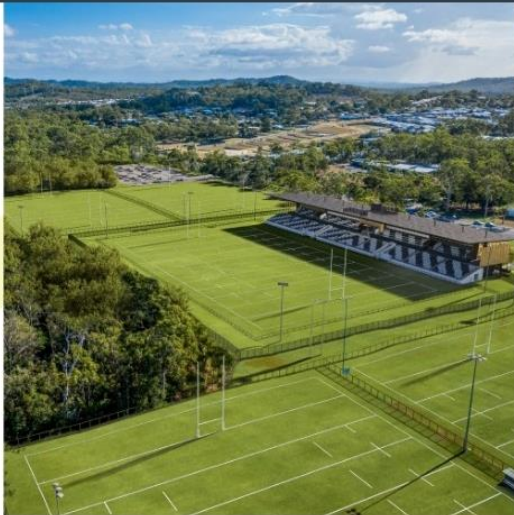




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## **Logan-Flagstone-Industrial Hydraulic Impact Assessment**

**Client:**  
**Project Number:**  
**Document Number:**

Roubaix Properties Pty Ltd  
BE220566  
BE220566-RP-HIA-02

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| 02          | Response to Outstanding Matters Letter | 12/02/2026 | JM       | SH       |

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# Executive Summary

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This Hydraulic Impact Assessment (HIA) has been prepared in response to an Information Request (RFI) issued by Economic Development Queensland (EDQ). The report is to support both existing applications DEV2025/1676 Reconfiguring a Lot & DEV2025/1587 Operational Work. A local hydrology and hydraulic model was developed to assess potential flood impacts associated with the proposed development, with particular focus on the 1% Annual Exceedance Probability (AEP) Climate Change events in the Local and Regional Scenario.

The assessment also incorporated updates to Logan City Council's Regional Hydraulic TUFLOW Model, which was refined to more accurately represent current and approved development conditions within the surrounding catchment.

Based on the updated hydraulic modelling outcomes, flood depths across the subject site in the 1% AEP Regional climate change event are below the threshold used to define the High Flood Risk Area under Logan City Council's flood mapping. Accordingly, the development footprint does not fall within the High Flood Risk Area as defined by the adopted mapping criteria.

The local modelling results indicate minor increases in flood levels of up to approximately 40 mm external to the site, with no increase in flood extent, confirming that the development does not result in any adverse off-site impacts. Furthermore, updates to the regional model have significantly reduced flood depths over the subject site in the base case scenario, effectively removing the High Flood Risk Overlay mapping previously identified in the Logan City Council Current Temporary Local Planning Instrument No 1. 2024.

Overall, the results demonstrate that the proposed development will not cause any adverse flood impacts in either the local or regional 1% AEP Climate Change events.





# Table of Contents

---

|       |                                                                                                    |    |
|-------|----------------------------------------------------------------------------------------------------|----|
| 1.    | Introduction .....                                                                                 | 1  |
| 1.1   | Background .....                                                                                   | 1  |
| 1.1.1 | Regulatory Requirements and Technical Guidelines .....                                             | 1  |
| 1.1.2 | EDQ Context and Existing Development .....                                                         | 1  |
| 1.2   | Purpose .....                                                                                      | 2  |
| 1.3   | Response to Information Request and Outstanding Matters Letter– DEV2025/1676 RAL – 3/02/2025 ..... | 2  |
| 1.4   | Response to Information Request – DEV2025/1587 OPW – 19/09/2025 .....                              | 4  |
| 1.5   | Scope .....                                                                                        | 5  |
| 1.5.1 | Local Assessment .....                                                                             | 5  |
| 1.5.2 | Regional Assessment .....                                                                          | 5  |
| 2.    | Site Detail .....                                                                                  | 6  |
| 2.1   | Real Property Description .....                                                                    | 6  |
| 2.2   | Physical Description .....                                                                         | 6  |
| 2.3   | Downstream Environment .....                                                                       | 7  |
| 2.4   | Rainfall .....                                                                                     | 7  |
| 2.5   | Proposed Development .....                                                                         | 7  |
| 3.    | Hydrologic Assessment - Local .....                                                                | 8  |
| 3.1   | Hydrologic Modelling Methodology – Local .....                                                     | 8  |
| 3.2   | Peak Flow Validation – Local .....                                                                 | 9  |
| 4.    | Hydraulic Assessment - Local .....                                                                 | 11 |
| 4.1   | Hydraulic Model Methodology – Local .....                                                          | 11 |
| 4.2   | TUFLOW Model Inputs - Local .....                                                                  | 11 |
| 4.3   | Climate Change Representation – ARR Guidelines 4.2 - Local .....                                   | 12 |
| 4.4   | Pre-development Scenario Representation - Local .....                                              | 12 |
| 4.5   | Post-development Scenario Representation - Local .....                                             | 13 |
| 4.6   | Results – Local .....                                                                              | 14 |
| 4.6.1 | Pre-development Flood Conditions – 1% AEP .....                                                    | 14 |
| 4.6.2 | Pre-development Flood Conditions – 1% AEP Climate Change - 2100 .....                              | 15 |
| 4.7   | 1% AEP Post-development Flood Conditions .....                                                     | 15 |
| 4.7.1 | Post-development Flood Conditions – 1% AEP Climate Change - 2100 .....                             | 16 |
| 4.8   | Impact Assessment - Local .....                                                                    | 16 |
| 5.    | Hydraulic Assessment - Regional .....                                                              | 20 |
| 5.1   | Hydraulic Model Methodology – Regional .....                                                       | 20 |
| 5.2   | TUFLOW Model Inputs - Regional .....                                                               | 20 |
| 5.3   | Pre-development Scenario Representation -Regional .....                                            | 21 |
| 5.4   | Climate Change Representation – Regional .....                                                     | 22 |
| 5.5   | Results – Regional .....                                                                           | 22 |
| 5.5.1 | Pre-development Flood Conditions – Regional 1% AEP Climate Change .....                            | 22 |





|       |                                                                          |    |
|-------|--------------------------------------------------------------------------|----|
| 5.5.2 | Post-development Flood Conditions – Regional 1% AEP Climate Change ..... | 23 |
| 5.6   | Impact Assessment – Regional .....                                       | 23 |
| 6.    | Conclusion .....                                                         | 25 |

## Tables

|           |                                                   |    |
|-----------|---------------------------------------------------|----|
| Table 3.1 | DRAINS Catchment Parameters .....                 | 9  |
| Table 3.2 | DRAINS Critical Storms and Peak Discharges .....  | 9  |
| Table 3.3 | 1% Rational Method v DRAINS Peak Discharges ..... | 10 |
| Table 4.1 | TUFLOW Model Inputs - Local .....                 | 11 |
| Table 4.2 | SSP2-4.5 Climate Change Factors .....             | 12 |
| Table 5.1 | TUFLOW Model Inputs – Regional.....               | 20 |

## Figures

|            |                                                                                 |    |
|------------|---------------------------------------------------------------------------------|----|
| Figure 1.1 | TLPI Overlay and Surrounding Approvals.....                                     | 1  |
| Figure 2.1 | Site Locality Plan .....                                                        | 6  |
| Figure 2.2 | Proposed Development.....                                                       | 7  |
| Figure 3.1 | Local Catchment Extents .....                                                   | 8  |
| Figure 4.1 | Pre-Development TUFLOW Model Configuration.....                                 | 13 |
| Figure 4.2 | Post-Development TUFLOW Model Configuration .....                               | 14 |
| Figure 4.3 | 1% AEP Pre-Development Scenario Peak Water Depth - Local .....                  | 15 |
| Figure 4.4 | 1% AEP Post-Development Scenario Peak Water Depth - Local.....                  | 16 |
| Figure 4.5 | 1% Climate Change AEP Water Level Afflux Map – Local .....                      | 17 |
| Figure 4.6 | 1% AEP Water Level Afflux Map - Local .....                                     | 17 |
| Figure 4.7 | 1% AEP CC Water Level Afflux Map – Local – Maclean Estate ROL Plan .....        | 18 |
| Figure 4.8 | 1% AEP CC Water Level Afflux Map – Local – PDA Approval Context.....            | 19 |
| Figure 5.1 | 1% AEP Climate Change Water Level Afflux Map.....                               | 21 |
| Figure 5.2 | 1% AEP Climate Change Regional Pre-Development Scenario Peak Water Depth.....   | 22 |
| Figure 5.3 | 1% AEP Climate Change Regional Post-Development Scenario Peak Water Depth ..... | 23 |
| Figure 5.4 | 1% AEP Climate Change Regional Water Level Afflux Map – Regional .....          | 24 |

## Appendices

|            |                                                       |
|------------|-------------------------------------------------------|
| Appendix A | – Proposed Plans of Development                       |
| Appendix B | – Rational Method Calculations                        |
| Appendix C | – DRAINS Input Parameters                             |
| Appendix D | – Model Features Map – Local TUFLOW Model             |
| Appendix E | – Hydraulic Model Results – Local                     |
| Appendix F | – Hydraulic Model Results - Regional                  |
| Appendix G | – Survey Provided by Sunrise Surveying                |
| Appendix H | – Mount Lindesay Highway, North Maclean Upgrade Plans |







## 1. Introduction

Roubaix Properties Pty Ltd has commissioned Burchills Engineering Solutions (Burchills) to prepare a Hydraulic Impact Assessment (HIA) to support both existing applications DEV2025/1676 Reconfiguring a Lot & DEV2025/1587 Operational Work, to facilitate a 17-lot industrial subdivision, to Economic Development Queensland (EDQ). The proposed North MacLean Industrial development is located at Lot 7 & 8 on RP137101, encompassing the addresses 4745-4759 and 4761-4773 Mount Lindesay Highway, North MacLean.

### 1.1 Background

#### 1.1.1 Regulatory Requirements and Technical Guidelines

The strategies proposed in this HIA have been developed to address requirements from The Greater Flagstone Priority Development Area (PDA), and have also been prepared in accordance with the following guidelines:

- Queensland Urban Drainage Manual (QUDM) Fourth Edition (IPWEAQ, 2017);
- Australian Rainfall & Runoff: A Guide to Flood Estimation (Ball J, 2024);
- Logan City Council Temporary Local Planning Instrument No 1. 2024

#### 1.1.2 EDQ Context and Existing Development

The proposed development located within the Greater Flagstone Priority Development Area (PDA), North Maclean precinct and is zone for Industry and Business purposes. The PDA is administered by Economic Development Queensland (EDQ) As shown in Figure 1.1 below, there has been significant existing development within the broader Economic Development Queensland (EDQ) area, much of which has been approved prior to the endorsement of the current "Temporary Local Planning Instrument No. 1 2024 (TLPI) of the Local Government, Logan City Council.

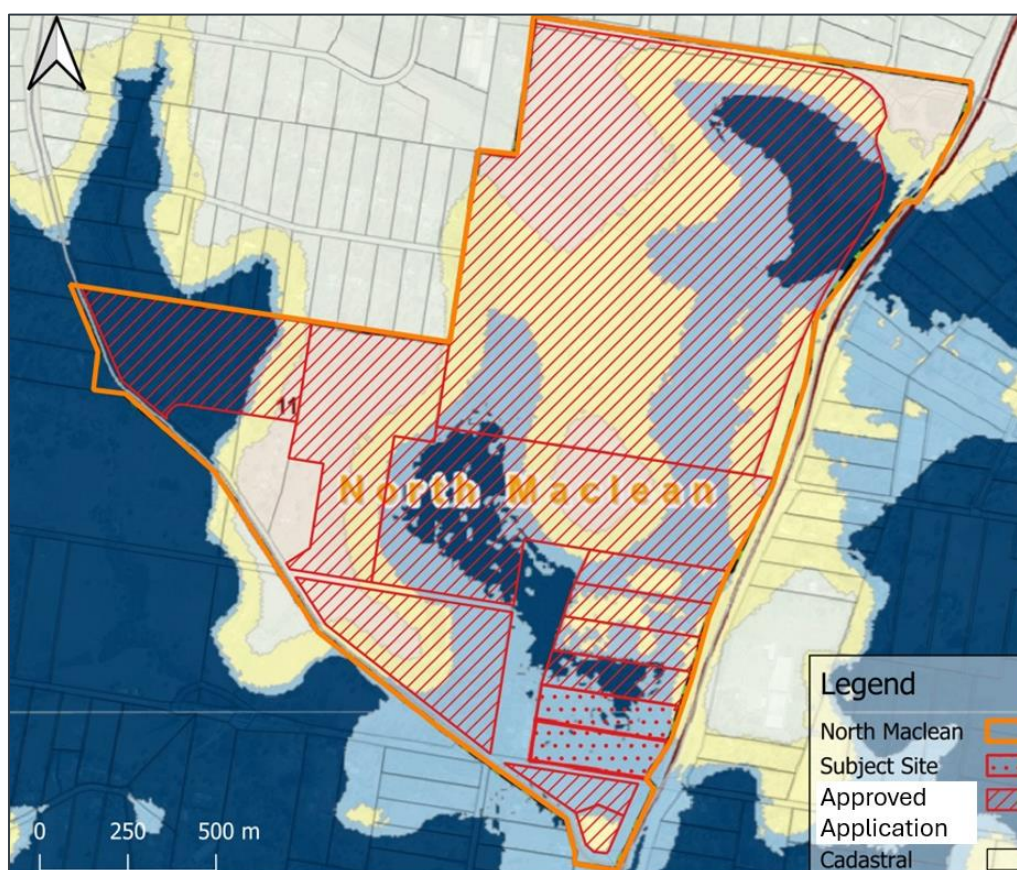


Figure 1.1 TLPI Overlay and Surrounding Approvals





These previous approvals have altered flood behaviour. Importantly, no prior developments within the PDA have undertaken flood storage balance assessments as these sites are not identified as being affected by flood within the Development Scheme.

Further to this it should be noted that Transport and Main Roads (TMR) completed the North Maclean safety improvements in 2020, no hydraulic impact assessment was undertaken or can be found for these works. Proposed swale drains along the highway frontage to alleviate ponding caused by the works have not been constructed.

In addition to the works already completed on the highway, TMR has a planned duplication of the highway in the planning phase for delivery. The "Chambers Flat Road to Greenbank Road" is to widen the highway from 4 to 6 lanes and upgrade drainage infrastructure. It is expected that TMR would trigger hydrology and hydraulic assessment in this corridor through the local government flood overlays.

## 1.2 Purpose

This report has been prepared to address an information request and outstanding matters letter issued by Economic Development Queensland for application DEV2025/1676 and DEV2025/1587. *The HIA is to support both existing applications DEV2025/1676 Reconfiguring a Lot & DEV2025/1587 Operational Work*

This report assessed the potential hydraulic impacts that may arise as a result of the proposed development. The objectives of this assessment are as follows:

- Demonstrate the proposed development does not cause any adverse hydraulic impacts external to the site in the 1% AEP Climate Change event as defined in the Temporary Local Planning Instrument No. 1 2024 (TLPI) of the Local Government, Logan City Council

## 1.3 Response to Information Request and Outstanding Matters Letter– DEV2025/1676 RAL – 3/02/2025

| Item                                                                                                                               | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Flooding and Stormwater                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| a) Submit a hydraulic report that:                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| i) removes the development footprint from within the high flood risk area as identified within Logan City Council's flood mapping; | The High Flood Risk Area identified in Logan City Council's flood mapping corresponds to areas where flood depths exceed 0.5 m in the 1% AEP event. As part of this assessment, updates made to the Logan Albert River Regional Flood Study (2023) have reduced peak water depths over the site in the 1% AEP Climate Change event to less than 0.5 m which is below the threshold used to define the High Flood Risk Area under Logan City Council's flood hazard mapping. Accordingly, the development footprint does not meet the criteria for classification as High Flood Risk. Please refer to section 5.5 of this report which reports on updated existing scenario peak flood depths. |
| ii) demonstrates no adverse afflux issues to upstream, downstream or adjacent properties;                                          | Impacts in the Local and Regional flood event have been reported on in section 4.8 and 5.6 of this report. The impact assessment has only been provided for the 1% AEP Climate Change events at this given time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |





|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                | <p>Generally, there is no increase in extent of flooding post-development and does therefore not impede future development potential. Additionally no impact occurs on any dwellings/buildings and is wholly located to environmental and drainage areas.</p> <p>It is therefore concluded the flood impacts associated with the modelled events are considered non-adverse.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| iii) demonstrates how flood plain storage will be maintained;                                                                                  | The updated modelling demonstrates no material increase in flood levels, extents, velocities, or hazard. Non-adverse hydraulic impacts indicate that flood storage balance is not critical and will not provide any material benefit to surrounding land.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| iv) demonstrates that the development will not directly, indirectly or cumulatively increase the risk of the flood hazard to other properties; | <p>This has been demonstrated within hazard mapping in Appendix E which demonstrates that d.v product throughout majority of the catchment in the local event is limited to 0.15 m<sup>2</sup>/s which represents a low level of hazard. Additionally the development does not result in a material change in flood conditions and is therefore not increase flood risk.</p> <p>Further to this impacts in the regional event are limited to a modest 12mm externally to the site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| v) demonstrates compensation for loss of flood storage given that filling is proposed below the Defined Flood Event (DFE) level;               | While filling is proposed below the Defined Flood Event, the modelling confirms no material worsening of flood behaviour. Non-adverse hydraulic impacts indicate that flood storage balance is not critical.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| vi) provides evidence of no worsening on adjoining State Controlled Road.                                                                      | <p>An increase in water level of approximately 40 mm has been modelled on the adjoining State-controlled road reserve as a result of the proposed development under the Local 1% AEP Climate Change event. Given that there is no increase in the extent of flooding, and that the minor rise in water level is confined to the road verge without impacting the traffic lanes, it is therefore concluded that the flood impacts associated with the modelled local event are acceptable.</p> <p>It is not expected that the 40mm of increased water level in the Local 1% AEP Climate Change Event will compromise the future planned upgrades given it will be wholly contained in the service road corridor providing access to local traffic. It should noted that the d.v product of the area impacted within the road reserve remains at &lt; 0.15 m<sup>2</sup>/s (low hazard) in the post developed Local 1% AEP Climate Change Scenario. The minor changes in flood depth along</p> |





|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>the road verge do not compromise the safety, function, or upgrade capacity of the State-controlled road and do not result in any adverse impact to the road corridor.</p> <p>No increases in water level are modelled to occur in the Regional 1% AEP Climate Change event.</p> <p>Further to this, Transport and Main Roads designed swale drains in the verge area were not constructed, in the TMR North Maclean Safety Improvements project to connect drainage structures. This has contributed to the minor rise in water level along the verge shown. This minor impact can easily be accommodated in future TMR upgrade works of the highway or during private construction of the service road proposed in the TMR corridor, by connecting the swale drains to drainage structures to alleviate ponding in the verge. This is a common industry treatment in areas that are very flat with minimal grade.</p> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 1.4 Response to Information Request – DEV2025/1587 OPW – 19/09/2025

| Item                                                                                                                                                                                                                                                                                                                                                                                                                          | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2. Flooding and Stormwater</b>                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| In order for EDQ to consider filling within the mapped High Risk / flood hazard category H3 area, the following must be provided:                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"><li>• A cumulative flood study to demonstrate that the development will not directly, indirectly or cumulatively increase the risk of the flood hazard to other properties; and</li><li>• Compensation for loss of flood storage given that filling is proposed below the Defined Flood Event (DFE) level.</li><li>• Evidence of no worsening on adjoining State Controlled Road.</li></ul> | <p>The High Flood Risk Area identified in Logan City Council's flood mapping corresponds to areas where flood depths exceed 0.5 m in the 1% AEP event. As part of this assessment, updates made to the Logan Albert River Regional Flood Study (2023) have reduced peak water depths over the site in the 1% AEP Climate Change event to less than 0.5 m. Given that the pre-development scenario for the 1% AEP Climate Change event now results in flood depths of less than 0.5 m, it is appropriate that the flood risk classification for the site be revised to a 'Moderate Flood Risk Area.'</p> <p>Generally, there is no increase in extent of flooding post-development and does therefore not impede future development potential. Additionally no impact occurs on any dwellings/buildings and is wholly located to environmental and drainage areas.</p> <p>It is therefore concluded the flood impacts associated with the modelled events are considered non-adverse.</p> |





## 1.5 Scope

To achieve the above-mentioned objectives, this Flood Assessment details the following:

### 1.5.1 Local Assessment

Hydrological Model Development;

- Construct a local Drains hydrology model;
- Validate the Drains model with Rational Method calculations;
- 1%, 0.05% AEP, PMF and 5%,10% 1% , 0.5 and 0.2%,AEP Climate Change events.

Hydraulic Model Development;

- Construct a local TUFLOW hydraulic model;
- Incorporate proposed development as a design scenario; and
- 1%, 0.05% AEP, PMF and 5%,10% 1% , 0.5 and 0.2%,AEP Climate Change events.

Review of Model Results and Results Processing;

- Review of modelling results such as water surface level impacts;

Report and Mapping;

- Presentation of pre-development and post-development flood extents, depths, and velocities (where applicable); and
- Review of any impacts resulting from the proposal in the context of whether such afflux may give rise to potential actionable damage to surrounding properties.

### 1.5.2 Regional Assessment

- Review Councils Regional TUFLOW model (Logan Albert River Flood Study 2023) and update existing base case scenario to best represent current day/approved conditions;
- Run 0.05% AEP, PMF and 1% , 0.5 and 0.2%,AEP Climate Change events.
- Amend regional model to include development site and assess potential impacts;







## 2. Site Detail

### 2.1 Real Property Description

The site is legally described as Lot 7 & 8 on RP137101. The corresponding street address is 4745-4759 and 4761-4773 Mount Lindesay Highway, North Maclean. The combined site is generally rectangular and occupies an area of approximately 8.20 ha. The location of the subject site is shown on Figure 2.1.



Figure 2.1 Site Locality Plan

### 2.2 Physical Description

The site is accessed from Mount Lindesay Highway service road, an existing road which fronts the eastern boundary of the subject site.

The subject site is mostly flat, ranging from RL26 mAHD to RL29 mAHD. There is a separate development application on Lots 7 and 8 on RP137101 for bulk earthworks and vegetation clearing. Current features of the site include:

- Lot 7 is covered with trees and vegetation
- Lot 8 is covered with trees and vegetation.

The subject site is located within the Great Flagstone Priority Development Area (PDA).

The site is bounded by the following existing land uses:

- North: Lot 6 on RP137101 Vacant Land;
- East: Mount Lindsay Highway;
- South: Lot 2 on SP267252 Industrial business; and
- West: Lot 9 on RP137101 Industrial supplier/business.







## 2.3 Downstream Environment

The stormwater runoff is conveyed via overland flow to the northern site boundary, where it sheet flows across the vacant lots to the north eventually discharges into the Logan River.

## 2.4 Rainfall

The mean annual rainfall for the site has been estimated at 932.8 mm from the data set obtained from the nearest Bureau of Meteorology (BOM) station number 040542 at MacLean Bridge, Queensland.

## 2.5 Proposed Development

The proposed development is a 17 lot industrial subdivision across the two lots, with an internal road that gains access from Mount Lindesay Highway. The lots range in size from 3019m<sup>2</sup> to 4535m<sup>2</sup>. Refer to the plan shown in Figure 2.2 below and in Appendix A. The internal subdivision road network and Service Road R047 are designed above the Defined Flood Event (1% AEP 2100) and provide flood-free vehicular access under that event. This HIA is to support both existing applications DEV2025/1676 Reconfiguring a Lot & DEV2025/1587 Operational Work. Stormwater Management over the site has been addressed in BE220566-RP-CSMP-02 prepared for DEV2025/1676.

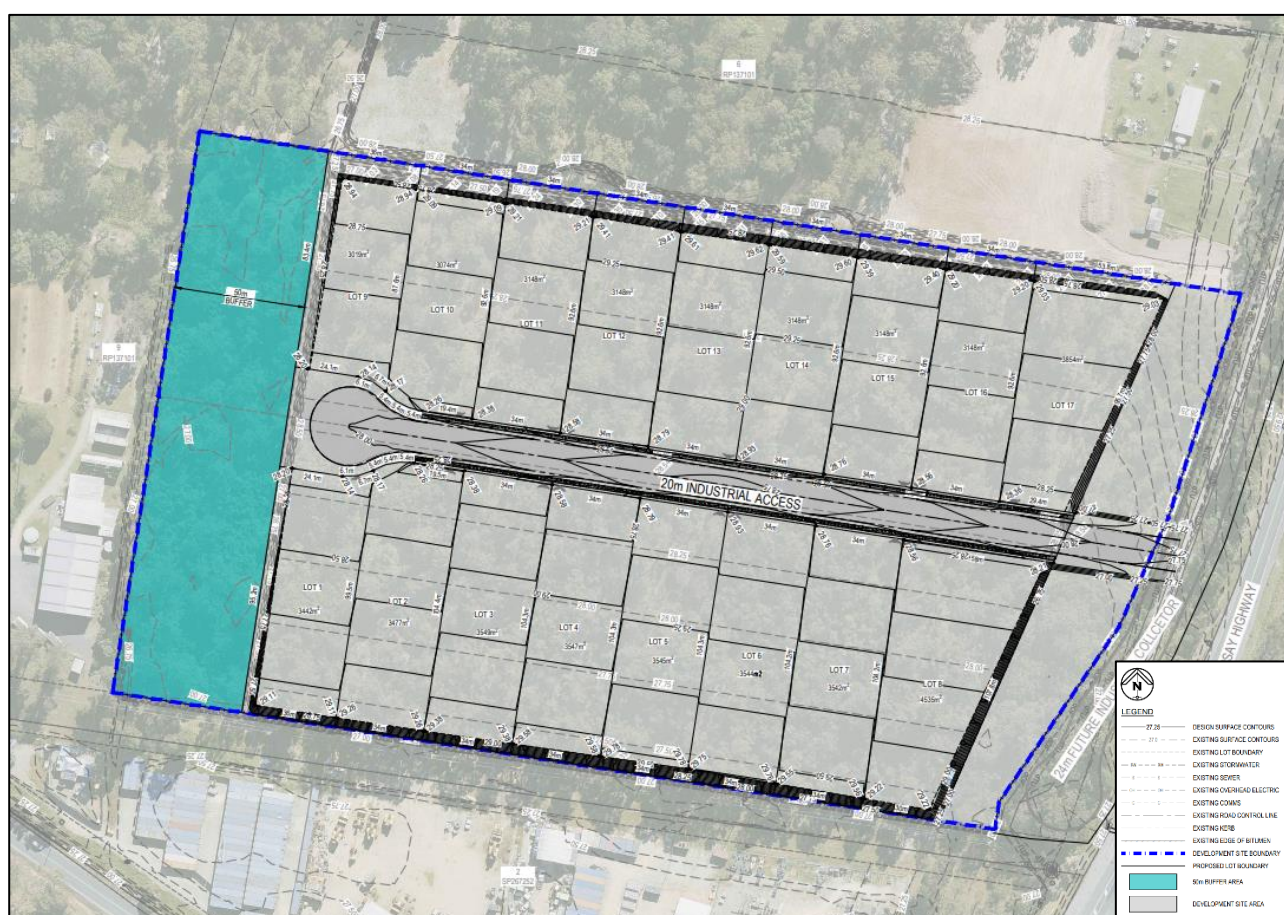


Figure 2.2 Proposed Development





### 3. Hydrologic Assessment - Local

#### 3.1 Hydrologic Modelling Methodology – Local

Ten (10) catchments within the vicinity of the subject site were modelled in DRAINS. The catchment extents and hydrological parameters were determined using a combination of LiDAR data and aerial imagery.

The catchment areas used in the hydrology model are shown in Figure 3.1 and key catchment parameters are summarised in Table 3.1.

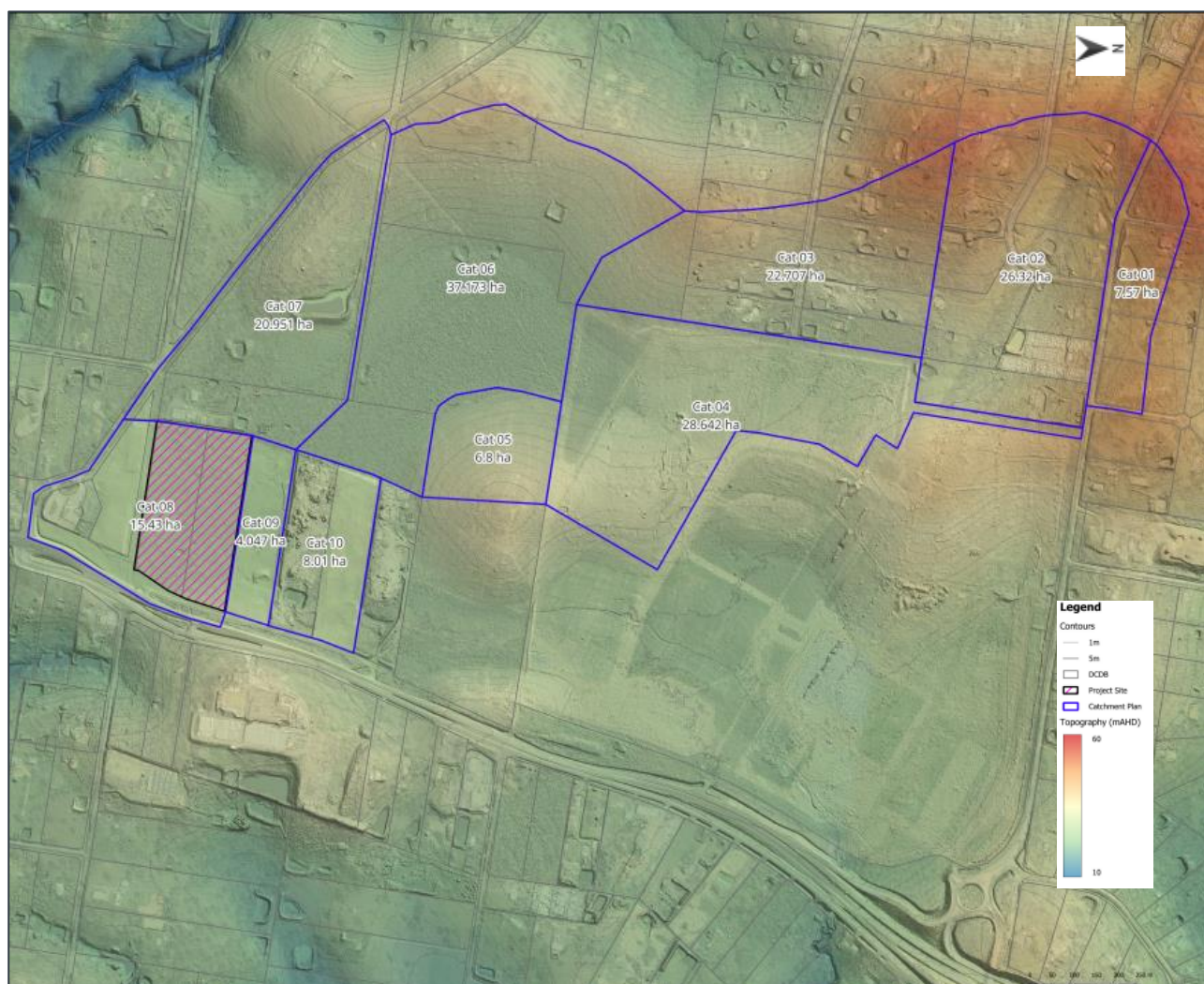


Figure 3.1 Local Catchment Extents



**Table 3.1 DRAINS Catchment Parameters**

| Scenario        | Catchment ID | Area (ha) | % Impervious |
|-----------------|--------------|-----------|--------------|
| Pre-Development | Cat 01       | 7.57      | 10           |
|                 | Cat 02       | 26.32     | 10           |
|                 | Cat 03       | 27.707    | 10           |
|                 | Cat 04       | 28.642    | 90           |
|                 | Cat 05       | 6.8       | 90           |
|                 | Cat 06       | 37.173    | 10           |
|                 | Cat 07       | 20.951    | 10           |
|                 | Cat 08       | 15.43     | 9            |
|                 | Cat 09       | 4.047     | 10           |
|                 | Cat 10       | 8.01      | 10           |

Storm losses for pervious areas were adopted in accordance with ARR 2019 guidance. Losses for impervious areas was set to zero.

The storm durations that produced the median peak flow from the ensemble storms at the site were adopted as the design events for the local flood impact assessment. The critical storms adopted for the hydraulic assessment are summarised in Table 3.2.

**Table 3.2 DRAINS Critical Storms and Peak Discharges**

| Event       | Critical Storm |
|-------------|----------------|
| 1% AEP      | 120min, TP06   |
| 0.05% AEP   | 90min TP05     |
| PMF         | 360min         |
| 10% AEP CC  | 360min TP10    |
| 5% AEP CC   | 180min TP08    |
| 1% AEP CC   | 120min TP03    |
| 0.5% AEP CC | 120min TP08    |
| 0.2% AEP CC | 90min TP05     |

*Note: The critical duration and temporal pattern combination was determined using the temporal pattern that produced the median peak discharge for each duration (10 minutes to 6 hours), then selecting the duration with the highest peak discharge from the median temporal pattern storms.*

### 3.2 Peak Flow Validation – Local

The rational method was used to check the validity of the peak discharges estimated by the DRAINS model to confirm the hydrology model was producing reasonable estimations. The rational method peak discharges are presented in Table 3.3.







**Table 3.3 1% Rational Method v DRAINS Peak Discharges**

| Catch. ID | Rational Method (m <sup>3</sup> /s) | DRAINS (m <sup>3</sup> /s) | Difference (%) |
|-----------|-------------------------------------|----------------------------|----------------|
| Cat 01    | 2.72                                | 2.77                       | -0.3           |
| Cat 02    | 7.44                                | 7.61                       | 3.2            |
| Cat 03    | 7.15                                | 7.18                       | 6.7            |
| Cat 04    | 11.25                               | 13.20                      | -10.1          |
| Cat 05    | 3.49                                | 3.82                       | -8.1           |
| Cat 06    | 9.63                                | 9.56                       | 11.8           |
| Cat 07    | 5.80                                | 5.88                       | 1.0            |
| Cat 08    | 4.61                                | 4.75                       | -1.9           |
| Cat 09    | 1.17                                | 1.25                       | 4.9            |
| Cat 10    | 3.04                                | 3.14                       | 13.8           |

Generally, peak flows compare well between the DRAINS model results and calculated flows from the rational method and have been deemed suitable for use in this flood assessment.







## 4. Hydraulic Assessment - Local

### 4.1 Hydraulic Model Methodology – Local

A TUFLOW model was developed to assess the impact of the proposed development on the local flooding regime over the subject site. The TUFLOW model extent was defined more than 0.5 km upstream and downstream of the subject site.

The critical events simulated in the TUFLOW model were determined by the hydrology modelling discussed above.

### 4.2 TUFLOW Model Inputs - Local

The TUFLOW model inputs are summarised in the following Table 4.1 and shown in the TUFLOW Configuration maps provided in Appendix D.

Table 4.1 TUFLOW Model Inputs - Local

| Parameters                                      | Details                                                                                                                                                                   |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Topography                                      | 2023 1m LiDAR<br>Available Survey data<br>Relevant Amendments utilizing Z-shapes as discussed in section 4.4.                                                             |
| Initial Water Level                             | Existing dams filled to spillway level based on LiDAR                                                                                                                     |
| 2D Resolution                                   | 2m grid.                                                                                                                                                                  |
| Timestep                                        | Adaptive timestep. (HPC)                                                                                                                                                  |
| Inflows                                         | Hydrographs derived from DRAINS hydrology model included as SA and QT inflows. Refer to the model features mapping provided below and in Appendix D for inflow locations. |
| Downstream Boundary Condition                   | HQ Boundary                                                                                                                                                               |
| Hydraulic Structures                            | Culverts within the model domain have been modelled using the combination of 1D features and DEM modification in TUFLOW. Details of input parameters can be found below.  |
| Surface Roughness<br>(reflected as Manning 'n') | 0.055 – Medium Scrub<br>0.100 – Dense Vegetation<br>0.050 – Scattered Scrub<br>0.100 - Buildings<br>0.020 –Water body<br>0.060 – Swales                                   |
| Development Representation                      | The design earthworks surface was adopted in the post-development scenario, as well as the post-development hydrology.                                                    |





### 4.3 Climate Change Representation – ARR Guidelines 4.2 - Local

This assessment has been undertaken in accordance with the latest Australian Rainfall and Runoff (ARR) 4.2 guidelines, which incorporate updated methodologies for considering climate change impacts on rainfall and flood behaviour. The ARR 4.2 framework aligns with the global Shared Socioeconomic Pathways (SSP) and Representative Concentration Pathways (RCP) approach adopted by the Intergovernmental Panel on Climate Change (IPCC). For this study, the SSP2-4.5 scenario has been adopted, representing a “middle-of-the-road” development pathway with moderate greenhouse gas emissions and associated climatic changes.

The Climate Change factors for increase in rainfall depth were applied as per the below table sourced from ARR data hub for the area.

Table 4.2 SSP2-4.5 Climate Change Factors

| <b>Burst Duration</b> | <b>Duration in Mins</b> | <b>Depth Factor</b> | <b><math>\alpha</math> %/°C</b> | <b>Total % Increase</b> |
|-----------------------|-------------------------|---------------------|---------------------------------|-------------------------|
| <b>≤1 hour</b>        | 60                      | 1.41                | 14.7%                           | 41.0%                   |
| <b>1.5 Hours</b>      | 90                      | 1.37                | 13.4%                           | 37.0%                   |
| <b>2 Hours</b>        | 120                     | 1.35                | 12.8%                           | 35.0%                   |
| <b>3 Hours</b>        | 180                     | 1.32                | 11.7%                           | 32.0%                   |
| <b>4.5 Hours</b>      | 270                     | 1.29                | 10.7%                           | 29.0%                   |
| <b>6 Hours</b>        | 360                     | 1.27                | 10.0%                           | 27.0%                   |
| <b>9 Hours</b>        | 540                     | 1.25                | 9.3%                            | 25.0%                   |
| <b>12 Hours</b>       | 720                     | 1.24                | 9.0%                            | 24.0%                   |
| <b>18 Hours</b>       | 1080                    | 1.22                | 8.3%                            | 22.0%                   |
| <b>≥24 Hours</b>      | 1440                    | 1.21                | 7.9%                            | 21.0%                   |

### 4.4 Pre-development Scenario Representation - Local

The base topography has been updated to best represent the current day scenario with the addition of surrounding approvals and developments under construction. Z-Shapes were used in the TUFLOW model to represent earthworks and changes to ground levels associated over the following lots and approvals:

- DEV2024/1470 – Lot 6 on RP137101 – Development filled above flood level in accordance with approved earthworks plans





- DEV2022/1315/2 – Lot 1 on RP113251 – Maclean Estate – Development filled above flood level and channel represented in model in accordance with Bulk Earthworks Sketch Plan prepared by Arcadis

Shown below in Figure 4.1 is the pre-development TUFLOW model set up map.

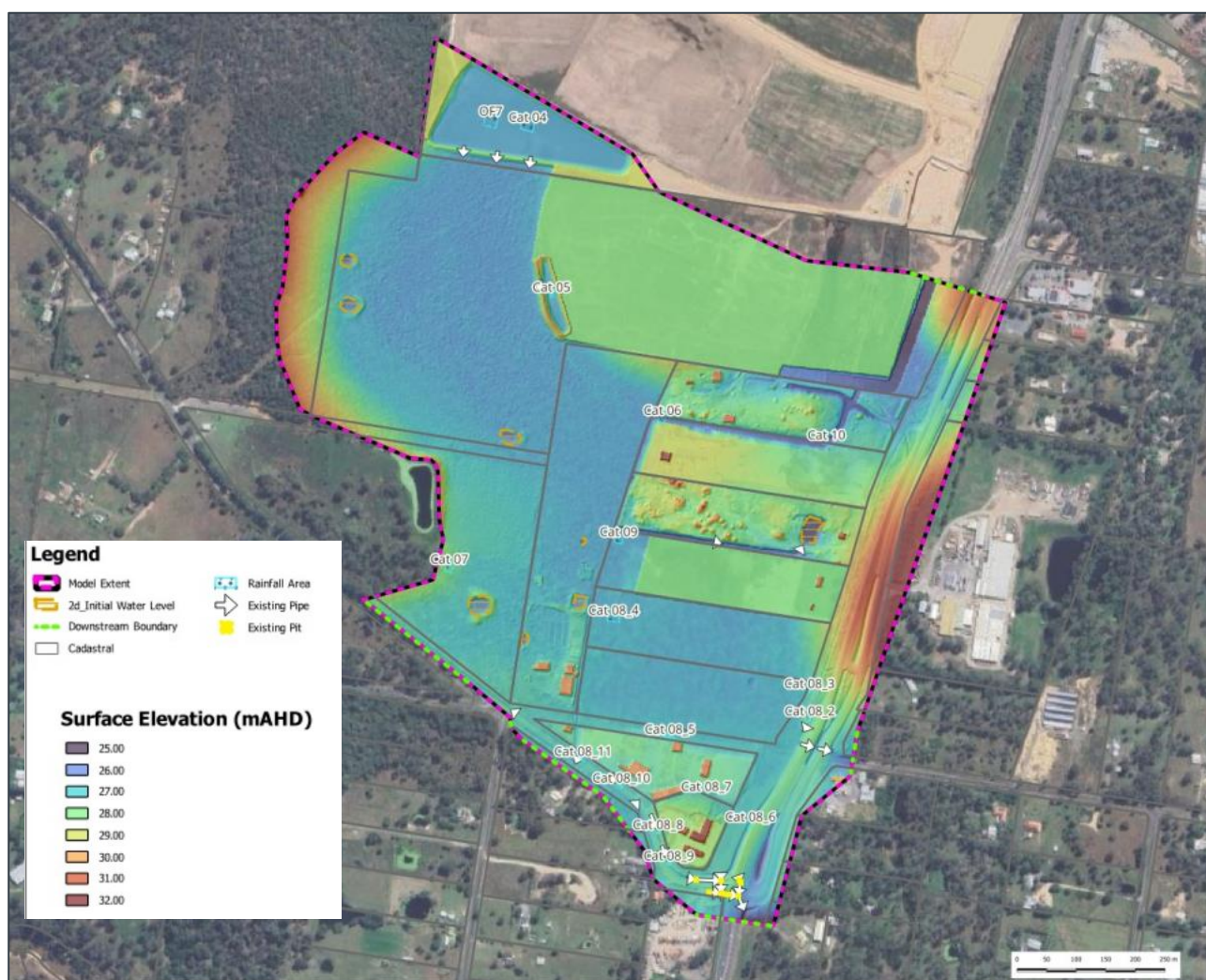


Figure 4.1 Pre-Development TUFLOW Model Configuration

#### 4.5 Post-development Scenario Representation - Local

The development over Lot 7 & 8 on RP137101 was represented utilising the earthworks surface prepared for the development. The post-development TUFLOW model configuration is shown below in Figure 4.2.





