYPICAL CONCRETE SLEEPER WALL

NOTE:
ALL ALLOTMENT RETAINING WALLS INCLUDING FOOTINGS
ARE TO BE LOCATED WHOLLY WITHIN ALLOTMENTS.



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C	12/05/2021	REV. 40/50/60/70/80	AM
B	07/12/2021	REV. 40/50/60/70/80	AM
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DATE:	
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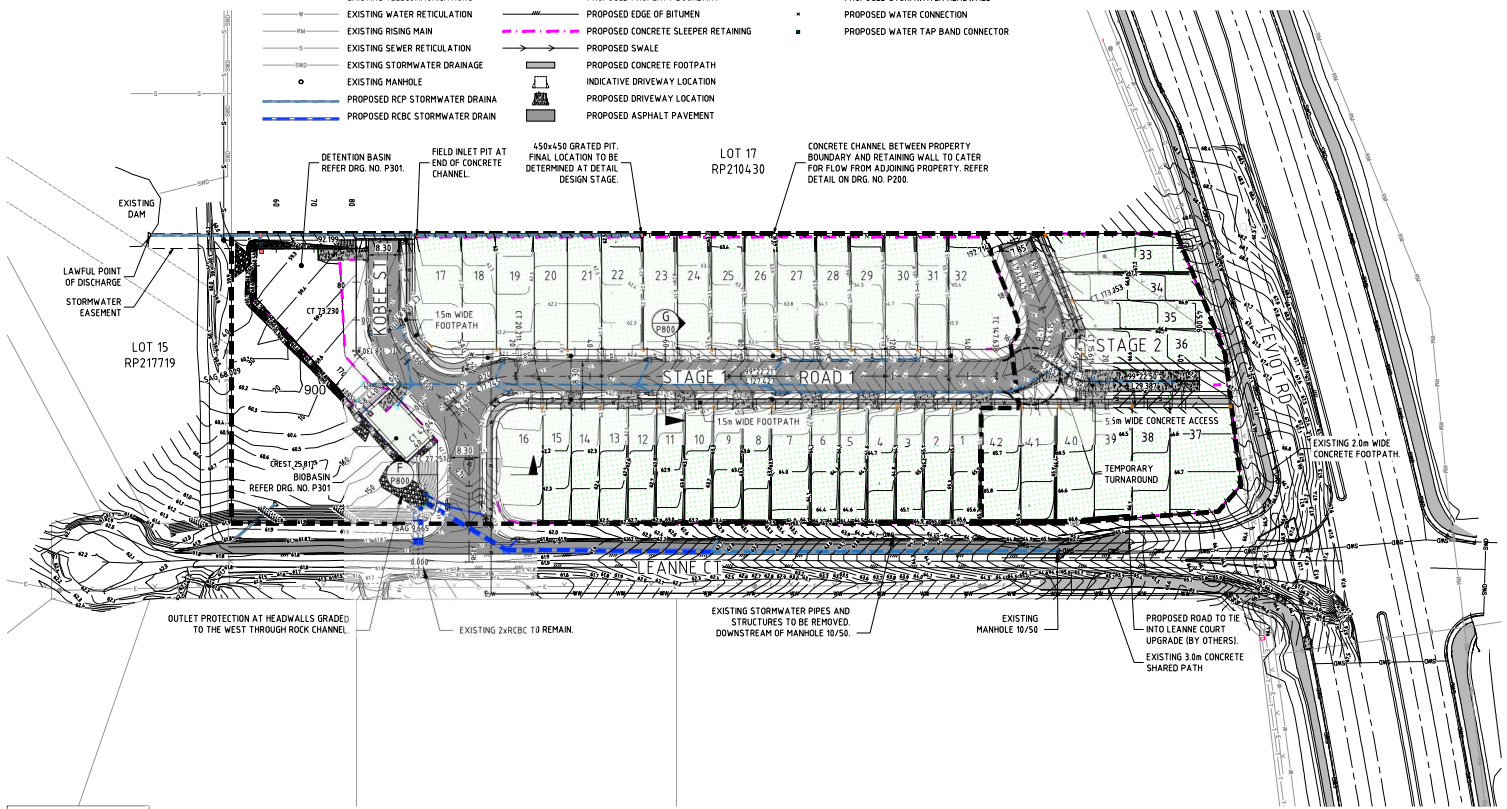
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- EXISTING TELECOMMUNICATIONS
- EXISTING WATER RETICULATION
- EXISTING RISING MAIN
- EXISTING SEWER RETICULATION
- EXISTING STORMWATER DRAINAGE
- EXISTING MANHOLE
- PROPOSED RCP STORMWATER DRAIN
- PROPOSED RCBC STORMWATER DRAIN

LEGEND

- PROPOSED SEWER RETICULATION
- PROPOSED WATER RETICULATION
- PROPOSED KERB
- PROPOSED EASEMENT
- PROPOSED PROPERTY BOUNDARY
- PROPOSED EDGE OF BITUMEN
- PROPOSED CONCRETE SLEEPER RETAINING
- PROPOSED SWALE
- PROPOSED CONCRETE FOOTPATH
- INDICATIVE DRIVEWAY LOCATION
- PROPOSED DRIVEWAY LOCATION
- PROPOSED ASPHALT PAVEMENT

LEGEND

- GRASS SEED
- PROPOSED GULLY PIT
- PROPOSED FIELD INLET PIT
- PROPOSED MANHOLE
- PROPOSED STORMWATER HEADWALL
- PROPOSED WATER CONNECTION
- PROPOSED WATER TAP BAND CONNECTOR



FOR APPROVAL

LAYOUT PLAN
SCALE 1:500

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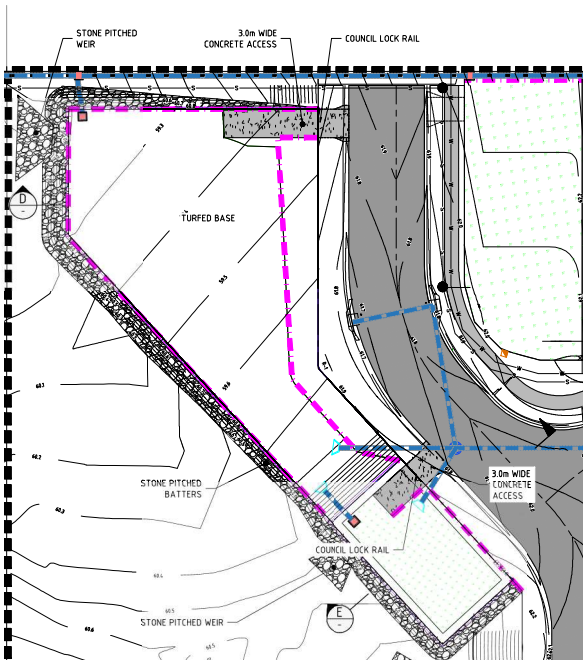
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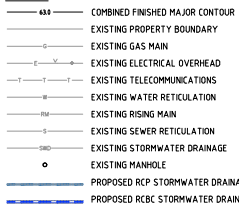
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DRAWING NUMBER: 2025039 - P300	REVISION: D

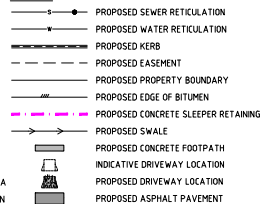


LAYOUT PLAN
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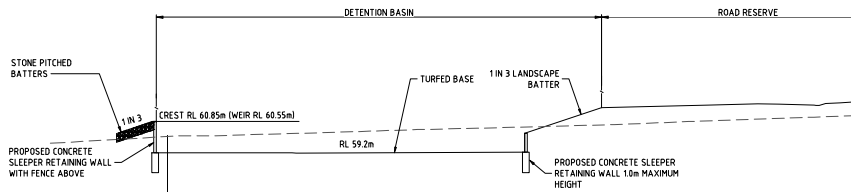
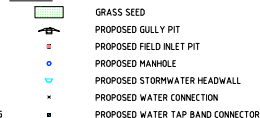
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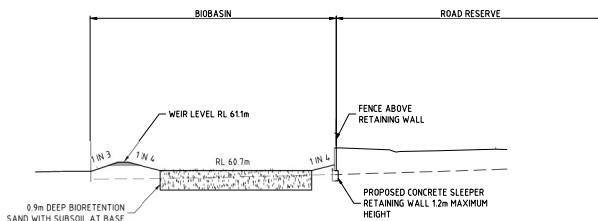
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SECTION D
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SECTION E
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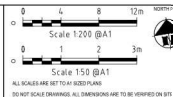
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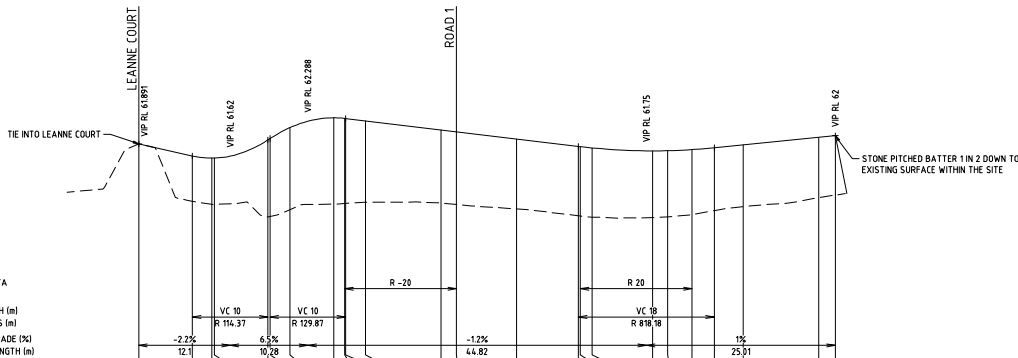
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REVISION:	C



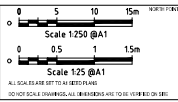
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EXISTING SURFACE LEVEL																							
CUT / FILL DEPTH																							
CONTROL LINE CHAINAGE																							
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	7.899	0.001	61.931	61.732																			
	9.665	0.001	61.993	61.703																			
	10	0.432	61.992	61.704																			
	17.099	1.039	62.026	61.645																			
	17.376	1.032	62.031	61.583																			
	20	1.085	61.822	62.137																			
	25.817	11.2	61.995	62.237																			
	27.251	1.06	61.93	62.229																			
	27.376	1.03	61.94	62.228																			
	30	1.077	61.719	62.706																			
	40	0.666	61.939	62.716																			
	42.411	0.861	61.991	62.052																			
	50	0.925	61.931	61.956																			
	58.991	0.718	62.040	61.858																			
	58.44	0.718	62.037	61.855																			
	60	0.925	62.023	61.838																			
	68.009	0.883	62.016	61.799																			
	70	0.876	62.025	61.801																			
	73.23	0.863	62.053	61.806																			
	76.991	0.851	61.909	61.840																			
	80	0.818	61.840	61.878																			
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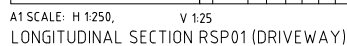
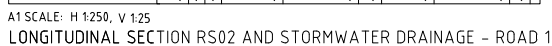
LONGITUDINAL SECTION RS01 AND STORMWATER DRAINAGE - KOBEE STREET