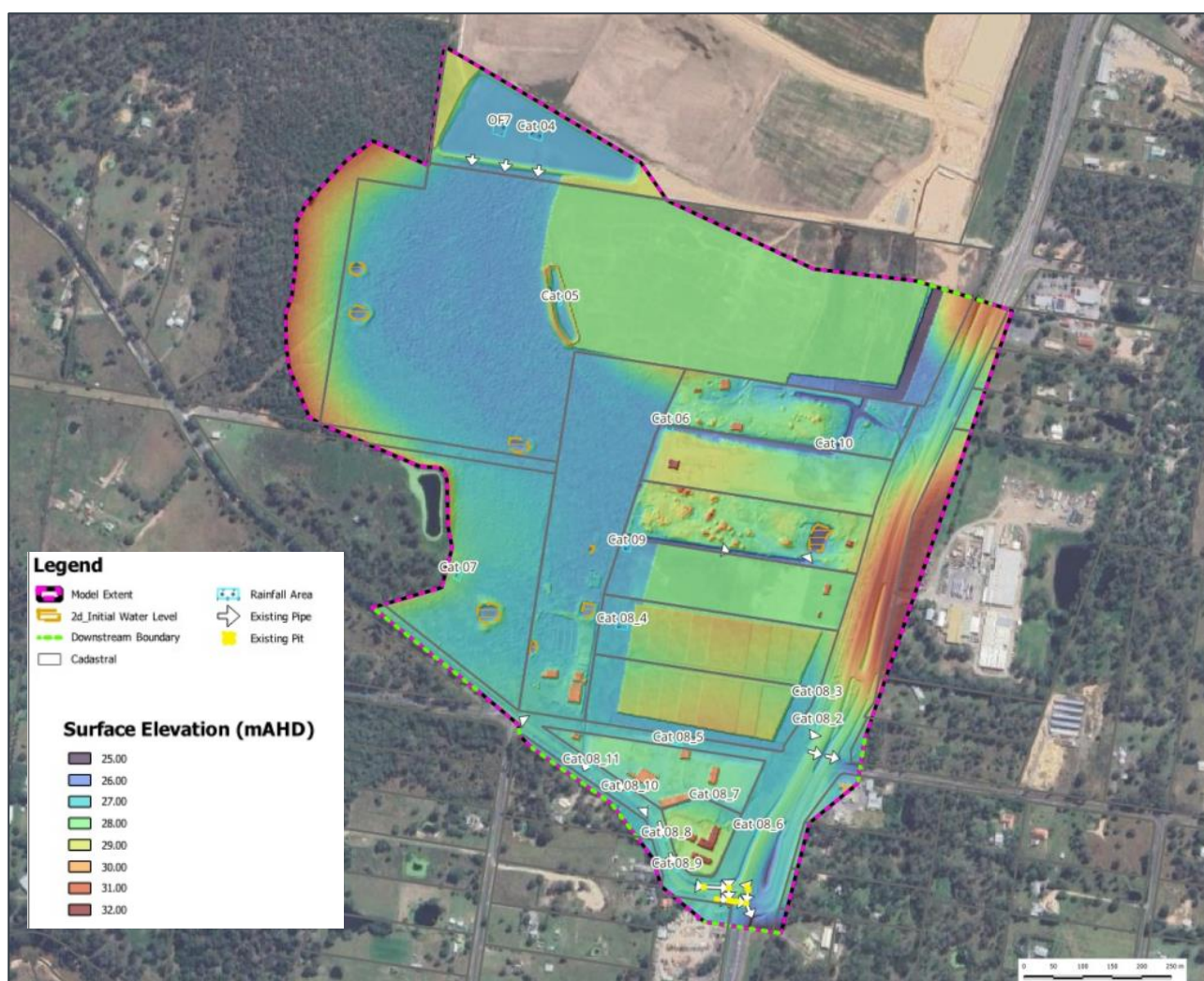


Figure 4.2 Post-Development TUFLOW Model Configuration

## 4.6 Results – Local

### 4.6.1 Pre-development Flood Conditions – 1% AEP

The model results suggest that in the 1% AEP the subject site is subjected to inundation of approximately 300-400mm across majority of the site with a peak flood depth of 560mm at the sites norther boundary. Shown below in Figure 4.3 is the 1% AEP peak flood depth map.





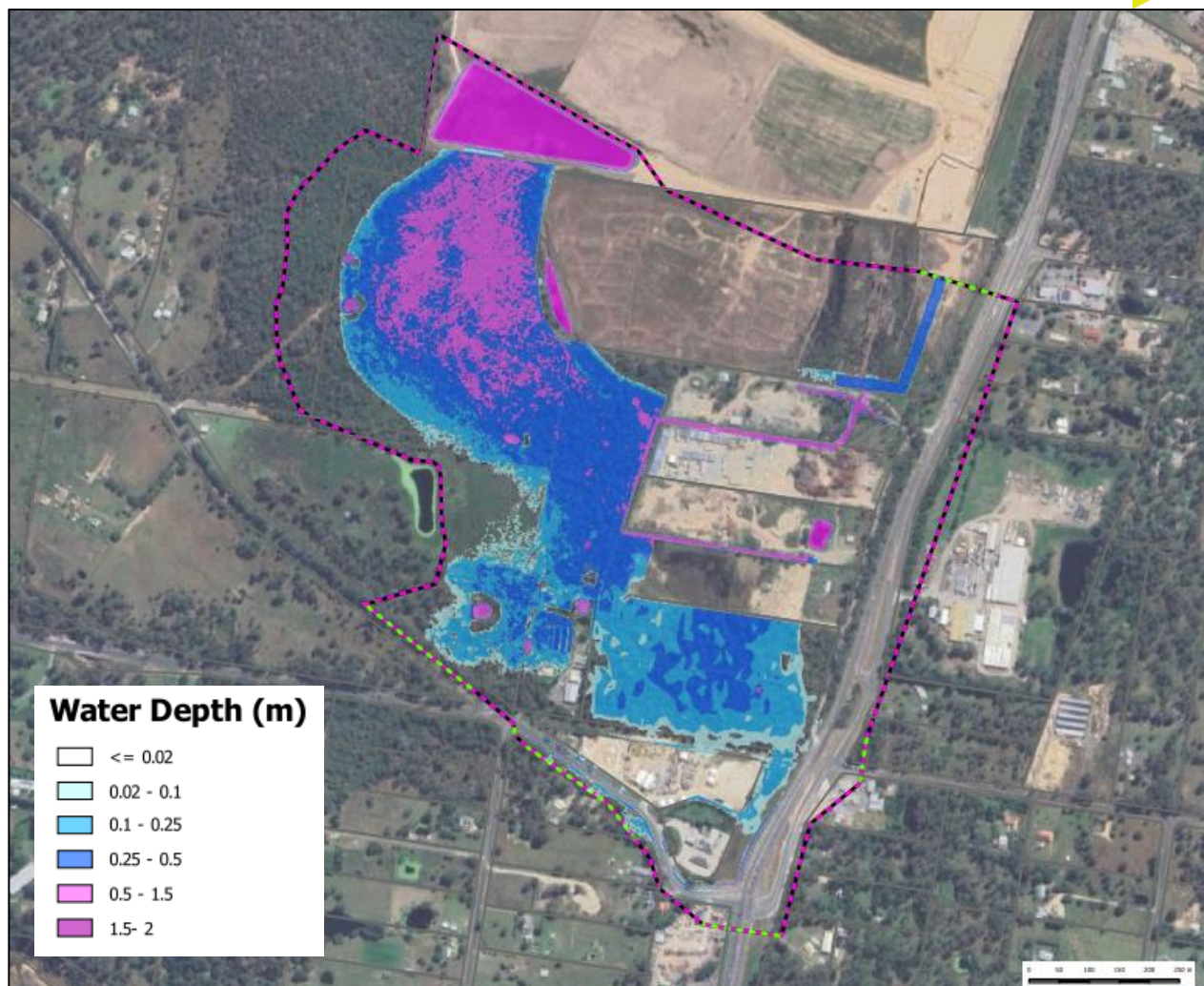


Figure 4.3 1% AEP Pre-Development Scenario Peak Water Depth - Local

#### 4.6.2 Pre-development Flood Conditions – 1% AEP Climate Change - 2100

The climate change 1% AEP flood depth results are similar to those presented in Figure 4.3 above with a global increase of depth across the model. A full set of result maps have been provided in Appendix E.

#### 4.7 1% AEP Post-development Flood Conditions

In the post developed scenario, majority of the development has been filled above the flood level over the site and will be free from inundation in the 1% AEP event. Shown below in Figure 4.4 is the 1% AEP peak flood depth map in the post developed scenario.

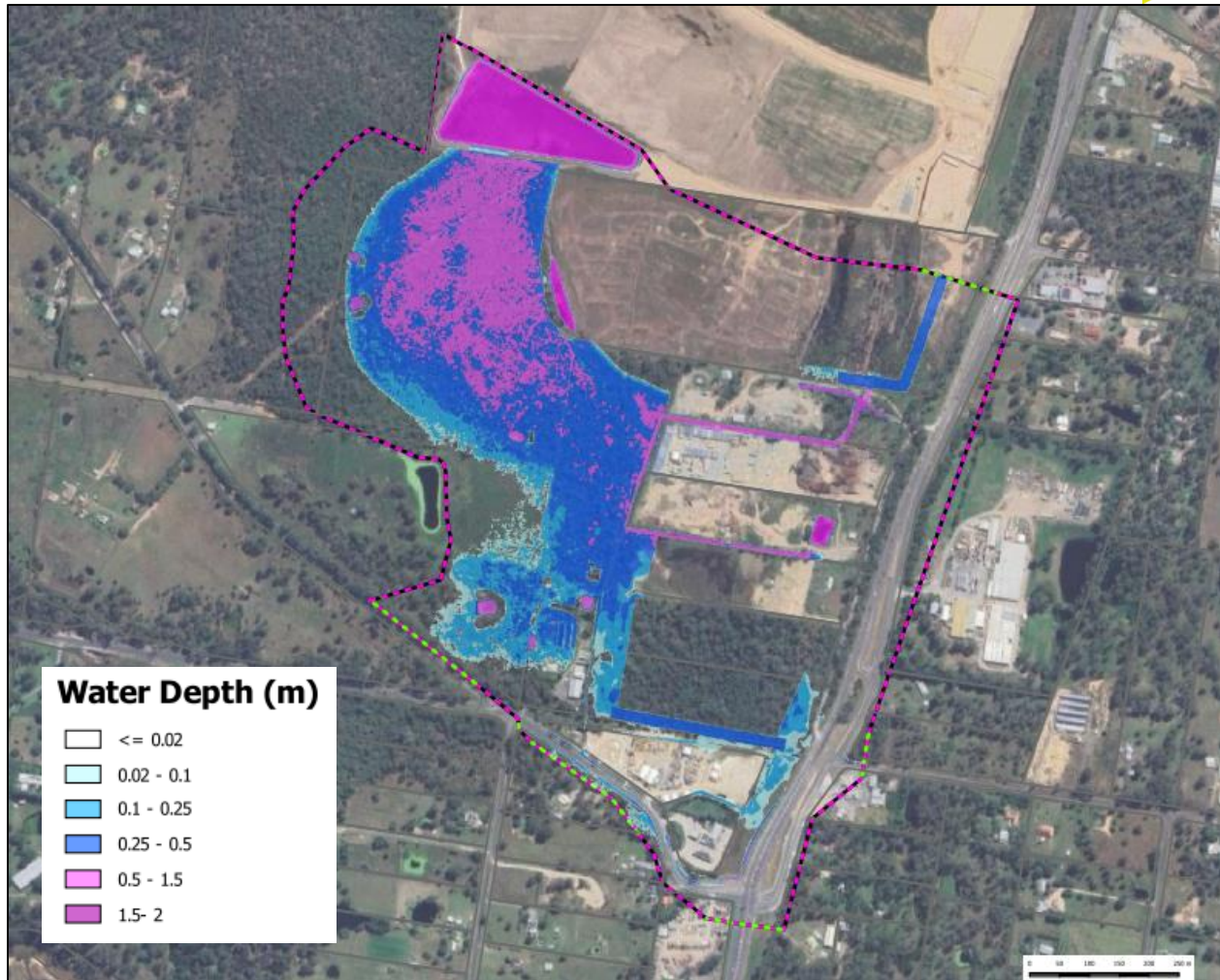


Figure 4.4 1% AEP Post-Development Scenario Peak Water Depth - Local

#### 4.7.1 Post-development Flood Conditions – 1% AEP Climate Change - 2100

The climate change 1% AEP flood depth results are similar to those presented in Figure 4.4 above with a global increase of depth across the model. A full set of result maps have been provided in Appendix E.

#### 4.8 Impact Assessment - Local

The assessment considered pre- and post-development conditions and was completed in accordance with the relevant PDA Development Scheme Assessment Benchmarks. This section of the report demonstrates that the proposed works do not materially increase flood levels, flow velocities, or flood extents beyond the site boundary and, as a result, do not give rise to adverse flooding impacts on surrounding properties or existing infrastructure.

The pre- and post-developed maximum flood water surface elevations were compared for each of the AEP events to quantify the maximum flood impacts caused by the development. The results are presented in maps in Appendix E, the 1% AEP and 1% AEP Climate Change result is presented in Figure 4.5.



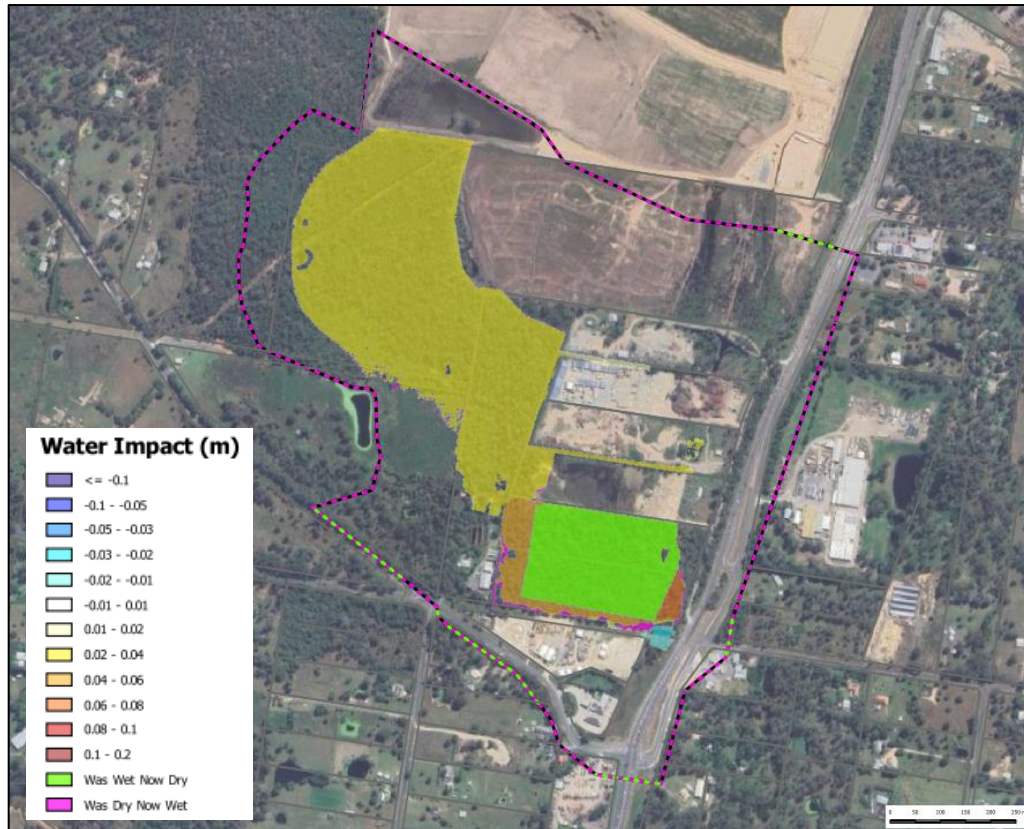


Figure 4.5 1% Climate Change AEP Water Level Afflux Map – Local

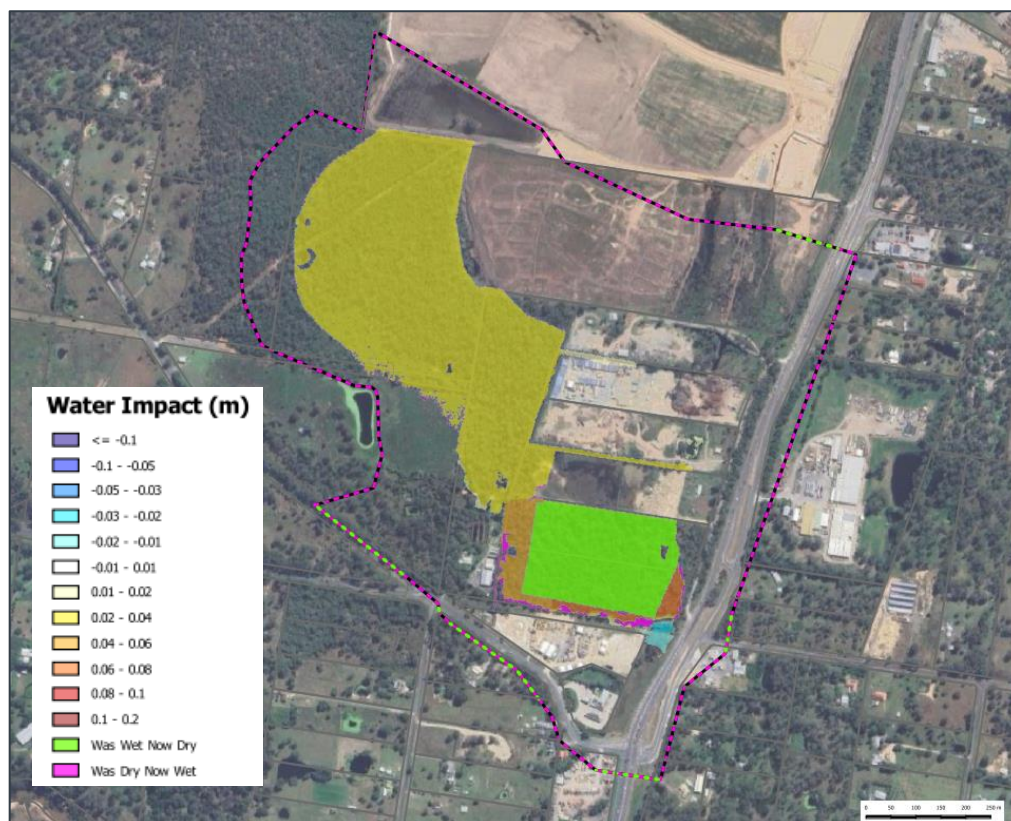


Figure 4.6 1% AEP Water Level Afflux Map - Local





Impact results indicate that in both the 1% AEP and 1% AEP Climate Change event the development will result in increases in water level of up to 40 mm in the area immediately west of the site. In addition to this impacts of up to 40mm are modelled to occur in a limited area in the road reserve (in the existing verge only) to the south east of the site.

The majority of the mapped impacts occur within areas that experience modelled peak flood depths greater than 500 mm under existing conditions. It is noted that the area toward the north-west of the site is identified in the North Maclean Enterprise Context Plan as a future biodiversity corridor and is not zoned for industry or business purposes. Furthermore, this area has been designated as an environmental conservation area under Approval No. DEV20221315. Refer to the figure below, which presents the 1% AEP climate change impacts overlaid on the Maclean Estates ROL Plan.. Hazard mapping presented in Appendix E of this report also demonstrates that the d.v product throughout the impact area remains less than 0.15m<sup>2</sup>/s in the post developed scenario.

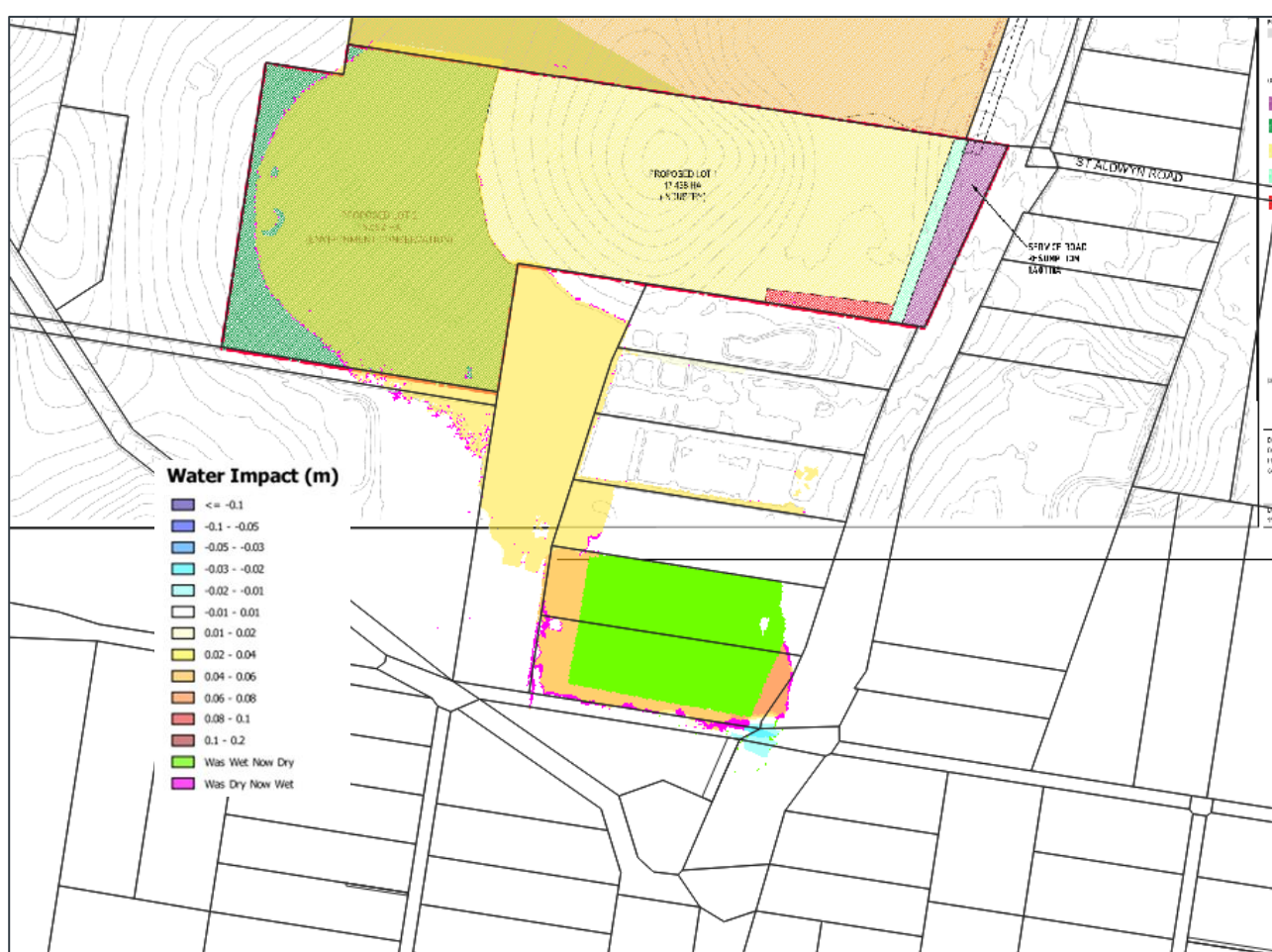
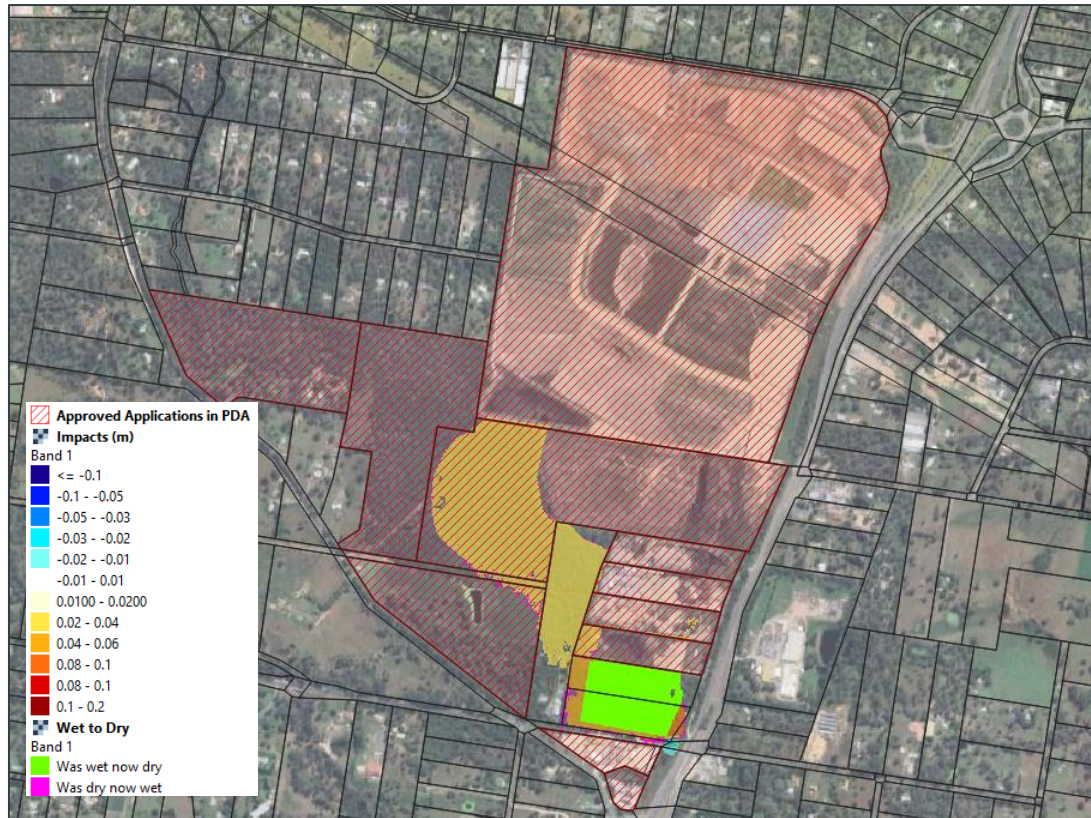


Figure 4.7 1% AEP CC Water Level Afflux Map – Local – Maclean Estate ROL Plan

Figure 4.8 below illustrates the extent of flood impacts in relation to surrounding approved development within the PDA. The figure demonstrates that the identified impacts do not materially affect developable land, with any impacts largely confined to areas mapped as a future biodiversity corridor or designated as environmental conservation areas. Accordingly, no adverse flood impacts are identified on land approved for industrial or business development within the PDA.







**Figure 4.8 1% AEP CC Water Level Afflux Map – Local – PDA Approval Context**

It is noted that there is no increase in extent of flooding post-development and does therefore not impede future development potential. Additionally no impact occurs on any dwellings/buildings and is wholly located to environmental and drainage areas.

The modelling demonstrates that any changes in flood levels are non-adverse and immaterial, with no measurable worsening to upstream, downstream, or adjacent properties or infrastructure.

Consistent with the State Planning Policy (Natural hazards, risk and resilience) assessment benchmarks, the modelling demonstrates that the proposal does not increase flood extent, hazard or risk external to the site, and does not increase exposure or severity of flooding impacts on adjoining land or infrastructure.



## 5. Hydraulic Assessment - Regional

### 5.1 Hydraulic Model Methodology – Regional

A hydraulic impact assessment was undertaken using Logan City Council's endorsed regional flood model, the 2023 Logan-Albert Flood Model. To better assess flooding behaviour specific to the proposed development, amendments were made to the base case model to refine the local topography, drainage characteristics, and representation of the site and its surrounds. These modifications ensure that the model provides a realistic simulation of flood behaviour under existing and proposed conditions. The following section outlines the model adjustments undertaken and presents the resulting flood behaviour across the development site.

### 5.2 TUFLOW Model Inputs - Regional

The TUFLOW model inputs are summarised in the following Table 5.1 and shown in the TUFLOW Configuration maps provided in Appendix D.

Table 5.1 TUFLOW Model Inputs – Regional

| Parameters                                      | Details                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Topography                                      | 2023 1m LiDAR<br>Relevant Amendments utilizing Z-shapes as discussed in section 4.4.                                                                                                                                                                                                                                                                                   |
| Initial Water Level                             | Existing dams filled to spillway level based on LiDAR                                                                                                                                                                                                                                                                                                                  |
| 2D Resolution                                   | 10m grid.                                                                                                                                                                                                                                                                                                                                                              |
| Timestep                                        | Adaptive timestep. (HPC)                                                                                                                                                                                                                                                                                                                                               |
| Inflows                                         | Inflow boundaries and locations have been left unchanged from the base case Logan-Albert Flood Study.                                                                                                                                                                                                                                                                  |
| Downstream Boundary Condition                   | Down stream boundary locations have been left unchanged from the base case Logan-Albert Flood Study.                                                                                                                                                                                                                                                                   |
| Hydraulic Structures                            | Culverts within the model domain have been modelled using the combination of 1D features and DEM modification in TUFLOW. Details of input parameters can be found below.                                                                                                                                                                                               |
| Surface Roughness<br>(reflected as Manning 'n') | Unchanged from the base case Logan-Albert Flood Study:<br>0.150 – Very Dense Bushland<br>0.055 – Rural Residential<br>0.200 – Low Density Residential<br>0.250 – Medium Density Residential<br>0.300 – High Density Residential<br>0.090 – Dense bushland<br>0.080 – Medium Dense bushland<br>0.020 - Road<br>0.020 –Water body<br>0.025 – 0.120 – Rivers and Channels |
| Development Representation                      | The design earthworks were represented through the use of Z-shapes within the model.                                                                                                                                                                                                                                                                                   |





### 5.3 Pre-development Scenario Representation -Regional

The base topography has been updated to best represent the current day scenario with the addition of surrounding approvals and developments under construction. Z-Shapes were used in the TUFLOW model to represent earthworks and changes to ground levels associated over the following lots and approvals:

- DEV2024/1470 – Lot 6 on RP137101 – Development filled above flood level in accordance with approved earthworks plans
- DEV2022/1315/2 – Lot 1 on RP113251 – Maclean Estate – Development filled above flood level and channel represented in model in accordance with Bulk Earthworks Sketch Plan prepared by Arcadis
- DEV2018-961-12 – Lot 39 on SP258739 – Charter Hall Development, Earthworks and channel levels have been applied via Z-Shapes
- DEV2021/1242 - Lot 2 on SP267252 - 916 – 944 Greenbank Road – Approved filling above flood level;
- Detailed Surface Level Survey of Green Bank Road – Provided by Sunrise Surveying (Provided in Appendix G of this report)
- Increased definition of Channel through Lot 3 & 4 on RP137101
- Additional Culvert across Mt Lindesay Highway

A depiction of model topography amendments (shown with coloured polygons) is demonstrated in the model excerpt shown below in Figure 5.1.



Figure 5.1 1% AEP Climate Change Water Level Afflux Map







## 5.4 Climate Change Representation – Regional

In accordance with the original Logan Albert 2023 Flood model and report, to obtain climate change scenario design flow hydrographs, design rainfall in the XP-RAFTS hydrologic model was increased by a factor of 1.095 (9.5% increase) in accordance with guidelines in Book 1 Chapter 6 of the 2016 ARR (Ball et al, 2019). The adopted multiplication factor is based on the RCP4.5 climate change projection, a planning horizon of year 2090 and a projected warming of 1.862 degrees Celsius. Design rainfall losses and all other hydrologic model parameters are the same for both the current climate and future climate scenarios.

This was the climate change scenario applied to the regional modelling in this assessment.

## 5.5 Results – Regional

### 5.5.1 Pre-development Flood Conditions – Regional 1% AEP Climate Change

The model results suggest that in the 1% AEP Climate Change regional event the subject site is subjected to inundation of approximately 50-150mm across the majority of the site with a peak flood depth of 235mm at the sites northern boundary. Shown below in Figure 5.2 is the 1% AEP Climate Change peak flood depth map in the regional event.

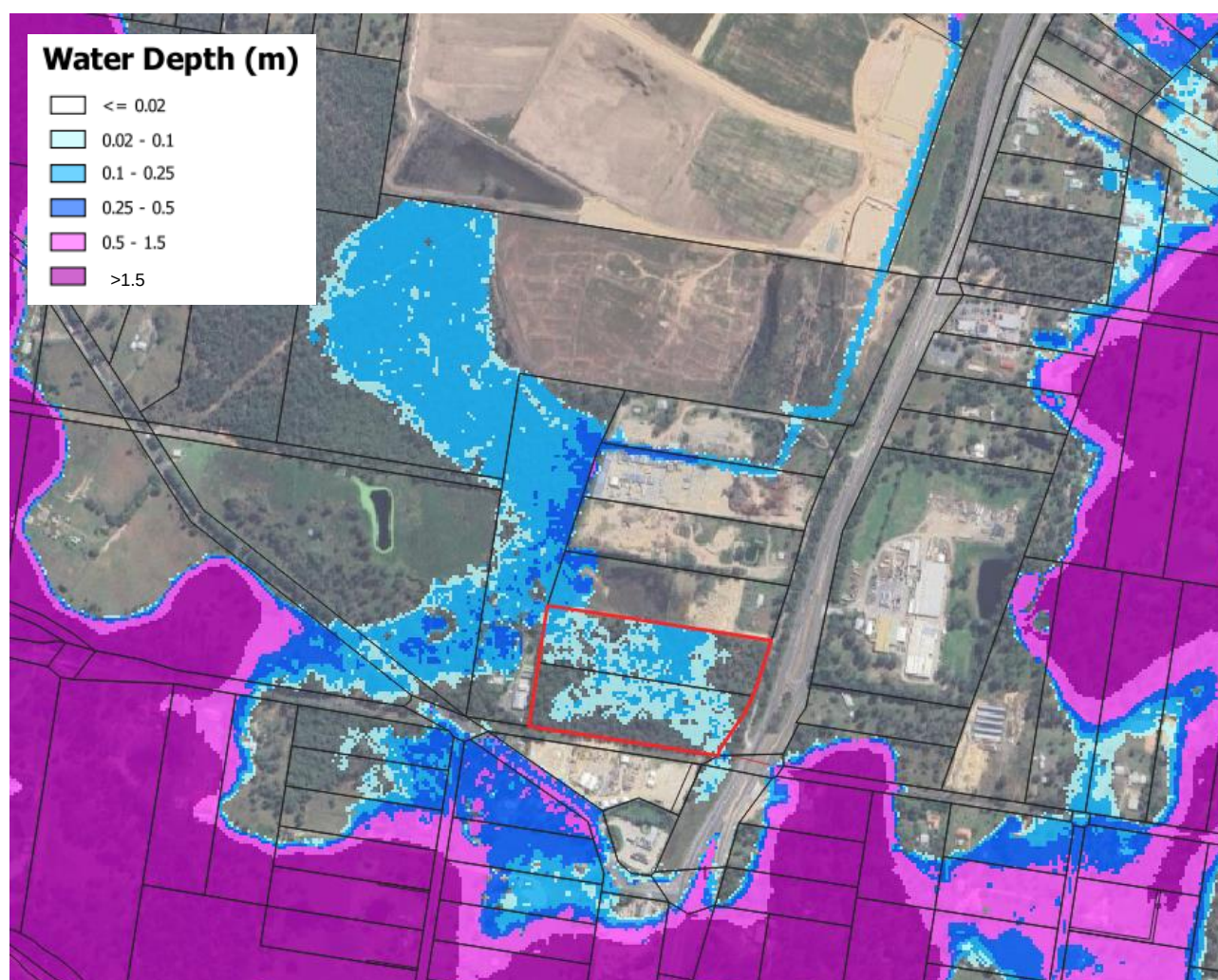


Figure 5.2 1% AEP Climate Change Regional Pre-Development Scenario Peak Water Depth



It should be noted that with the inclusion of detailed surveyed surface levels of Greenbank Road, the amount of flow overtopping Greenbank Road to the west of the site was dramatically reduced. This reduction in flow and overtopping resulted in much lower flood levels over the subject site in the base case scenario.

### 5.5.2 Post-development Flood Conditions – Regional 1% AEP Climate Change

In the post developed scenario, majority of the development has been filled above the flood level over the site and will be free from inundation in the 1% AEP event. Shown below in Figure 5.3 is the 1% AEP Climate Change Regional peak flood depth map in the post developed scenario.

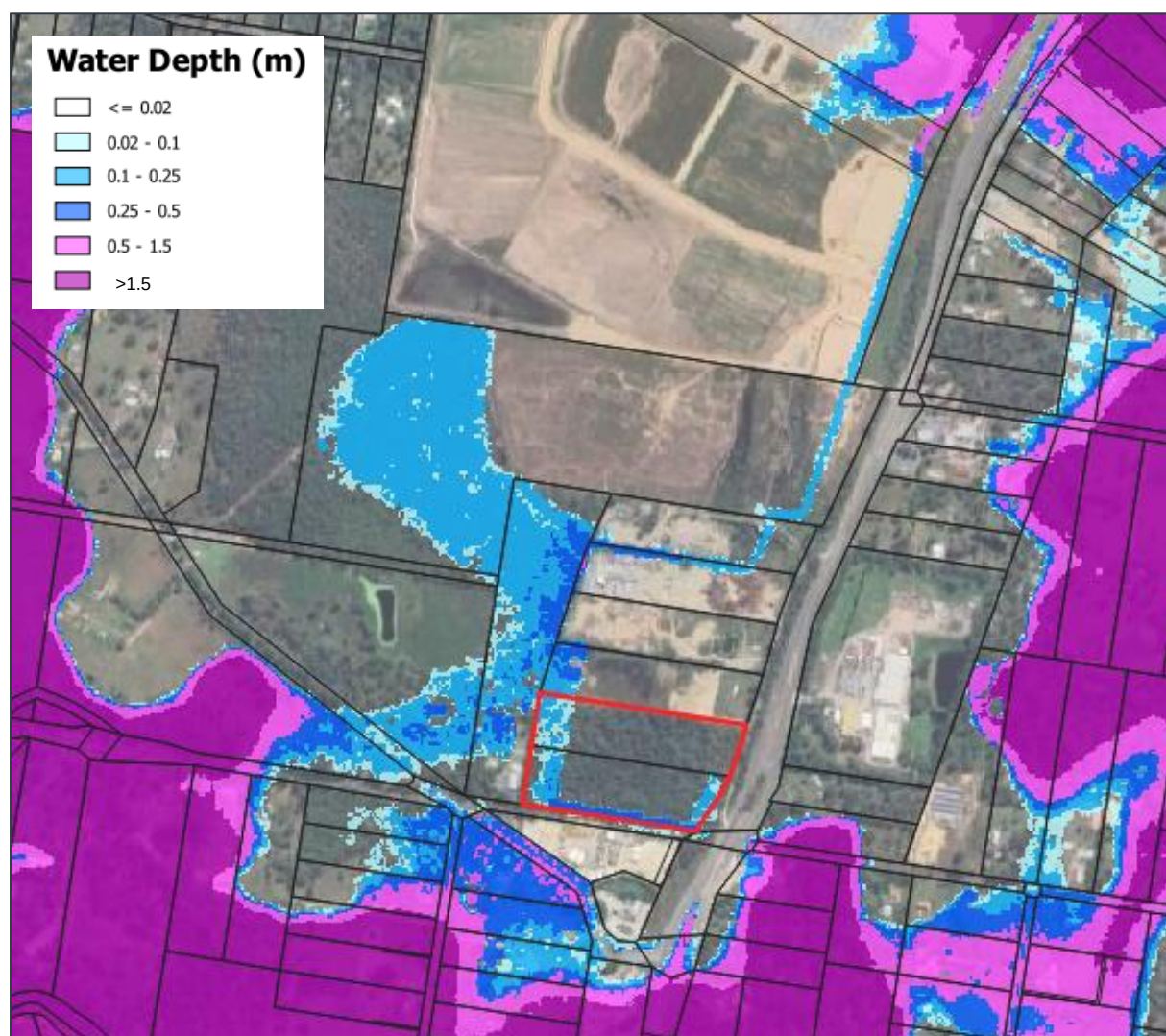


Figure 5.3 1% AEP Climate Change Regional Post-Development Scenario Peak Water Depth

### 5.6 Impact Assessment – Regional

The pre- and post-developed maximum flood water surface elevations were compared for each of the AEP events to quantify the maximum flood impacts caused by the development. The results are presented in maps in Appendix E, the 1% AEP and 1% AEP Climate Change result is presented in Figure 5.4.





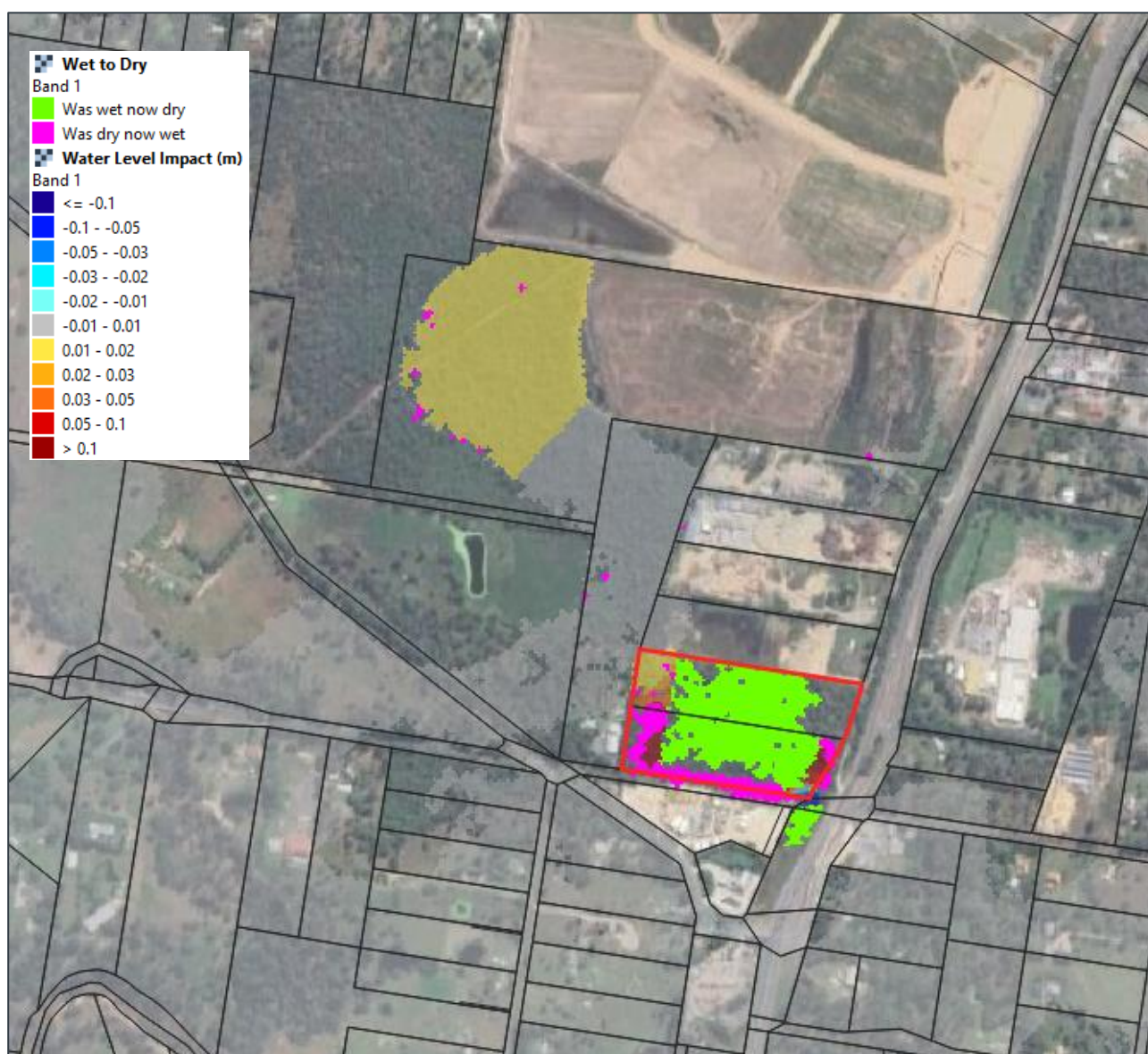


Figure 5.4 1% AEP Climate Change Regional Water Level Afflux Map – Regional

Impact results indicate that in 1% AEP Climate Change Regional event the development will result in increases in water level of up to 12 mm in the area to the west of the site. It should be noted that the area towards the north-west of the site is identified in the North Maclean Enterprise Context Plan as a future biodiversity corridor and is not zoned for industry or business purposes.

It is noted that there is no increase in extent of flooding post-development and does therefor not impede future development potential. Additionally no impact occurs on any dwellings/buildings and is wholly located to environmental and drainage areas.

Consistent with the State Planning Policy (Natural hazards, risk and resilience) assessment benchmarks, the modelling demonstrates that the proposal does not increase flood extent, hazard or risk external to the site, and does not increase exposure or severity of flooding impacts on adjoining land or infrastructure.

It is therefore concluded the flood impacts associated with the modelled regional event is acceptable.





## 6. Conclusion

---

This Hydraulic Impact Assessment (HIA) has been prepared for Roubaix Properties Pty Ltd for a Development Approval (DA) submission, for a ROL to facilitate a 17-lot industrial subdivision, to Economic Development Queensland (EDQ).

The findings and modelling results of this Hydraulic Impact Assessment demonstrate that the proposal does not cause adverse flooding impacts to surrounding properties or infrastructure. The local hydraulic model indicates only minor increases in flood levels in select locations (up to approximately 50 mm) external to the site, with no increase in flood extent, confirming that flood behaviour remains consistent with existing conditions. Modelling results show that water level increases in the modelled events do not show increases in flood levels on existing dwellings / buildings or areas zoned for redevelopment

Based on the updated hydraulic modelling outcomes, flood depths across the subject site in the 1% AEP Regional climate change event are below the threshold used to define the High Flood Risk Area under Logan City Council's flood mapping. Accordingly, the development footprint does not fall within the High Flood Risk Area as defined by the adopted mapping criteria.

As this application relates to Reconfiguring a Lot only, any use-specific flood emergency management, evacuation planning or operational safety measures will be assessed and conditioned at MCU and Operational Works stage, when final land uses, finished floor levels and detailed access arrangements are confirmed





## Appendix A – Proposed Plans of Development

---



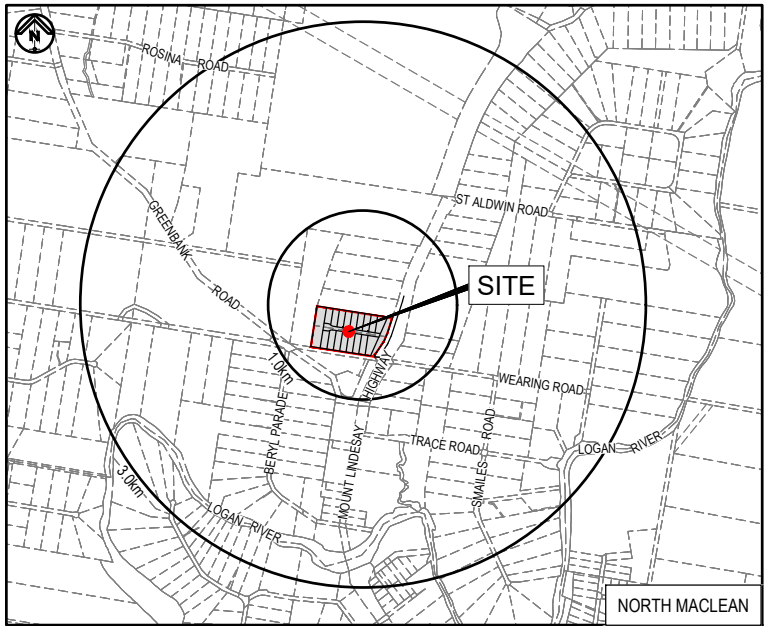
# PROPOSED DEVELOPMENT AT

## 4733-4743 MOUNT LINDESAY HIGHWAY

### NORTH MACLEAN, QUEENSLAND

## PROJECT No. BE220566-DA

## DA APPLICATION

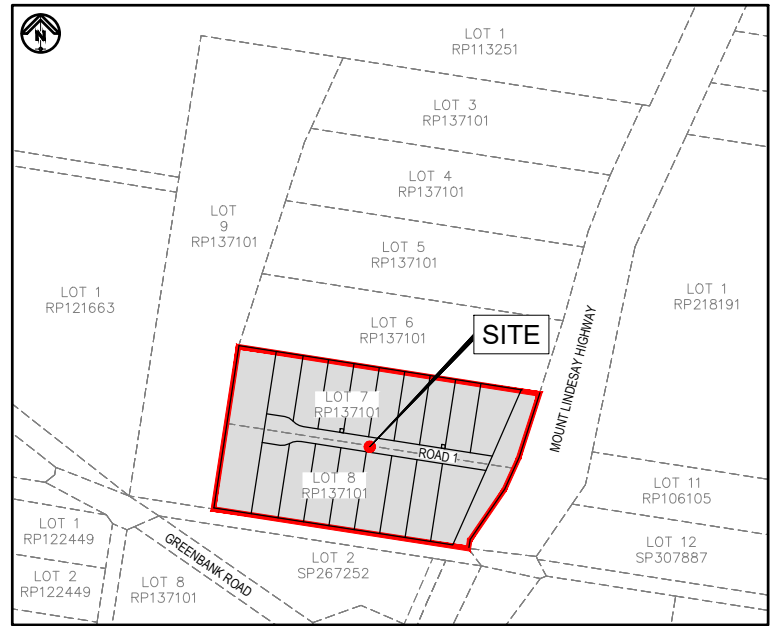


**LOCALITY PLAN**

N.T.S.

| DRAWING INDEX |                                                   |          |
|---------------|---------------------------------------------------|----------|
| DRG. No.      | DRAWING TITLE                                     | REVISION |
| C1000         | COVER SHEET, LOCALITY PLAN & DRAWING INDEX        | B        |
| C1101         | OVERALL LAYOUT PLAN                               | B        |
| C2000         | GENERAL NOTES AND TYPICAL DETAILS                 | B        |
| C2101         | EARTHWORKS LAYOUT PLAN                            | B        |
| C2301         | EARTHWORKS SECTIONS                               | B        |
| C3201         | 20m INDUSTRIAL ACCESS ROAD - LONGITUDINAL SECTION | B        |
| C5101         | COMBINED SERVICES LAYOUT PLAN                     | B        |
| C9000         | HAZARD RISK REGISTER - DESIGN RISKS               | B        |

**SURVEY**  
PROVIDED BY: SUNRISE SURVEY  
REPORT No: 22095 4001 001-A  
DATE: 11-10-2024  
SYSTEM: MGA2020 ZONE 56



**NEIGHBOURHOOD PLAN**

N.T.S.

PREPARED FOR



ROUBAIX PROPERTIES NO 4705 PTY LTD

PREPARED BY



GOLD COAST | BRISBANE | TOOWOOMBA  
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PHONE: +61 7 5509 6400  
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COOTE BURCHILLS ENGINEERING PTY LTD  
ABN 76 166 942 365

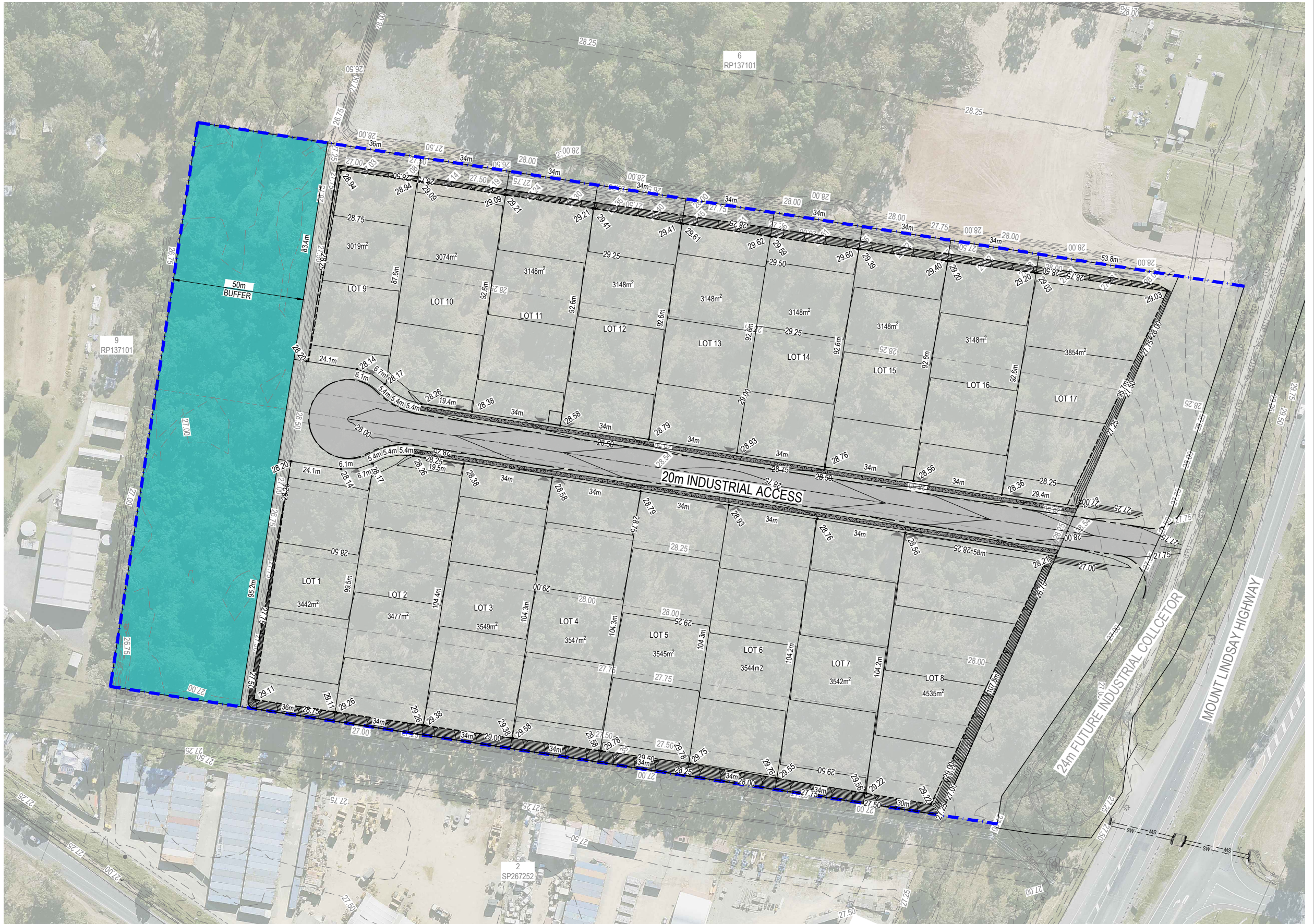
|              |              |          |          |
|--------------|--------------|----------|----------|
| PROJECT No.: | DRAWING No.: | VERSION: | DATE:    |
| BE220566-DA  | C1000        | B        | 24-06-25 |





LEGEND

- 27.25 — DESIGN SURFACE CONTOURS
- - - 27.0 - - - EXISTING SURFACE CONTOURS
- - - - - EXISTING LOT BOUNDARY
- SW - - - SW - - - EXISTING STORMWATER
- S - - - S - - - EXISTING SEWER
- OH - - - OH - - - EXISTING OVERHEAD ELECTRIC
- C - - - C - - - EXISTING COMMS
- - - - - EXISTING ROAD CONTROL LINE
- - - - - EXISTING KERB
- - - - - EXISTING EDGE OF BITUMEN
- ■ ■ ■ ■ DEVELOPMENT SITE BOUNDARY
- — — — — PROPOSED LOT BOUNDARY
- 50m BUFFER AREA
- DEVELOPMENT SITE AREA



**WARNING: UNDERGROUND SERVICES:**  
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OVERALL LAYOUT PLAN

|                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|
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| C                                                                                                                                                                                                                                                                                                                                                                                                                                         | AMENDED KERB RETURN | 21-10-25 |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                         | CHANGE TO LAYOUT    | 24-06-25 |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                         | ISSUE FOR APPROVAL  | 24-02-25 |
| VER.                                                                                                                                                                                                                                                                                                                                                                                                                                      | DESCRIPTION         | DATE     |

**BURCHILLS**  
ENGINEERING SOLUTIONS

GOLD COAST | BRISBANE | TOOWOOMBA  
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PHONE: +61 7 5509 6400  
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ABN 76 166 942 365

CLIENT :  
  
**ROUBAIX PROPERTIES  
NO 4705 PTY LTD**

DRAWING TITLE :  
  
**OVERALL LAYOUT PLAN**

PROJECT :  
  
**DEVELOPMENT APPROVAL**

**4733-4743 MT LINDSAY HWY**

**PRELIMINARY**  
NOT FOR CONSTRUCTION OR TENDER

SCALE AT FULL SIZE (A1) :  
10 0 5 10 15 20 25 30 35m  
1:750 (FULL SIZE)

|                                                                                     |  |                        |  |
|-------------------------------------------------------------------------------------|--|------------------------|--|
| DEVEL. APPLIC. No. :                                                                |  | DATE: 21-10-25         |  |
| PROJECT LEADER : JACK SHAO                                                          |  | DESIGNER : CARL KRUGER |  |
| DRAFTSPERSON : CARL KRUGER                                                          |  | CHECKED : JACK SHAO    |  |
| APPROVED FOR AND ON BEHALF OF<br>BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365 |  |                        |  |
| PROJECT No. :<br>BE220566-DA                                                        |  | DRAWING No. :<br>C1101 |  |
|                                                                                     |  | VERSION:<br>C          |  |





## CONCEPT BULK EARTHWORKS SUMMARY

SUMMARY:  
45,871 cu.m - 1,673 cu.m = 44,198 cu.m IMPORTED MATERIAL  
NO ALLOWANCE FOR BOXING HAS BEEN CONSIDERED  
NO ALLOWANCE HAS BEEN MADE FOR TOPSOIL STRIP / REPLACEMENT.  
NO ALLOWANCE FOR COMPACTION HAS BEEN CONSIDERED

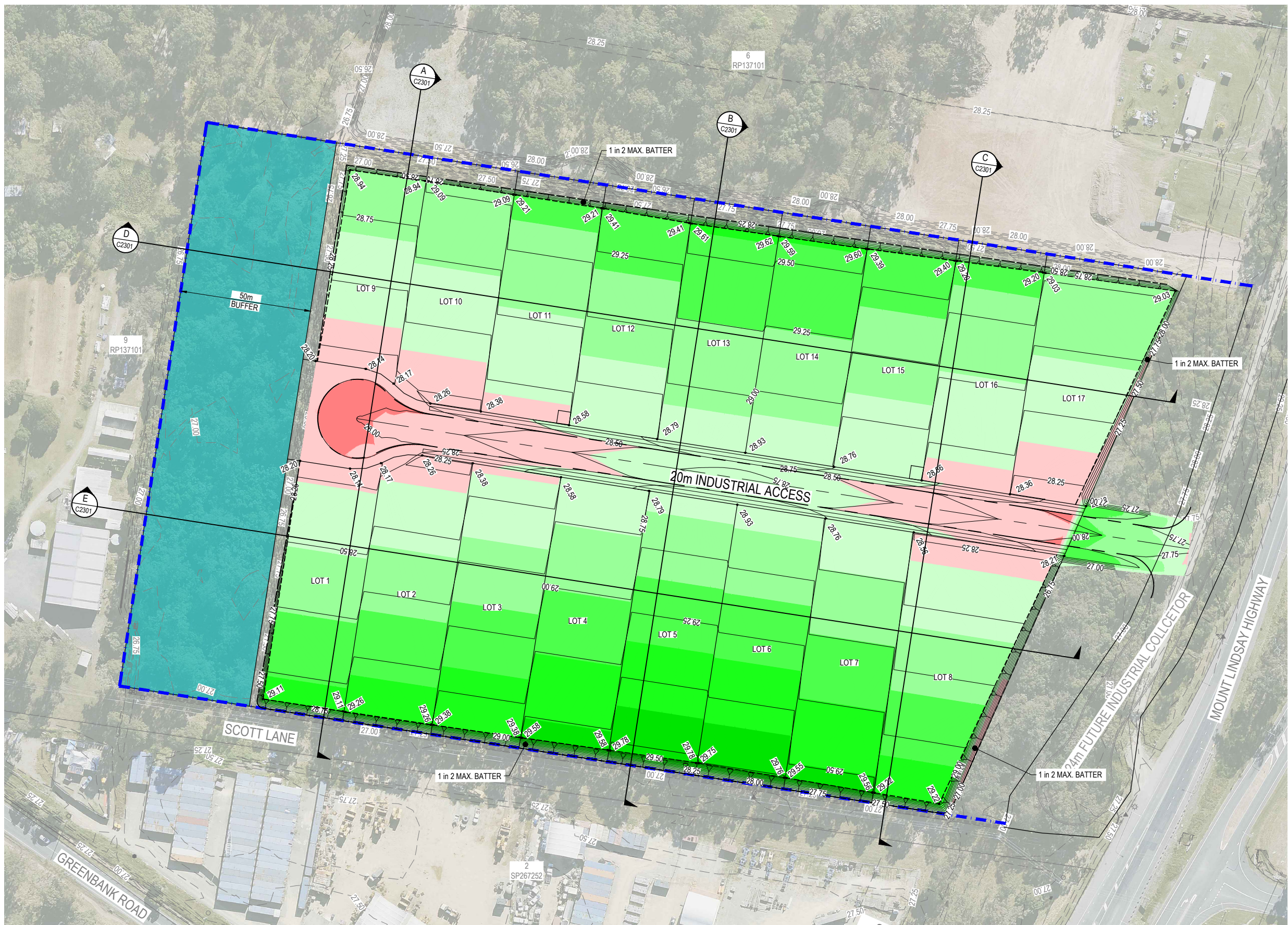
| LOWER |    | UPPER | COLOUR |
|-------|----|-------|--------|
| -4.0m | TO | -3.5m |        |
| -3.5m | TO | -3.0m |        |
| -3.0m | TO | -2.5m |        |
| -2.5m | TO | -2.0m |        |
| -2.0m | TO | -1.5m |        |
| -1.5m | TO | -1.0m |        |
| -1.0m | TO | -0.5m |        |
| -0.5m | TO | 0.0m  |        |
| 0.0m  | TO | 0.5m  |        |
| 0.5m  | TO | 1.0m  |        |
| 1.0m  | TO | 1.5m  |        |
| 1.5m  | TO | 2.0m  |        |
| 2.0m  | TO | 2.5m  |        |
| 2.5m  | TO | 3.0m  |        |
| 3.0m  | TO | 3.5m  |        |
| 3.5m  | TO | 4.0m  |        |

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**COOTE BURCHILLS ENGINEERING PTY LTD**  
ABN 76 166 942 365

CLIENT :

ROUBAIX PROPERTIES  
NO 4705 PTY LTD

DRAWING TITLE :

## EARTHWORKS LAYOUT PLAN

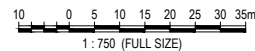
PROJECT :

## DEVELOPMENT APPROVAL

4733-4743 MT LINDESAY HWY

PRELIMINARY  
FOR CONSTRUCTION OR TENDER

SCALE AT FULL SIZE (A1) :



DEVEL. APPLIC. No. :

PROJECT LEADER : JACK SHAO

DRAFTSPERSON: CARL KRUGER

APPROVED FOR AND ON BEHALF OF  
BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

PROJECT No.:

BE220566-DA

DRAWING No. :

C2101

DATE : 21-10-25

DESIGNER : CARL KRUGER

CHECKED : JACK SHAO

6 166 942 365

|            |          |
|------------|----------|
| WING No. : | VERSION: |
|------------|----------|

101

|  |          |
|--|----------|
|  | VERSION: |
|--|----------|







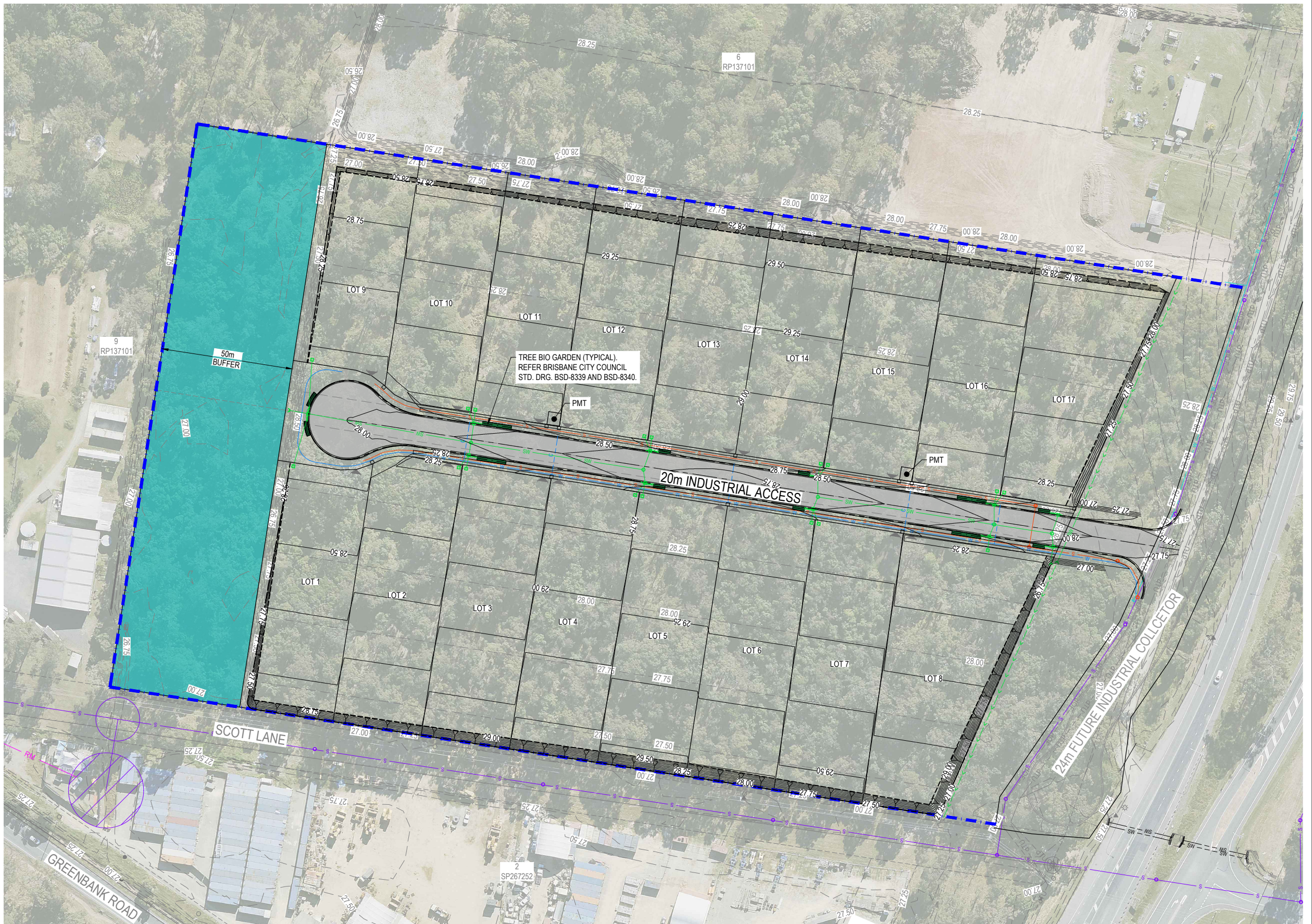






LEGEND

- 28.00 --- EXISTING SURFACE CONTOURS
- 29.50 --- DESIGN SURFACE CONTOURS
- EXISTING LOT BOUNDARY
- SW --- SW --- EXISTING STORMWATER
- EXISTING KERB
- EXISTING EDGE OF BITUMEN
- PROPOSED LOT BOUNDARY
- INDICATIVE FUTURE DRIVEWAY LOCATION
- SW --- PROPOSED STORMWATER
- W --- PROPOSED WATER
- C --- PROPOSED CONDUIT
- S --- PROPOSED SEWER
- RM --- EXTERNAL SEWER RISING MAIN (BY OTHERS)
- S --- EXTERNAL SEWER (BY OTHERS)
- W --- EXTERNAL WATER (BY OTHERS)
- PROPOSED ROAD CONTROL LINE
- PROPOSED MOUNTABLE
- PROPOSED KERB (TYPE B1)
- DEVELOPMENT SITE BOUNDARY
- 50m BUFFER AREA



**WARNING: UNDERGROUND SERVICES:**  
UNDERGROUND SERVICES EXIST IN THIS VICINITY. THE CONTRACTOR IS TO CONTACT THE RELEVANT AUTHORITIES TO CONFIRM EXACT LOCATION OF SERVICES ON SITE PRIOR TO ANY EXCAVATION OR CONSTRUCTION COMMENCING.

COMBINED SERVICES LAYOUT PLAN

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| VER. | DESCRIPTION                    | DATE     |
|------|--------------------------------|----------|
| C    | AMENDED KERB RETURN & SERVICES | 21-10-25 |
| B    | CHANGE TO LAYOUT               | 24-06-25 |
| A    | ISSUE FOR APPROVAL             | 24-02-25 |



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DRAWING TITLE :  
  
COMBINED SERVICES LAYOUT PLAN  
  
PROJECT :  
  
DEVELOPMENT APPROVAL  
  
4733-4743 MT LINDESAY HWY

**PRELIMINARY**  
NOT FOR CONSTRUCTION OR TENDER

SCALE AT FULL SIZE (A1):  
10 0 5 10 15 20 25 30 35m  
1:750 (FULL SIZE)

|                                                                                     |                        |
|-------------------------------------------------------------------------------------|------------------------|
| DEVEL APPLIC. No. :                                                                 | DATE : 21-10-25        |
| PROJECT LEADER : JACK SHAO                                                          | DESIGNER : CARL KRUGER |
| DRAFTSPERSON : CARL KRUGER                                                          | CHECKED : JACK SHAO    |
| APPROVED FOR AND ON BEHALF OF<br>BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365 |                        |
| PROJECT No. :<br>BE220566-DA                                                        | DRAWING No. :<br>C5101 |
| VERSION:<br>C                                                                       |                        |





## Appendix B – Rational Method Calculations

Design storm event flows across the site were derived using the Rational Method in accordance with QUDM. This involved:

- Determination of a C10 value (derived in accordance with QUDM Table 4.05.3(b) and Council guidelines).
- Adoption of design rainfall using BoM IFD data; and
- Calculation of design flows through the site for Q100, Q50, Q20, Q10, Q5, Q2, Q1 and Q3<sub>month</sub>, where Q3<sub>month</sub> is deemed to be 50% of Q1.

Summaries of the hydrologic calculations are contained in the following table for the pre-development scenario.

| Catch.        | Area<br>(ha) | tc<br>(min) | I <sub>100</sub><br>(mm/hr) | C     | Q <sub>100</sub><br>(m³/s) |
|---------------|--------------|-------------|-----------------------------|-------|----------------------------|
| <b>Cat 01</b> | 7.57         | 22.0        | 2.72                        | 2.77  | 1.8                        |
| <b>Cat 02</b> | 26.32        | 34.4        | 7.44                        | 7.61  | 2.1                        |
| <b>Cat 03</b> | 22.71        | 27.9        | 7.15                        | 7.18  | 0.4                        |
| <b>Cat 04</b> | 28.64        | 18.3        | 11.25                       | 13.20 | 14.7                       |
| <b>Cat 05</b> | 6.80         | 9.7         | 3.49                        | 3.82  | 8.6                        |
| <b>Cat 06</b> | 37.17        | 39.9        | 9.63                        | 9.56  | -0.8                       |
| <b>Cat 07</b> | 20.951       | 35.8        | 5.80                        | 5.88  | 1.3                        |
| <b>Cat 08</b> | 15.430       | 30.7        | 4.61                        | 4.75  | 3.1                        |
| <b>Cat 09</b> | 4.047        | 32.6        | 1.17                        | 1.25  | 6.1                        |
| <b>Cat 10</b> | 8.010        | 19.7        | 3.04                        | 3.14  | 3.2                        |





## Appendix C – DRAINS Input Parameters

---

DRAINS (version 2025.01) software was utilised to model the performance of the proposed stormwater quantity control measures. This modelling software is a link-node model capable of performing hydrology and hydraulic of stormwater drainage systems simultaneously.

The WBNM storage routing model has been adopted for Design and Analysis Runs within DRAINS. This Method uses ARR2019 Rational Method Procedure, the Lag Parameter for catchment data and separate pervious and impervious areas, as shown in.

**Table C. 2 DRAINS Catchment Parameters**

| Catchment | Area (ha) | Fraction Impervious (%) |
|-----------|-----------|-------------------------|
| Cat 01    | 7.57      | 10                      |
| Cat 02    | 26.32     | 10                      |
| Cat 03    | 27.707    | 10                      |
| Cat 04    | 28.642    | 90                      |
| Cat 05    | 6.8       | 90                      |
| Cat 06    | 37.173    | 10                      |
| Cat 07    | 20.951    | 10                      |
| Cat 08    | 15.43     | 9                       |
| Cat 09    | 4.047     | 10                      |
| Cat 10    | 8.01      | 10                      |







## Appendix D – Model Features Map – Local TUFLOW Model

---





FIG 01 PRE - DEVELOPMENT  
TUFLOW MODEL FEATURE



Location of the site within the Logan City

#### Legend

- |                        |               |
|------------------------|---------------|
| Model Extent           | Cadastral     |
| 2d_Initial Water Level | Rainfall Area |
| Downstream Boundary    | Existing Pipe |
| Inflow Boundary        | Existing Pit  |

#### Surface Elevation (mAHD)

Project: BE220566

Date: 03/11/2025

Scale: 1:6000 at A3

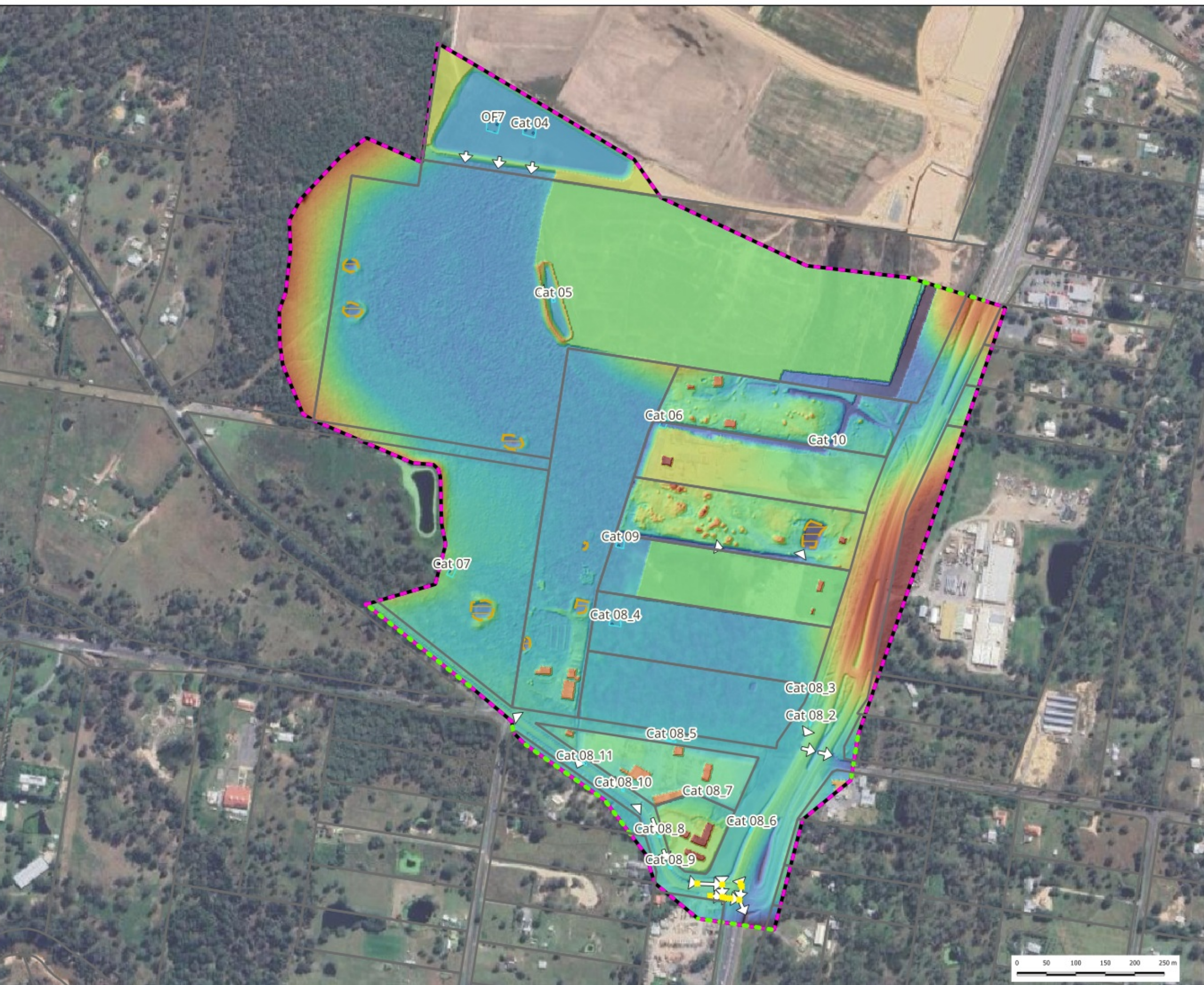
Projection: GDA94 / MGA zone 56

Data Sources:



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FIG 02 POST - DEVELOPMENT  
TUFLOW MODEL FEATURE



Location of the site within the Logan City

**Legend**

- |                        |               |
|------------------------|---------------|
| Model Extent           | Cadastral     |
| 2d_Initial Water Level | Rainfall Area |
| Downstream Boundary    | Existing Pipe |
| Inflow Boundary        | Existing Pit  |

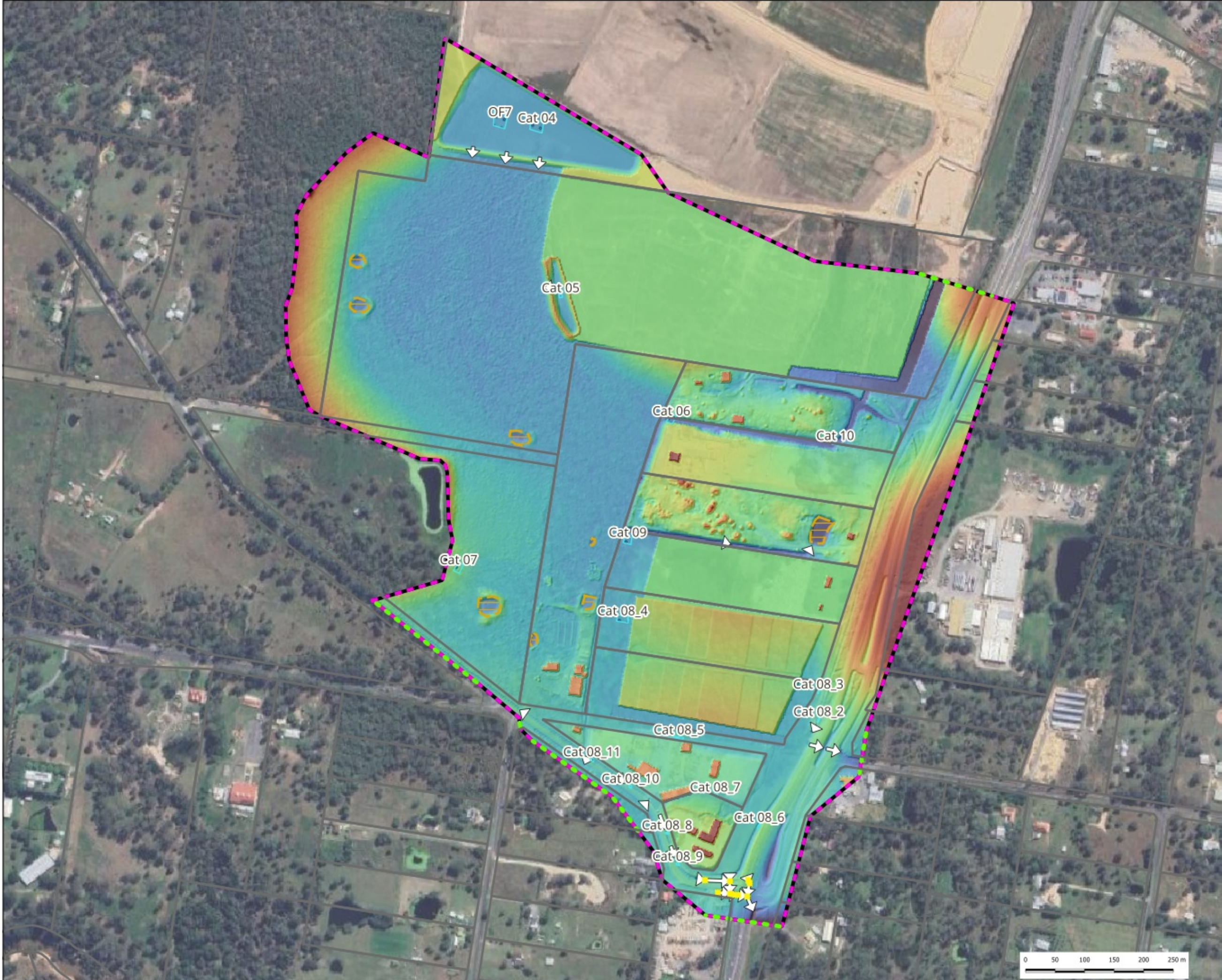
**Surface Elevation (mAHD)**

Project: BE220566  
Date: 03/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