FOR APPROVAL

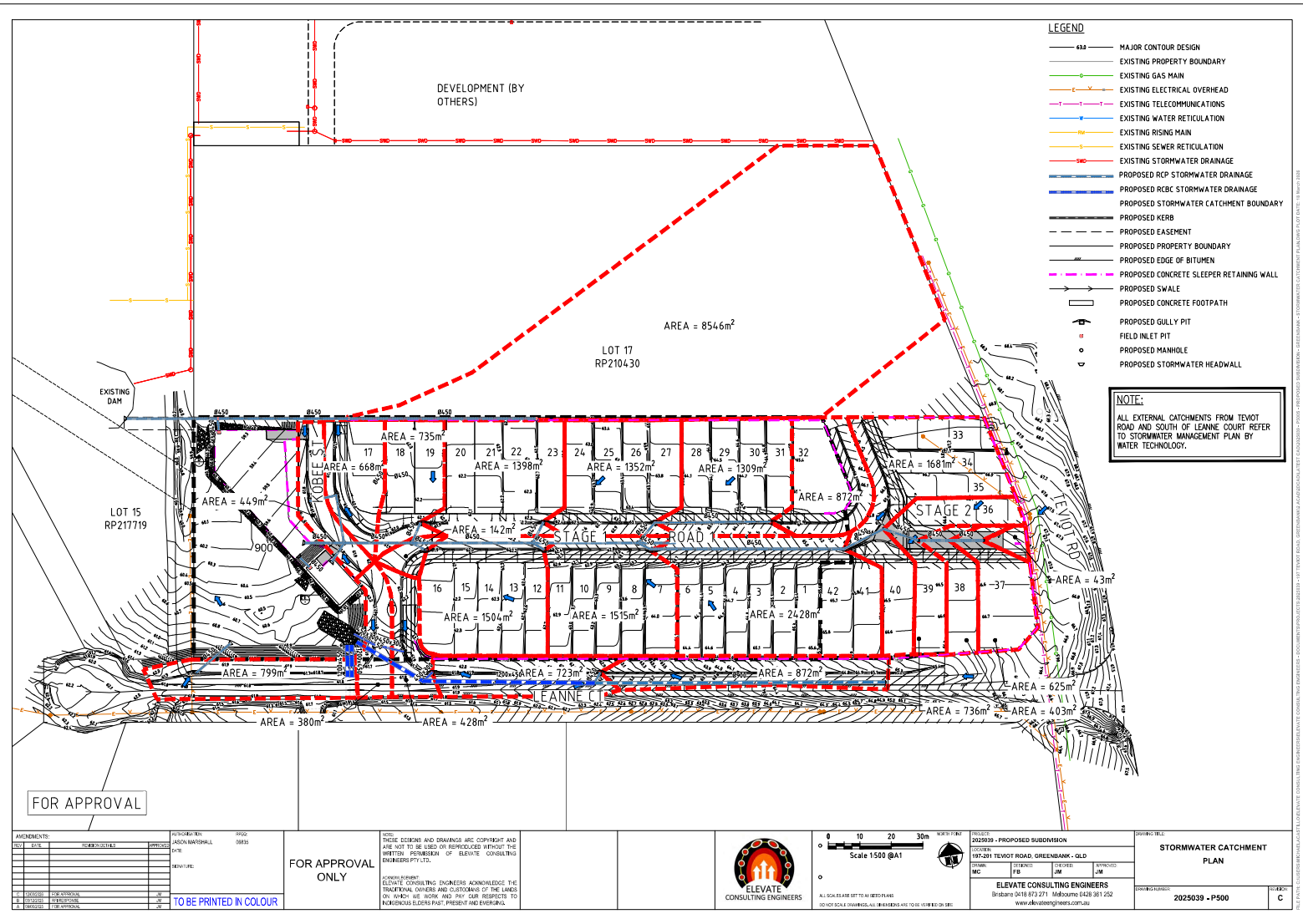
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NO.	DATE	DESCRIPTION	DATE	PROJECT	PROJECT	PROJECT	PROJECT
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2				197-201 TELVOT ROAD, GREENBANK - QLD	197-201 TELVOT ROAD, GREENBANK - QLD	197-201 TELVOT ROAD, GREENBANK - QLD	197-201 TELVOT ROAD, GREENBANK - QLD
3				MC	MC	MC	MC
4				ELEVATE CONSULTING ENGINEERS	ELEVATE CONSULTING ENGINEERS	ELEVATE CONSULTING ENGINEERS	ELEVATE CONSULTING ENGINEERS
5				Brisbane 0418 872 271 Melbourne 0428 381 252	Brisbane 0418 872 271 Melbourne 0428 381 252	Brisbane 0418 872 271 Melbourne 0428 381 252	Brisbane 0418 872 271 Melbourne 0428 381 252
6				www.elevate-engineers.com.au	www.elevate-engineers.com.au	www.elevate-engineers.com.au	www.elevate-engineers.com.au
FOR APPROVAL ONLY				LONGITUDINAL SECTION SHEET 1 OF 3			
TO BE PRINTED IN COLOUR				2025039 - P400			



PROJECT:		DRAWING TITLE:	
2025039 - PROPOSED SUBDIVISION		LONGITUDINAL SECTION SHEET 1 OF 3	
197-201 TELVOT ROAD, GREENBANK - QLD		2025039 - P400	
MC		C	



DRAWING TITLE		REVISION
LONGITUDINAL SECTION SHEET 3 OF 3		
DRAWING NUMBER		REVISION
2025039 - P402		C

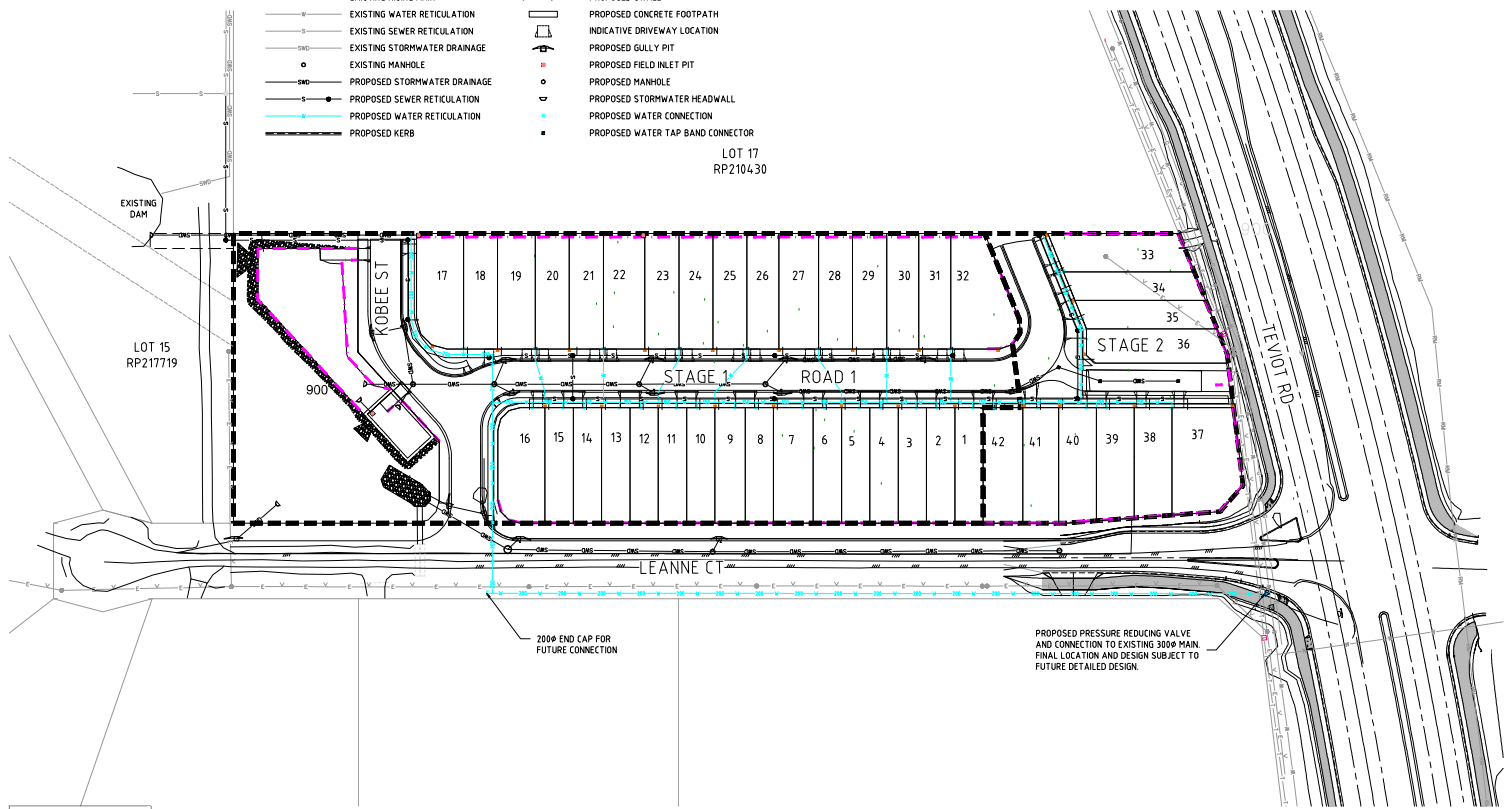


LEGEND

- EXISTING PROPERTY BOUNDARY
- EXISTING GAS MAIN
- EXISTING ELECTRICAL OVERHEAD
- EXISTING TELECOMMUNICATIONS
- EXISTING RISING MAIN
- EXISTING WATER RETICULATION
- EXISTING SEWER RETICULATION
- EXISTING STORMWATER DRAINAGE
- EXISTING MANHOLE
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWER RETICULATION
- PROPOSED WATER RETICULATION
- PROPOSED KERB

LEGEND

- PROPOSED EASEMENT
- PROPOSED PROPERTY BOUNDARY
- PROPOSED EDGE OF BITUMEN
- PROPOSED CONCRETE SLEEPER RETAINING WALL
- PROPOSED SWALE
- PROPOSED CONCRETE FOOTPATH
- INDICATIVE DRIVEWAY LOCATION
- PROPOSED GULLY INLET PIT
- PROPOSED FIELD INLET PIT
- PROPOSED MANHOLE
- PROPOSED STORMWATER HEADWALL
- PROPOSED WATER CONNECTION
- PROPOSED WATER TAP BAND CONNECTOR



FOR APPROVAL

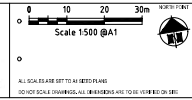
LAYOUT PLAN
SCALE 1500

AMENDMENTS:		
NO.	DATE	DESCRIPTION

DESIGNED BY	DRG
CHECKED BY	DRG
DATE	08/03/20
PROJECT NO.	2025039
PROJECT NAME	PROPOSED SUBSTATION
PROJECT ADDRESS	197-201 TEVOT ROAD, GREENBANK - QLD
PROJECT CLIENT	ELEVATE CONSULTING ENGINEERS
PROJECT CONTACT	Brisbane 0418 872 271 Melbourne 0428 381 252
PROJECT WEBSITE	www.elevate-engineers.com.au

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PROJECT:	2025039 - PROPOSED SUBSTATION
LOCATION:	197-201 TEVOT ROAD, GREENBANK - QLD
OWNER:	MC
DESIGNED BY:	FB
CHECKED BY:	JM
DATE:	08/03/20
PROJECT NO.:	2025039
PROJECT NAME:	PROPOSED SUBSTATION
PROJECT ADDRESS:	197-201 TEVOT ROAD, GREENBANK - QLD
PROJECT CLIENT:	ELEVATE CONSULTING ENGINEERS
PROJECT CONTACT:	Brisbane 0418 872 271 Melbourne 0428 381 252
PROJECT WEBSITE:	www.elevate-engineers.com.au

DRAWING TITLE:	
WATER RETICULATION LAYOUT PLAN	
DRAWING NUMBER:	2025039 - P600
REVISION:	C

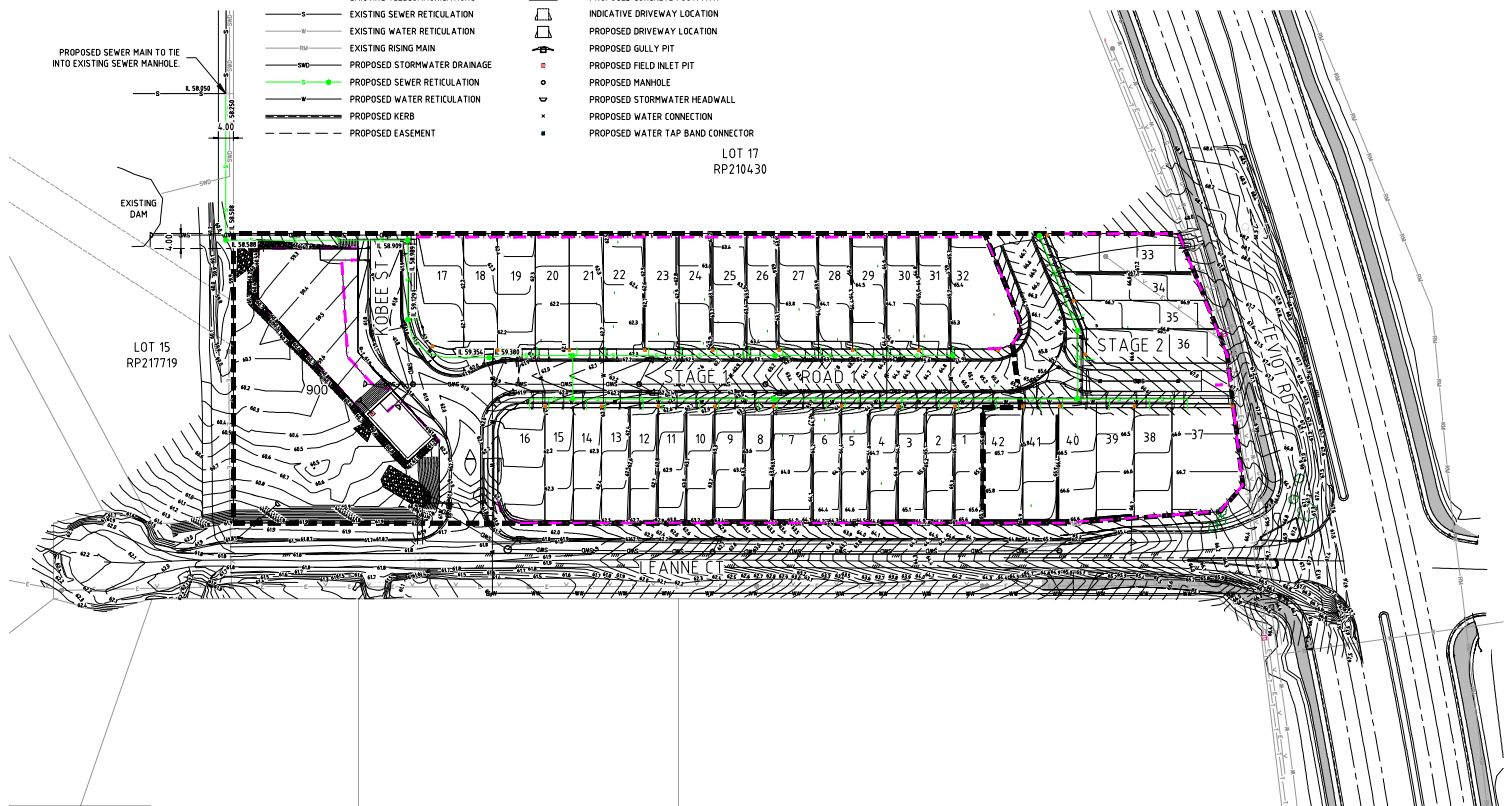
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LEGEND

- 63.0 COMBINED FINISHED MAJOR CONTOUR
- EXISTING PROPERTY BOUNDARY
- EXISTING GAS MAIN
- EXISTING ELECTRICAL OVERHEAD
- EXISTING TELECOMMUNICATIONS
- EXISTING SEWER RETICULATION
- EXISTING WATER RETICULATION
- EXISTING RISING MAIN
- EXISTING STORMWATER DRAINAGE
- PROPOSED SEWER RETICULATION
- PROPOSED WATER RETICULATION
- PROPOSED KERB
- PROPOSED EASEMENT

LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED EDGE OF BITUMEN
- PROPOSED CONCRETE SLEEPER RETAINING WALL
- PROPOSED SWALE
- PROPOSED CONCRETE FOOTPATH
- INDICATIVE DRIVEWAY LOCATION
- PROPOSED DRIVEWAY LOCATION
- PROPOSED GULLY PIT
- PROPOSED FIELD INLET PIT
- PROPOSED MANHOLE
- PROPOSED STORMWATER HEADWALL
- PROPOSED WATER CONNECTION
- PROPOSED WATER TAP BAND CONNECTOR



FOR APPROVAL

LAYOUT PLAN
SCALE 1500

AMENDMENTS:		APPROVED:		PROJECT:		DRAWING TITLE:	
AS/ DATE: 08/05/2020		JASON MARSHALL		2025039 - PROPOSED SUBSTATION		SEWER RETICULATION LAYOUT PLAN	
DATE:		08/05		LOCATION: TELVOT ROAD, GREENBANK - QLD			
REVIEWER:				DRAWN: MC			
				CHECKED: FB			
				DATE: 08/05/2020			
				ELEVATE CONSULTING ENGINEERS			
				Brisbane 0416 872 271 Melbourne 0428 361 252			
				www.elevate-engineers.com.au			

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ELEVATE CONSULTING ENGINEERS

0 10 20 30m

Scale 1500 @A1

Scale 1500 @A1

PROJECT: 2025039 - PROPOSED SUBSTATION

LOCATION: TELVOT ROAD, GREENBANK - QLD

DRAWN: MC

CHECKED: FB

DATE: 08/05/2020

ELEVATE CONSULTING ENGINEERS

Brisbane 0416 872 271 Melbourne 0428 361 252

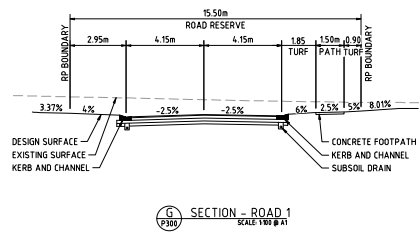
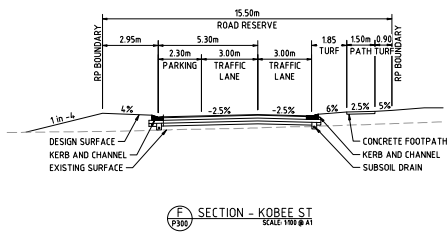
www.elevate-engineers.com.au

DRAWING NUMBER: 2025039 - P700

REVISION: C

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FOR APPROVAL

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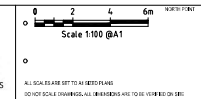
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JASON MARSHALL	08/03/20
FOR:	
REVISION:	
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TO BE PRINTED IN COLOUR

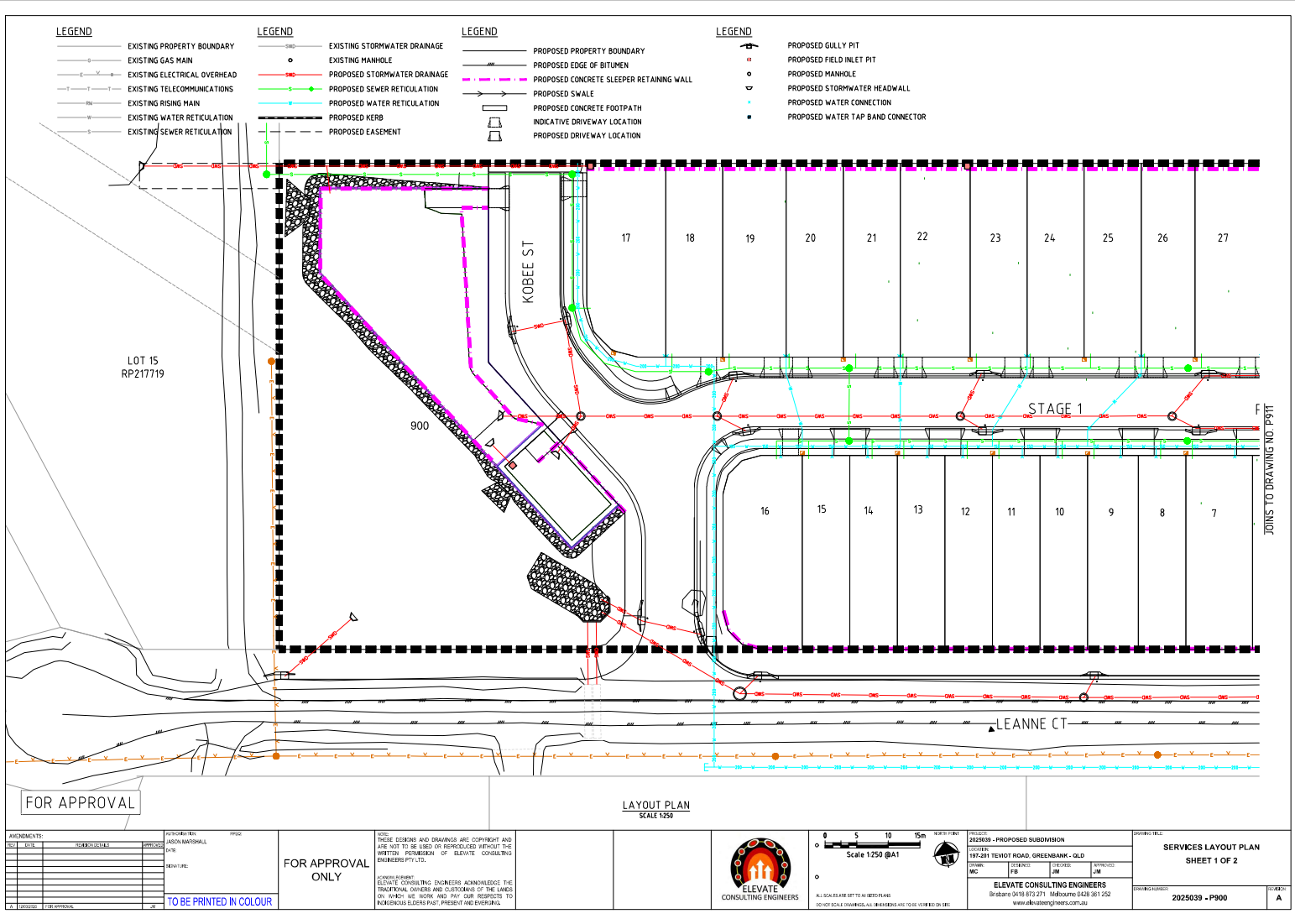
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PROJECT:	2025039 - PROPOSED SUBDIVISION
LOCATION:	197-201 TELVOT ROAD, GREENBANK - QLD
TITLE:	MC
DATE:	FB
DATE:	2M
DATE:	2M
DATE:	2M
DATE:	2M
DATE:	2M
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DATE:	2M
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DATE:	2025039 - P800
DATE:	C



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LEGEND

EXISTING PROPERTY BOUNDARY
EXISTING GAS MAIN
EXISTING ELECTRICAL OVERHEAD
EXISTING TELECOMMUNICATIONS
EXISTING RISING MAIN
EXISTING WATER RETICULATION
EXISTING SEWER RETICULATION

LEGEND

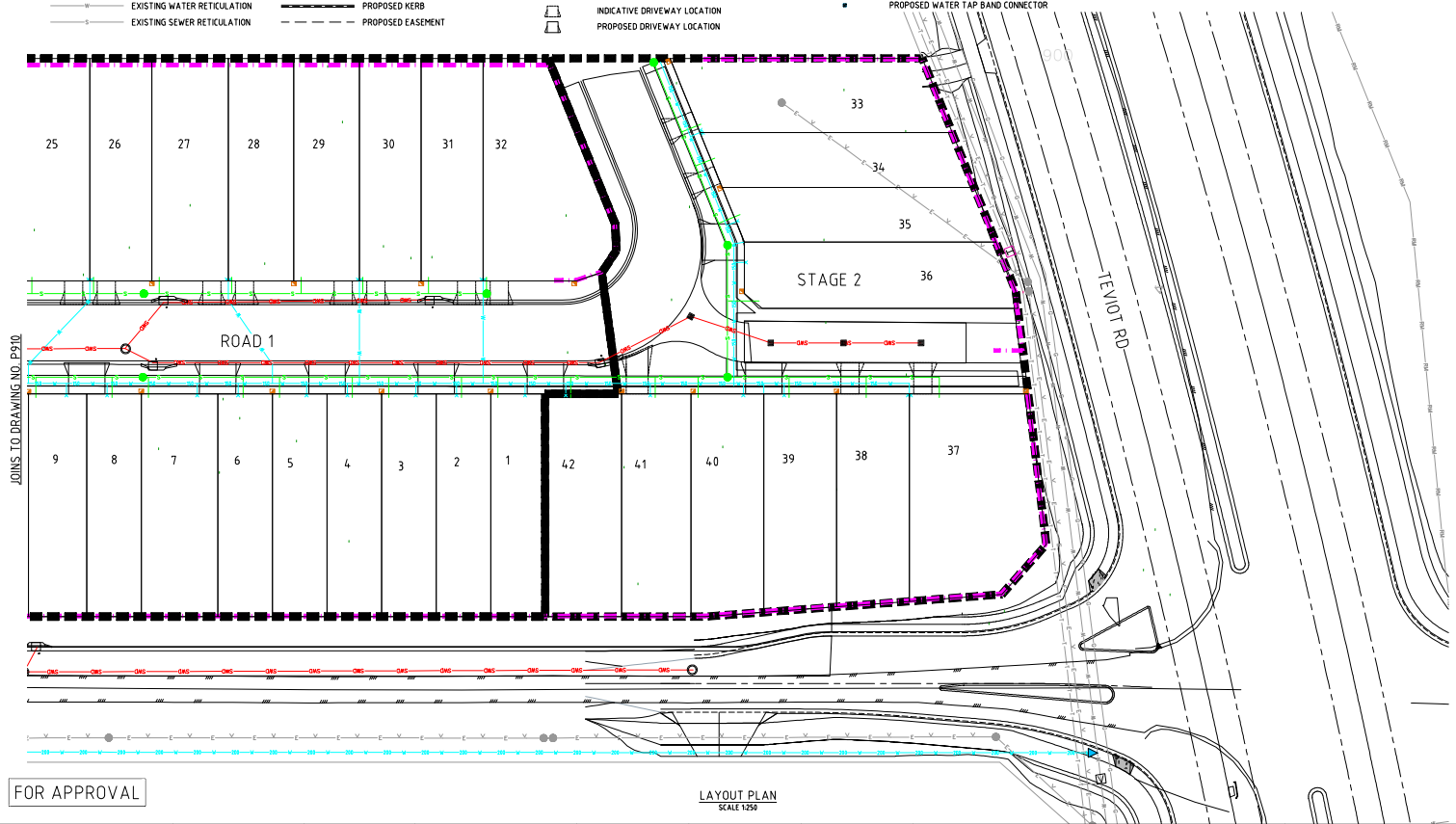
EXISTING STORMWATER DRAINAGE
EXISTING MANHOLE
PROPOSED STORMWATER DRAINAGE
PROPOSED SEWER RETICULATION
PROPOSED WATER RETICULATION
PROPOSED KERB
PROPOSED EASEMENT