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FIG 03 PRE - DEVELOPMENT  
TUFLOW MANNING MAP



Location of the site within the Logan City

**Legend**

- Model Extent (dashed magenta line)  
Downstream Boundary (dashed green line)  
Cadastral (thin grey line)

**Manning Value (n)**

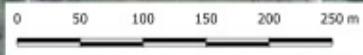
- Buildings (n=0.1) (red square)  
Dense Tree (n=0.07) (green square)  
Existing Road (n=0.014) (yellow square)  
Scattered Scrub (n=0.05) (light green square)  
Water body (n=0.022) (blue square)  
Swales (n=0.06) (cyan square)

Project: BE220566  
Date: 03/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



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FIG 03 POST - DEVELOPMENT  
TUFLOW MANNING MAP



Location of the site within the Logan City

**Legend**

- Model Extent (dashed magenta line)  
Downstream Boundary (dashed green line)  
Cadastral (thin grey line)

**Manning Value (n)**

- Buildings (n=0.1) (red squares)  
Dense Tree (n=0.07) (green areas)  
Existing Road (n=0.014) (yellow areas)  
Scattered Scrub (n=0.05) (light green areas)  
Water body (n=0.022) (blue areas)  
Swales (n=0.06) (cyan lines)

Project: BE220566

Date: 03/11/2025

Scale: 1:6000 at A3

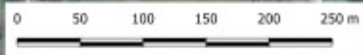
Projection: GDA94 / MGA zone 56

Data Sources:



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## Appendix E – Hydraulic Model Results – Local

---





Figure E01  
Existing 10% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Level (mAHD)

- <= 27.00
- 27.00 - 27.10
- 27.10 - 27.20
- 27.20 - 27.30
- 27.30 - 27.40
- 27.40 - 27.50
- > 27.50

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E02  
Existing 5% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

- Model Extent      Downstream Boundary  
 Cadastral

Water Level (mAHD)

- $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
 27.50 - 27.60  
  $> 27.60$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

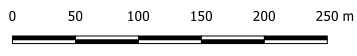
Projection: GDA94 / MGA zone 56

Data Sources:



FOR

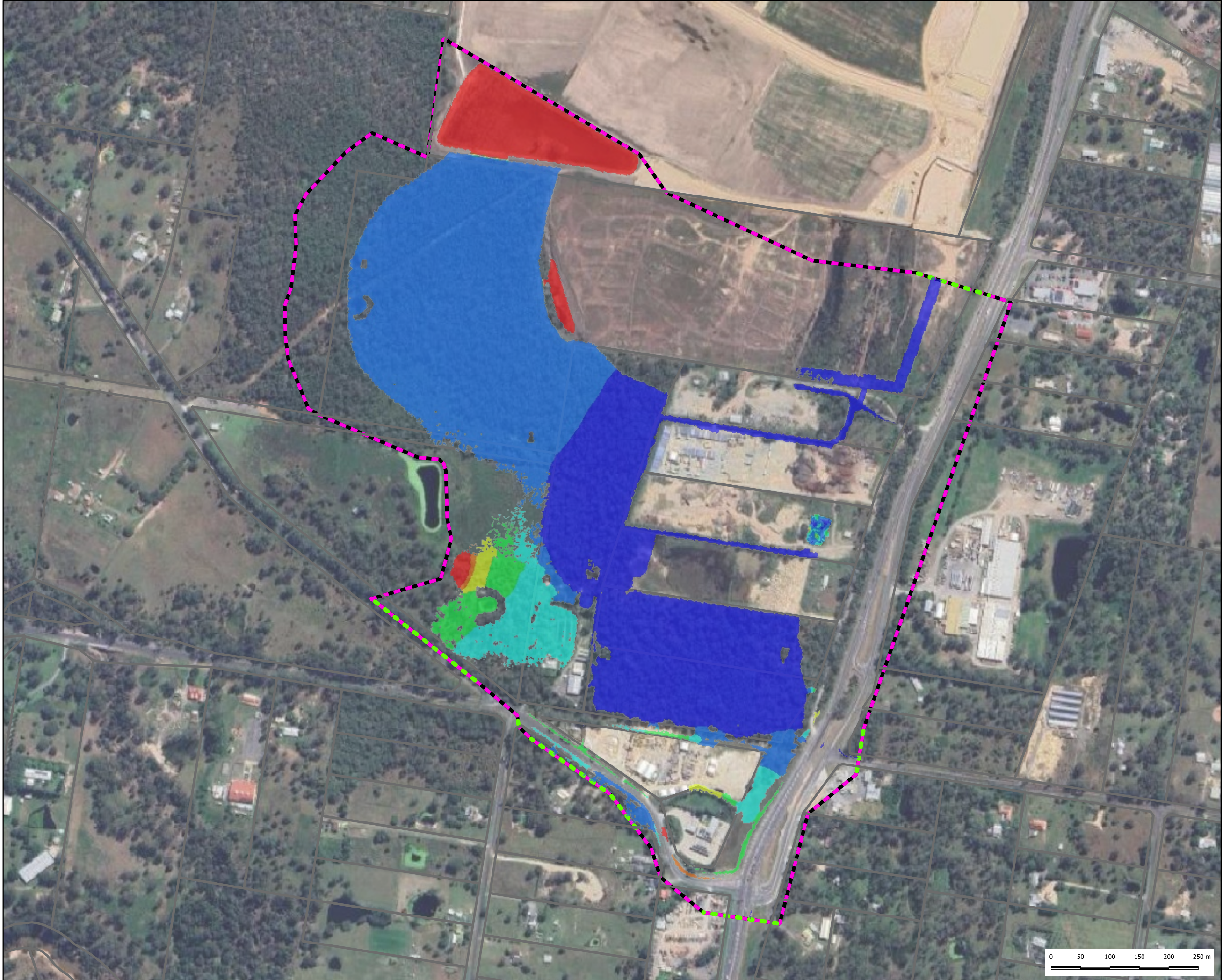
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Figure E03  
Existing 1% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

**Legend**

Model Extent      Downstream Boundary  
 Cadastral

**Water Level (mAHD)**

- <= 27.00
- 27.00 - 27.10
- 27.10 - 27.20
- 27.20 - 27.30
- 27.30 - 27.40
- 27.40 - 27.50
- > 27.50

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

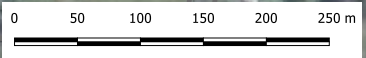
Projection: GDA94 / MGA zone 56

Data Sources:

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Figure E04  
Existing 0.5% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Level (mAHD)

-   $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
  $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

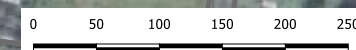
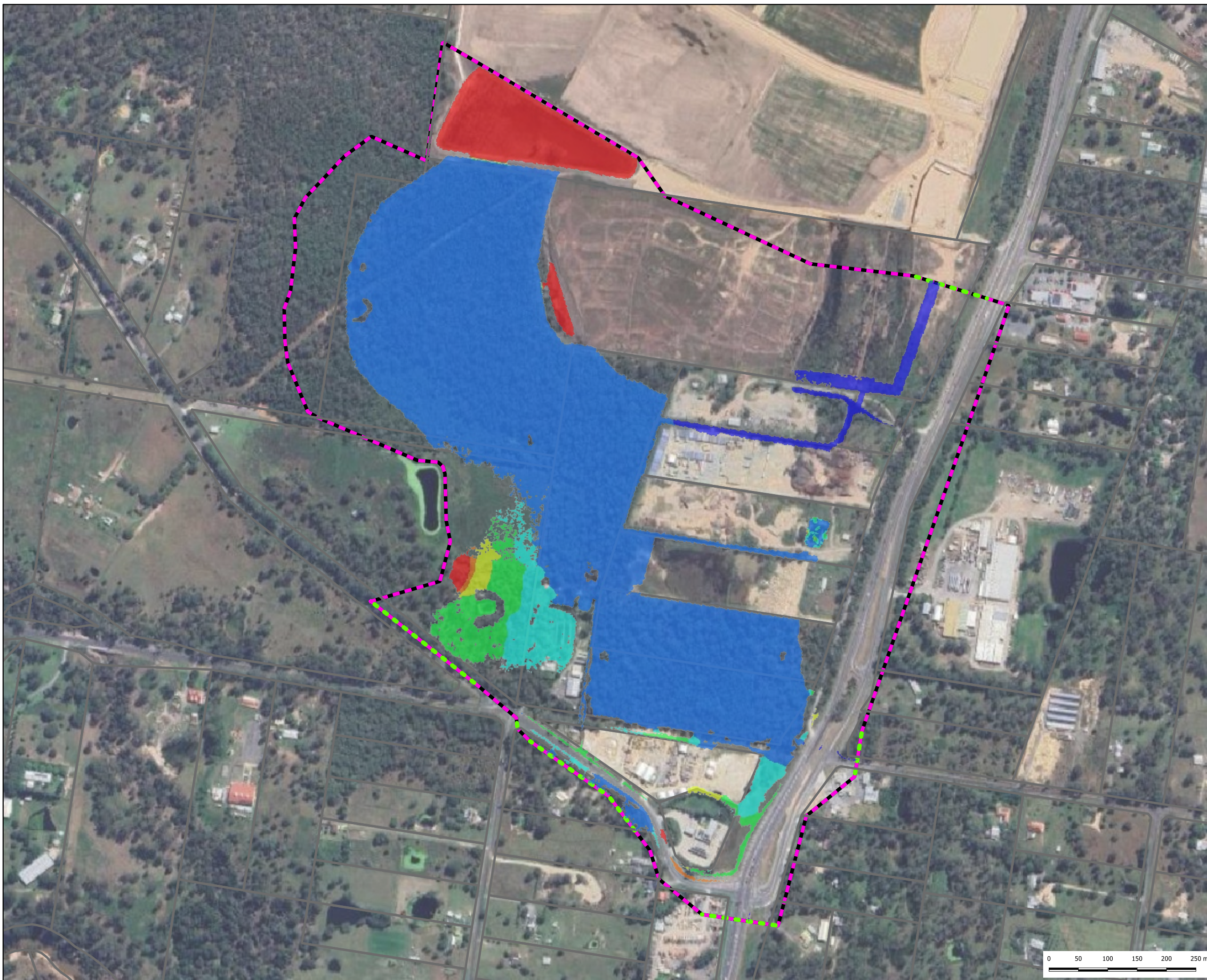
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E05  
Existing 0.2% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

#### Legend

-  Model Extent  Downstream Boundary  
 Cadastral

#### Water Level (mAHD)

-   $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
  $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

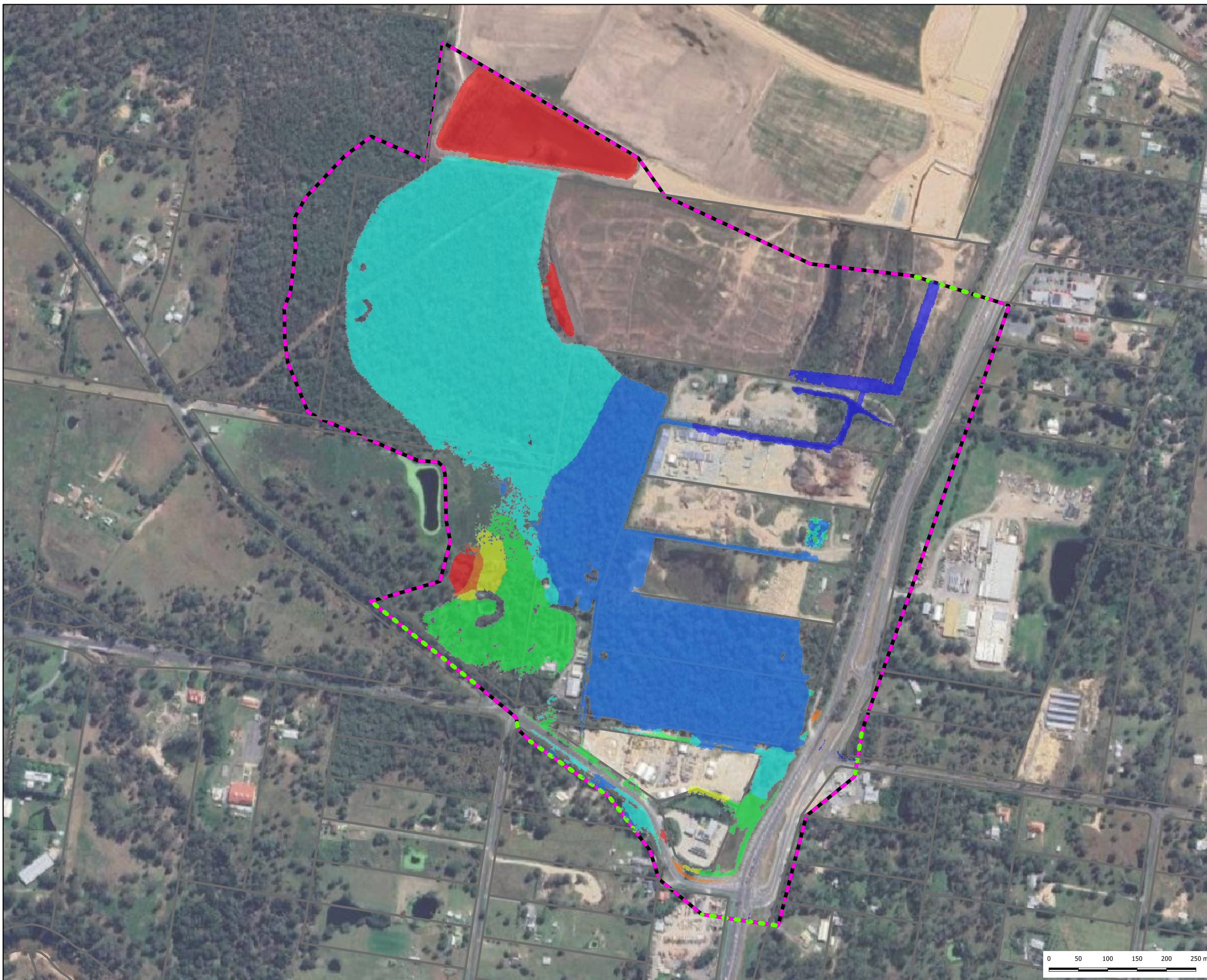
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E06  
Existing 0,05% AEP -  
Water Surface Level



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Level (mAHD)

-   $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
  $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

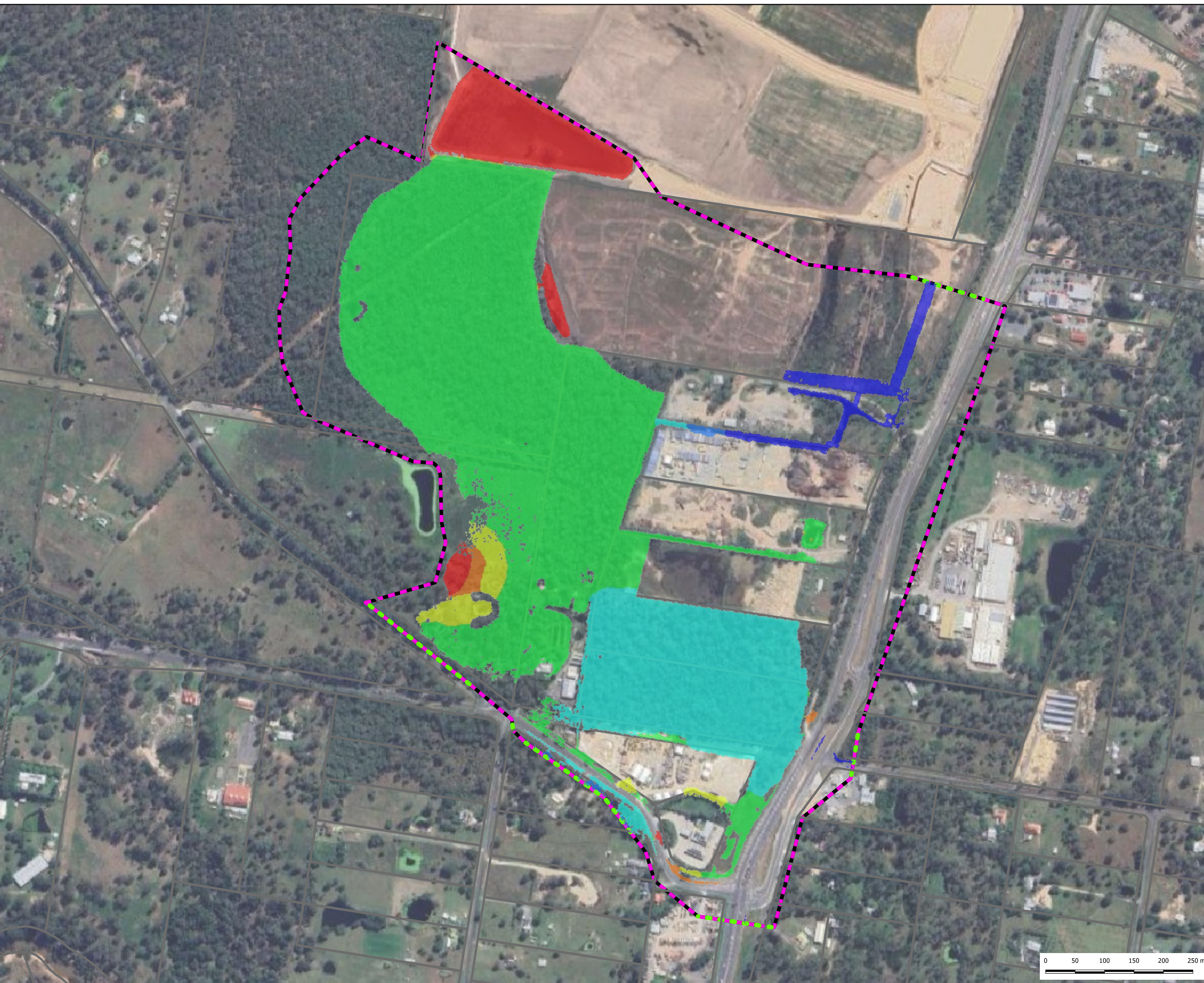
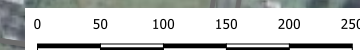
Projection: GDA94 / MGA zone 56

Data Sources:



FOR

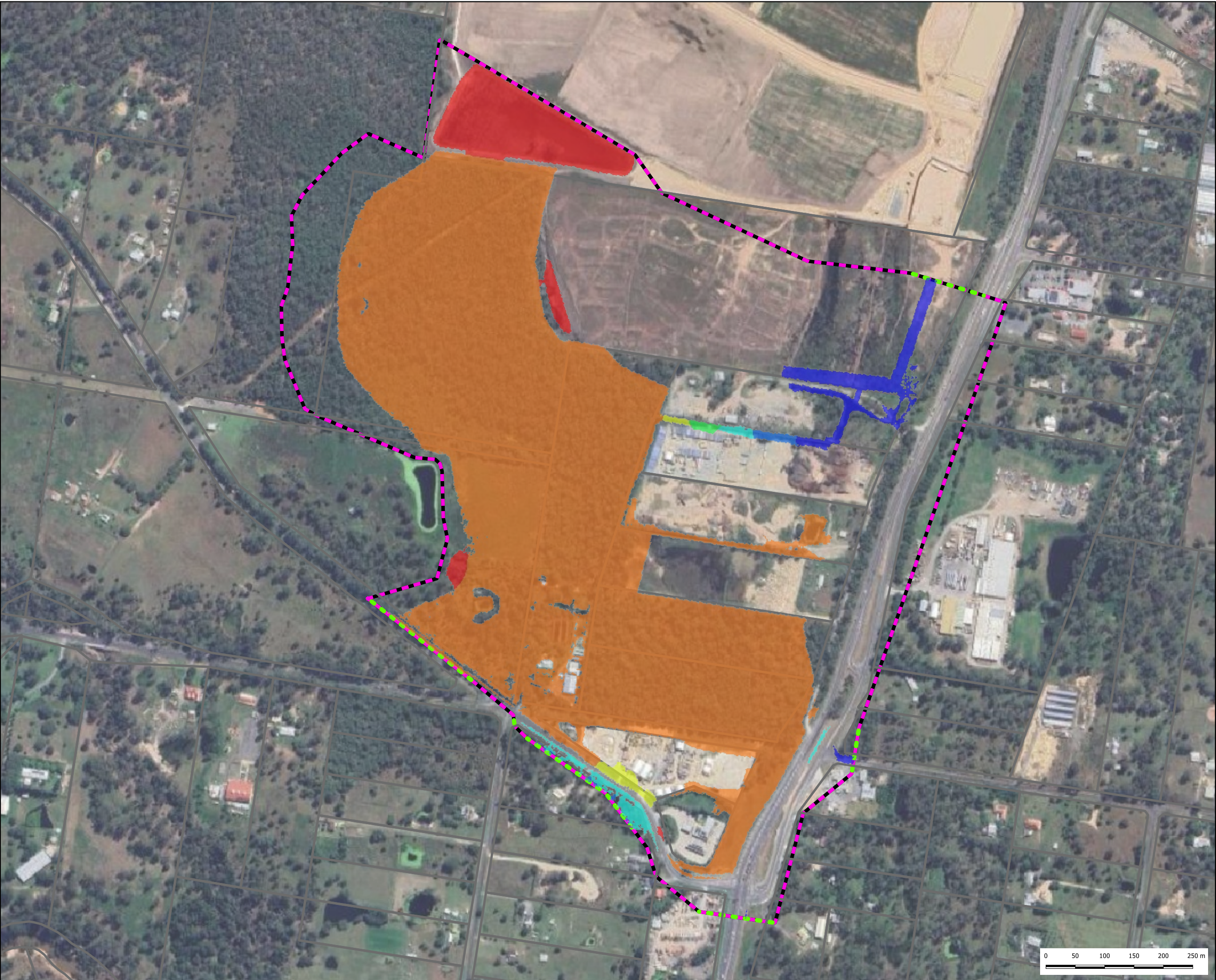
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Figure E07  
Existing PMF - Water  
Surface Level



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Level (mAHD)

- <= 27.00
- 27.00 - 27.10
- 27.10 - 27.20
- 27.20 - 27.30
- 27.30 - 27.40
- 27.40 - 27.50
- > 27.50

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E08  
Existing 10% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Velocity (m/s)

-   $\leq 0.025$   
 0.025 - 0.050  
 0.050 - 0.075  
 0.075 - 0.100  
 0.100 - 0.125  
 0.125 - 0.150  
 0.150 - 0.175  
 0.175 - 0.200  
  $> 0.200$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

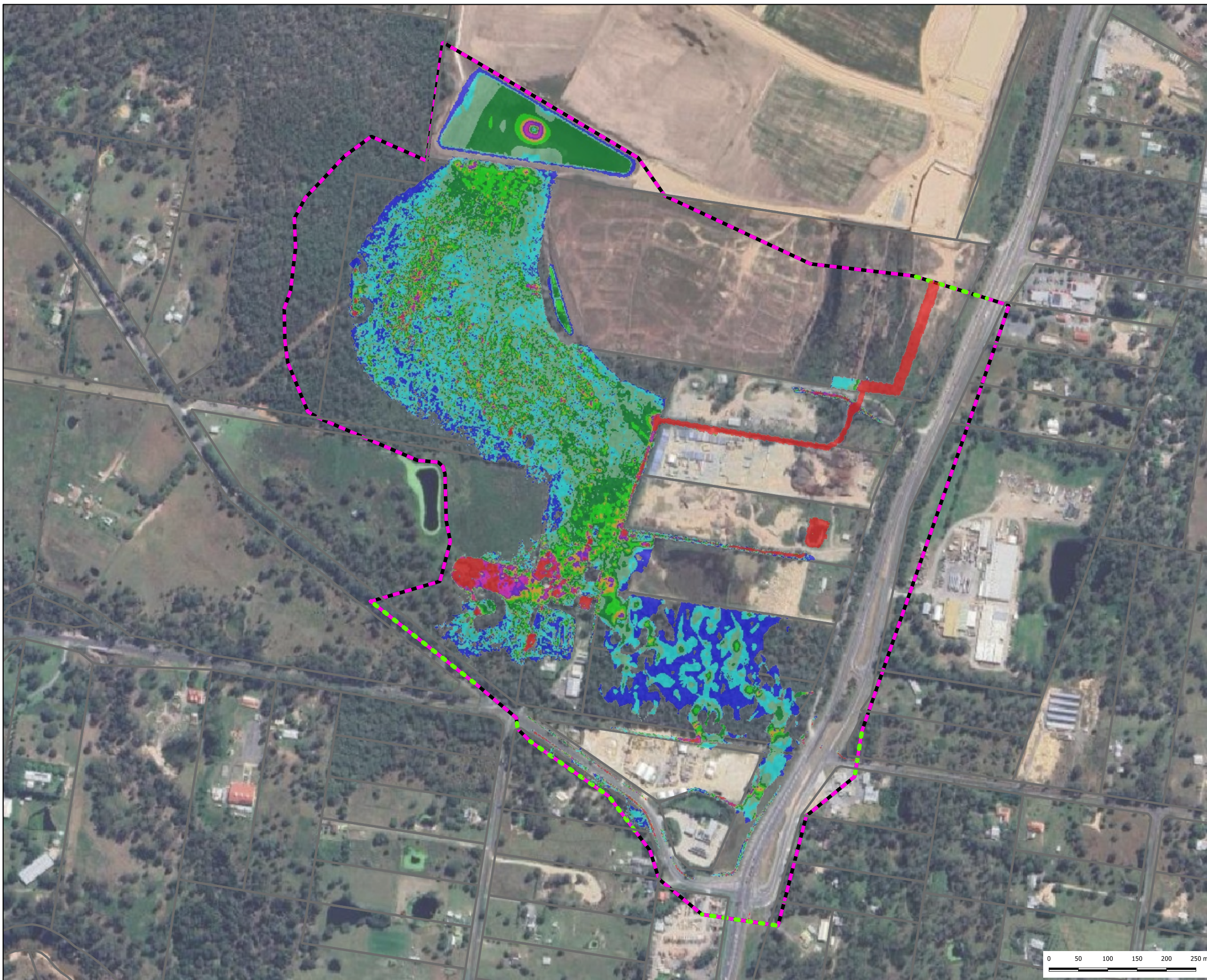
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E09  
Existing 5% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Velocity (m/s)

-   $\leq 0.025$   
 0.025 - 0.050  
 0.050 - 0.075  
 0.075 - 0.100  
 0.100 - 0.125  
 0.125 - 0.150  
 0.150 - 0.175  
 0.175 - 0.200  
  $> 0.200$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

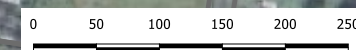
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E10  
Existing 1% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

#### Legend

- Model Extent      Downstream Boundary  
 Cadastral

#### Water Velocity (m/s)

- $\leq 0.025$   
 0.025 - 0.050  
 0.050 - 0.075  
 0.075 - 0.100  
 0.100 - 0.125  
 0.125 - 0.150  
 0.150 - 0.175  
 0.175 - 0.200  
  $> 0.200$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

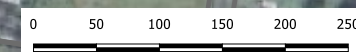
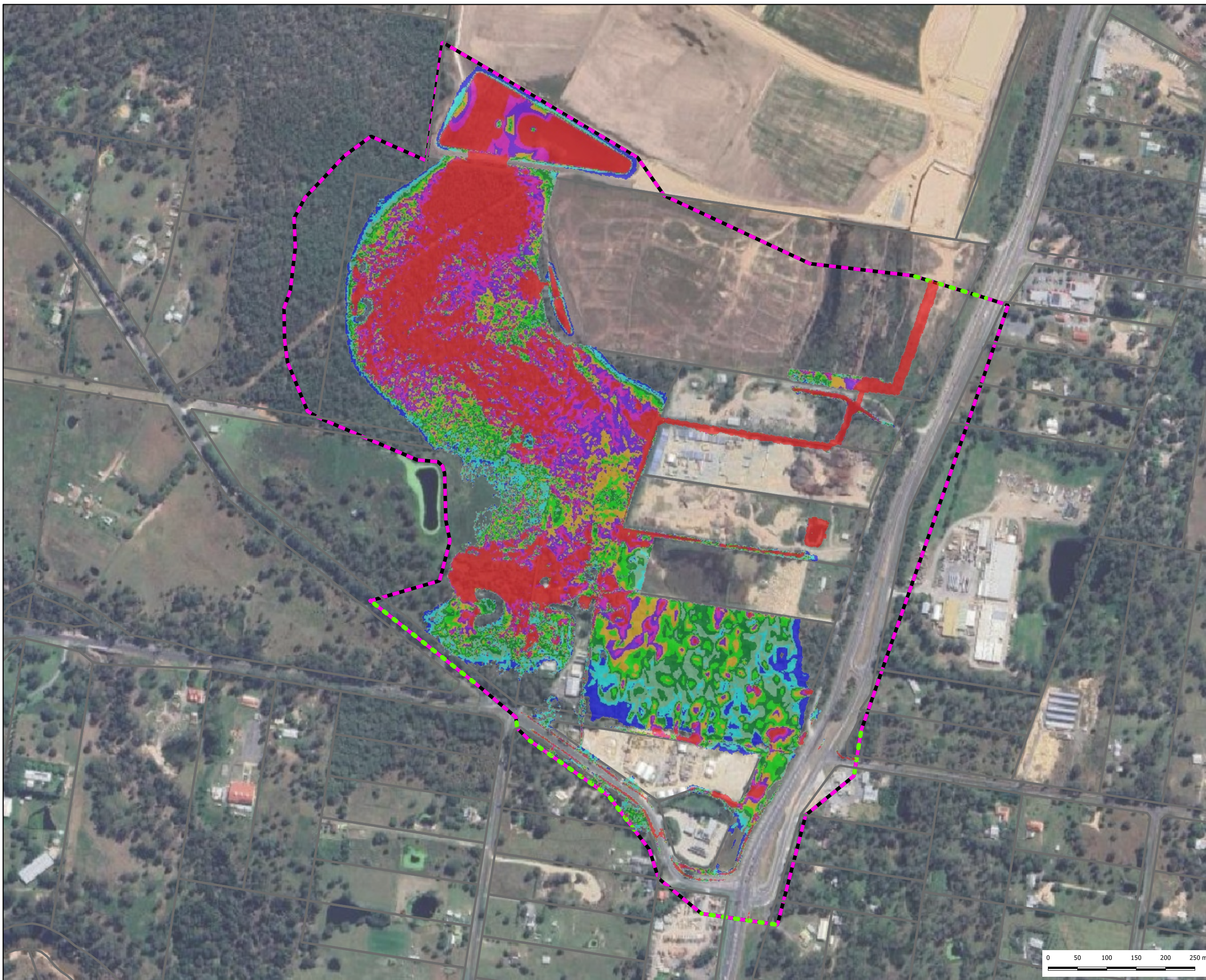
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E11  
Existing 10% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

-  Model Extent       Downstream Boundary  
 Cadastral

Water Depth (m)

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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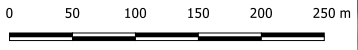




Figure E12  
Existing 5% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

-  Model Extent       Downstream Boundary  
 Cadastral

Water Depth (m)

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



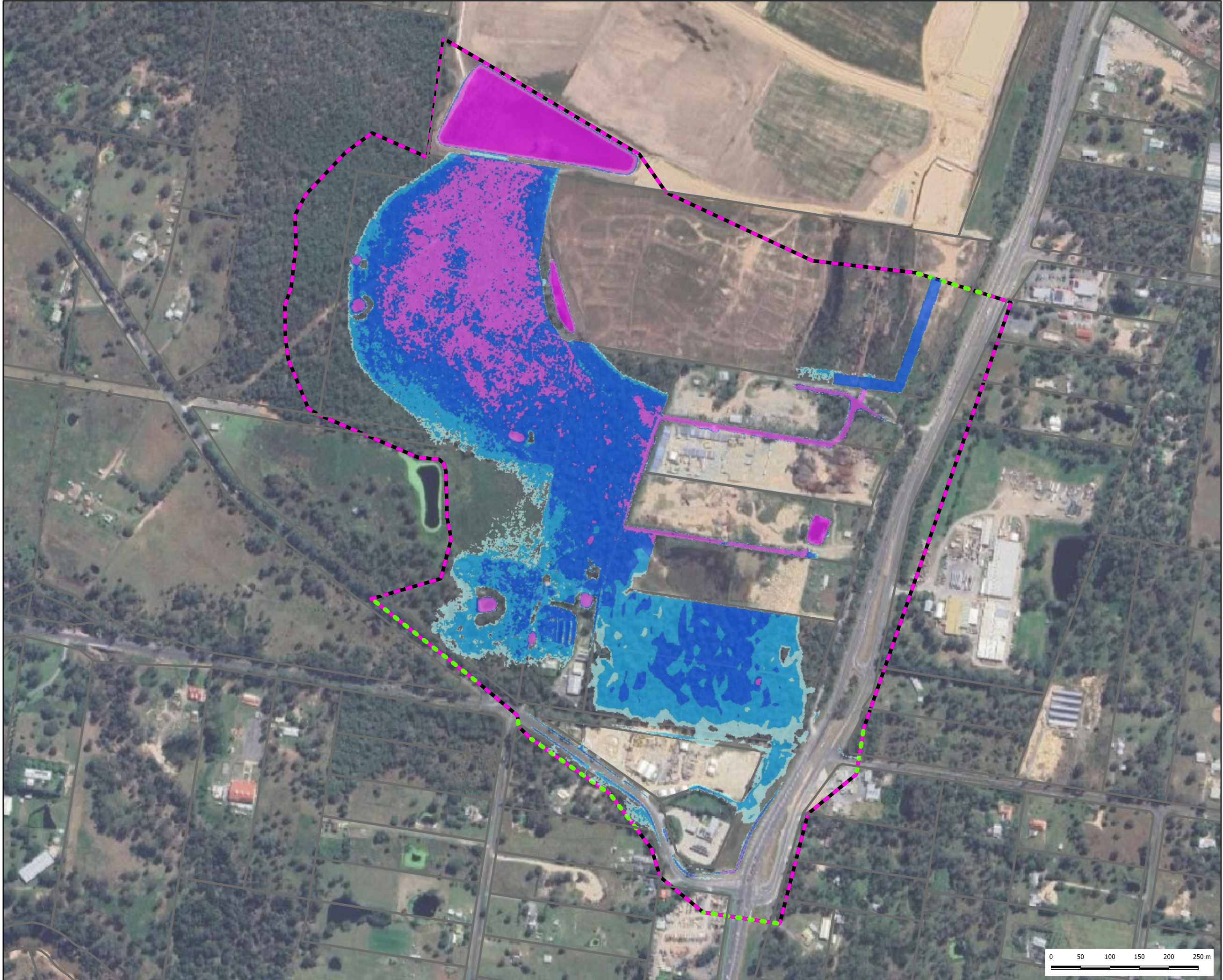
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Figure E13  
Existing 1% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Depth (m)

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



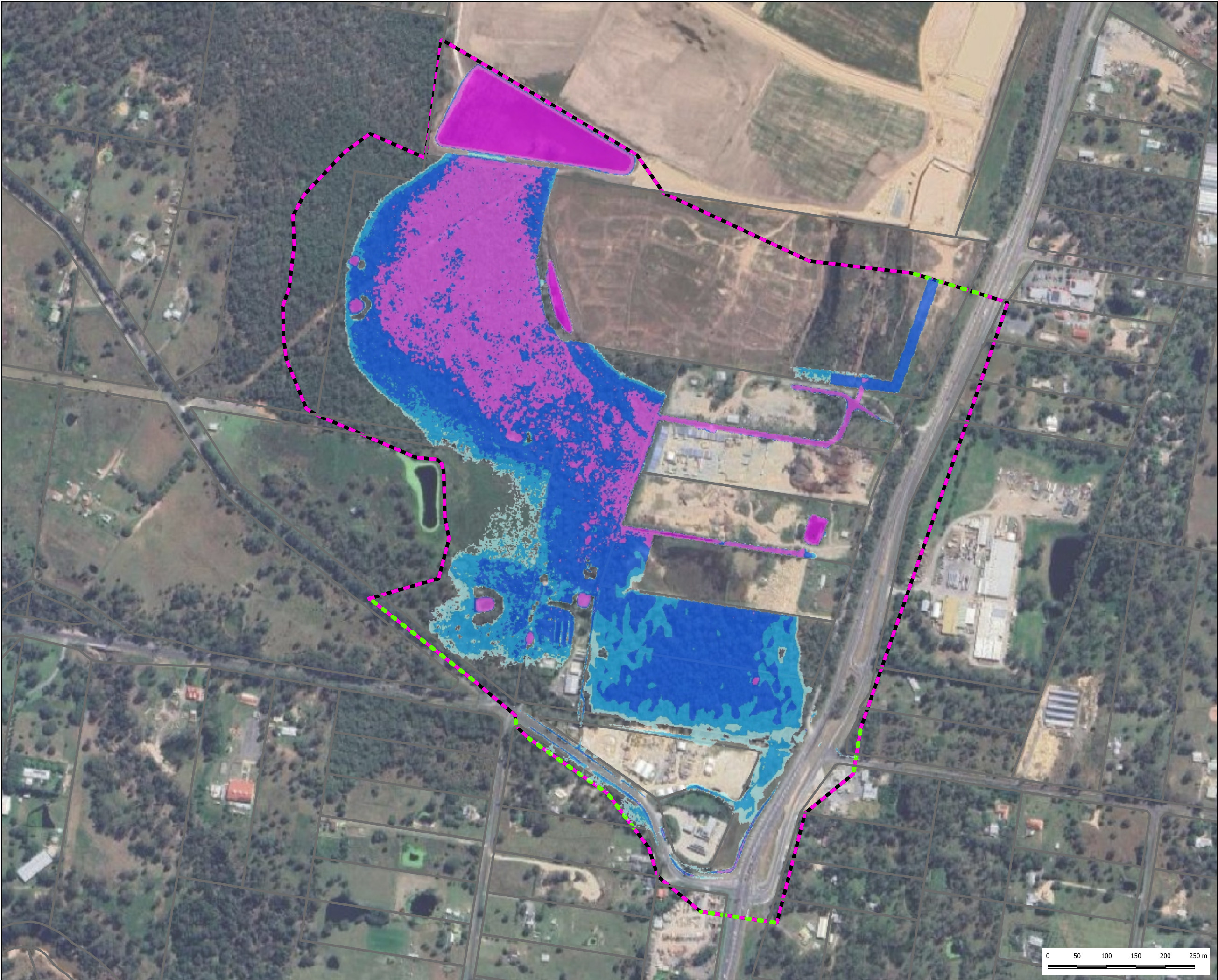
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Figure E14  
Existing 0.5% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

**Legend**

-  Model Extent  Downstream Boundary  
 Cadastral

**Water Depth (m)**

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



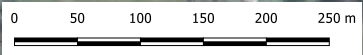
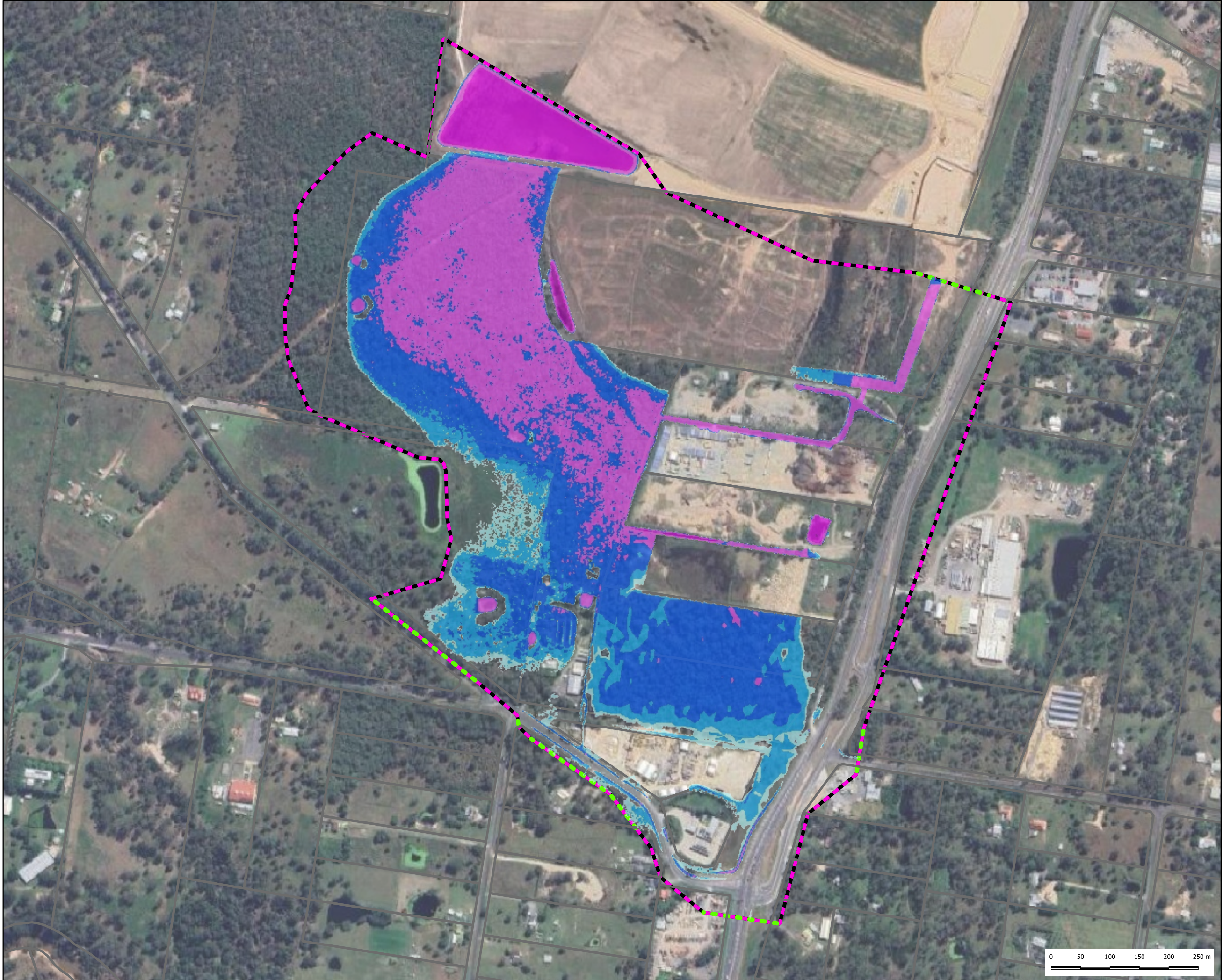
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Figure E15  
Existing 0.2% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