LEGEND

PROPOSED PROPERTY BOUNDARY
PROPOSED EDGE OF BITUMEN
PROPOSED CONCRETE SLEEPER RETAINING WALL
PROPOSED SWALE
PROPOSED CONCRETE FOOTPATH
INDICATIVE DRIVEWAY LOCATION
PROPOSED DRIVEWAY LOCATION

LEGEND

PROPOSED GULLY PIT
PROPOSED FIELD INLET PIT
PROPOSED MANHOLE
PROPOSED STORMWATER HEADWALL
PROPOSED WATER CONNECTION
PROPOSED WATER TAP BAND CONNECTOR



FOR APPROVAL

LAYOUT PLAN
SCALE 1:250

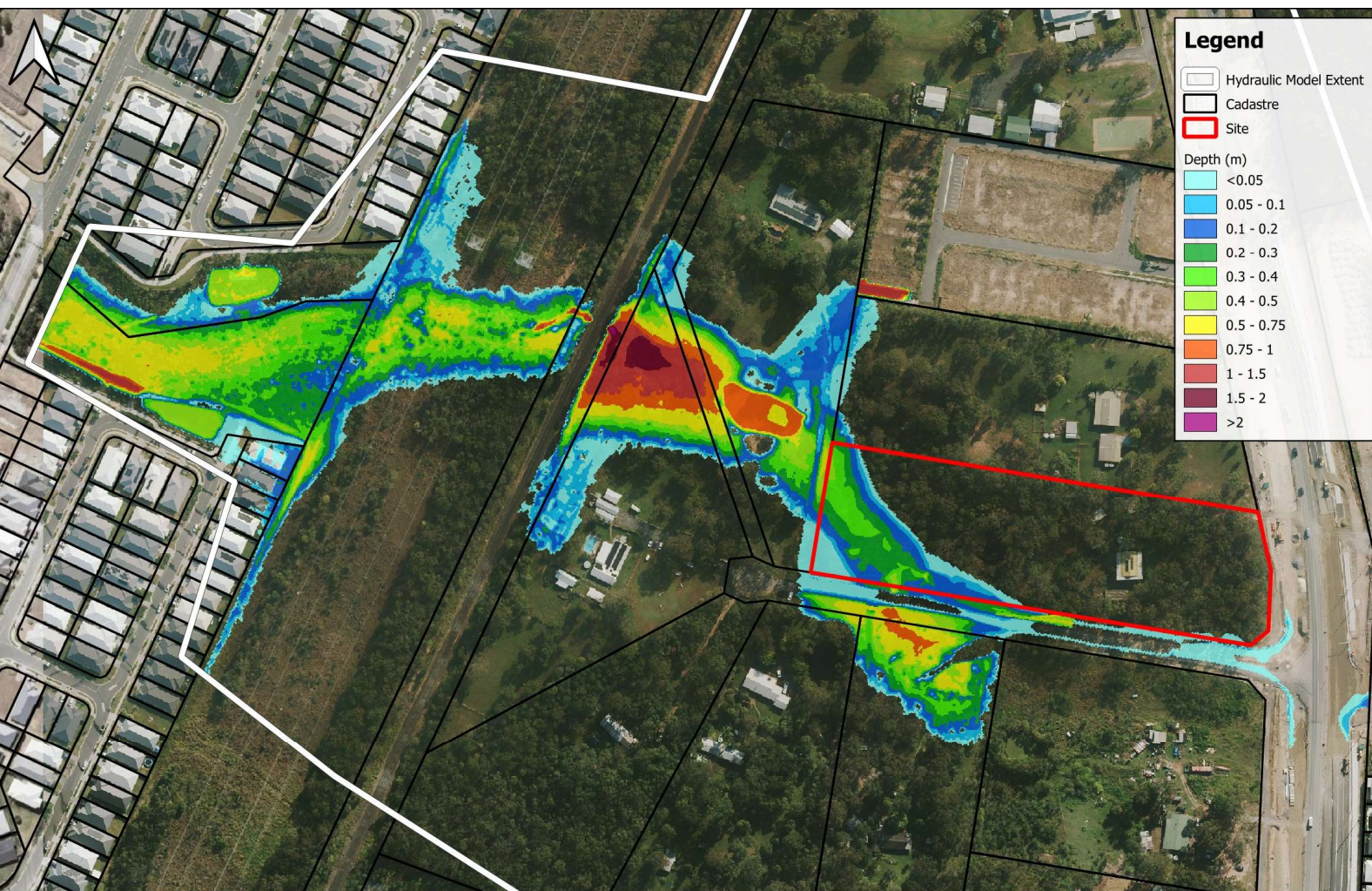
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2025039 - PROPOSED SUBDIVISION				SHEET 2 OF 2												
ADDRESS: 197-201 TENNOT ROAD, GREENBANK - QLD																
OWNER: MC																
DESIGNED: FB																
DRAWN: JM																
CHECKED: JM																
APPROVED: JM																
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DO NOT SCALE DIMENSIONS. ALL DIMENSIONS ARE TO BE VERIFIED ON SITE.																

TO BE PRINTED IN COLOUR				2025039 - P901		A	
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APPENDIX B HYDRAULIC MODEL GIS RESULTS





CRS: GDA2020 / MGA Zone 56

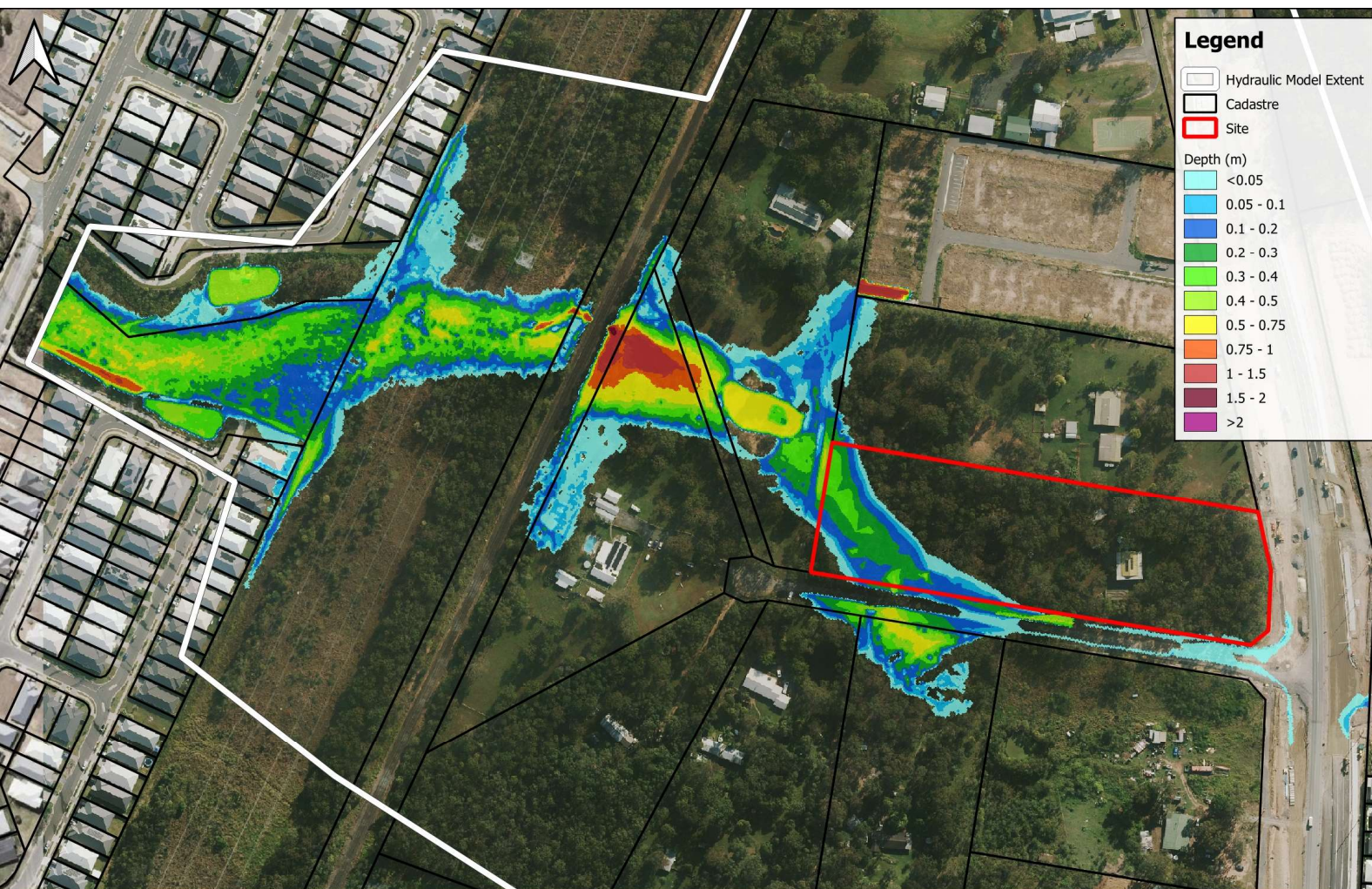
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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Depth - 1% AEP Event





CRS: GDA2020 / MGA Zone 56

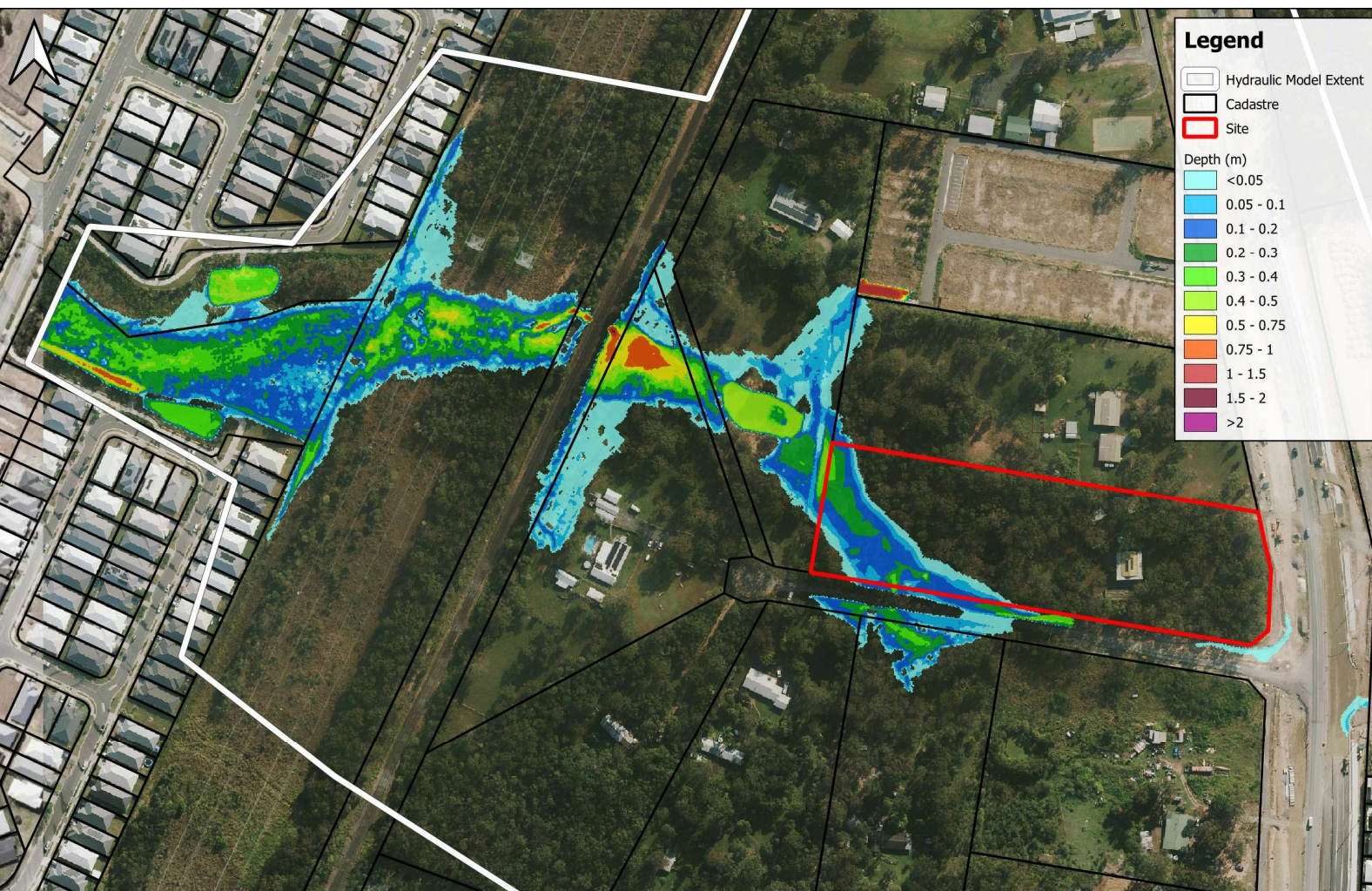
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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Depth - 10% AEP Event