**Legend**

- Model Extent
- Downstream Boundary
- Cadastral

**Water Depth (m)**

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



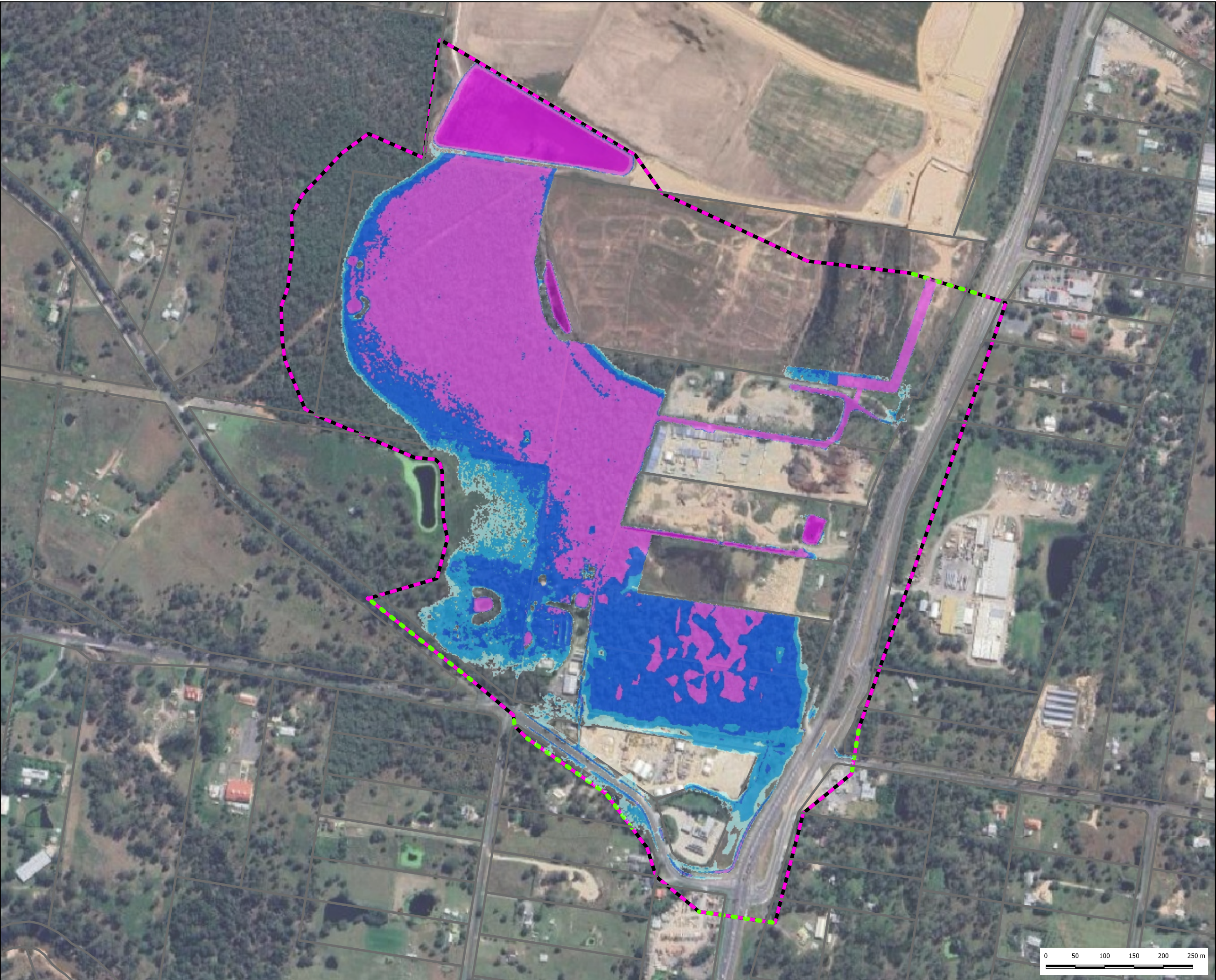
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Figure E16  
Existing 0,05% AEP -  
Depth



Location of the site within the Logan City

**Legend**

- Model Extent
- Downstream Boundary
- Cadastral

**Water Depth (m)**

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure E17  
Existing PMP - Depth



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Depth (m)

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

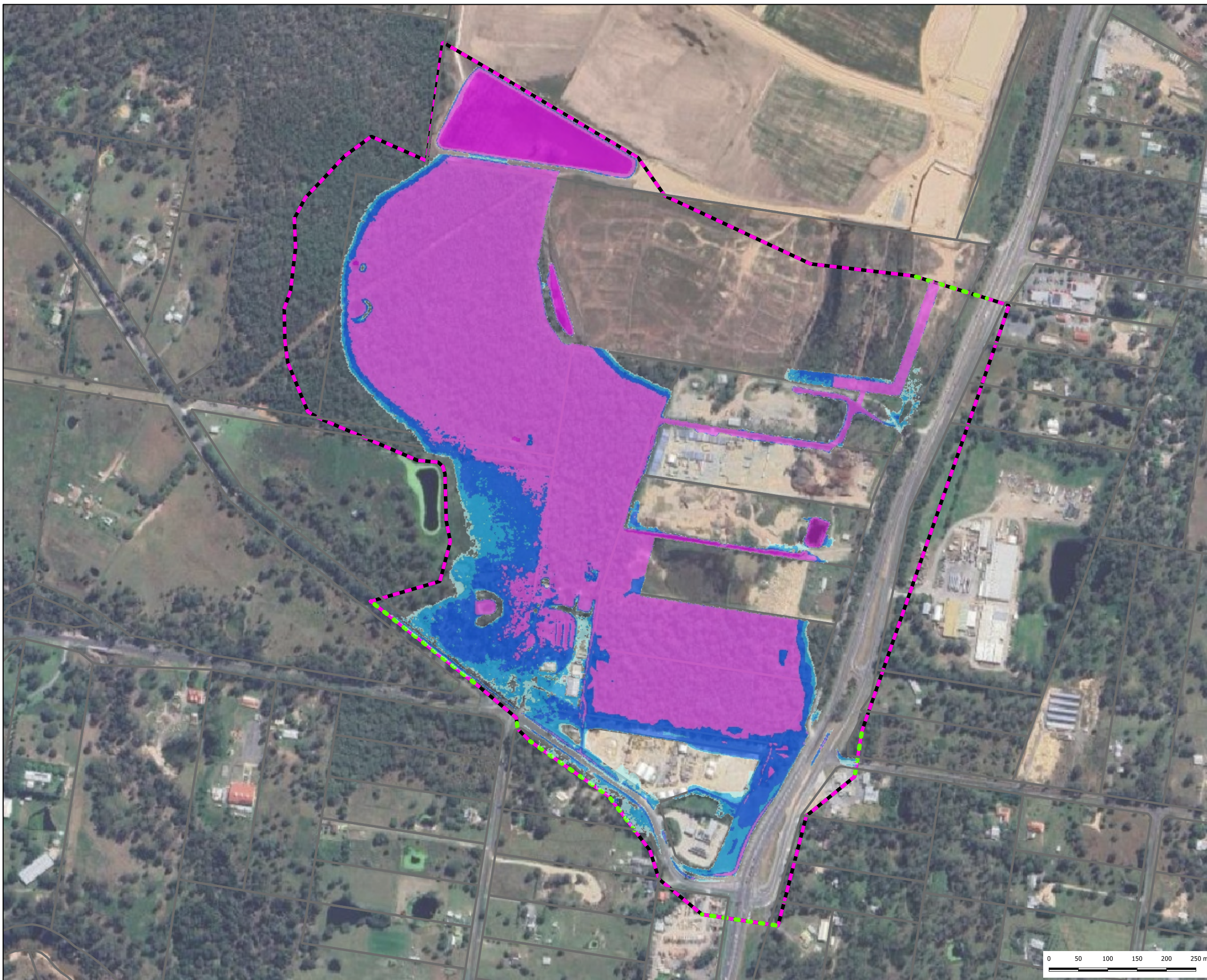
Projection: GDA94 / MGA zone 56

Data Sources:



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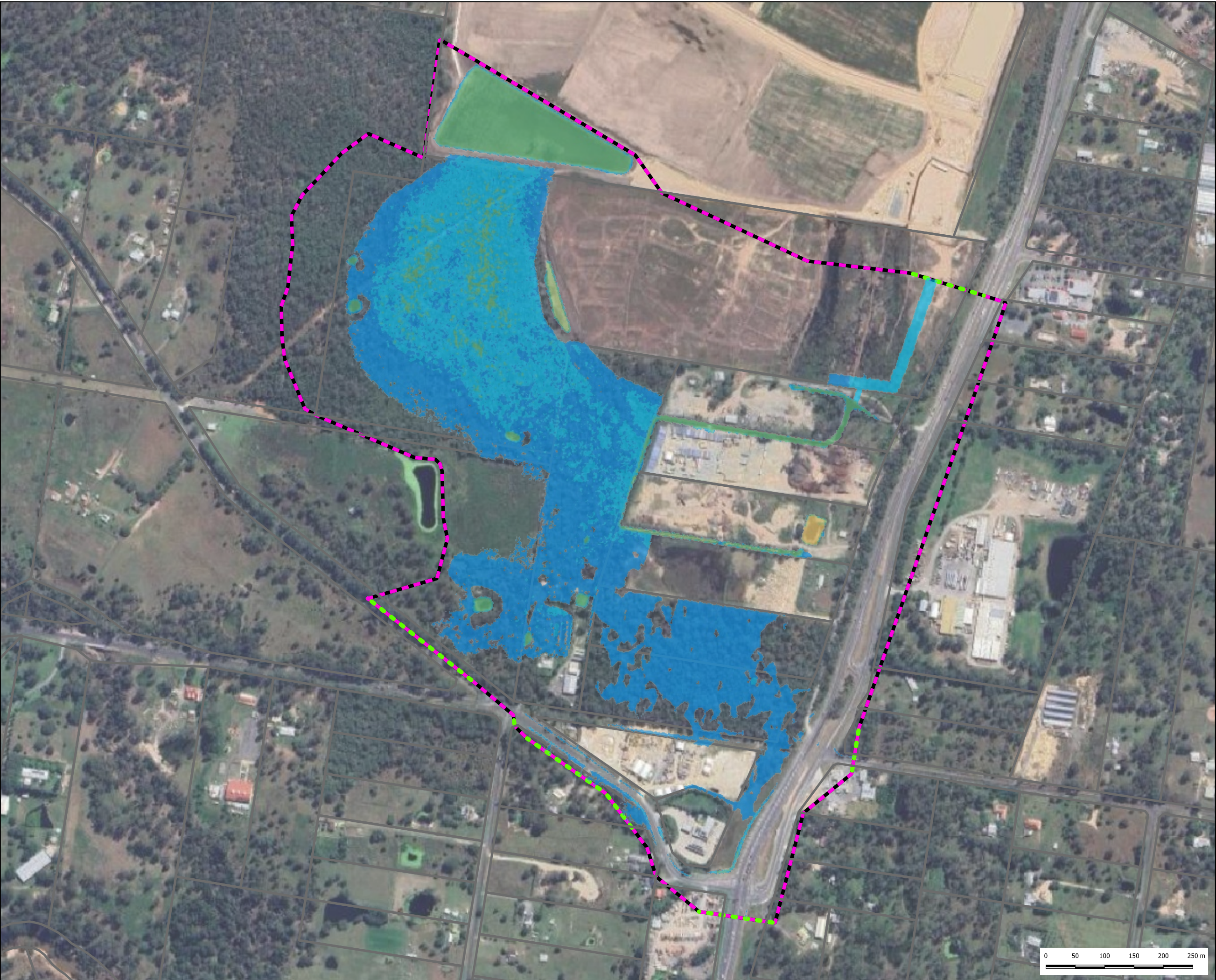
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Figure E18  
Existing 10% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Hazard

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

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



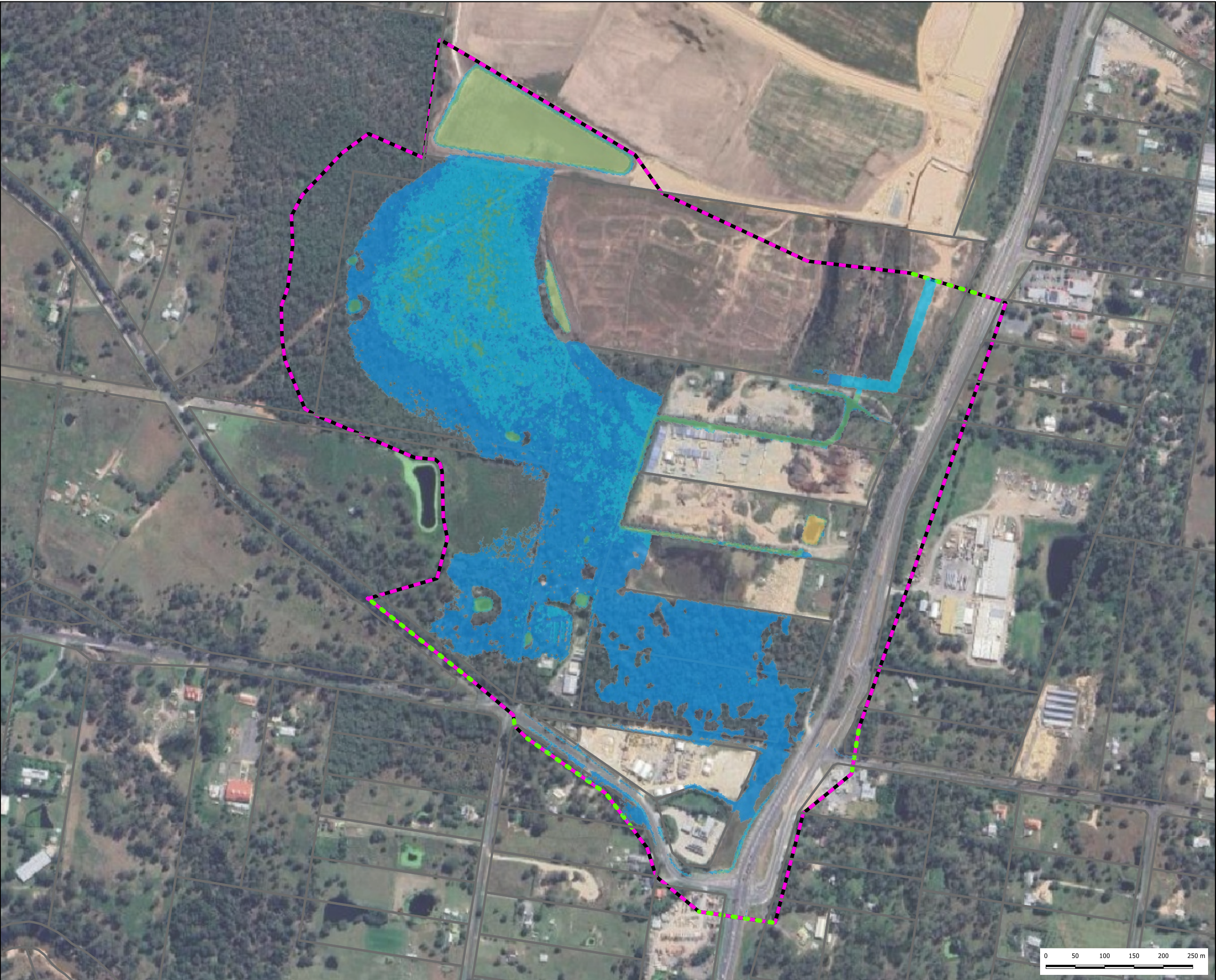
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Figure E19  
Existing 5% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

-  Model Extent       Downstream Boundary  
 Cadastral

**Water Hazard**

-  H1  
 H2  
 H3  
 H4  
 H5  
 H6

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



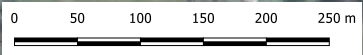
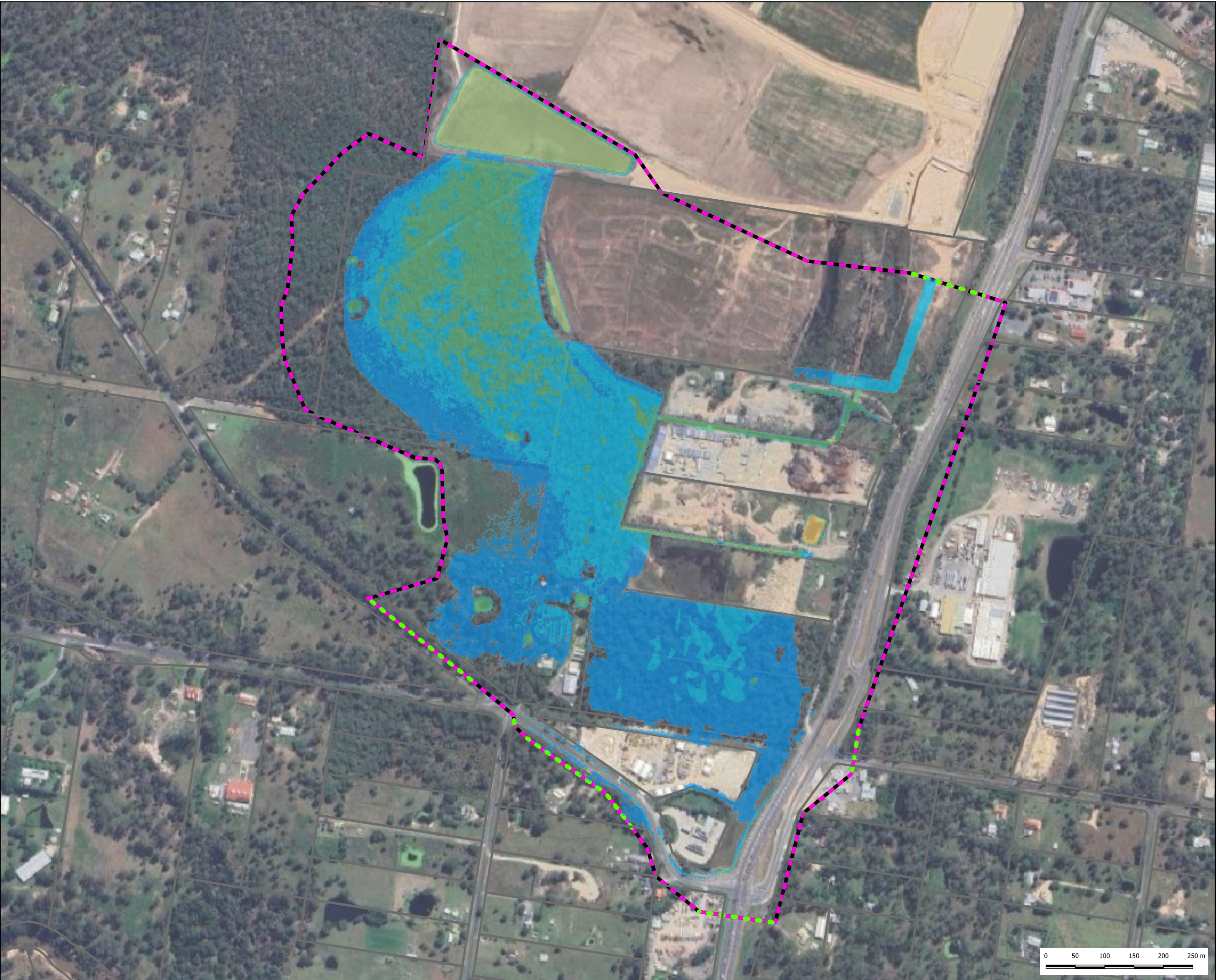
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4733-4743 MT LINDESAY HWY

Figure E20  
Existing 1% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

- Model Extent
- Downstream Boundary
- Cadastral

**Water Hazard**

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

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



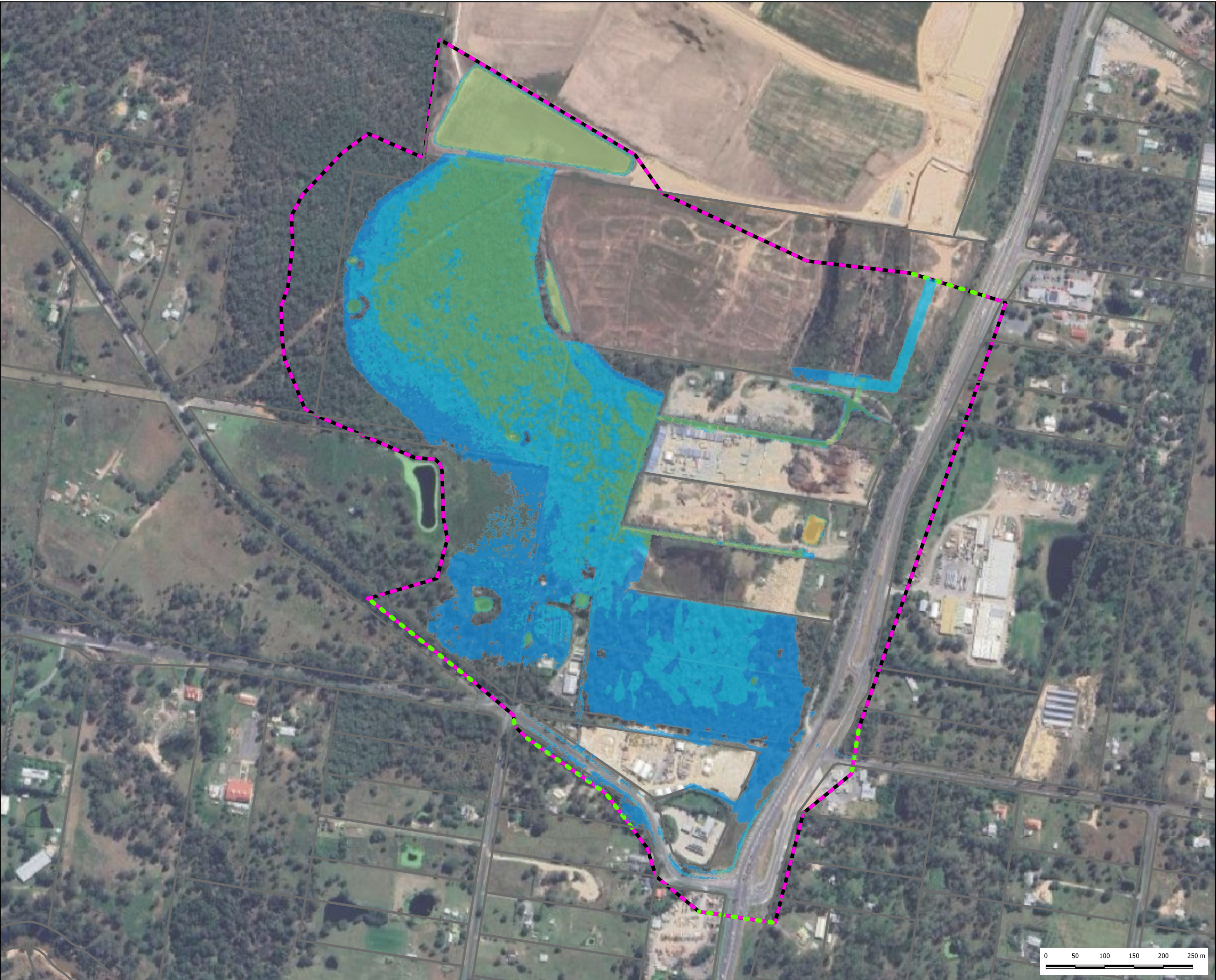
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Figure E21  
Existing 0.5% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

-  Model Extent       Downstream Boundary  
 Cadastral

**Water Hazard**

-  H1  
 H2  
 H3  
 H4  
 H5  
 H6

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



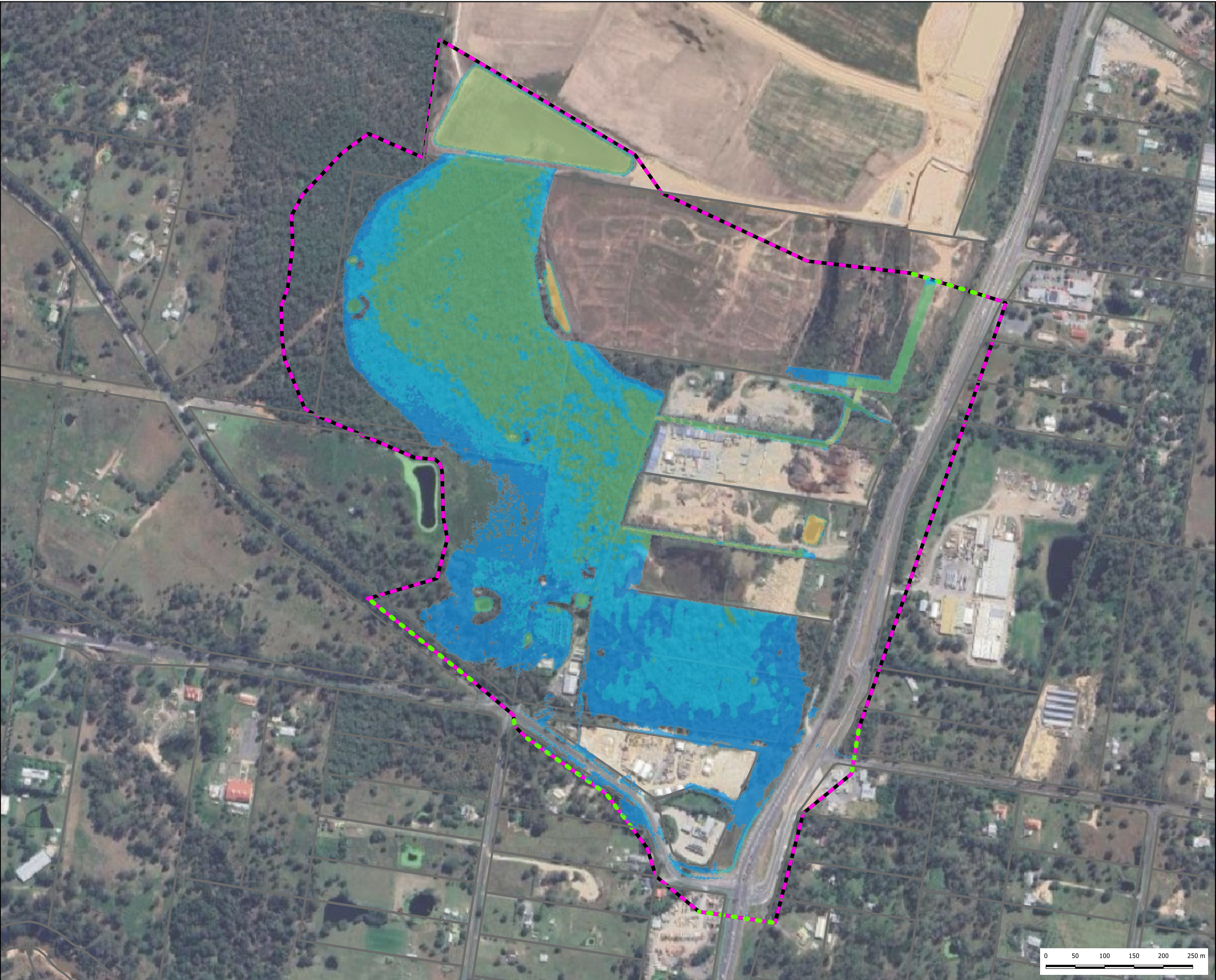
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Figure E22  
Existing 0.2% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

-  Model Extent  Downstream Boundary  
 Cadastral

**Water Hazard**

-  H1  
 H2  
 H3  
 H4  
 H5  
 H6

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



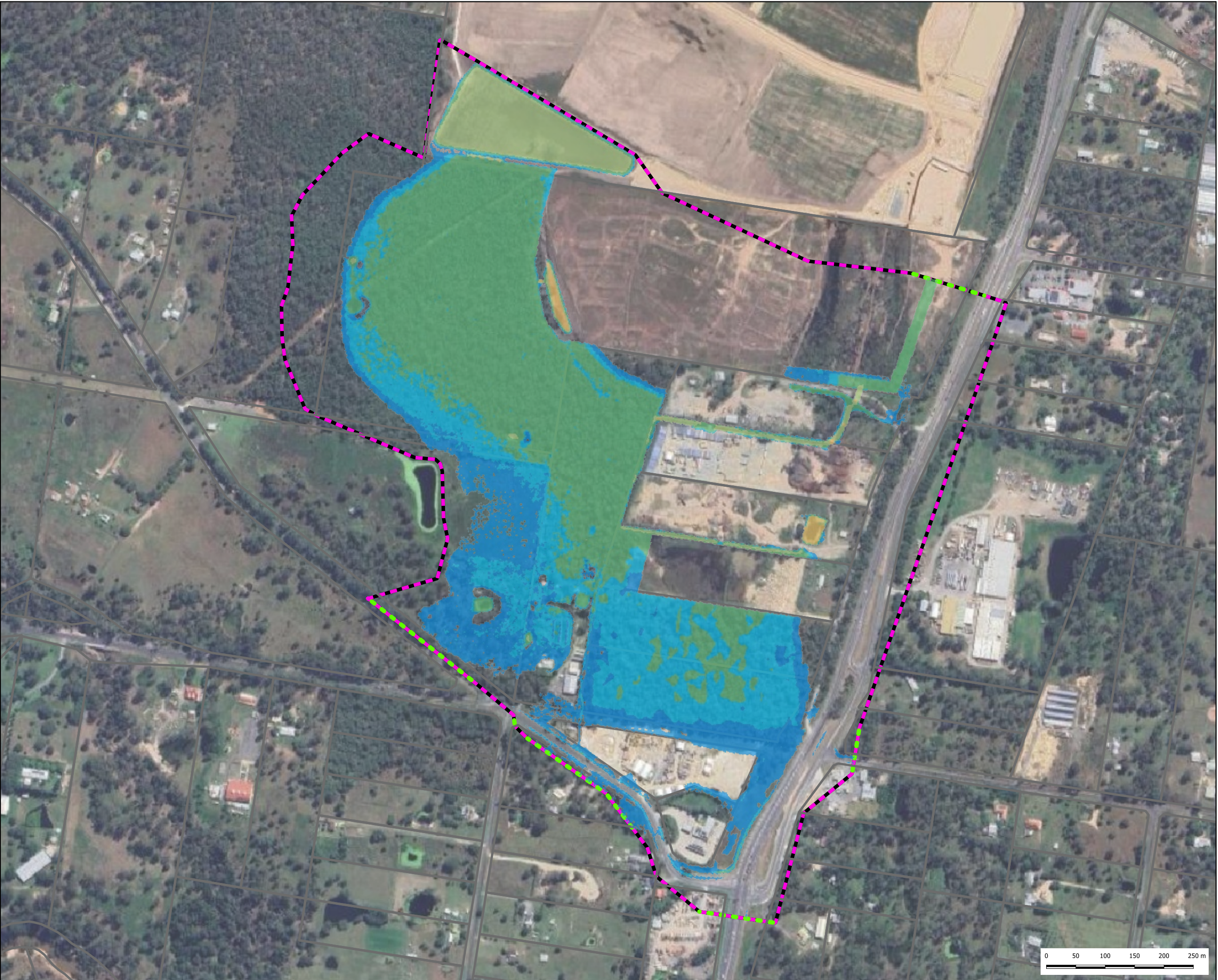
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Figure E23  
Existing 0,05% AEP -  
Hazard



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Hazard

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

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



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4733-4743 MT LINDESAY HWY

Figure E24  
Existing PMP - Hazard



Location of the site within the Logan City

**Legend**

- Model Extent
- Downstream Boundary
- Cadastral

**Water Hazard**

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

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



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Figure F01  
Developed 10% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Level (mAHD)

-   $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
  $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

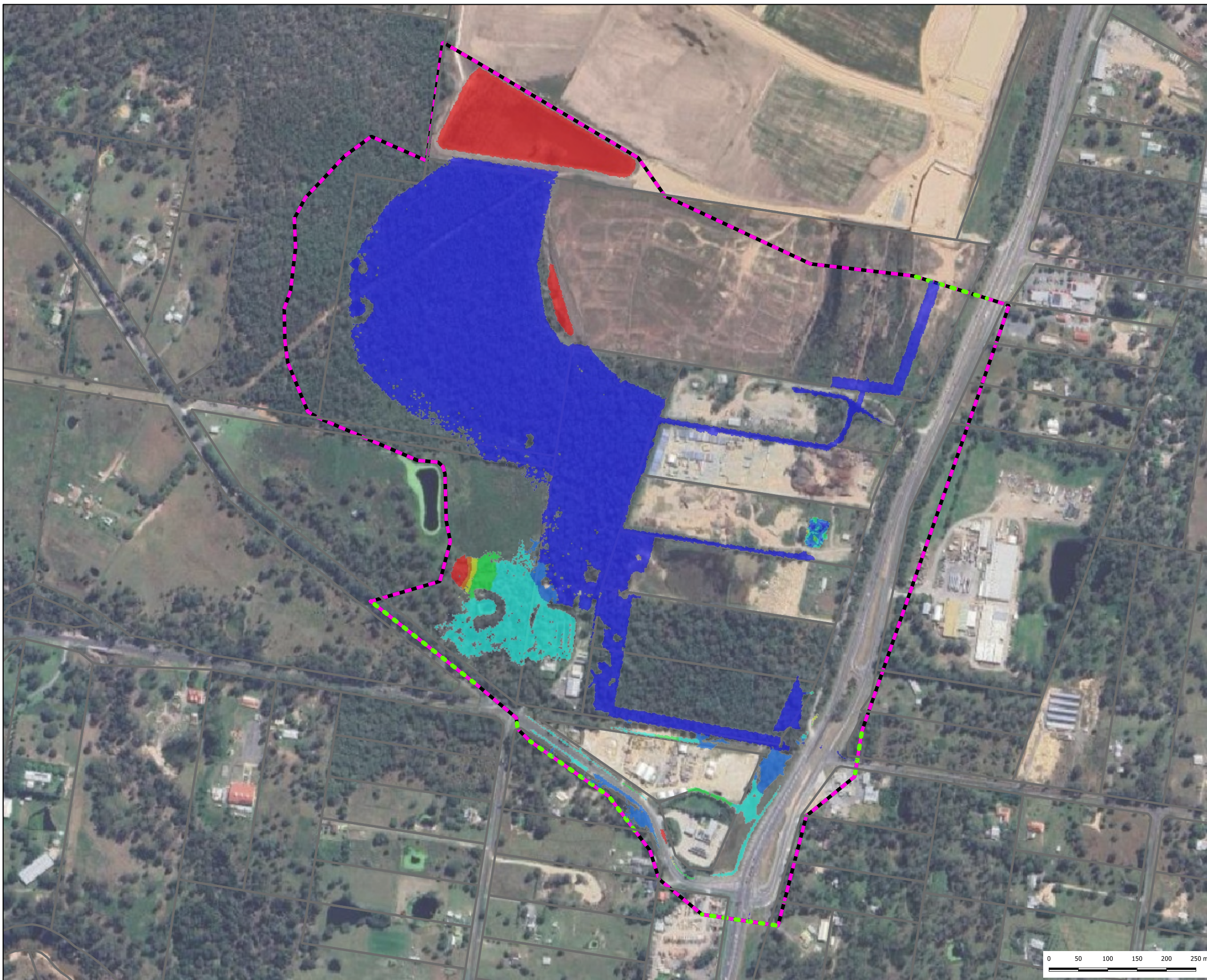
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Data Sources:



FOR

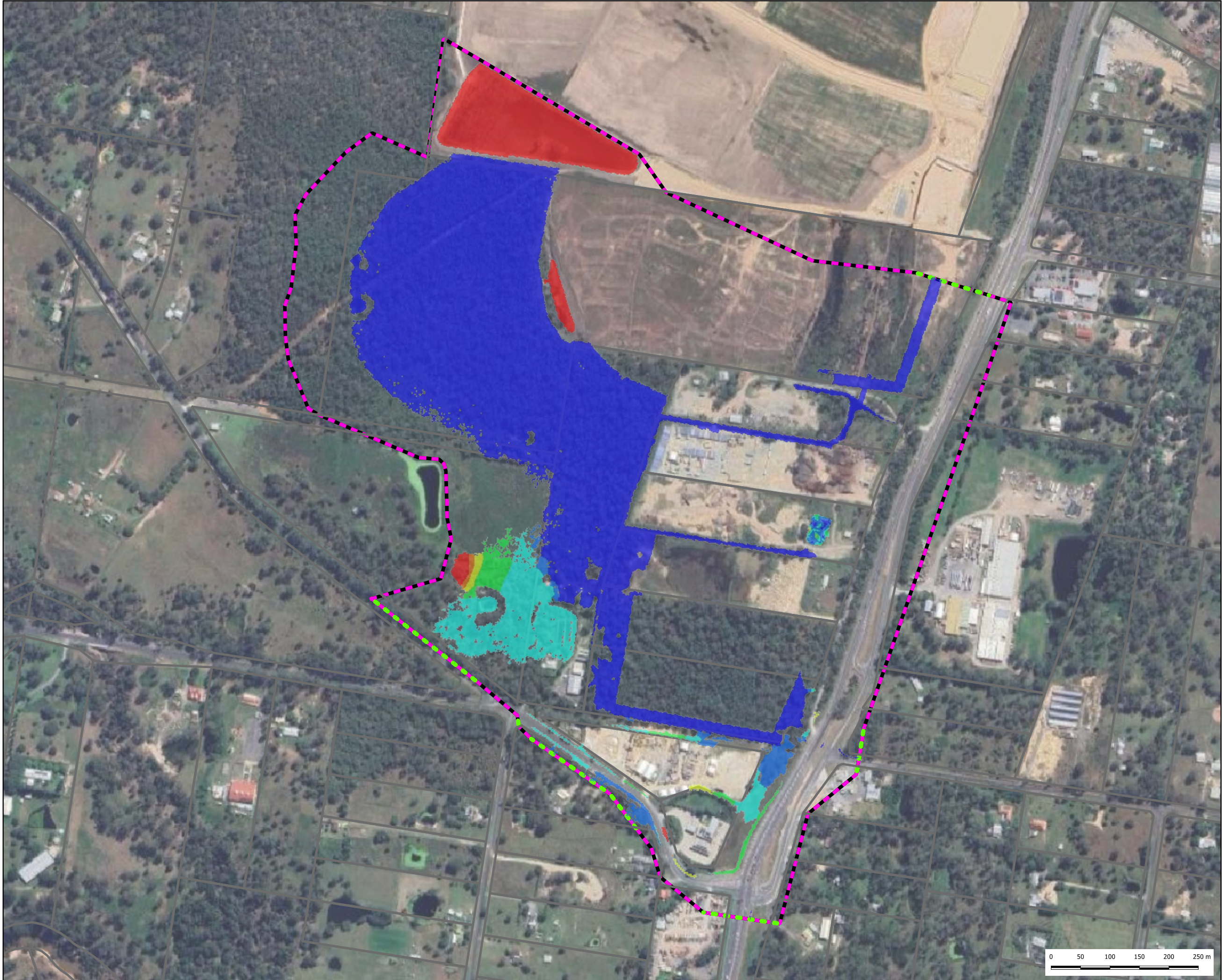
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Figure F02  
Developed 5% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

**Legend**

- Model Extent
- Downstream Boundary
- Cadastral

**Water Level (mAHD)**

- <= 27.00
- 27.00 - 27.10
- 27.10 - 27.20
- 27.20 - 27.30
- 27.30 - 27.40
- 27.40 - 27.50
- > 27.50

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F03  
Developed 1% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Level (mAHD)

-   $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
  $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