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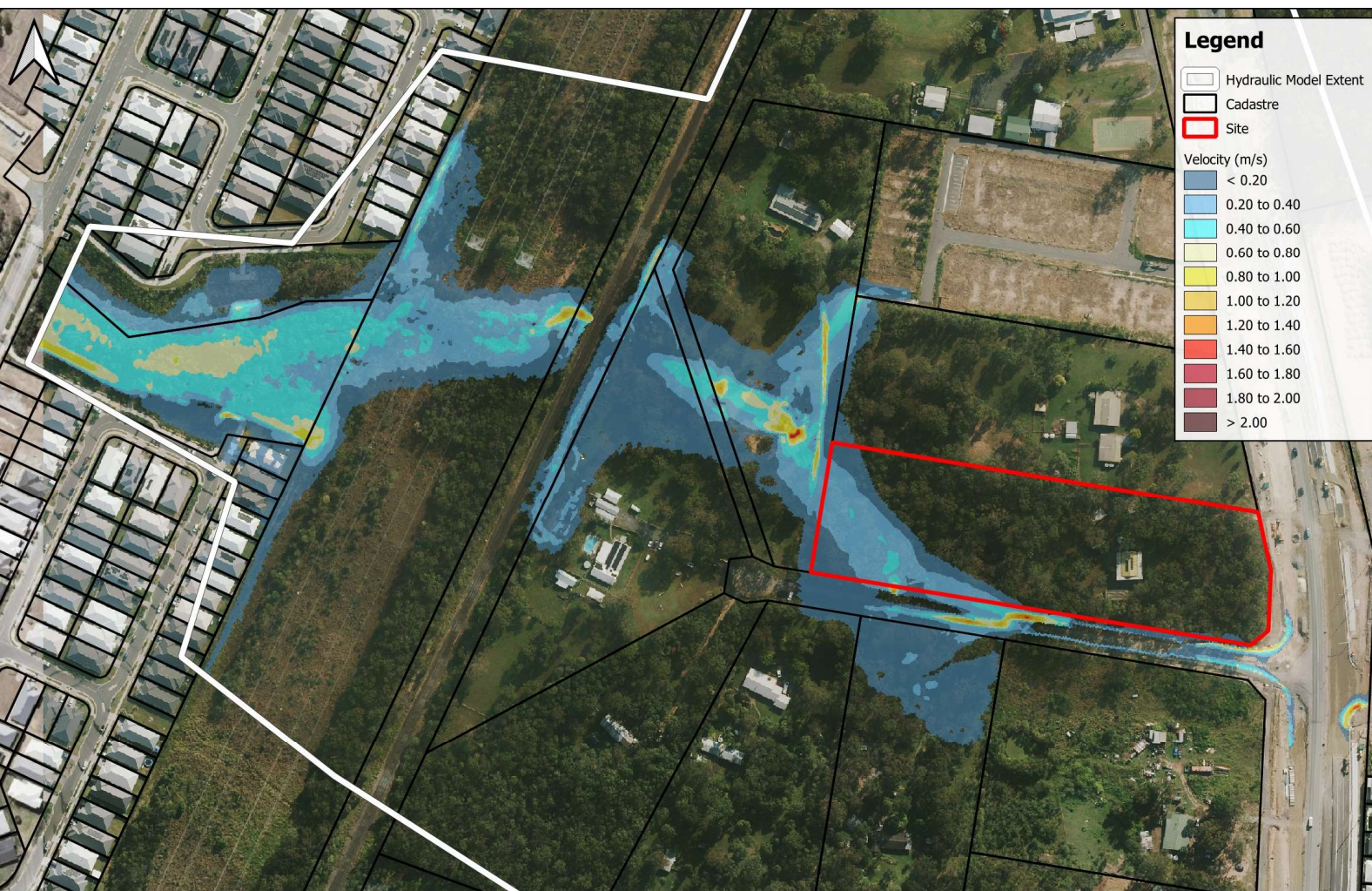
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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Depth - 50% AEP Event





CRS: GDA2020 / MGA Zone 56

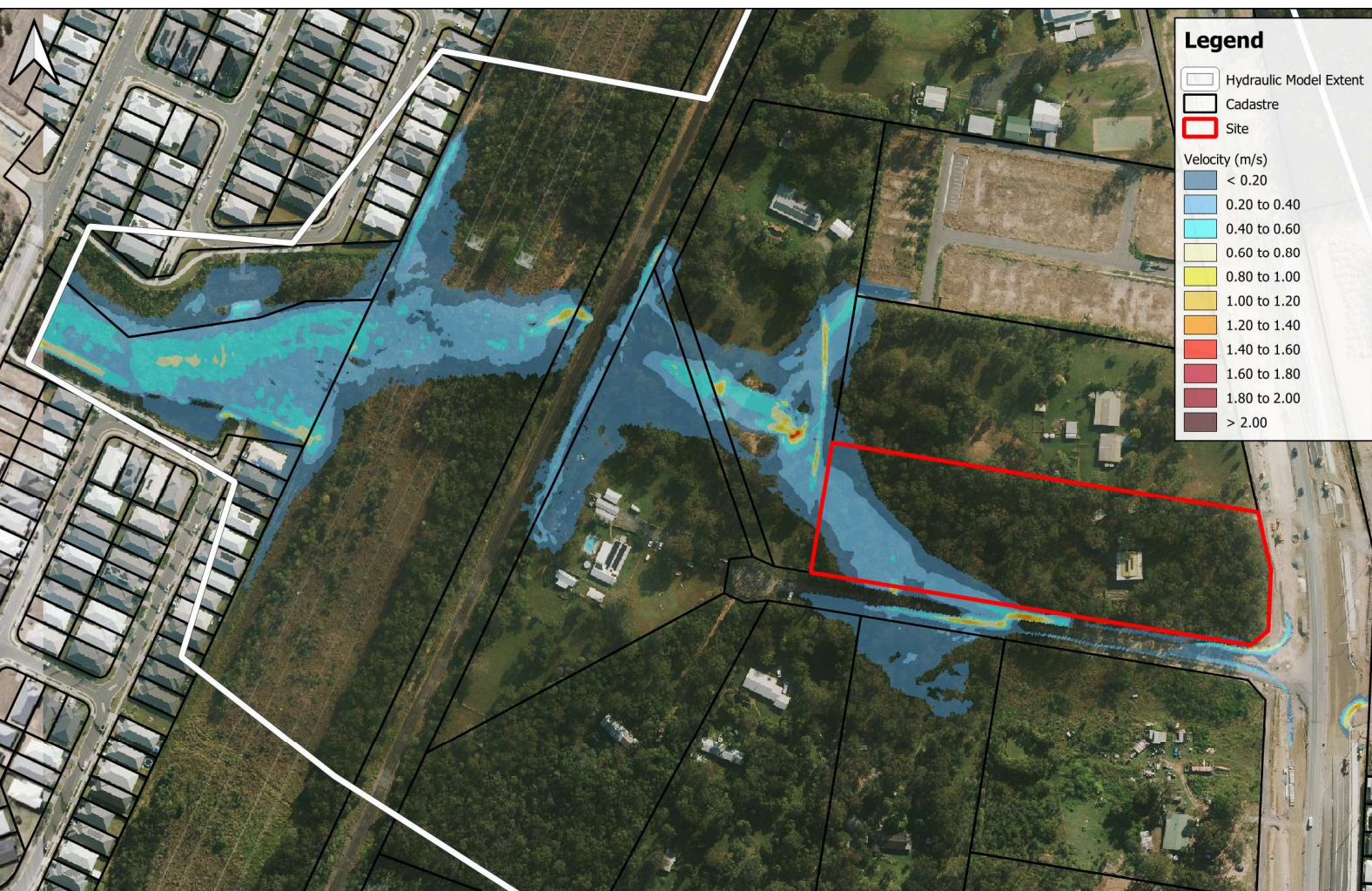
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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Velocity - 1% AEP Event





CRS: GDA2020 / MGA Zone 56

Imagery Source: Metro Map

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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Velocity - 10% AEP Event





CRS: GDA2020 / MGA Zone 56

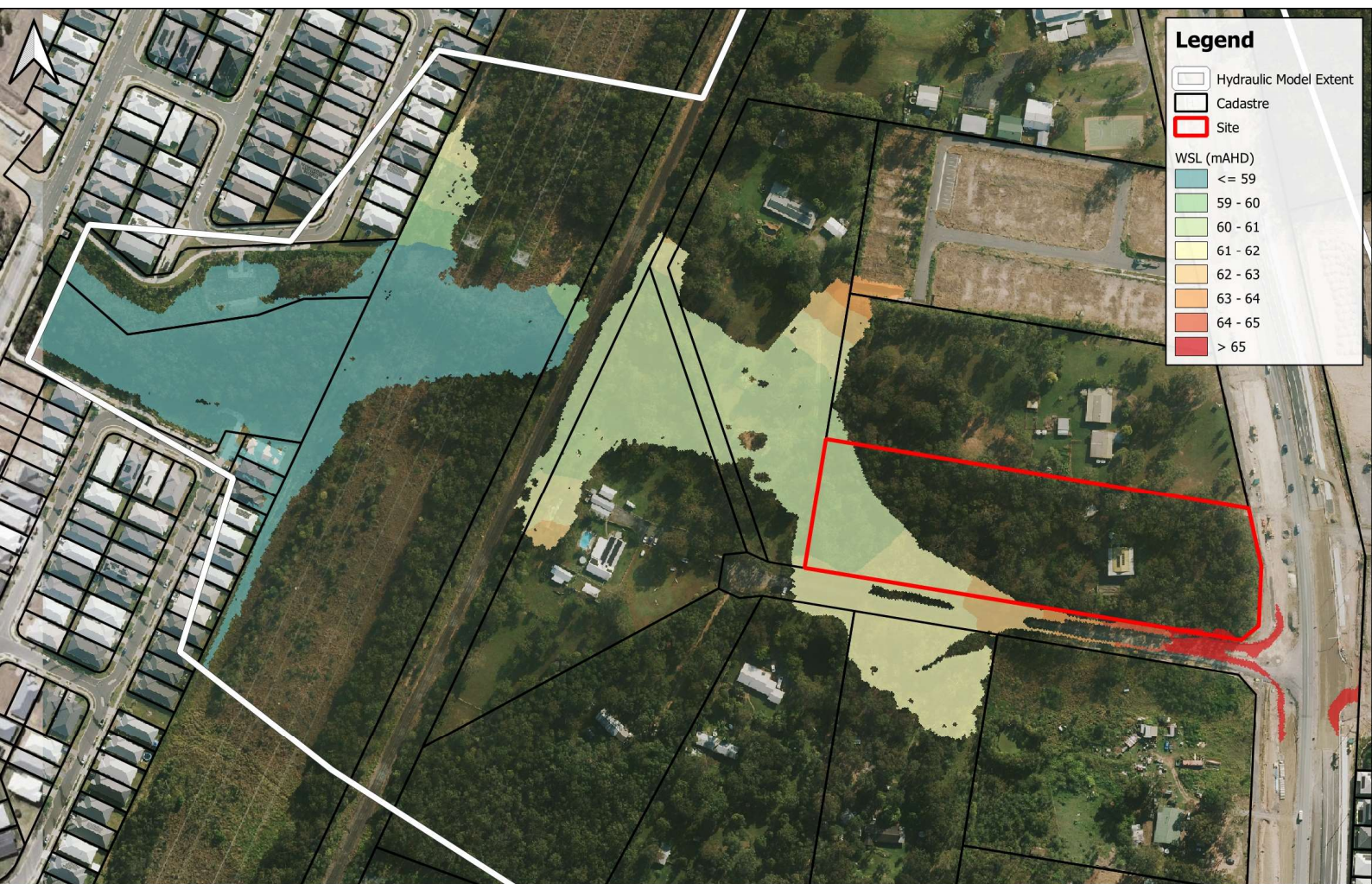
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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Velocity - 50% AEP Event





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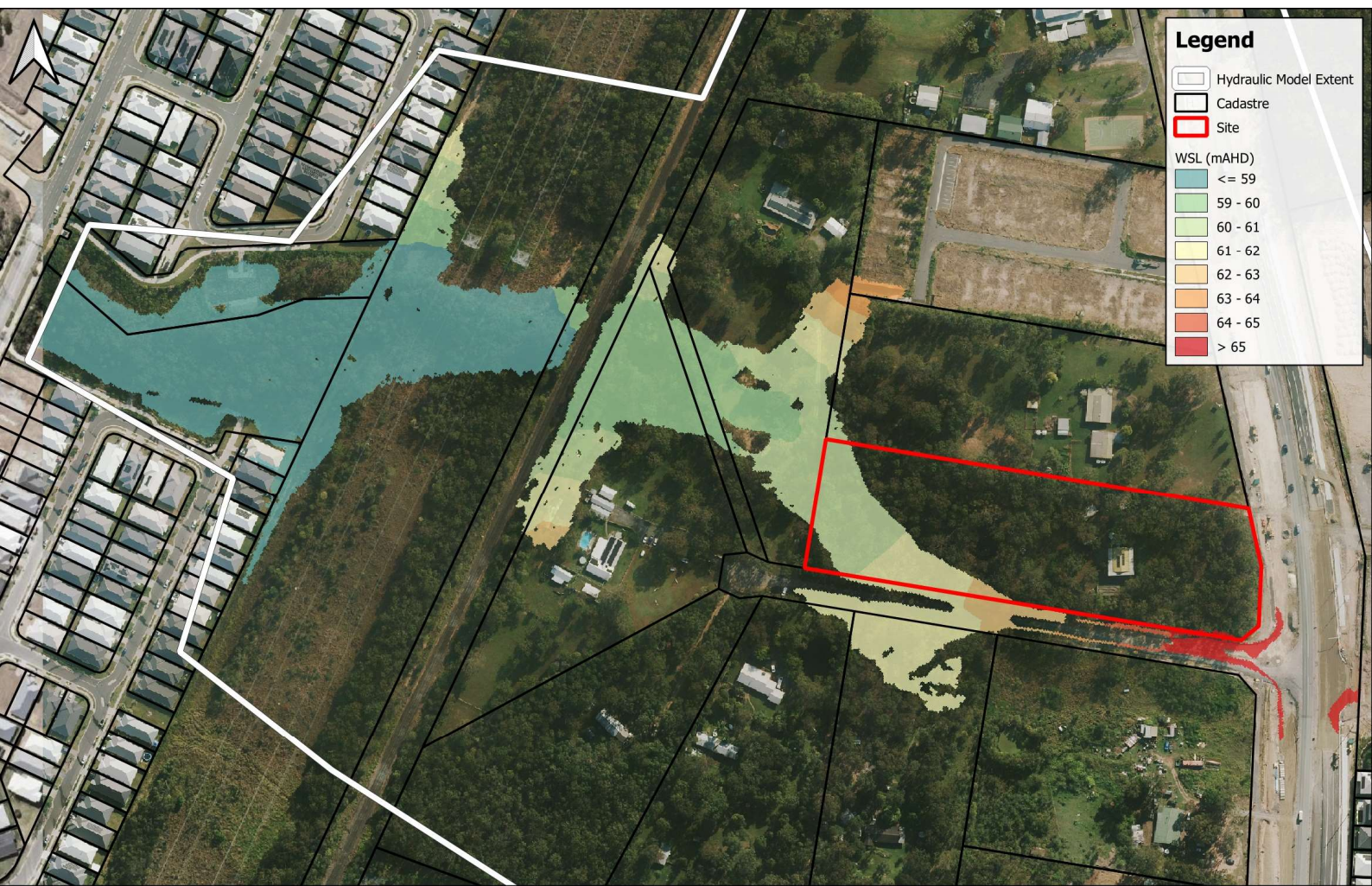
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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Surface Level - 1% AEP Event





CRS: GDA2020 / MGA Zone 56

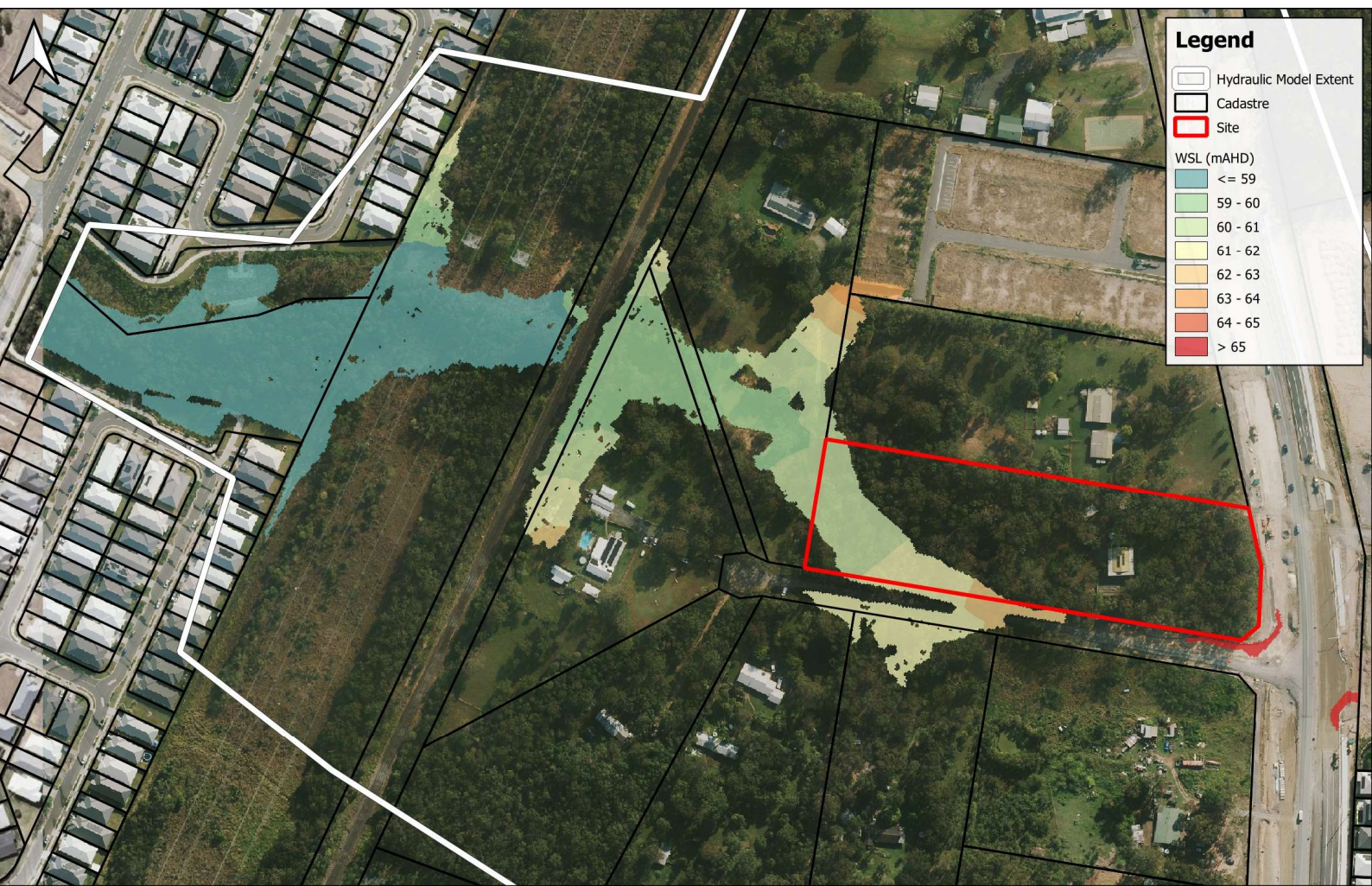
Imagery Source: Metro Map

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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Surface Level - 10% AEP Event





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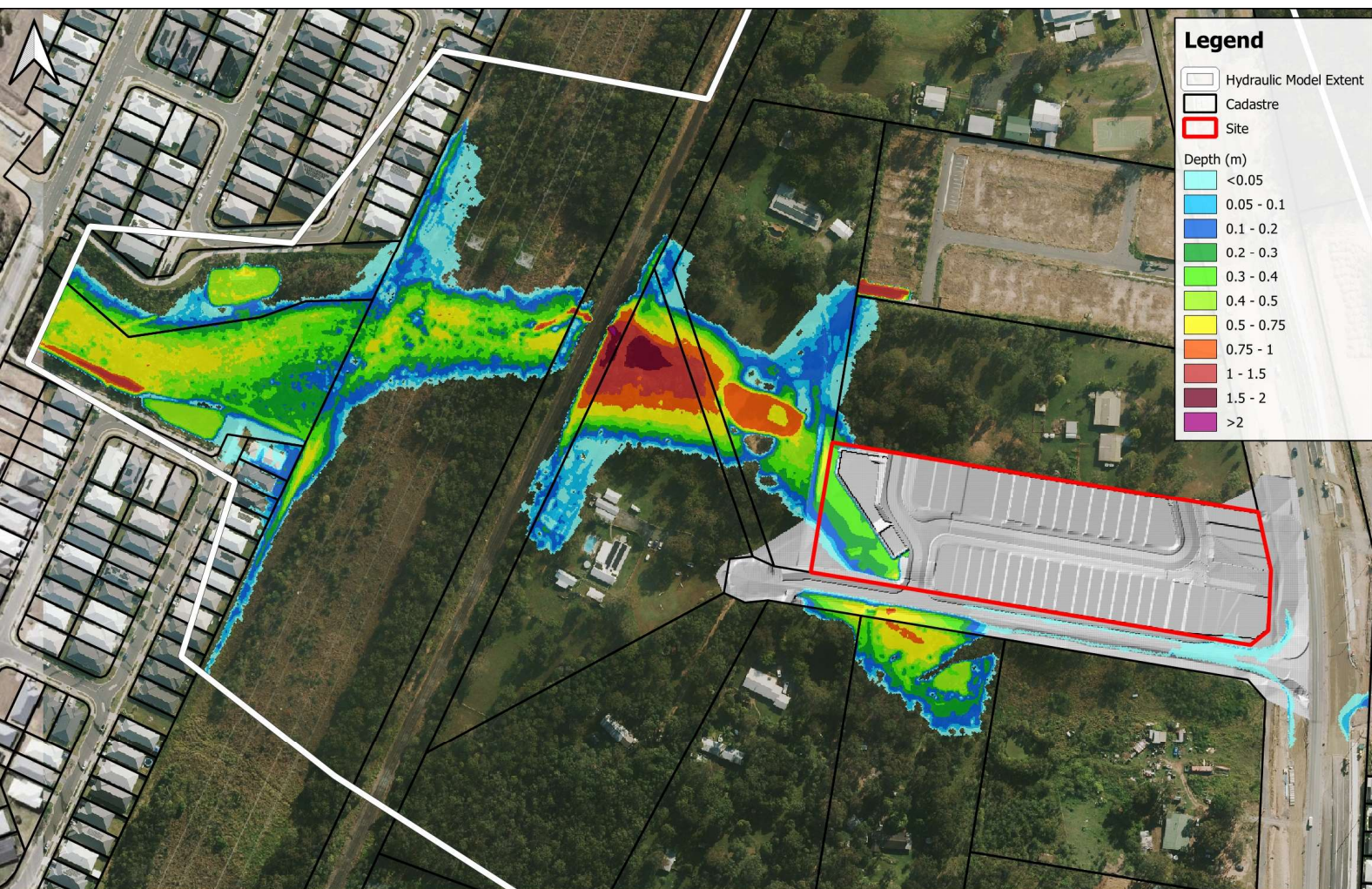
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197-201 Teviot Road FIA and SMP