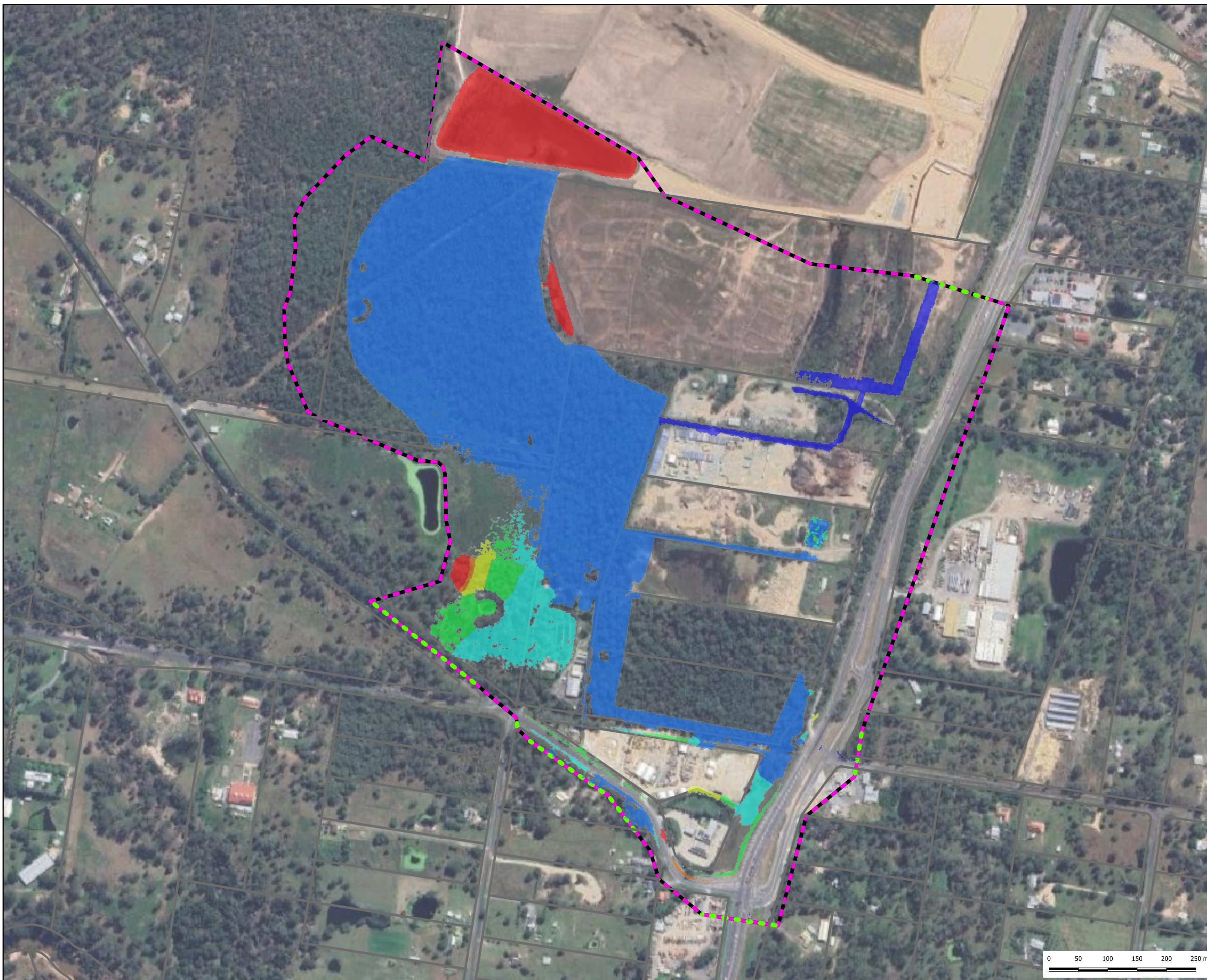
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F04  
Developed 0.5% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Level (mAHD)

- <= 27.00
- 27.00 - 27.10
- 27.10 - 27.20
- 27.20 - 27.30
- 27.30 - 27.40
- 27.40 - 27.50
- > 27.50

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F05  
Developed 0.2% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

#### Legend

-  Model Extent  Downstream Boundary  
 Cadastral

#### Water Level (mAHD)

-   $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
  $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

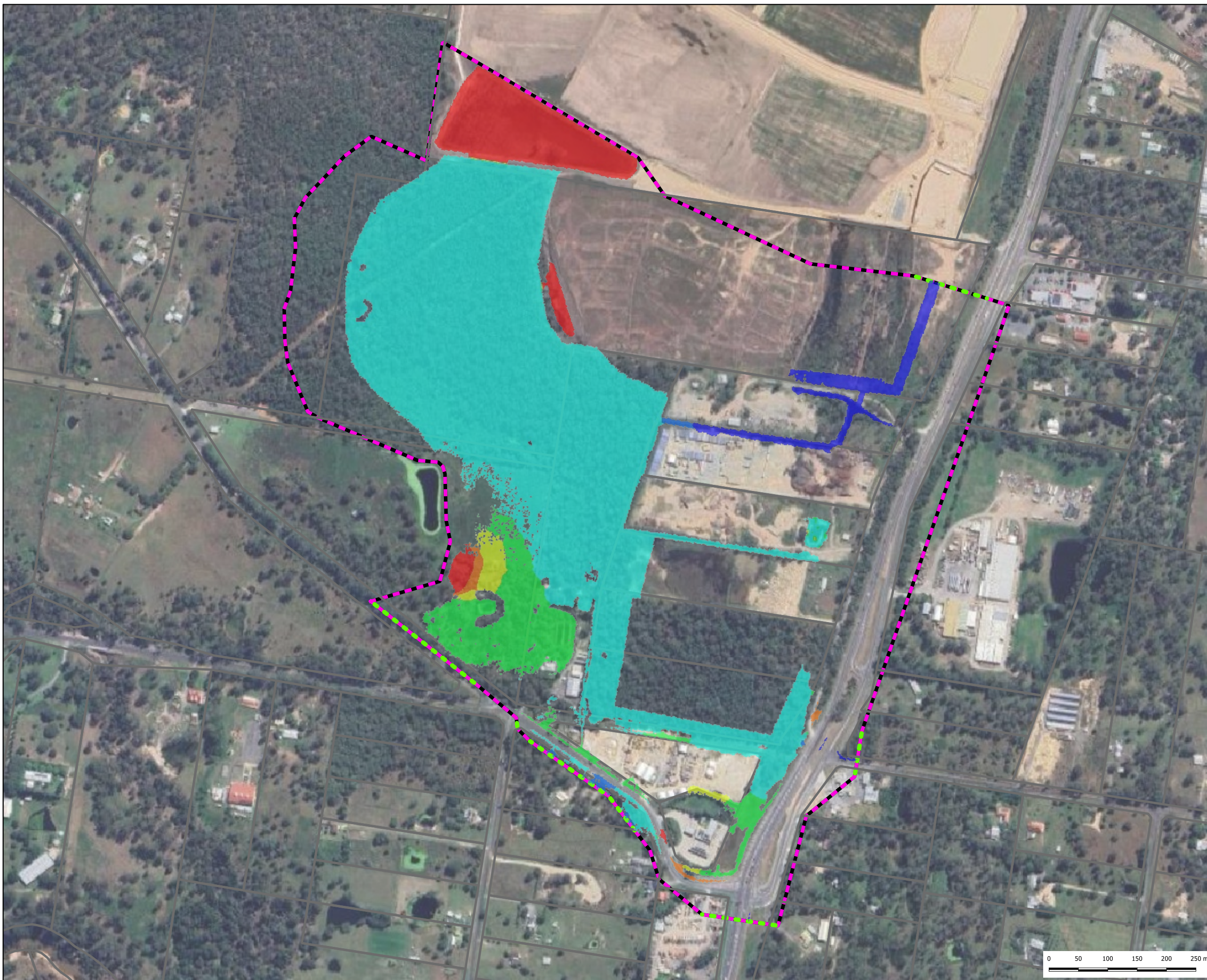
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F06  
Developed 0,05% AEP  
- Water Surface Level



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Level (mAHD)

-   $\leq 27.00$   
 27.00 - 27.10  
 27.10 - 27.20  
 27.20 - 27.30  
 27.30 - 27.40  
 27.40 - 27.50  
  $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

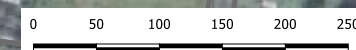
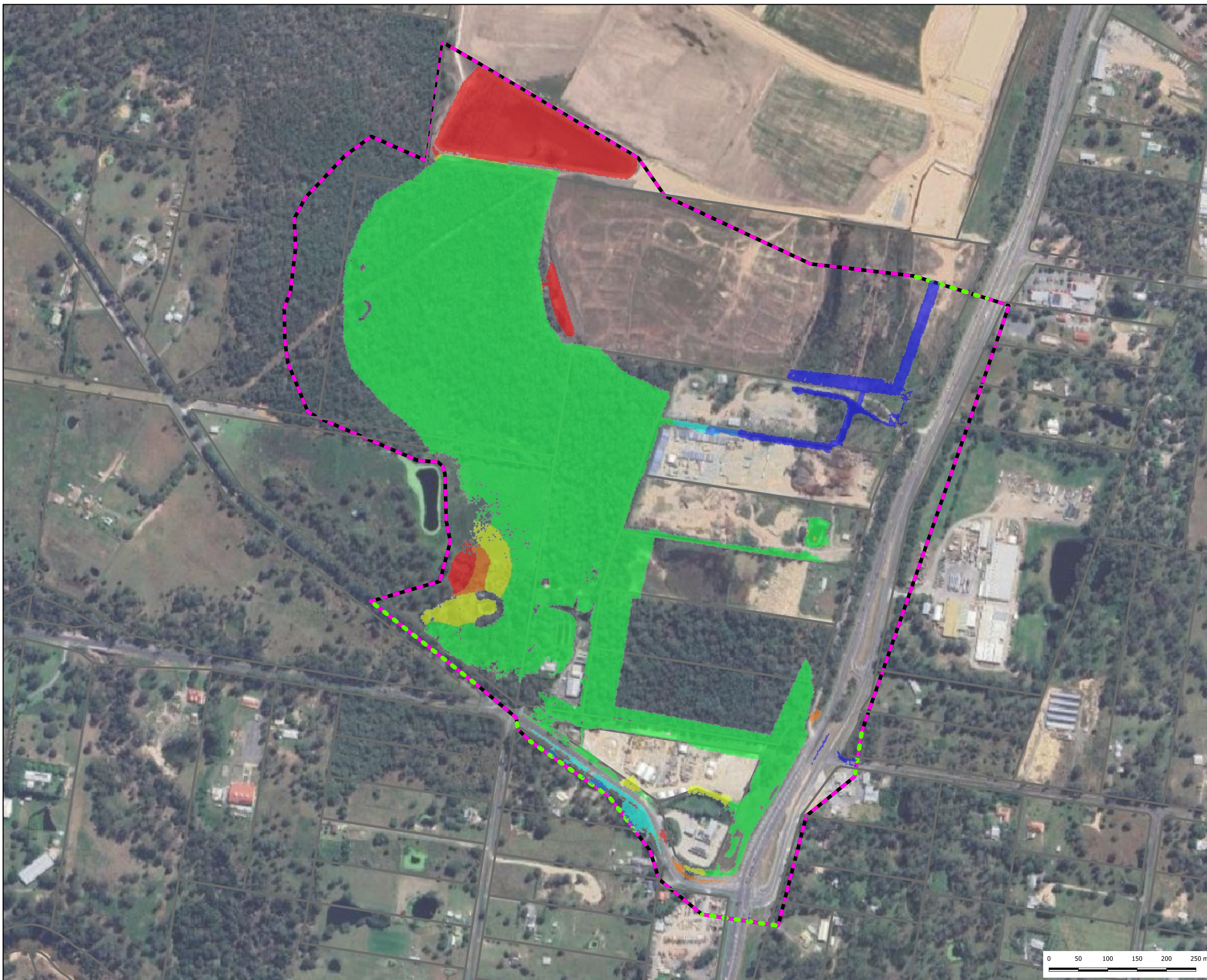
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F07  
Developed PMP - Water  
Surface Level



Location of the site within the Logan City

#### Legend

- Model Extent
- Downstream Boundary
- Cadastral

#### Water Level (mAHD)

- $\leq 27.00$
- 27.00 - 27.10
- 27.10 - 27.20
- 27.20 - 27.30
- 27.30 - 27.40
- 27.40 - 27.50
- $> 27.50$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

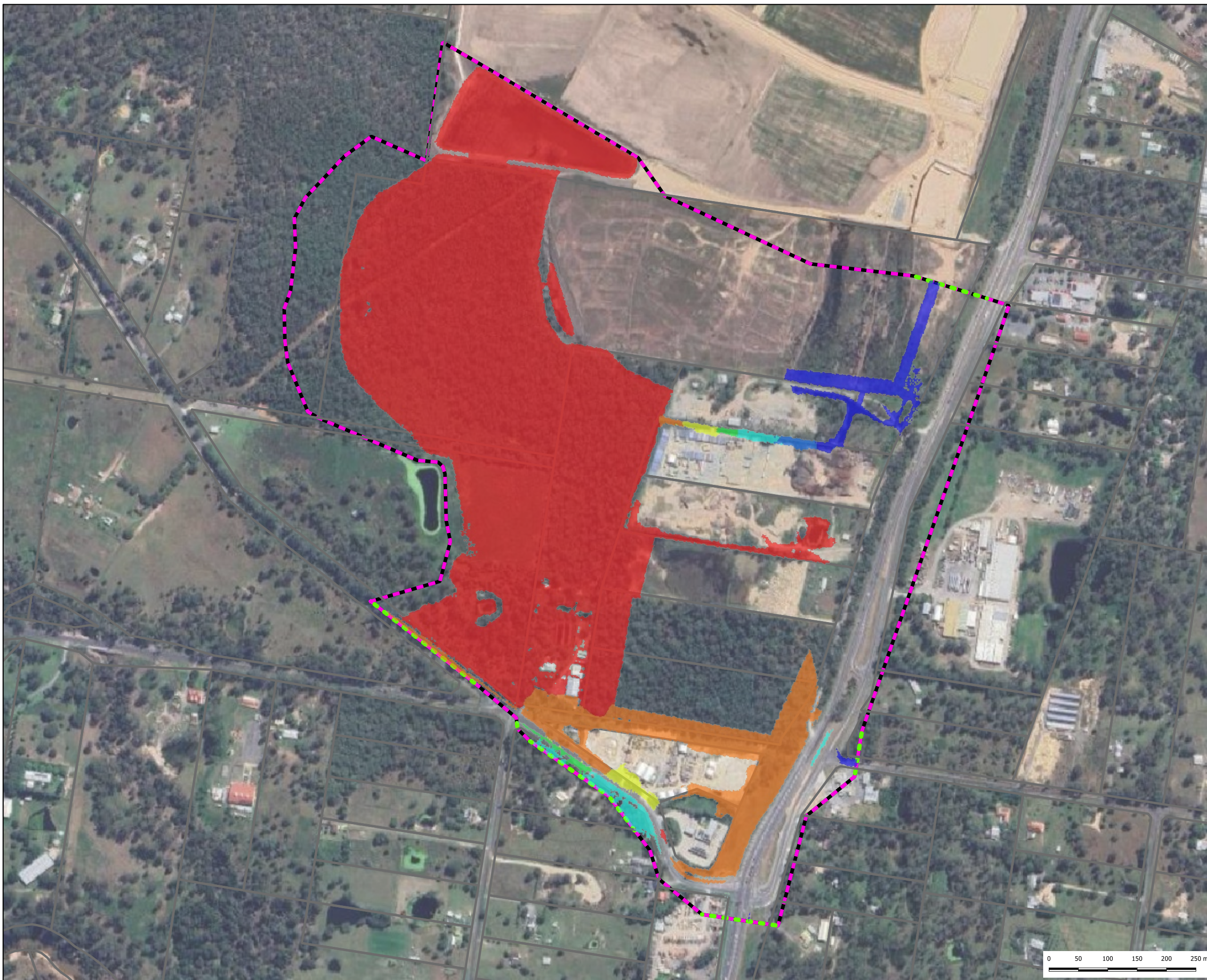
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F08  
Developed 10% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Velocity (m/s)

-   $\leq 0.025$   
 0.025 - 0.050  
 0.050 - 0.075  
 0.075 - 0.100  
 0.100 - 0.125  
 0.125 - 0.150  
 0.150 - 0.175  
 0.175 - 0.200  
  $> 0.200$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



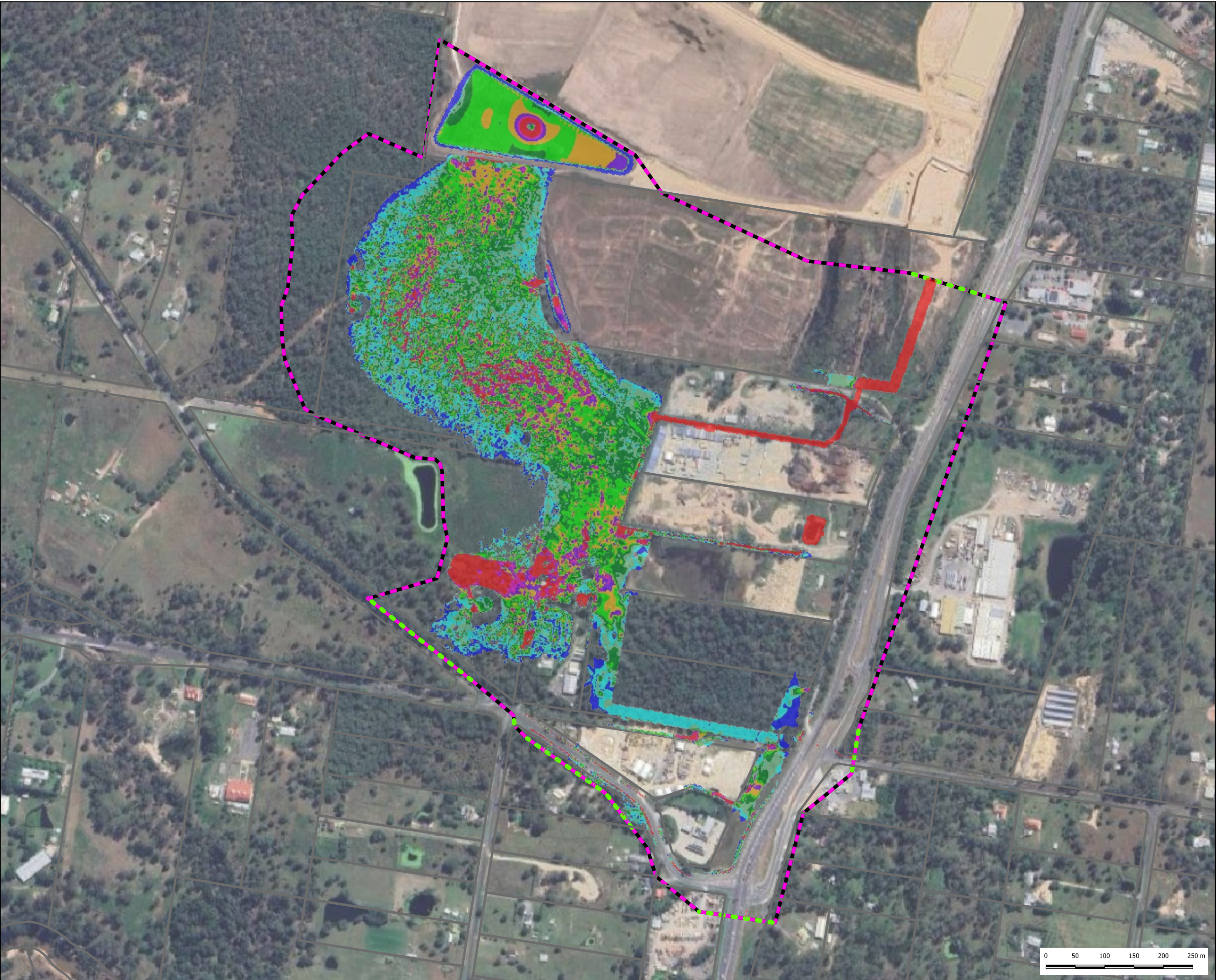
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Figure F09  
Developed 5% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

**Legend**

- Model Extent      Downstream Boundary  
 Cadastral

**Water Velocity (m/s)**

- $\leq 0.025$   
 0.025 - 0.050  
 0.050 - 0.075  
 0.075 - 0.100  
 0.100 - 0.125  
 0.125 - 0.150  
 0.150 - 0.175  
 0.175 - 0.200  
  $> 0.200$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F10  
Developed 1% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

Legend

-  Model Extent       Downstream Boundary  
 Cadastral

Water Velocity (m/s)

-   $\leq 0.025$   
 0.025 - 0.050  
 0.050 - 0.075  
 0.075 - 0.100  
 0.100 - 0.125  
 0.125 - 0.150  
 0.150 - 0.175  
 0.175 - 0.200  
  $> 0.200$

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

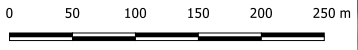
Data Sources:



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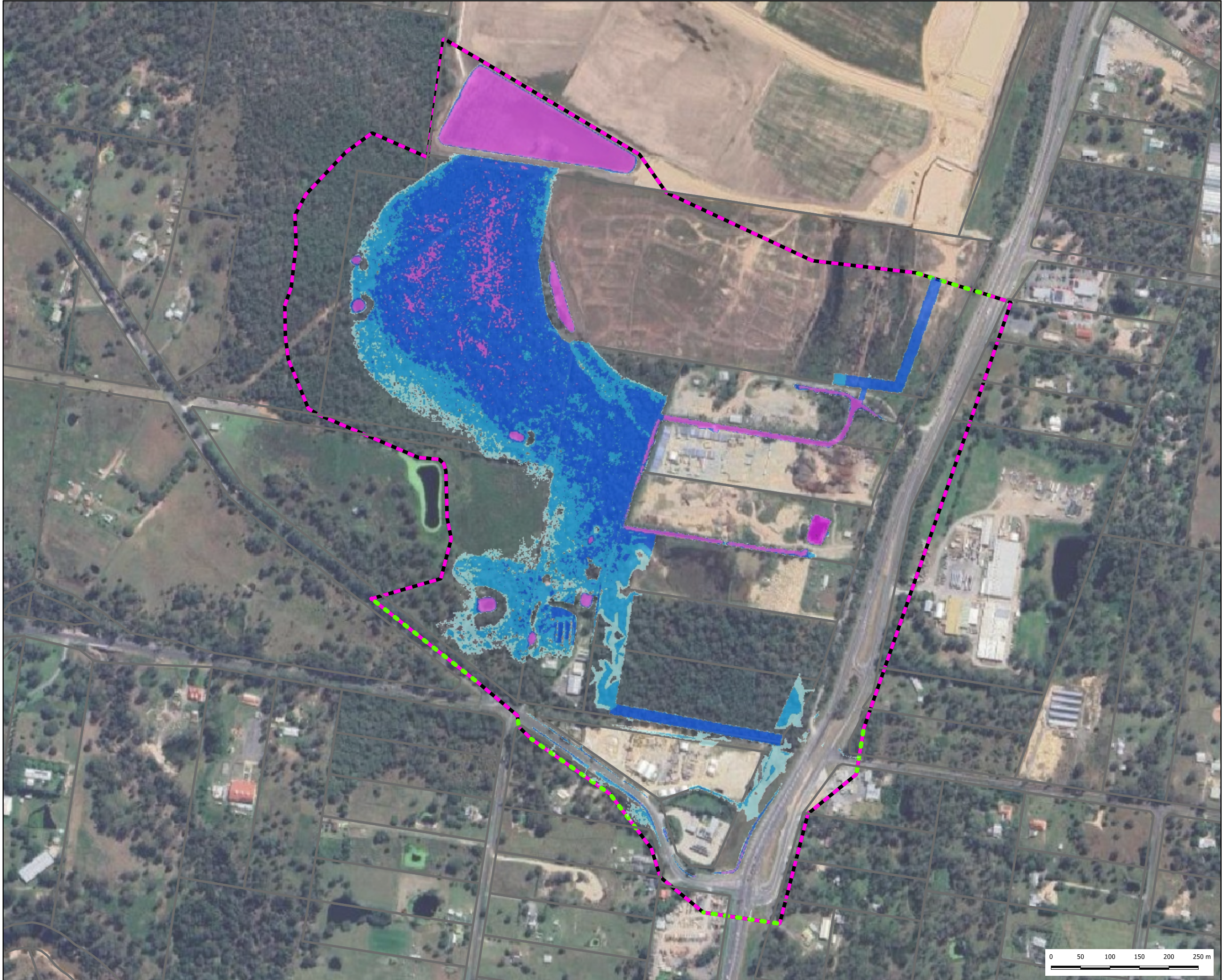
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DEVELOPMENT APPROVAL  
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Figure F11  
Developed 10% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Depth (m)

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



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Figure F12  
Developed 5% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

-  Model Extent       Downstream Boundary  
 Cadastral

Water Depth (m)

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

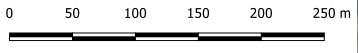
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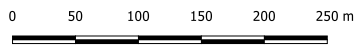
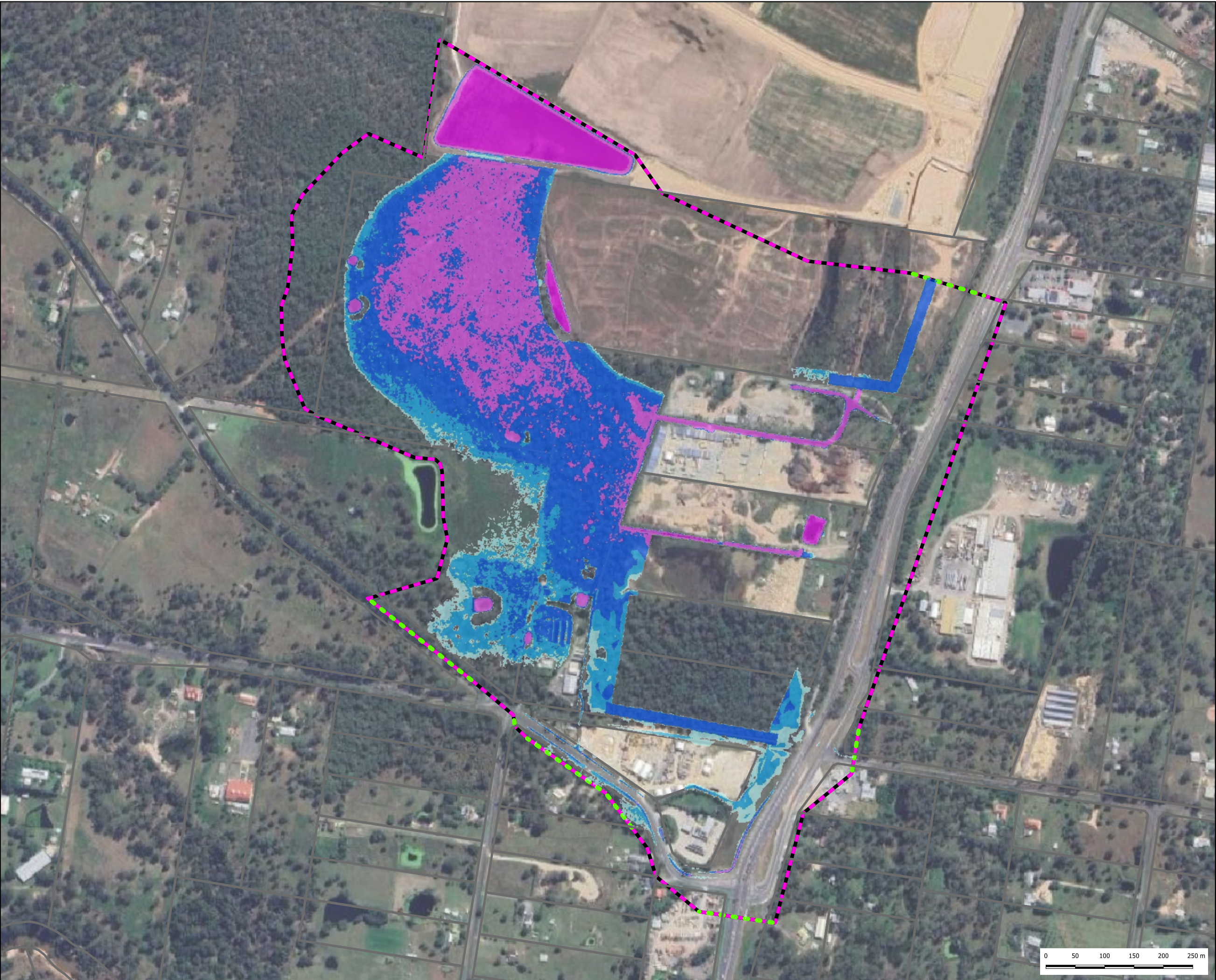
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Figure F13  
Developed 1% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

**Legend**

-  Model Extent  Downstream Boundary  
 Cadastral

**Water Depth (m)**

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F14  
Developed 0.5% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Depth (m)

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



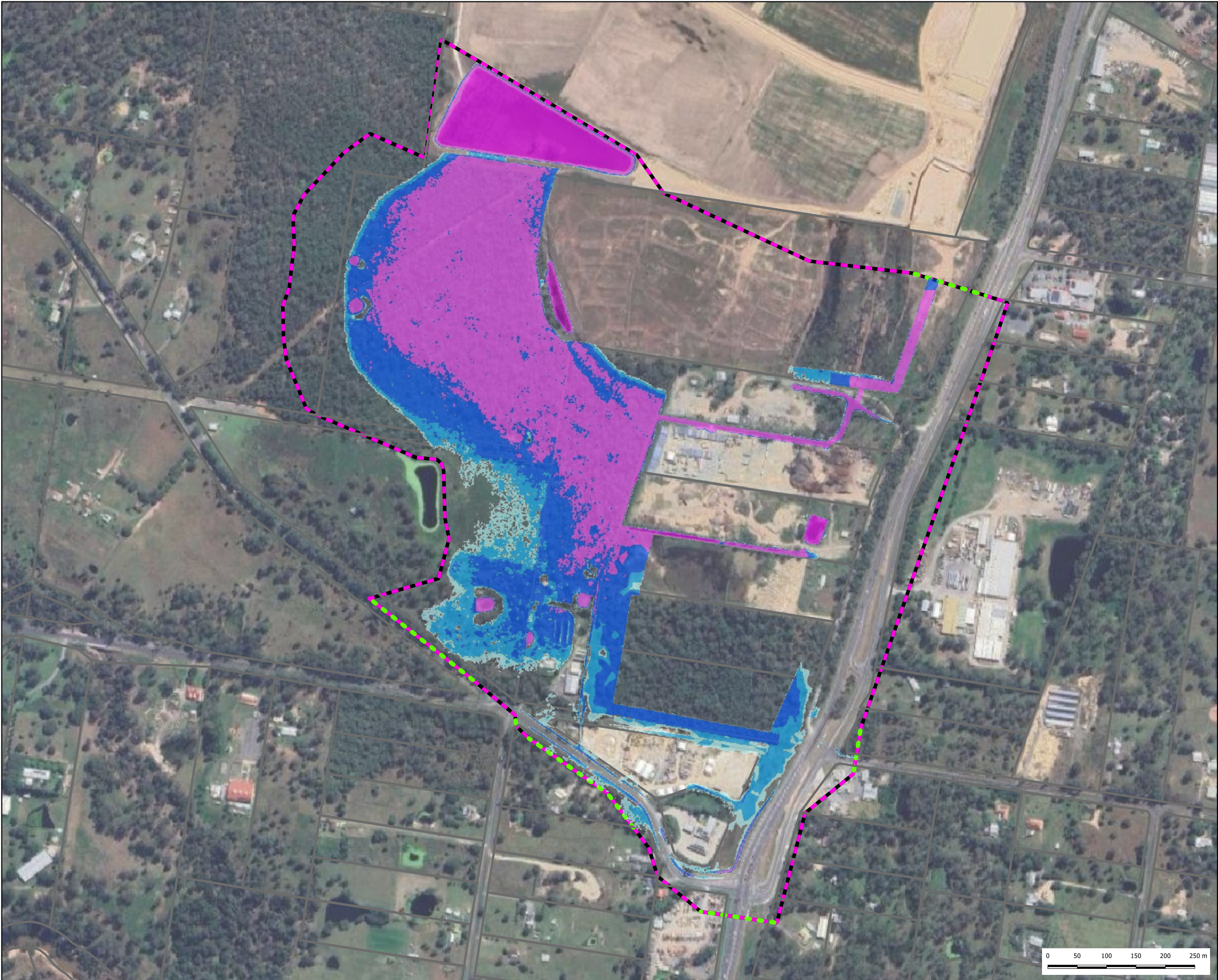
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Figure F15  
Developed 0.2% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

**Legend**

- Model Extent
- Downstream Boundary
- Cadastral

**Water Depth (m)**

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure F16  
Developed 0,05% AEP  
- Depth



Location of the site within the Logan City

Legend

-  Model Extent       Downstream Boundary  
 Cadastral

Water Depth (m)

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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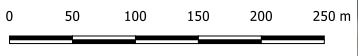




Figure F17  
Developed PMF - Depth



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Depth (m)

-   $\leq 0.0$   
 0.0 - 0.1  
 0.1 - 0.3  
 0.3 - 0.5  
 0.5 - 1.5  
 1.5 - 2.0  
 2.0 - 2.5

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



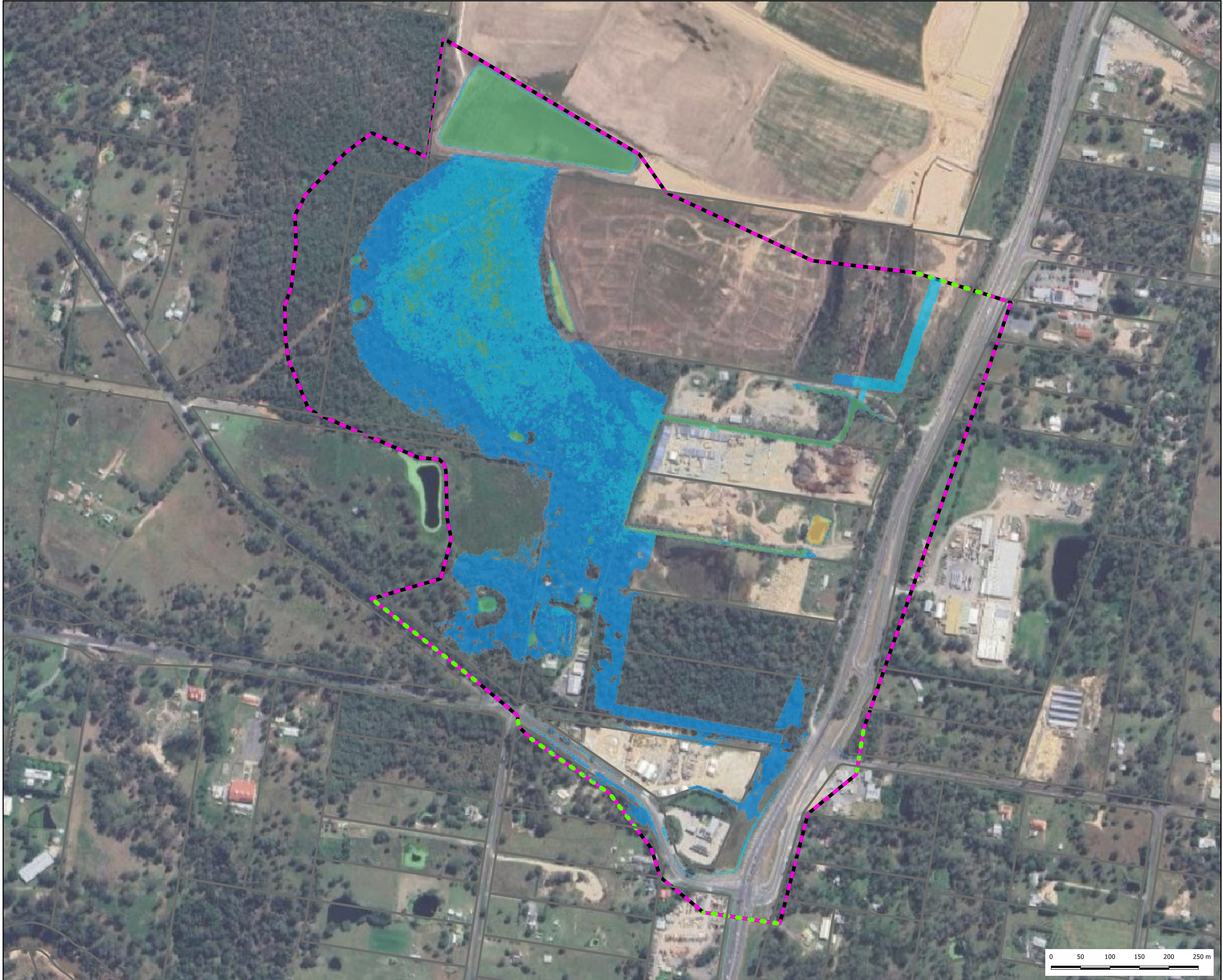
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Figure F18  
Developed 10% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Hazard

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

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



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Figure F19  
Developed 5% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Hazard

-  H1  
 H2  
 H3  
 H4  
 H5  
 H6

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

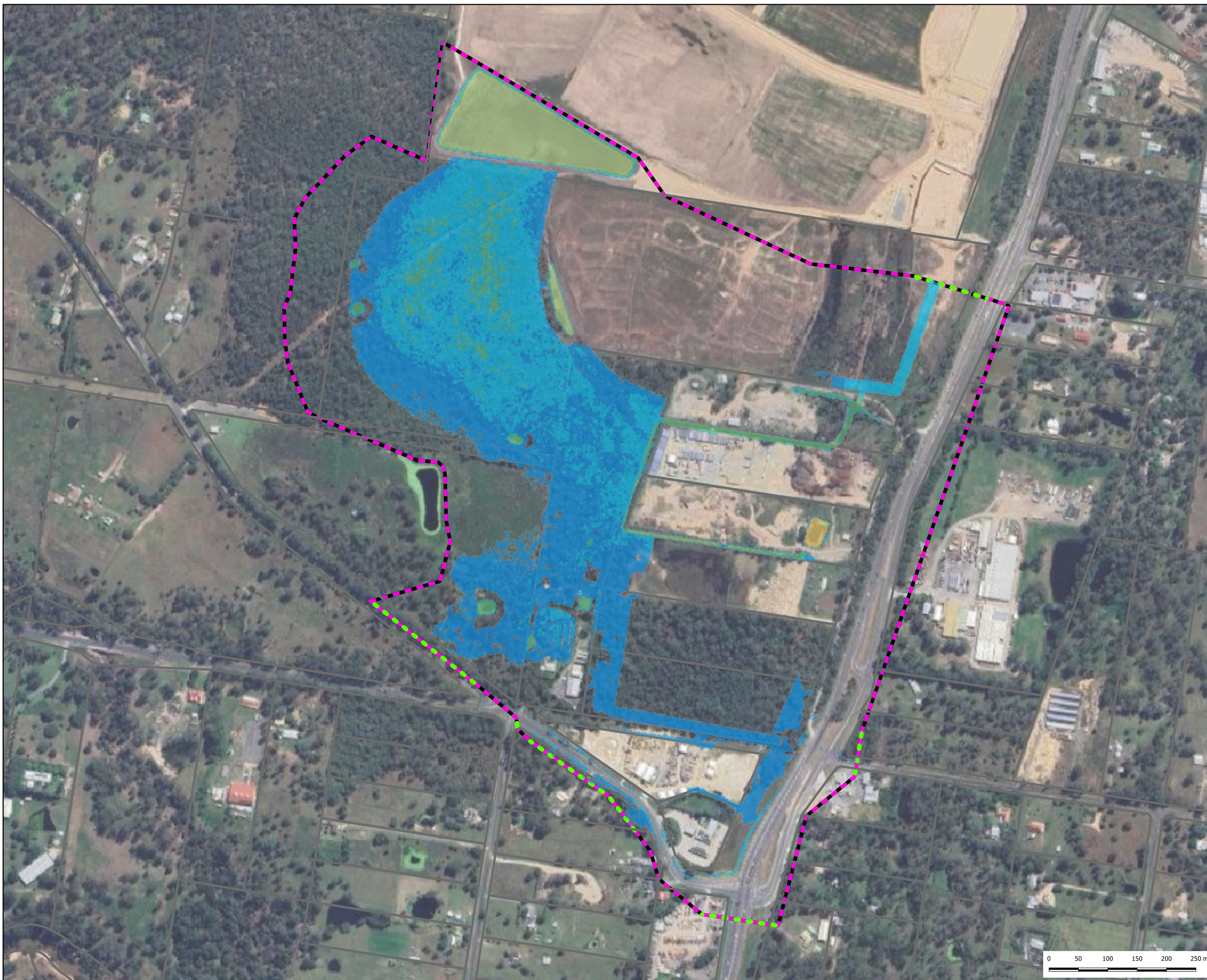
Projection: GDA94 / MGA zone 56

Data Sources:



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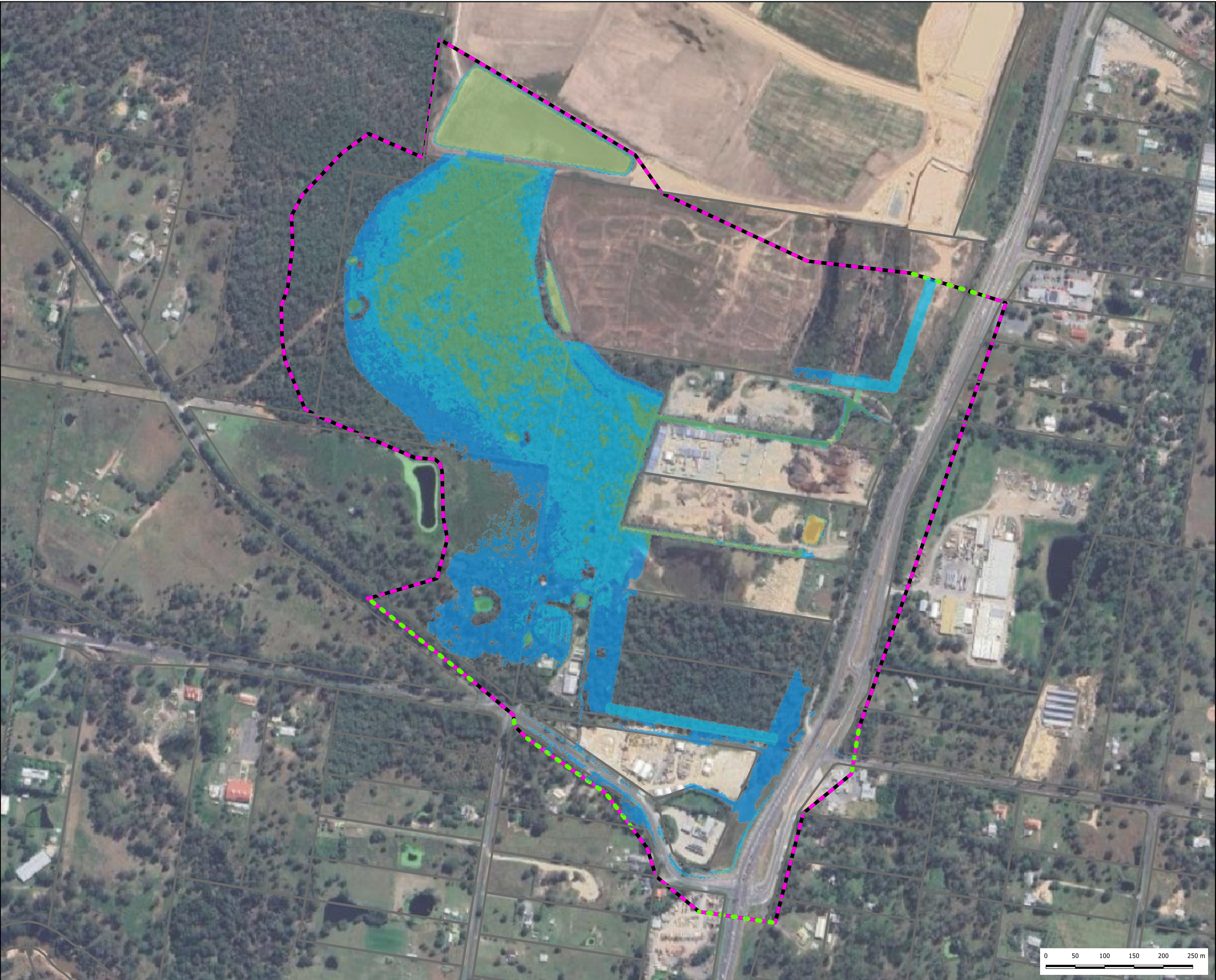


0 50 100 150 200 250 m

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Figure F20  
Developed 1% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Hazard

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

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



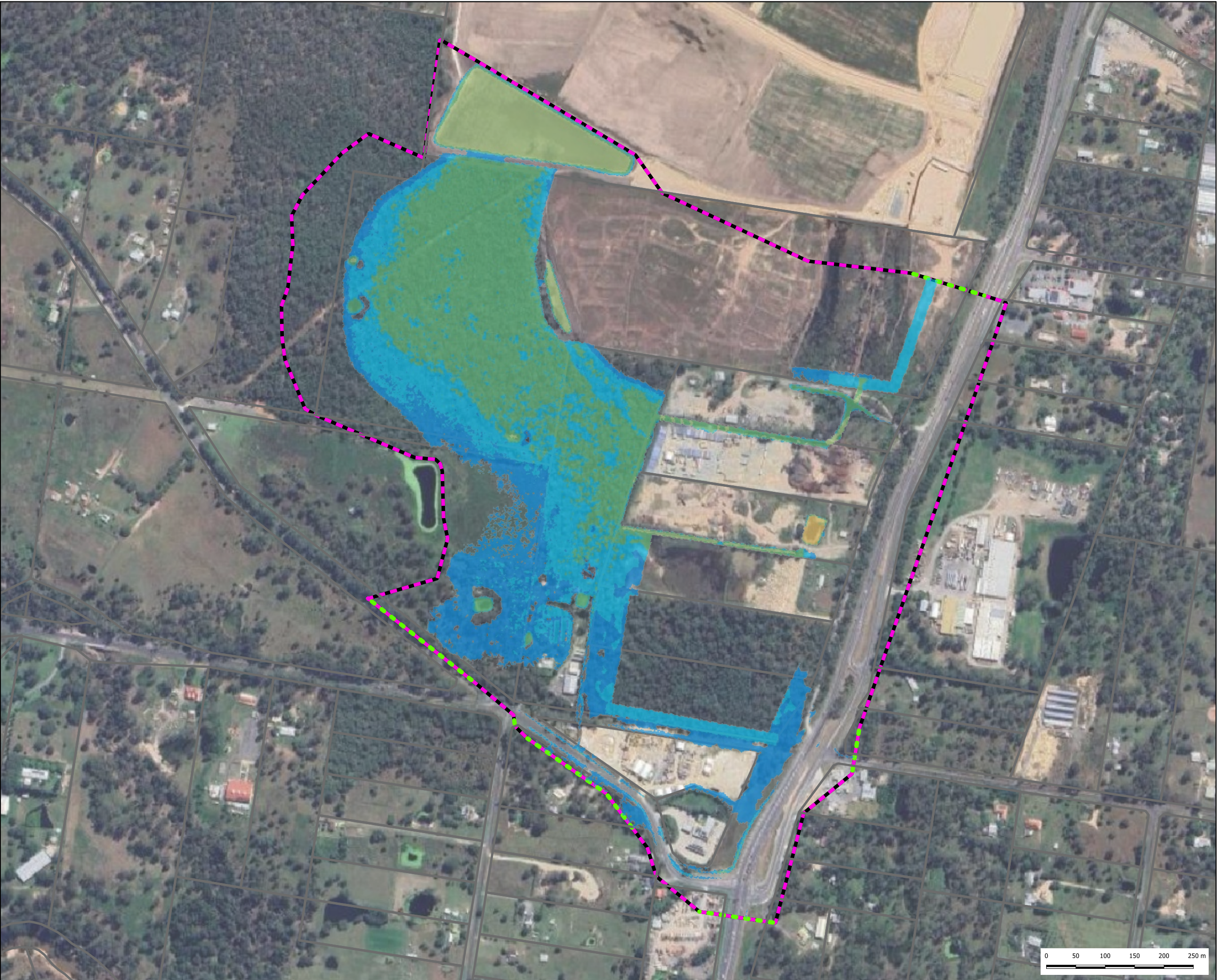
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Figure F21  
Developed 0.5% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Hazard

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

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



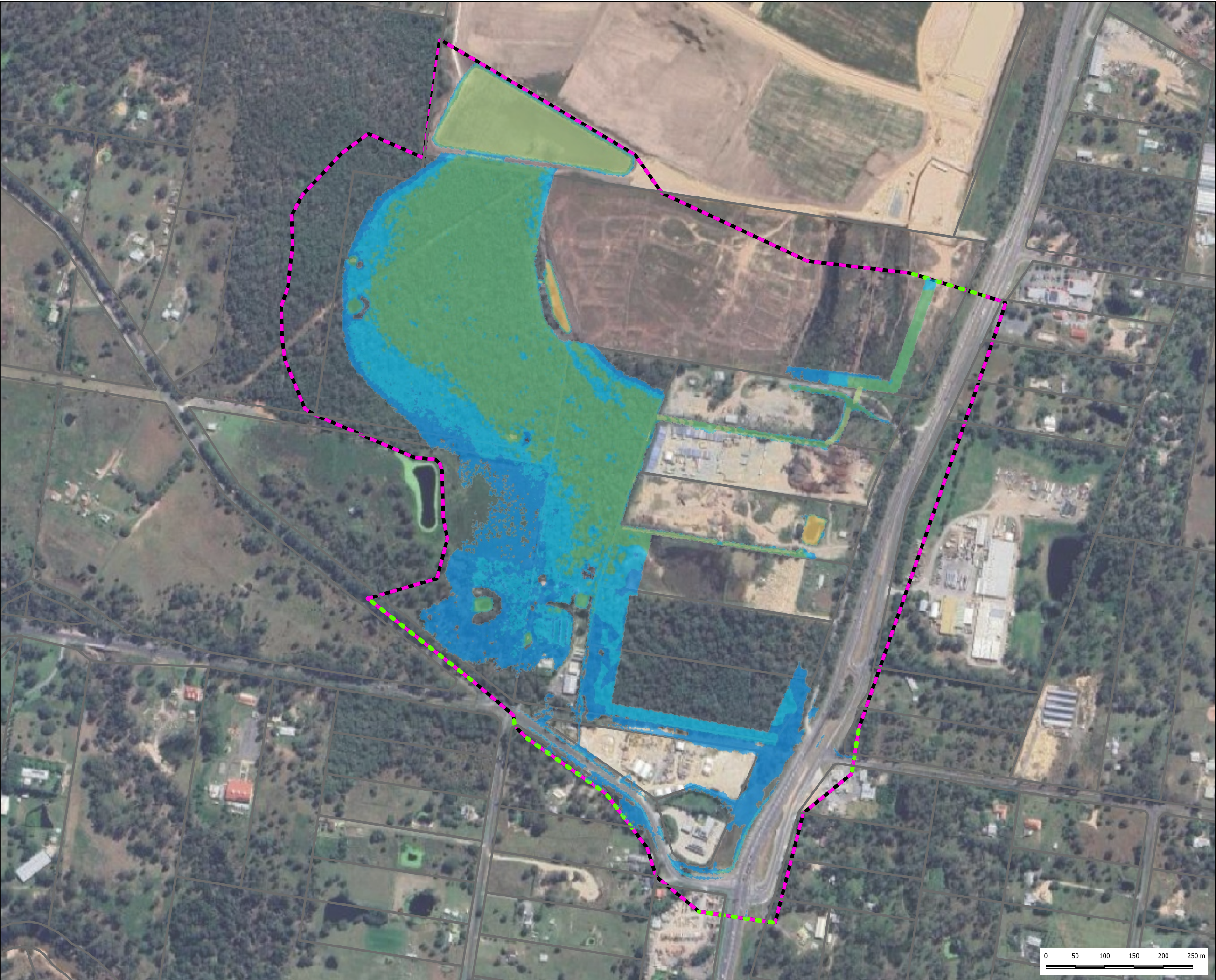
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure F22  
Developed 0.2% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

Legend

- Model Extent
- Downstream Boundary
- Cadastral

Water Hazard

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

Project: BE220566  
Date: 13/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



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Figure F23  
Developed 0,05% AEP  
- Hazard



Location of the site within the Logan City

#### Legend

-  Model Extent       Downstream Boundary  
 Cadastral

#### Water Hazard

-  H1  
 H2  
 H3  
 H4  
 H5  
 H6

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



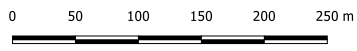
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4733-4743 MT LINDESAY HWY

Figure F24  
Developed PMF -  
Hazard



Location of the site within the Logan City

**Legend**

- Model Extent
- Downstream Boundary
- Cadastral

**Water Hazard**

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

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure G01  
Water Level Afflux -  
10% AEP CC



Location of the site within the Logan City

Legend

- Model Extent      Downstream Boundary  
 Cadastral

Water Impact (m)

- $\leq -0.1$   
 -0.1 - -0.05  
 -0.05 - -0.03  
 -0.03 - -0.02  
 -0.02 - -0.01  
 -0.01 - 0.01  
 0.01 - 0.02  
 0.02 - 0.04  
 0.04 - 0.06  
 0.06 - 0.08  
 0.08 - 0.1  
 0.1 - 0.2  
 Was Wet Now Dry  
 Was Dry Now Wet

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure G02  
Water Level Afflux -  
5% AEP CC



Location of the site within the Logan City

Legend

- Model Extent      Downstream Boundary  
 Cadastral

Water Impact (m)

- $\leq -0.1$   
 -0.1 - -0.05  
 -0.05 - -0.03  
 -0.03 - -0.02  
 -0.02 - -0.01  
 -0.01 - 0.01  
 0.01 - 0.02  
 0.02 - 0.04  
 0.04 - 0.06  
 0.06 - 0.08  
 0.08 - 0.1  
 0.1 - 0.2  
 Was Wet Now Dry  
 Was Dry Now Wet

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure G03  
Water Level Afflux -  
1% AEP CC



Location of the site within the Logan City

Legend

- Model Extent      Downstream Boundary  
 Cadastral

Water Impact (m)

- $\leq -0.1$   
 -0.1 - -0.05  
 -0.05 - -0.03  
 -0.03 - -0.02  
 -0.02 - -0.01  
 -0.01 - 0.01  
 0.01 - 0.02  
 0.02 - 0.04  
 0.04 - 0.06  
 0.06 - 0.08  
 0.08 - 0.1  
 0.1 - 0.2  
 Was Wet Now Dry  
 Was Dry Now Wet

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure G04  
Water Level Afflux -  
0.5% AEP CC



Location of the site within the Logan City

Legend

- Model Extent      Downstream Boundary  
 Cadastral

Water Impact (m)

- $\leq -0.1$   
 -0.1 - -0.05  
 -0.05 - -0.03  
 -0.03 - -0.02  
 -0.02 - -0.01  
 -0.01 - 0.01  
 0.01 - 0.02  
 0.02 - 0.04  
 0.04 - 0.06  
 0.06 - 0.08  
 0.08 - 0.1  
 0.1 - 0.2  
 Was Wet Now Dry  
 Was Dry Now Wet

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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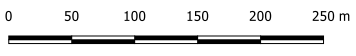




Figure G05  
Water Level Afflux -  
0.2% AEP CC



Location of the site within the Logan City

Legend

- Model Extent      Downstream Boundary  
 Cadastral

Water Impact (m)

- $\leq -0.1$   
 -0.1 - -0.05  
 -0.05 - -0.03  
 -0.03 - -0.02  
 -0.02 - -0.01  
 -0.01 - 0.01  
 0.01 - 0.02  
 0.02 - 0.04  
 0.04 - 0.06  
 0.06 - 0.08  
 0.08 - 0.1  
 0.1 - 0.2  
 Was Wet Now Dry  
 Was Dry Now Wet

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

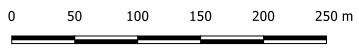
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure G06  
Water Level Afflux -  
0,05% AEP



Location of the site within the Logan City

#### Legend

- Model Extent      Downstream Boundary  
 Cadastral

#### Water Impact (m)

- $\leq -0.1$   
 -0.1 - -0.05  
 -0.05 - -0.03  
 -0.03 - -0.02  
 -0.02 - -0.01  
 -0.01 - 0.01  
 0.01 - 0.02  
 0.02 - 0.04  
 0.04 - 0.06  
 0.06 - 0.08  
 0.08 - 0.1  
 0.1 - 0.2  
 Was Wet Now Dry  
 Was Dry Now Wet

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

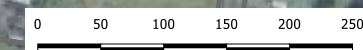
Projection: GDA94 / MGA zone 56

Data Sources:



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Figure G07  
Water Level Afflux -  
PMF



Location of the site within the Logan City

Legend

- Model Extent      Downstream Boundary  
 Cadastral

Water Impact (m)

- $\leq -0.1$   
 -0.1 - -0.05  
 -0.05 - -0.03  
 -0.03 - -0.02  
 -0.02 - -0.01  
 -0.01 - 0.01  
 0.01 - 0.02  
 0.02 - 0.04  
 0.04 - 0.06  
 0.06 - 0.08  
 0.08 - 0.1  
 0.1 - 0.2  
 Was Wet Now Dry  
 Was Dry Now Wet

Project: BE220566

Date: 13/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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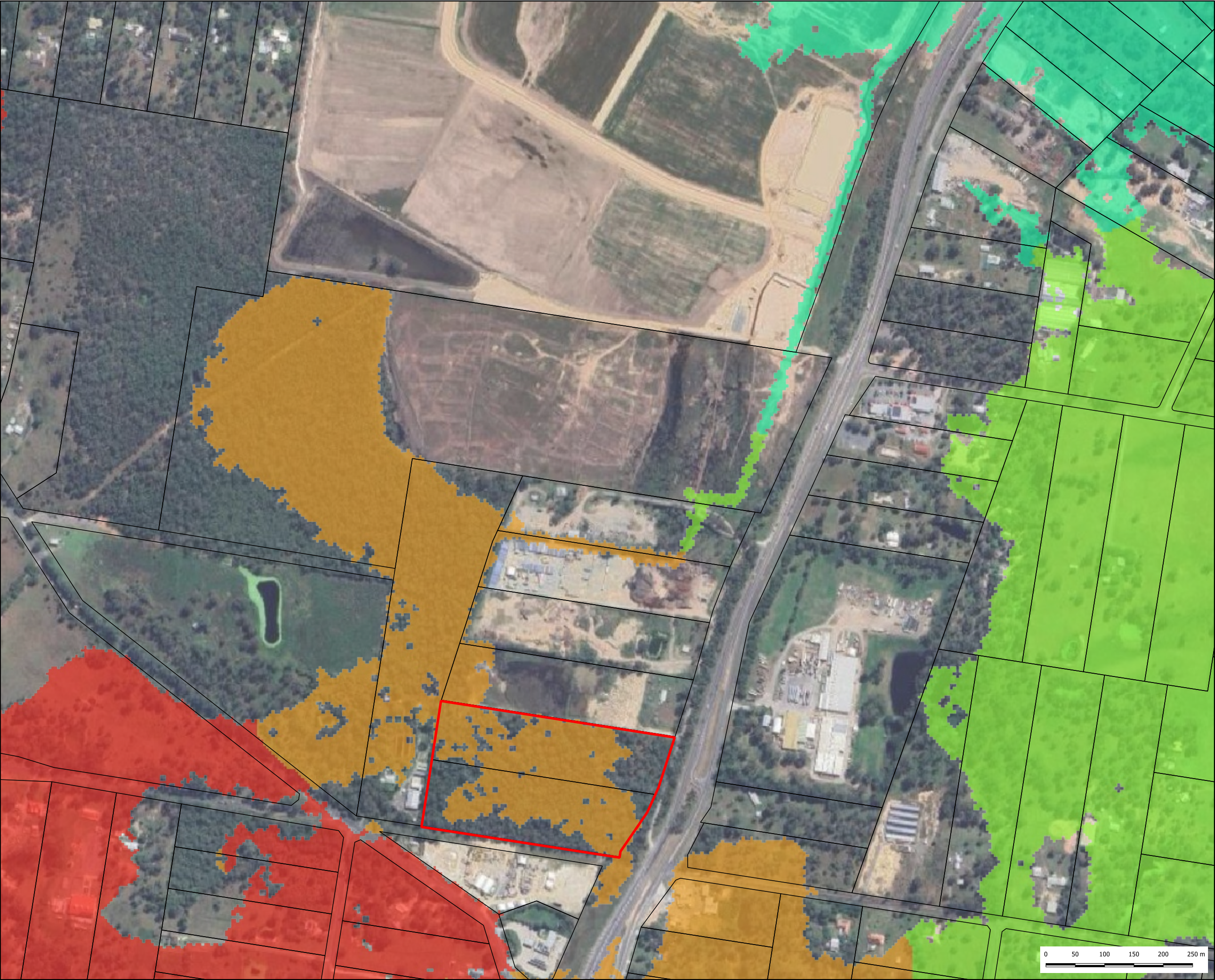
## Appendix F – Hydraulic Model Results - Regional

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Figure H01 - Regional  
Existing 1% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



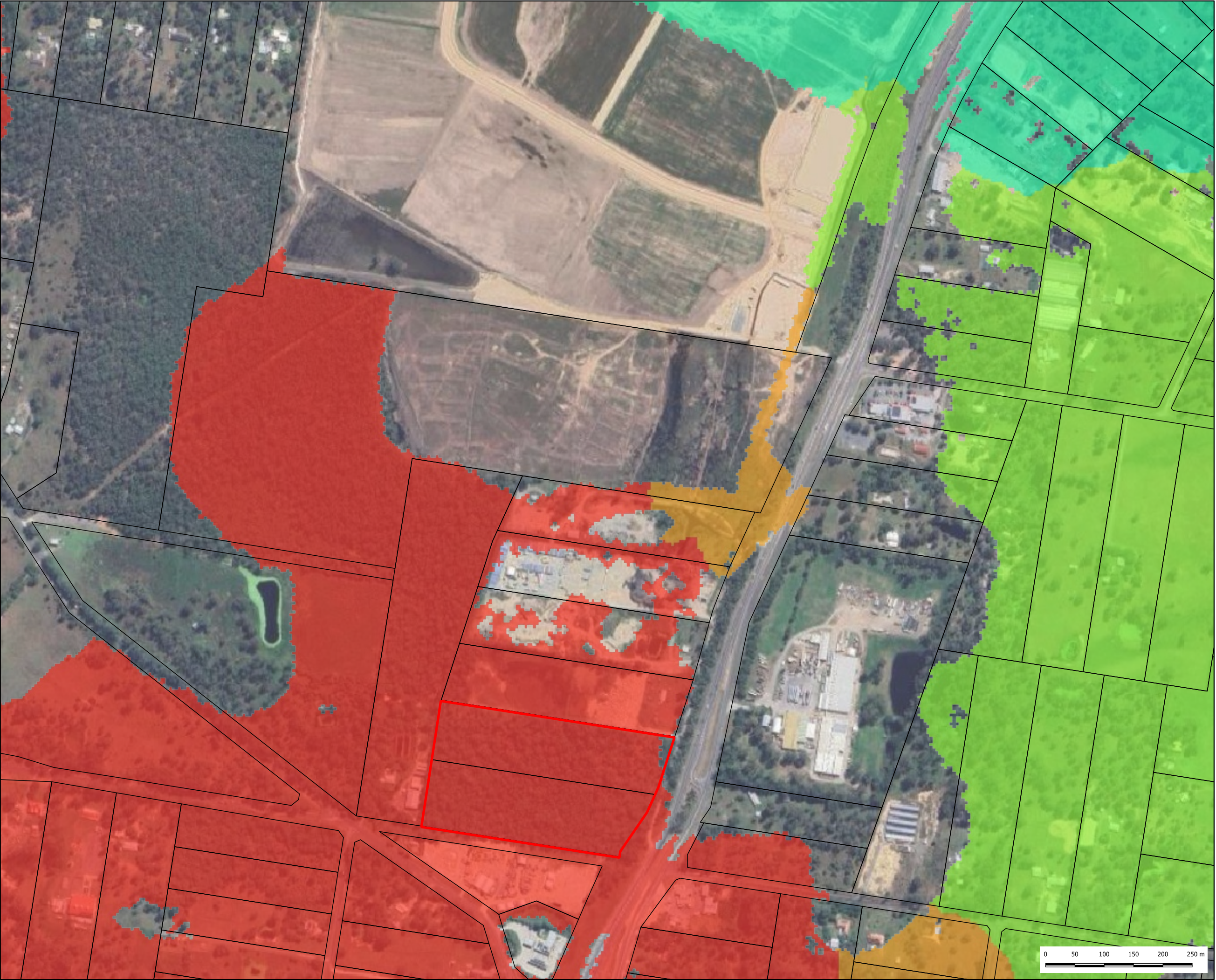
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Figure H02 - Regional  
Existing 0.5% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



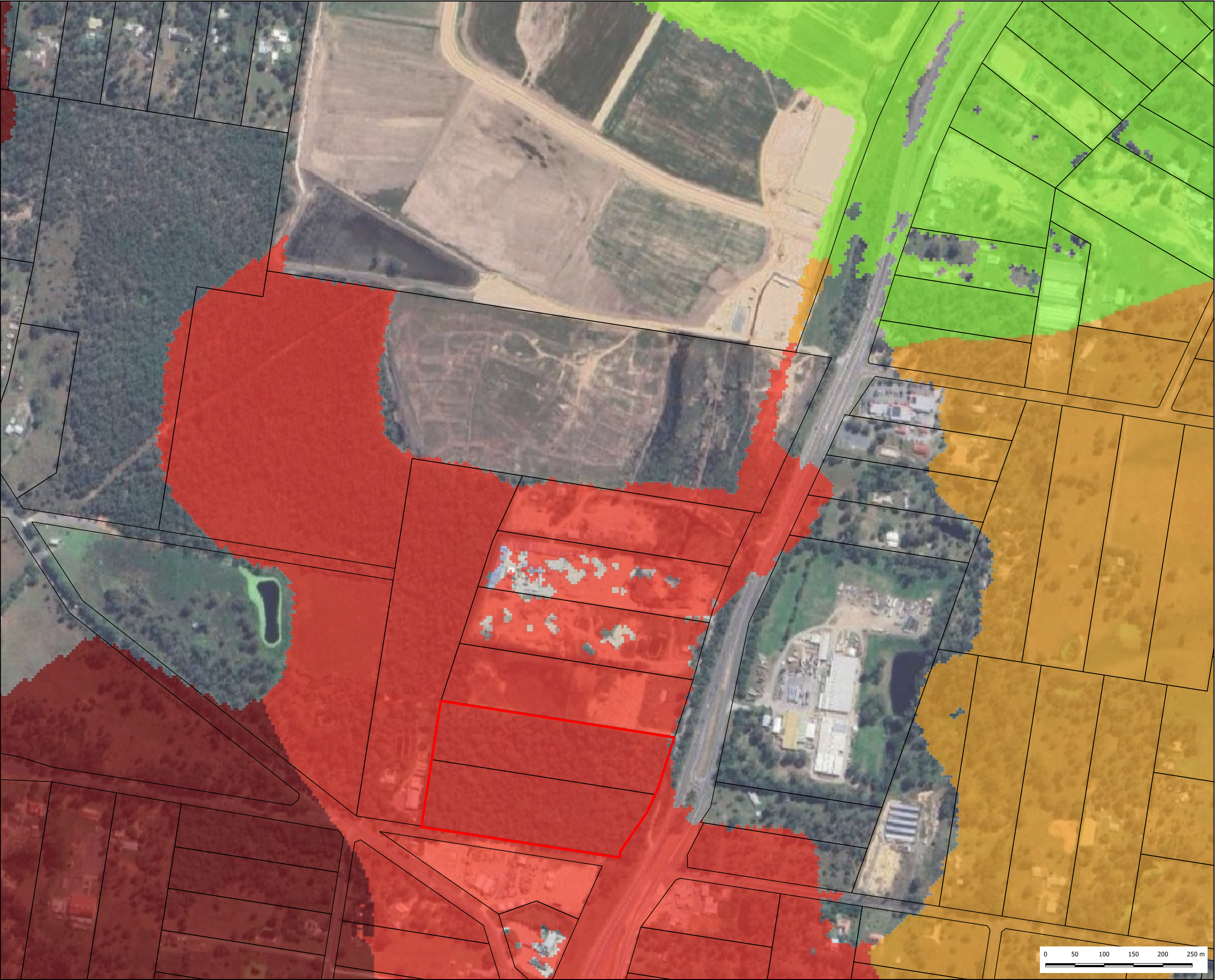
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Figure H03 - Regional  
Existing 0.2% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



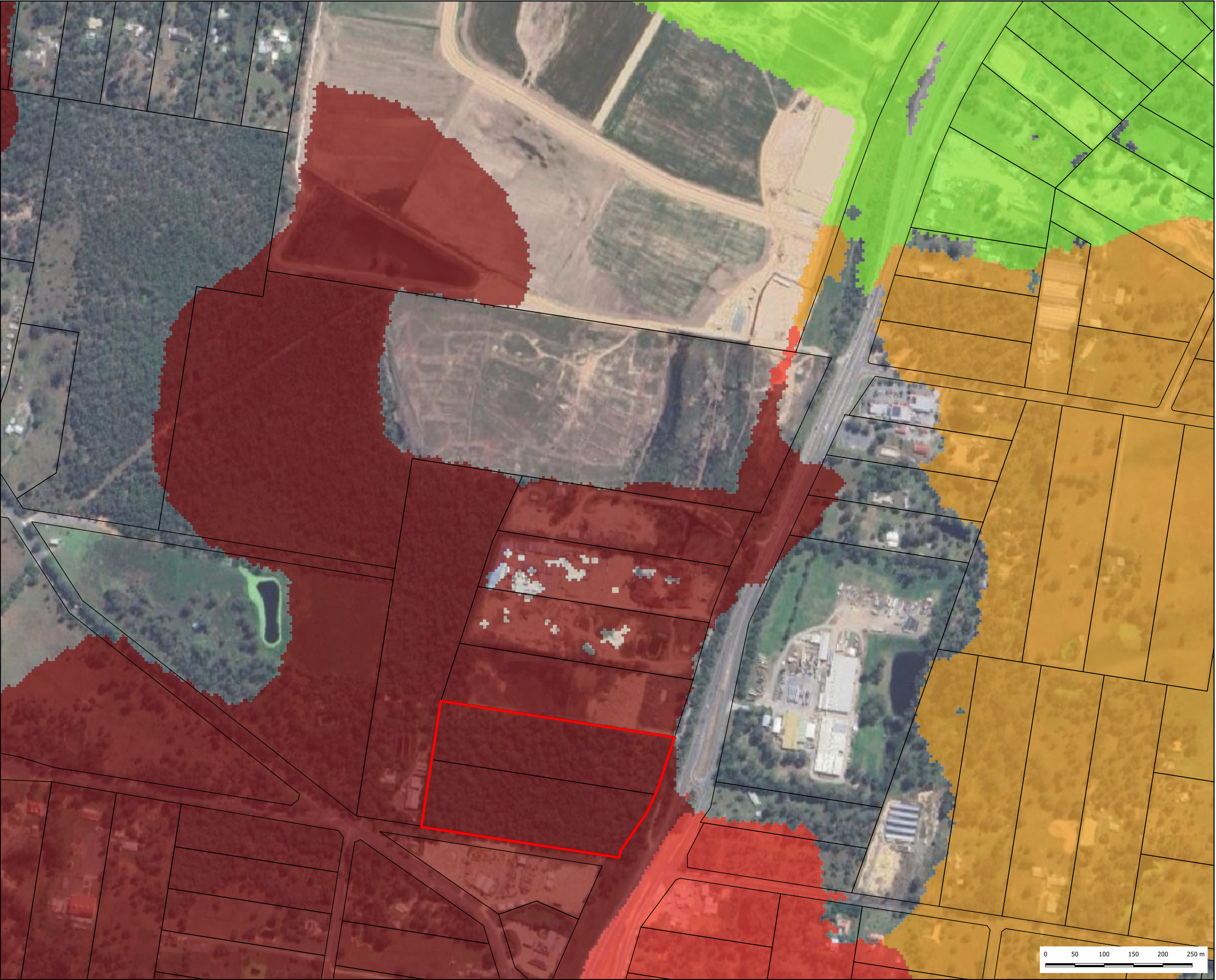
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Figure H04 - Regional  
Existing 0,05% AEP -  
Water Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



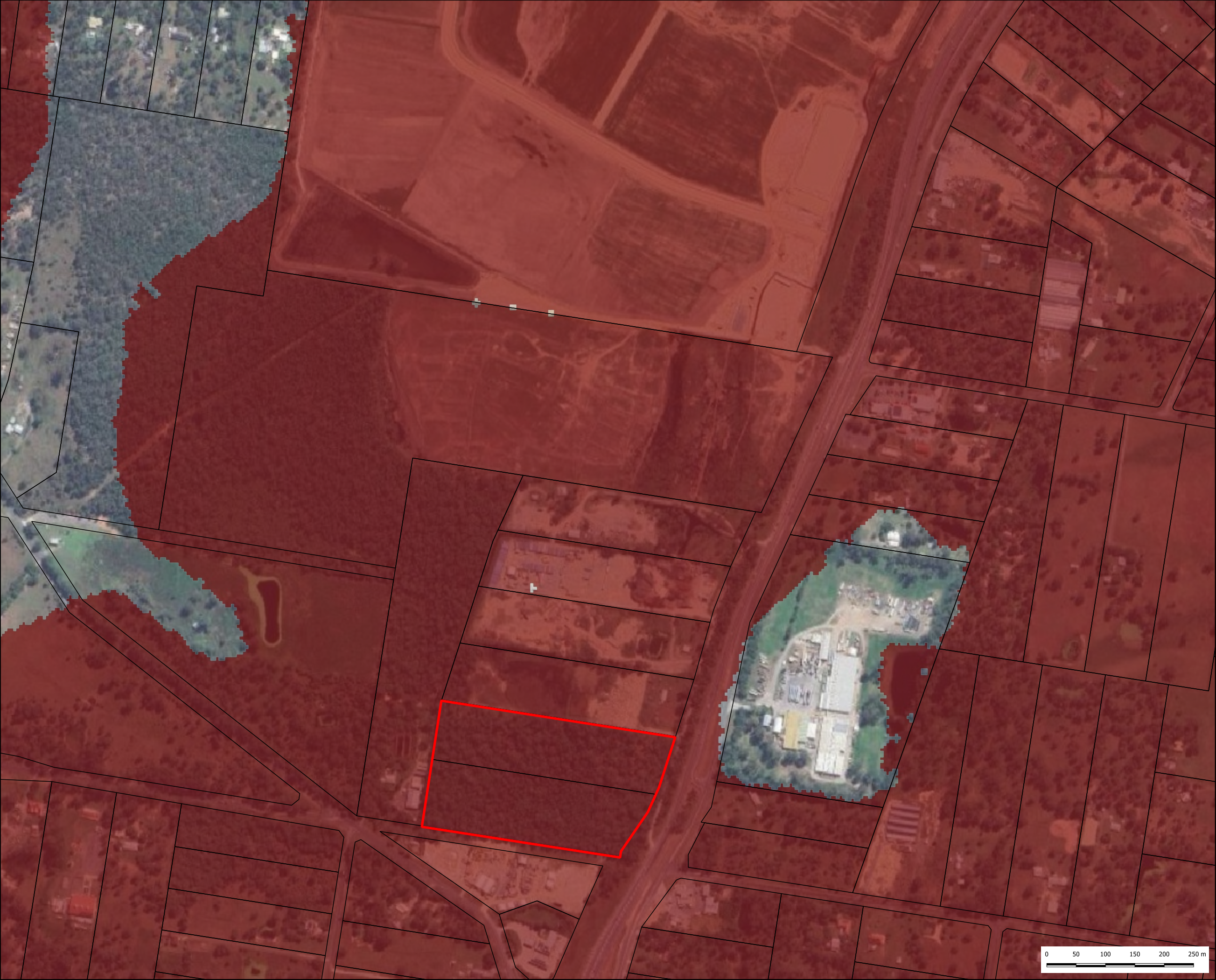
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Figure H05 - Regional  
Existing PMF - Water  
Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure H06 - Regional  
Existing 1% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

**Legend**

- Cadastral Project site

**Water Velocity (m/s)**

- $\leq 0.025$   
 0.025 - 0.050  
 0.050 - 0.075  
 0.075 - 0.100  
 0.100 - 0.125  
 0.125 - 0.150  
 0.150 - 0.175  
 0.175 - 0.200  
  $> 0.200$

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

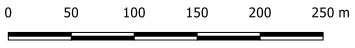
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Figure H07 - Regional  
Existing 0.5% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

**Legend**

-  Cadastral  Project site

**Water Velocity (m/s)**

-   $\leq 0.025$
-  0.025 - 0.050
-  0.050 - 0.075
-  0.075 - 0.100
-  0.100 - 0.125
-  0.125 - 0.150
-  0.150 - 0.175
-  0.175 - 0.200
-   $> 0.200$

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

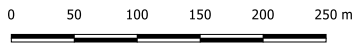
Projection: GDA94 / MGA zone 56

Data Sources:



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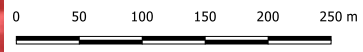
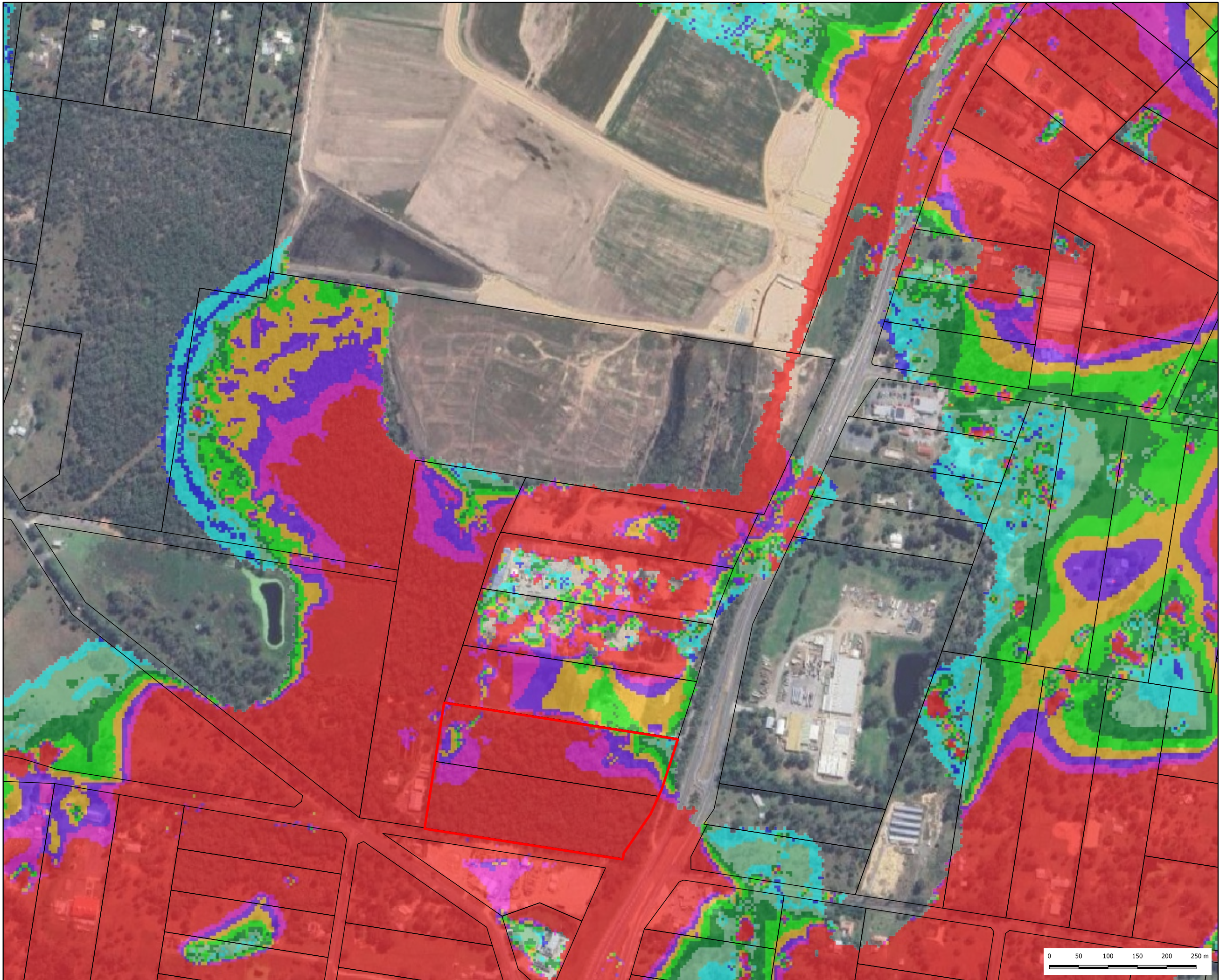


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Figure H08 - Regional  
Existing 0.2% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

Legend

- Cadastral
- Project site

Water Velocity (m/s)

- <= 0.025
- 0.025 - 0.050
- 0.050 - 0.075
- 0.075 - 0.100
- 0.100 - 0.125
- 0.125 - 0.150
- 0.150 - 0.175
- 0.175 - 0.200
- > 0.200

Project: BE220566  
Date: 17/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:



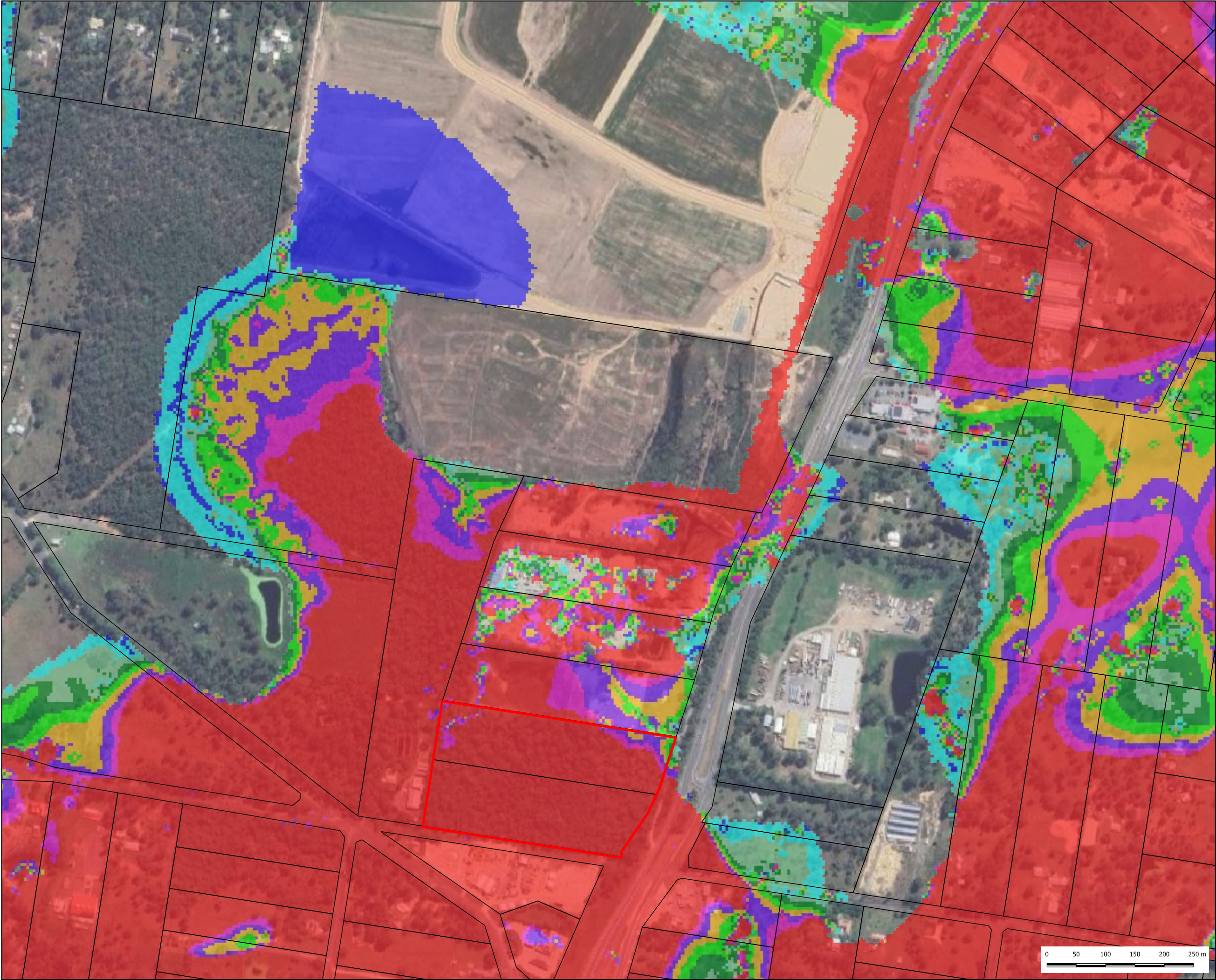
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Figure H09 - Regional  
Existing 0,05% AEP -  
Velocity