Existing Case - Peak Water Surface Level - 50% AEP Event





CRS: GDA2020 / MGA Zone 56

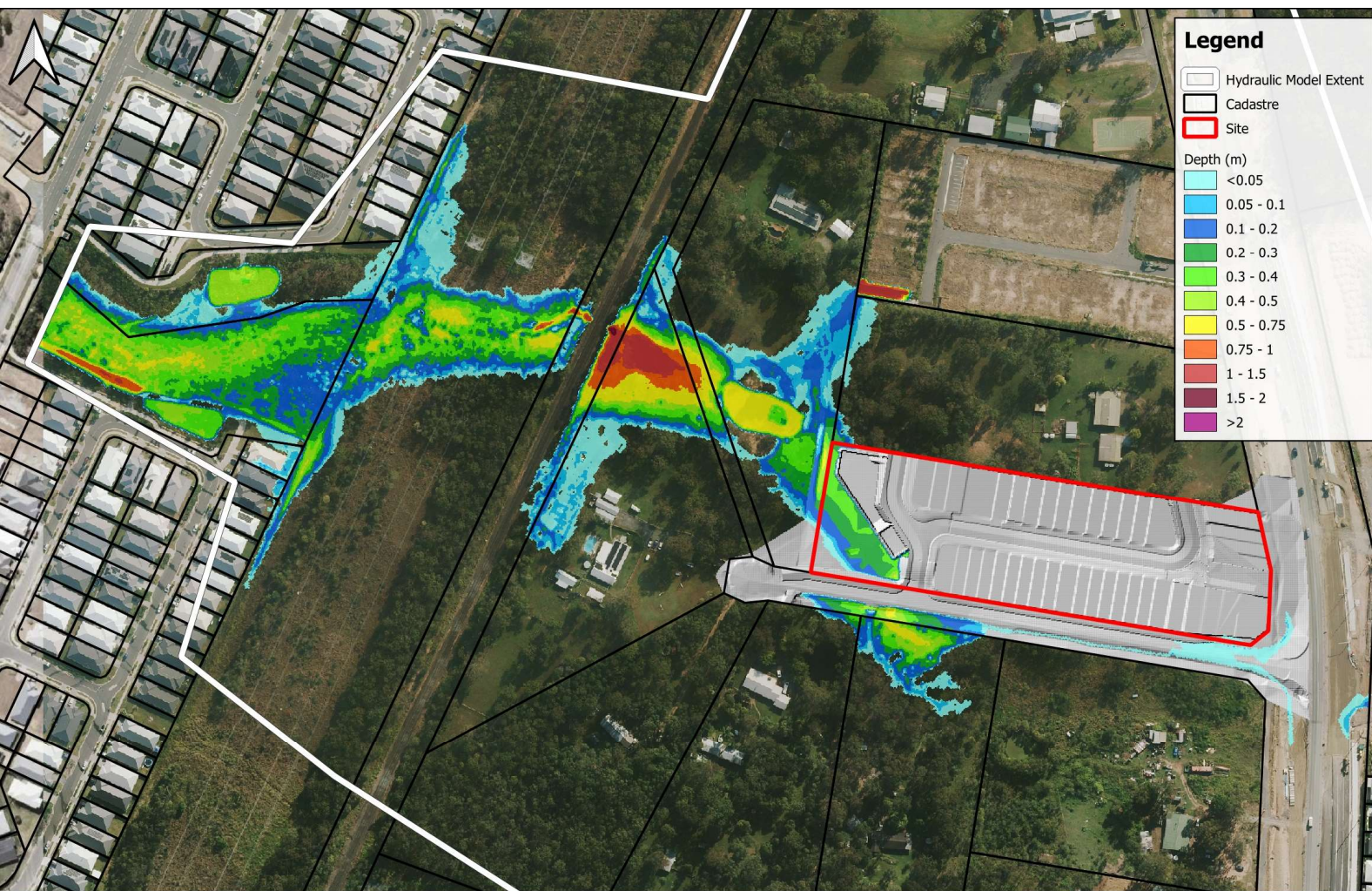
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197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Depth - 1% AEP Event





CRS: GDA2020 / MGA Zone 56

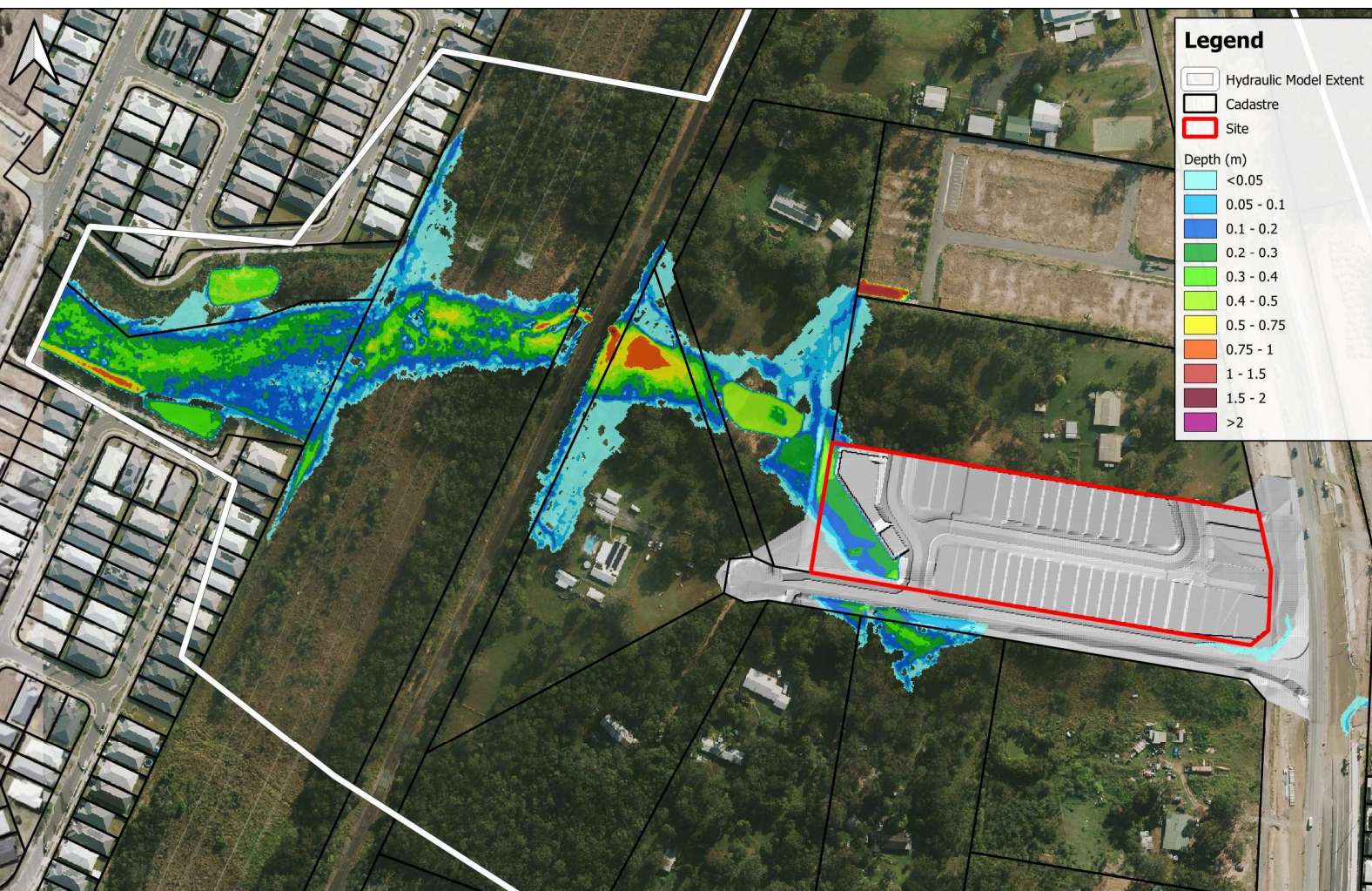
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197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Depth - 10% AEP Event





CRS: GDA2020 / MGA Zone 56

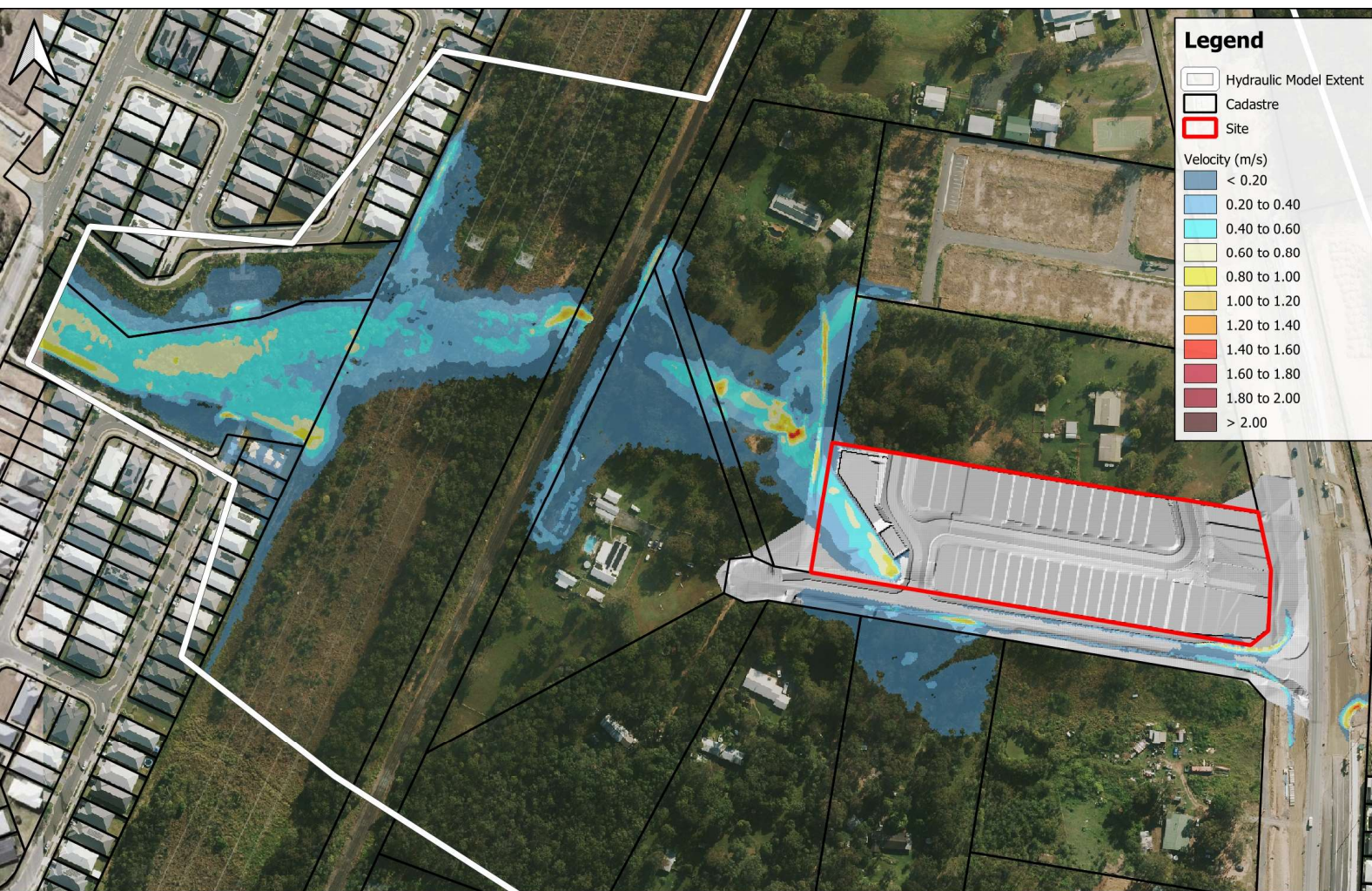
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197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Depth - 50% AEP Event





CRS: GDA2020 / MGA Zone 56

Imagery Source: Metro Map

0 50 100 m

197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Velocity - 1% AEP Event





CRS: GDA2020 / MGA Zone 56

Imagery Source: Metro Map

0 50 100 m

197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Velocity - 10% AEP Event





CRS: GDA2020 / MGA Zone 56

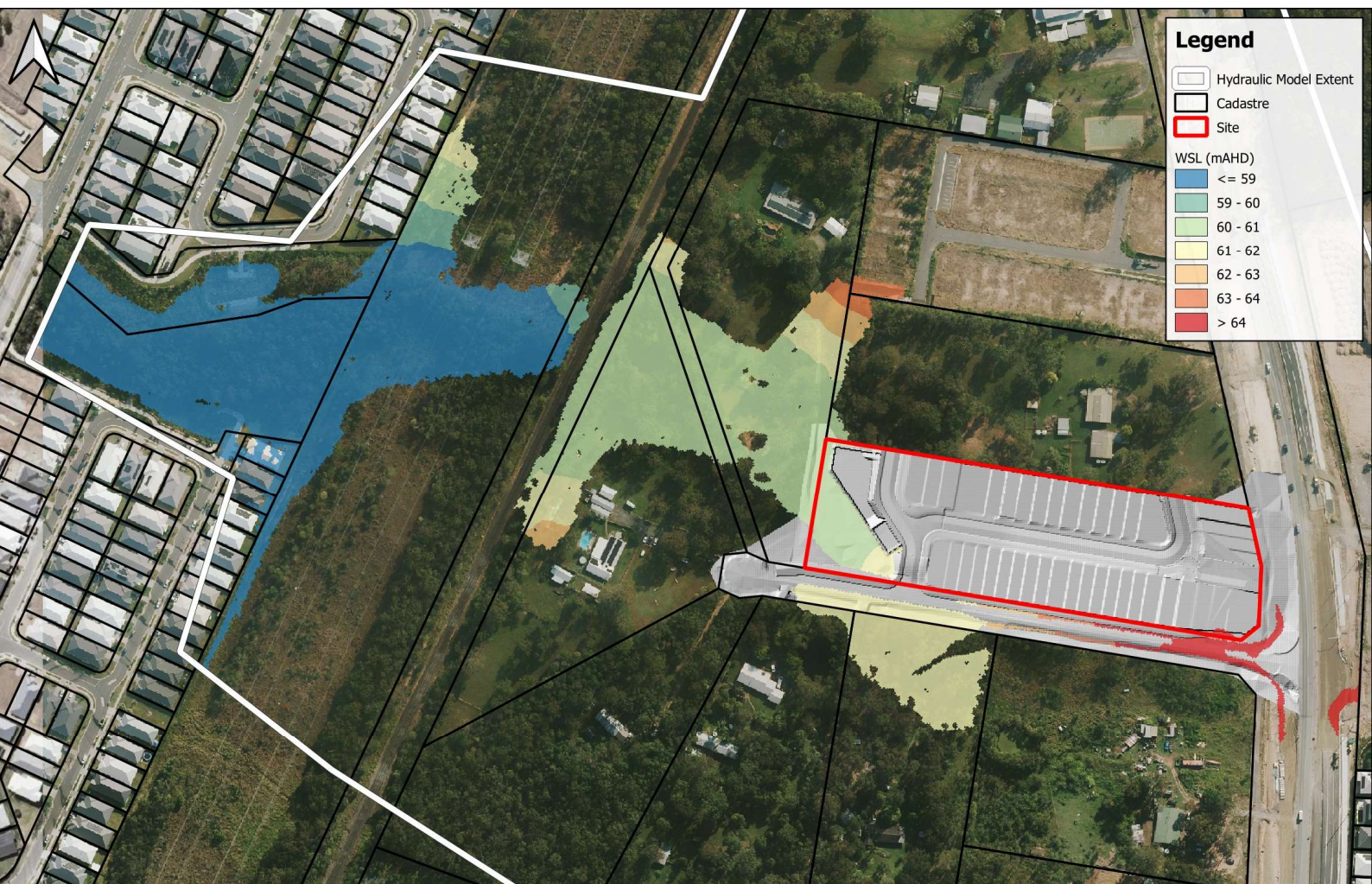
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197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Velocity - 50% AEP Event





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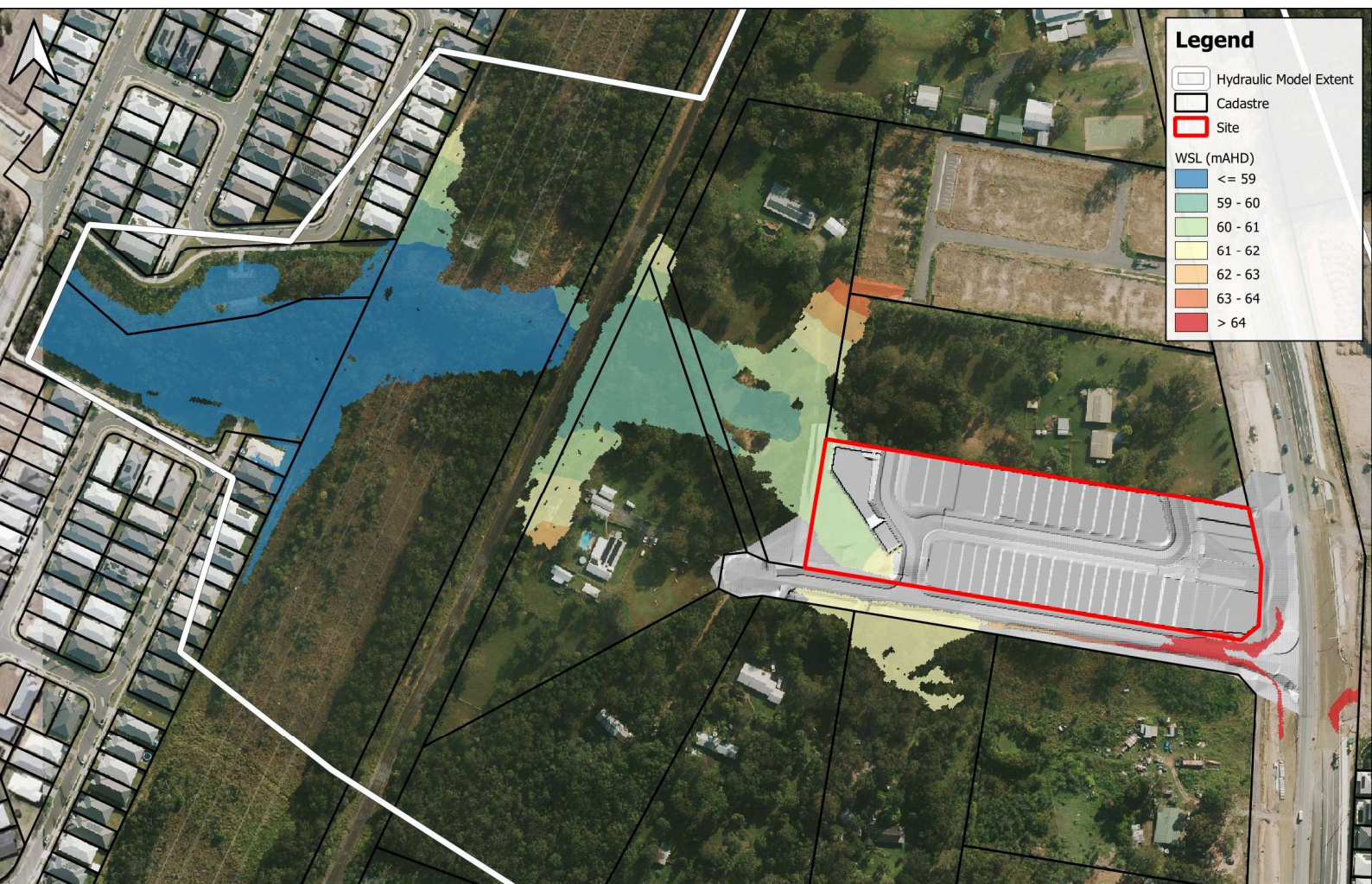
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197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Surface Level - 1% AEP Event





CRS: GDA2020 / MGA Zone 56

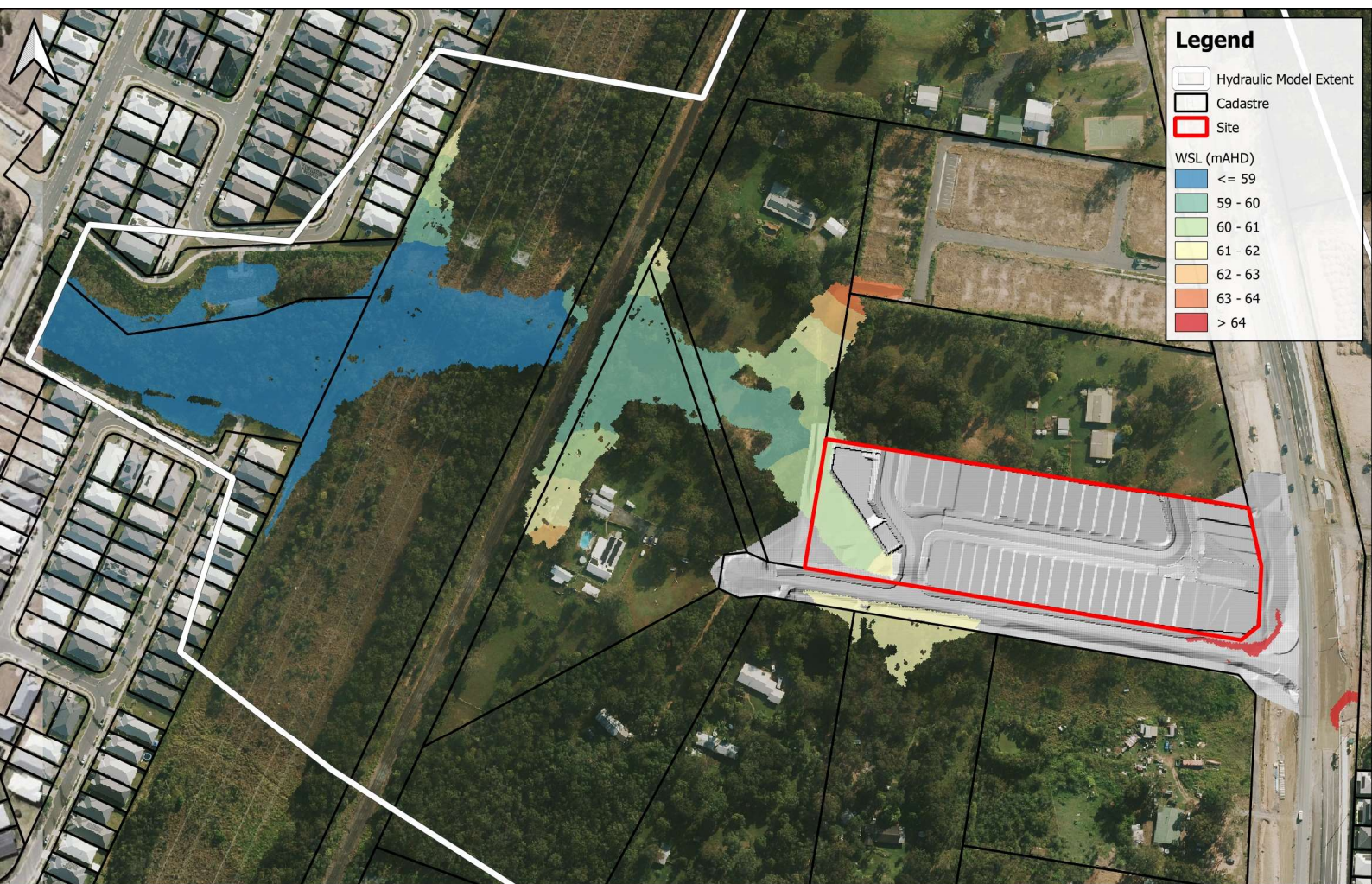
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197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Surface Level - 10% AEP Event





CRS: GDA2020 / MGA Zone 56

Imagery Source: Metro Map

0 50 100 m

197-201 Teviot Road FIA and SMP

Developed Case - Peak Water Surface Level - 50% AEP Event





CRS: GDA2020 / MGA Zone 56

Imagery Source: Metro Map

0 50 100 m

197-201 Teviot Road FIA and SMP

Developed Case - Change in Peak Water Surface Level - 1% AEP Event





CRS: GDA2020 / MGA Zone 56

Imagery Source: Metro Map

0 50 100 m

197-201 Teviot Road FIA and SMP

Developed Case - Change in Peak Water Surface Level - 10% AEP Event





CRS: GDA2020 / MGA Zone 56

Imagery Source: Metro Map

0 50 100 m

197-201 Teviot Road FIA and SMP

Developed Case - Change in Peak Water Surface Level - 50% AEP Event



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Wangaratta

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Telephone (03) 5721 2650

Geelong

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Geelong VIC 3220
Telephone (03) 8526 0800

Wimmera

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Stawell VIC 3380
Telephone 0438 510 240

Gold Coast

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Varsity Lakes QLD 4227
Telephone (07) 5676 7602

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