Location of the site within the Logan City

**Legend**

 Cadastral  Project site

**Water Velocity (m/s)**

-  <= 0.025
-  0.025 - 0.050
-  0.050 - 0.075
-  0.075 - 0.100
-  0.100 - 0.125
-  0.125 - 0.150
-  0.150 - 0.175
-  0.175 - 0.200
-  > 0.200

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



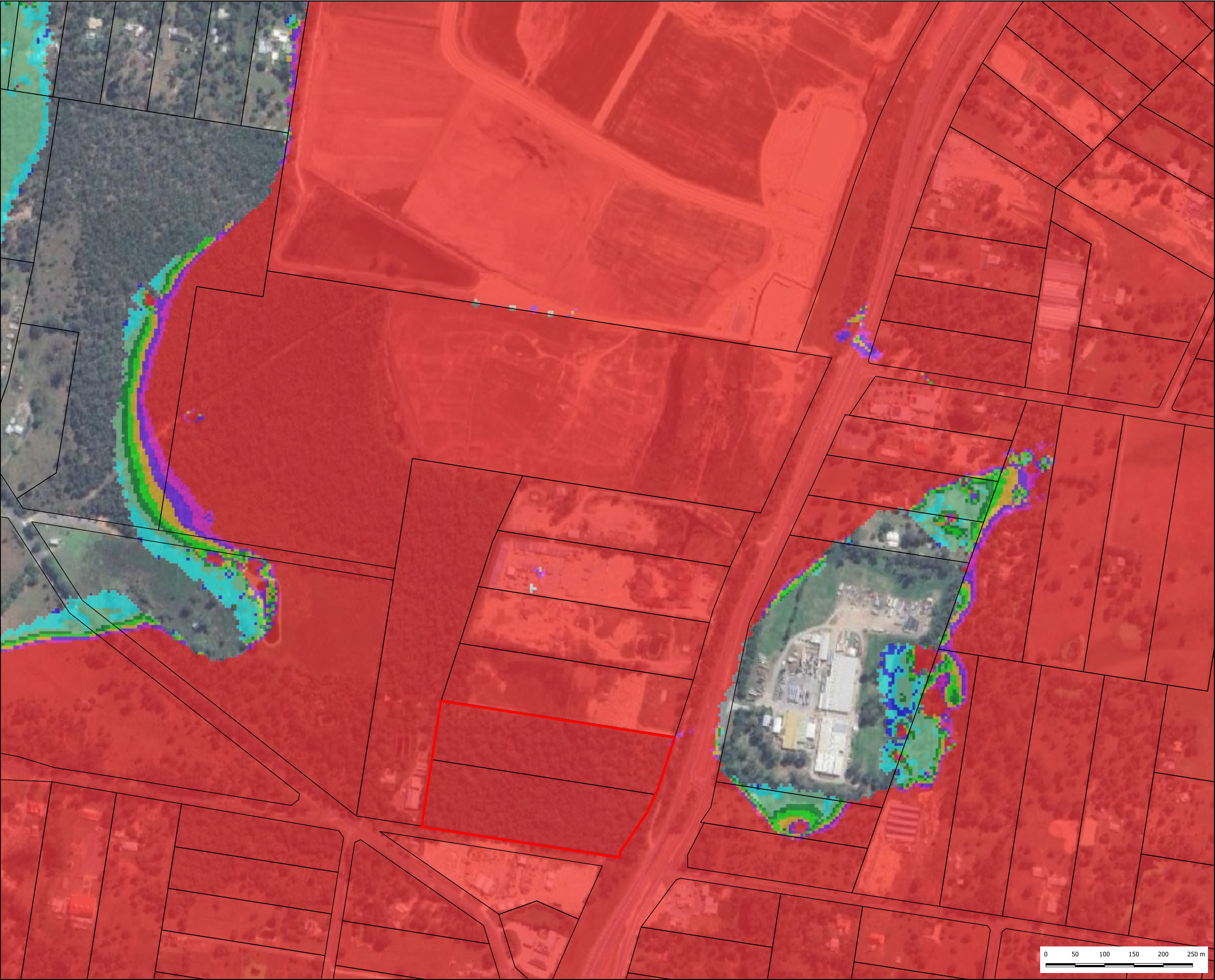
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DEVELOPMENT APPROVAL  
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Figure H10 - Regional  
Existing PMF - Velocity



Location of the site within the Logan City

Legend

-  Cadastral  Project site

Water Velocity (m/s)

-   $\leq 0.025$
-  0.025 - 0.050
-  0.050 - 0.075
-  0.075 - 0.100
-  0.100 - 0.125
-  0.125 - 0.150
-  0.150 - 0.175
-  0.175 - 0.200
-   $> 0.200$

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



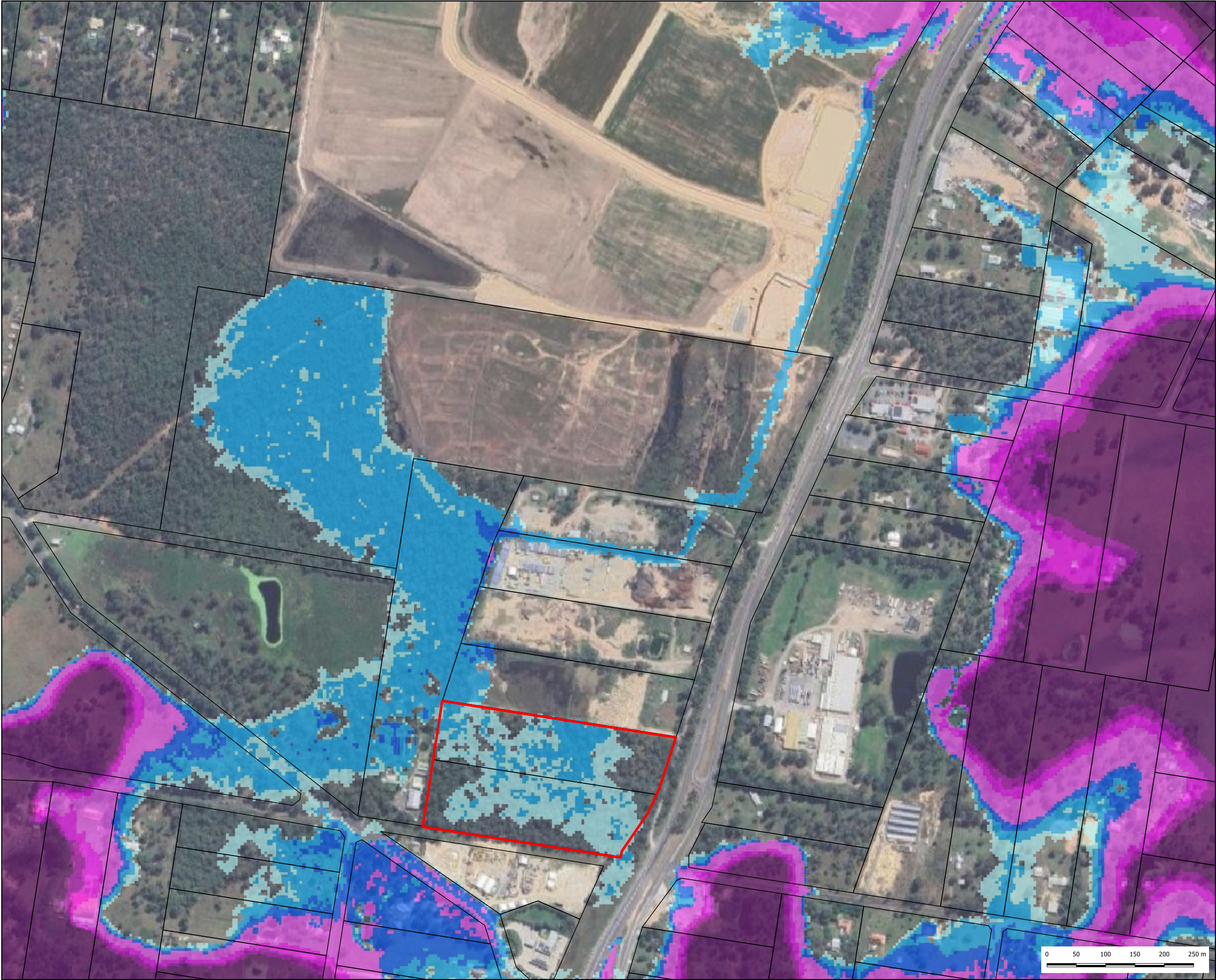
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure H11 - Regional  
Existing 1% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

 Cadastral  Project site

Water Depth (m)

-   $\leq 0.0$
-  0.0 - 0.1
-  0.1 - 0.3
-  0.3 - 0.5
-  0.5 - 1.5
-  1.5 - 2.0
-  2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



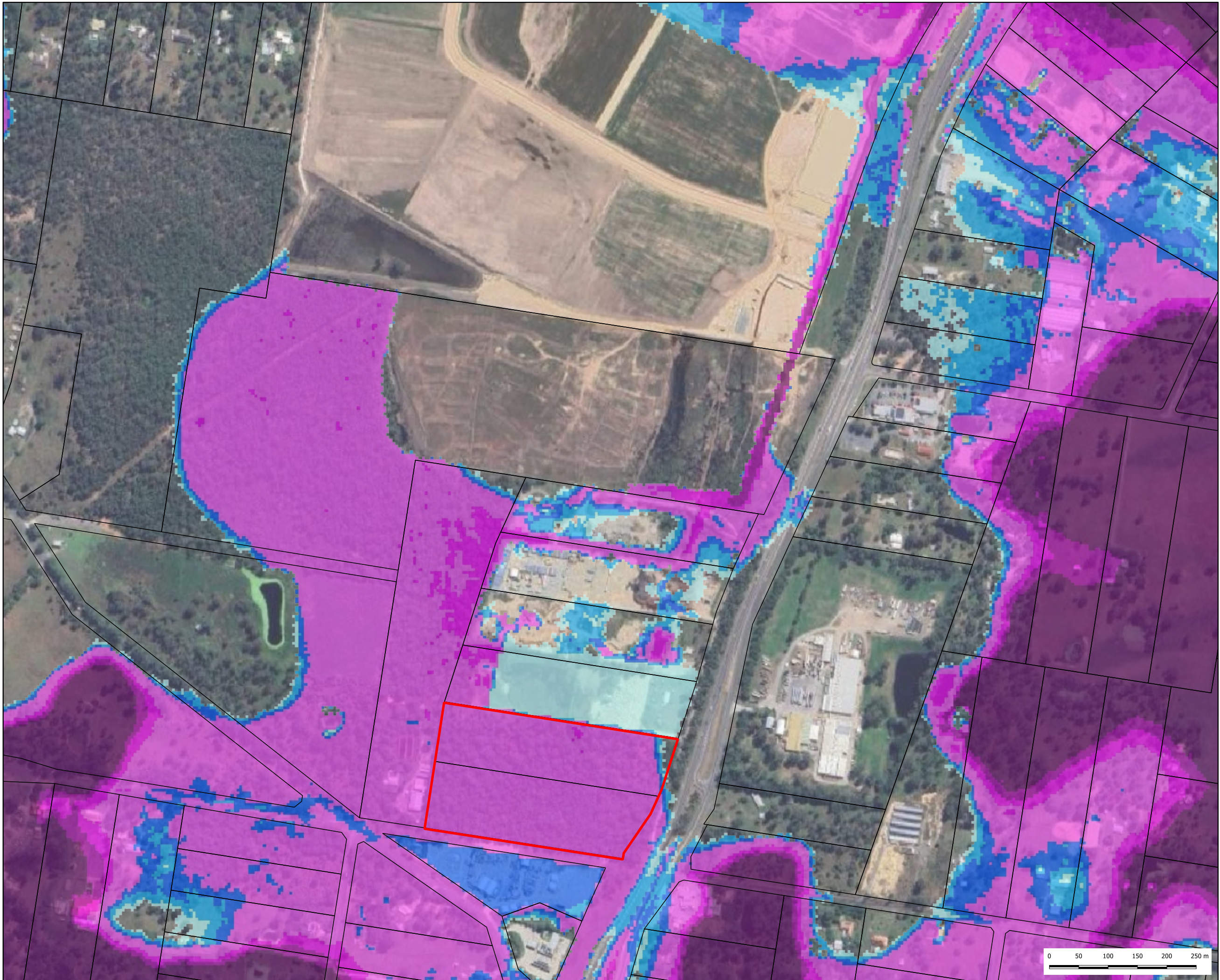
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure H12 - Regional  
Existing 0.5% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

- Cadastral
- Project site

Water Depth (m)

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



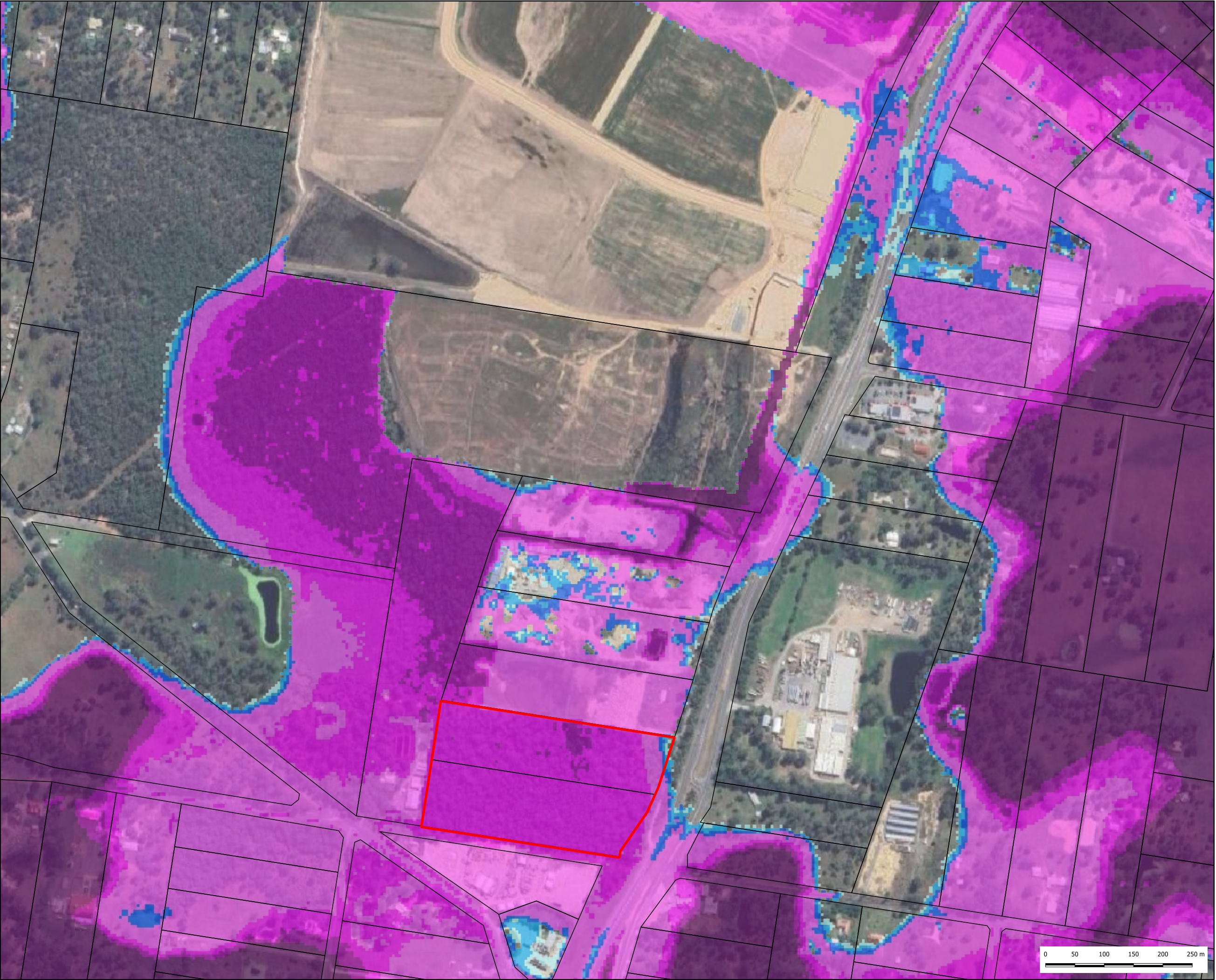
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Figure H13 - Regional  
Existing 0.2% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

 Cadastral  Project site

Water Depth (m)

-   $\leq 0.0$
-  0.0 - 0.1
-  0.1 - 0.3
-  0.3 - 0.5
-  0.5 - 1.5
-  1.5 - 2.0
-  2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure H14 - Regional  
Existing 0,05% AEP -  
Depth



Location of the site within the Logan City

Legend

 Cadastral  Project site

Water Depth (m)

-   $\leq 0.0$
-  0.0 - 0.1
-  0.1 - 0.3
-  0.3 - 0.5
-  0.5 - 1.5
-  1.5 - 2.0
-  2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

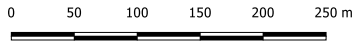
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Data Sources:



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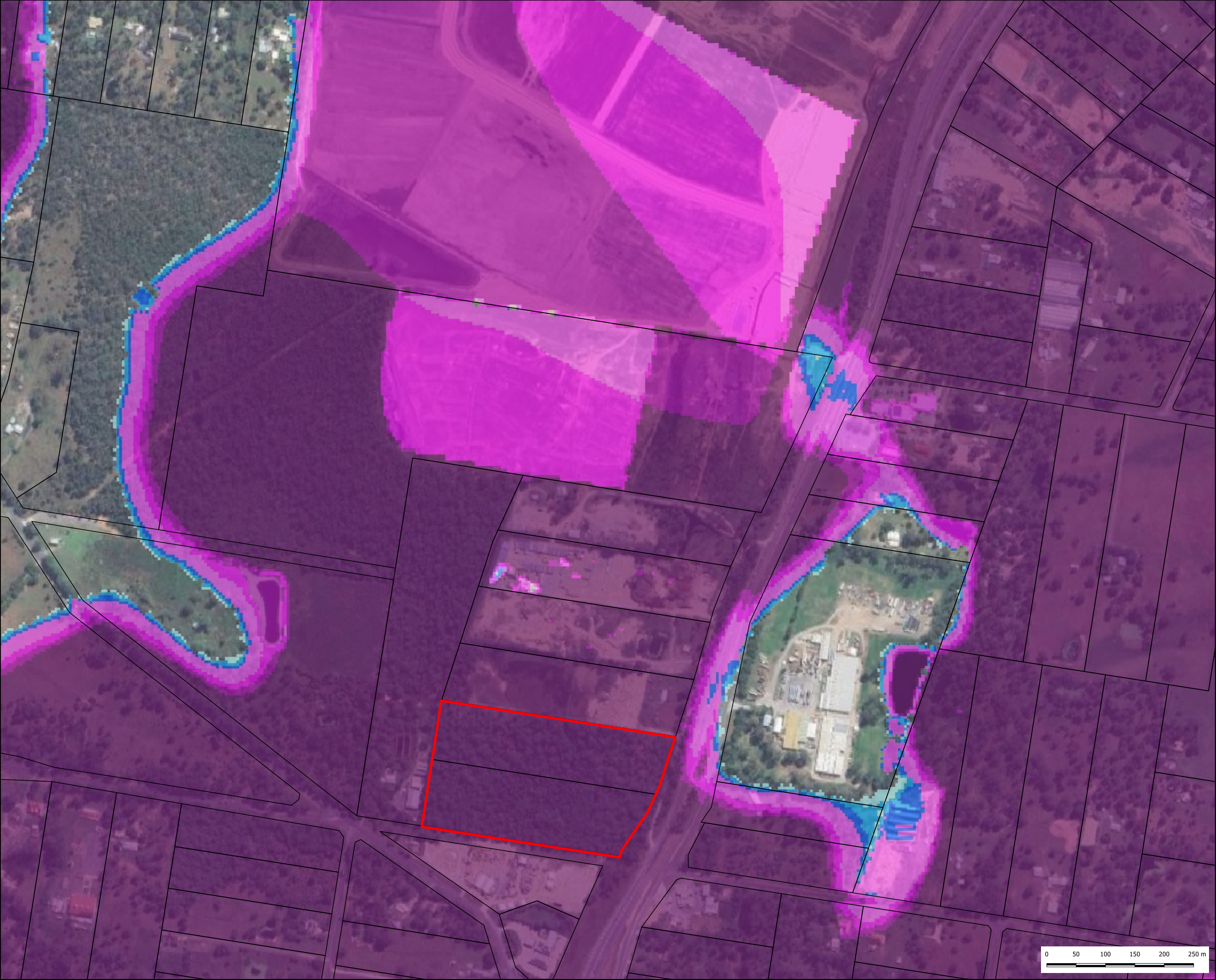
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Figure H15 - Regional  
Existing PMF - Depth



Location of the site within the Logan City

Legend

Cadastral Project site

Water Depth (m)

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



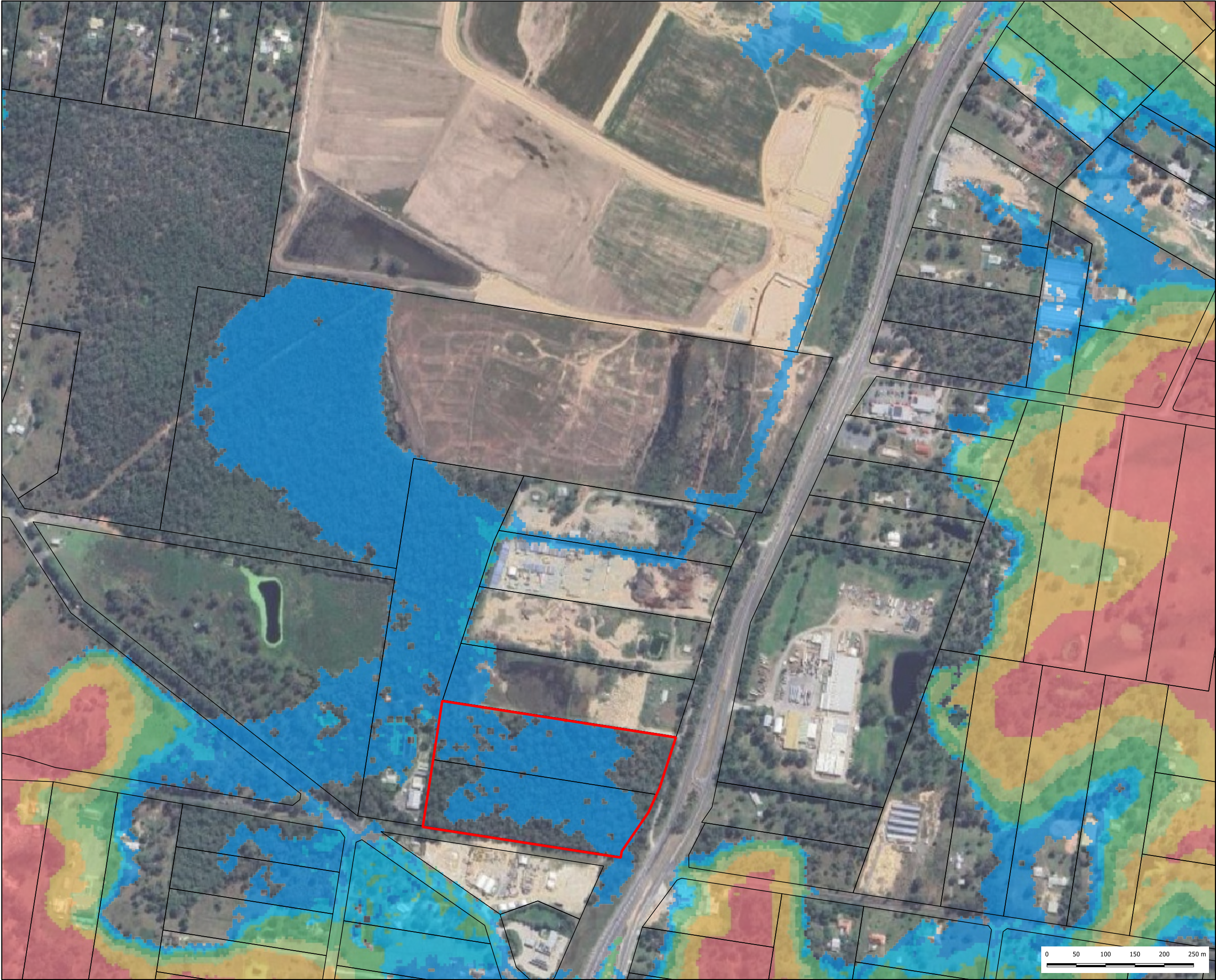
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Figure H16 - Regional  
Existing 1% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

□ Cadastral    □ Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



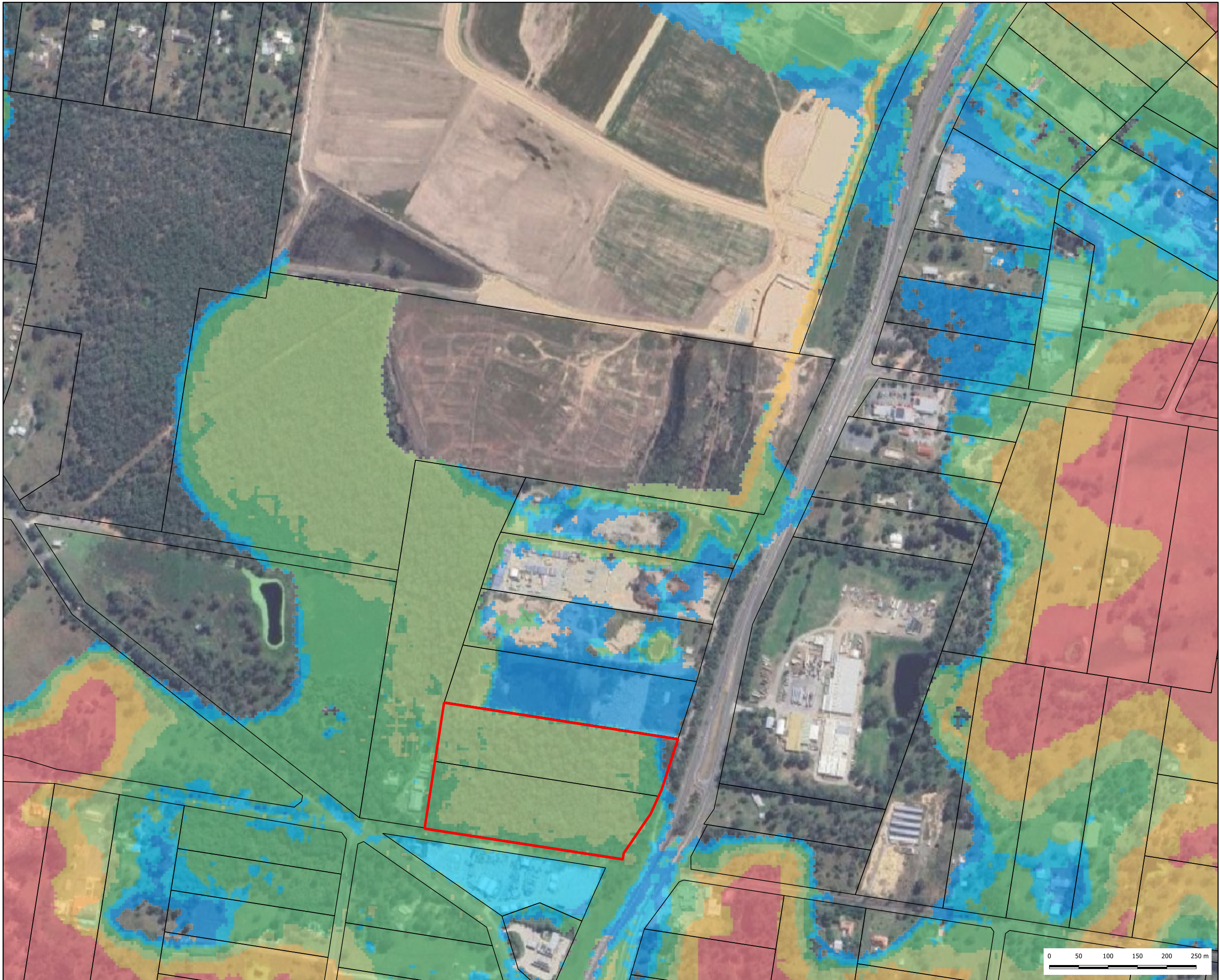
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Figure H17 - Regional  
Existing 0.5% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



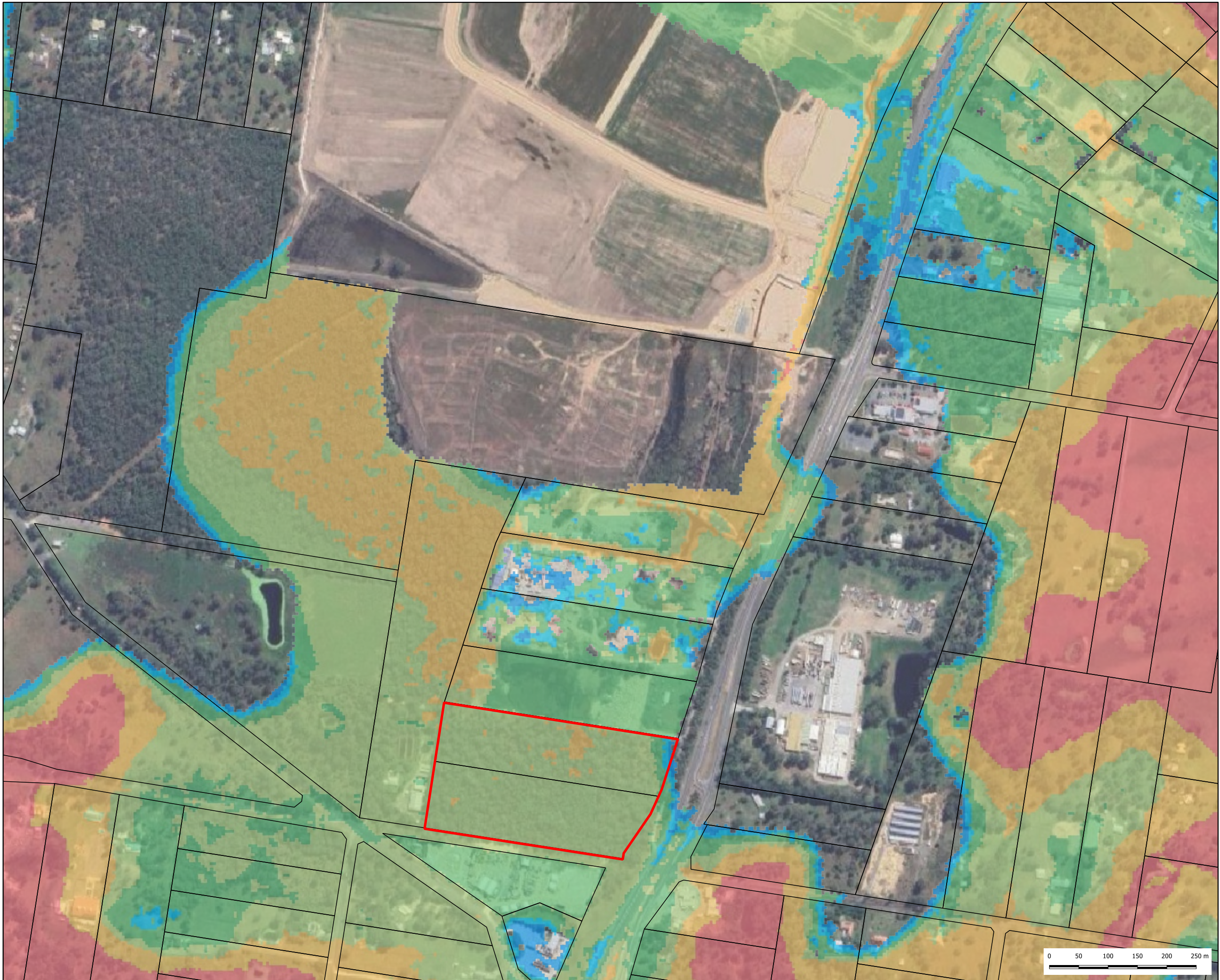
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Figure H18 - Regional  
Existing 0.2% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

Legend

- Cadastral
- Project site

Water Hazard

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



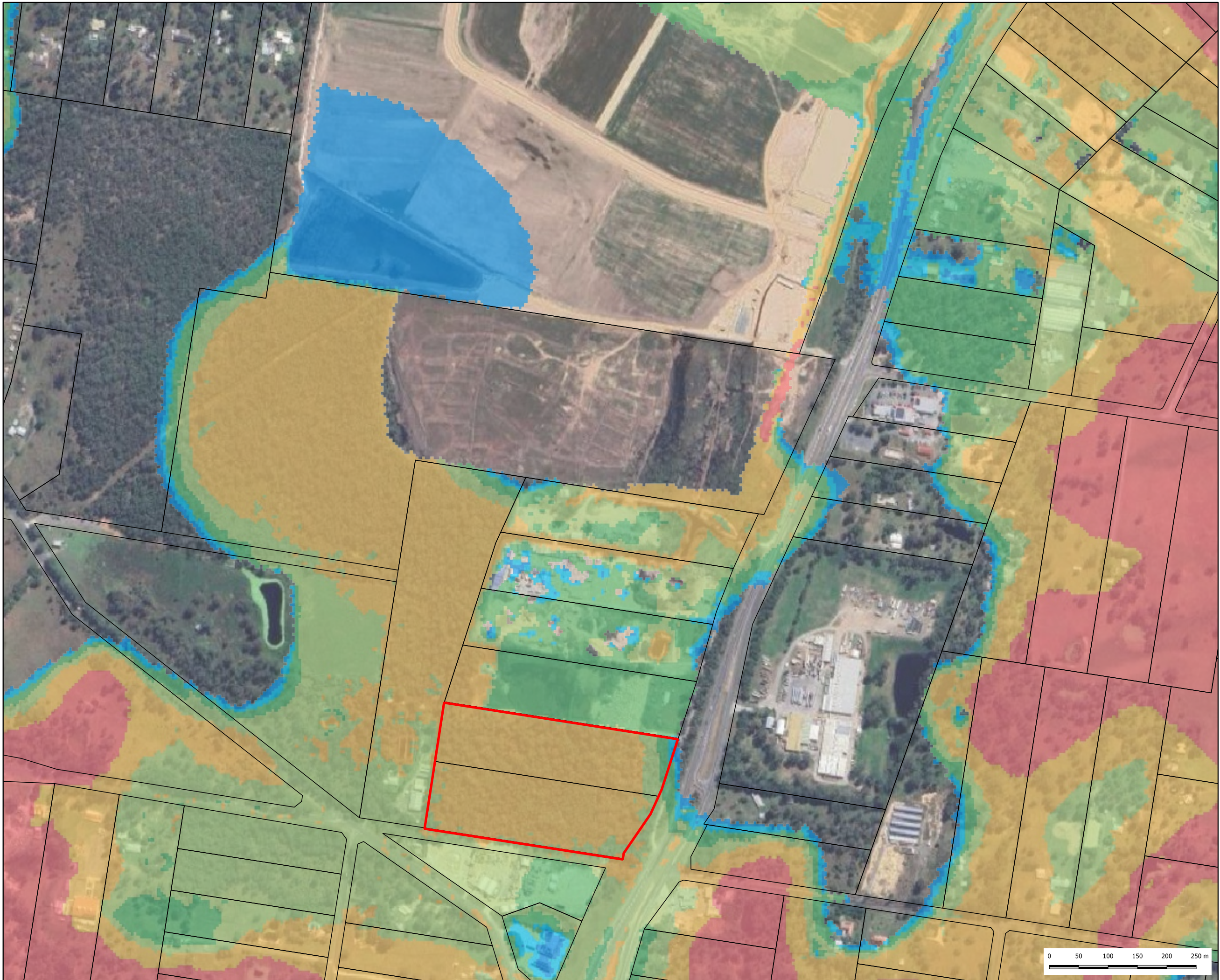
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Figure H19 - Regional  
Existing 0,05% AEP -  
Hazard



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



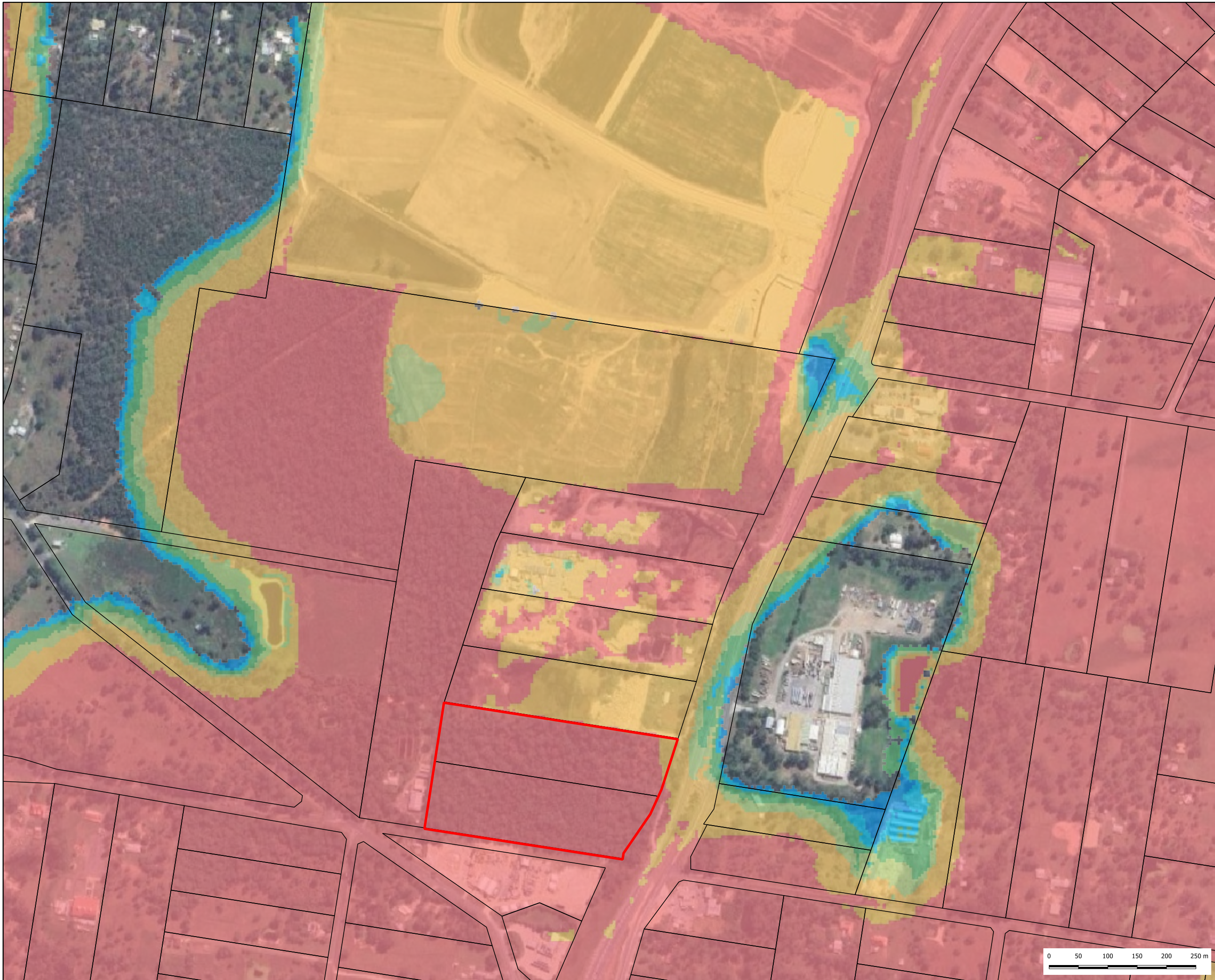
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Figure H20 - Regional  
Existing PMF - Hazard



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

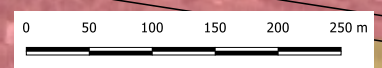
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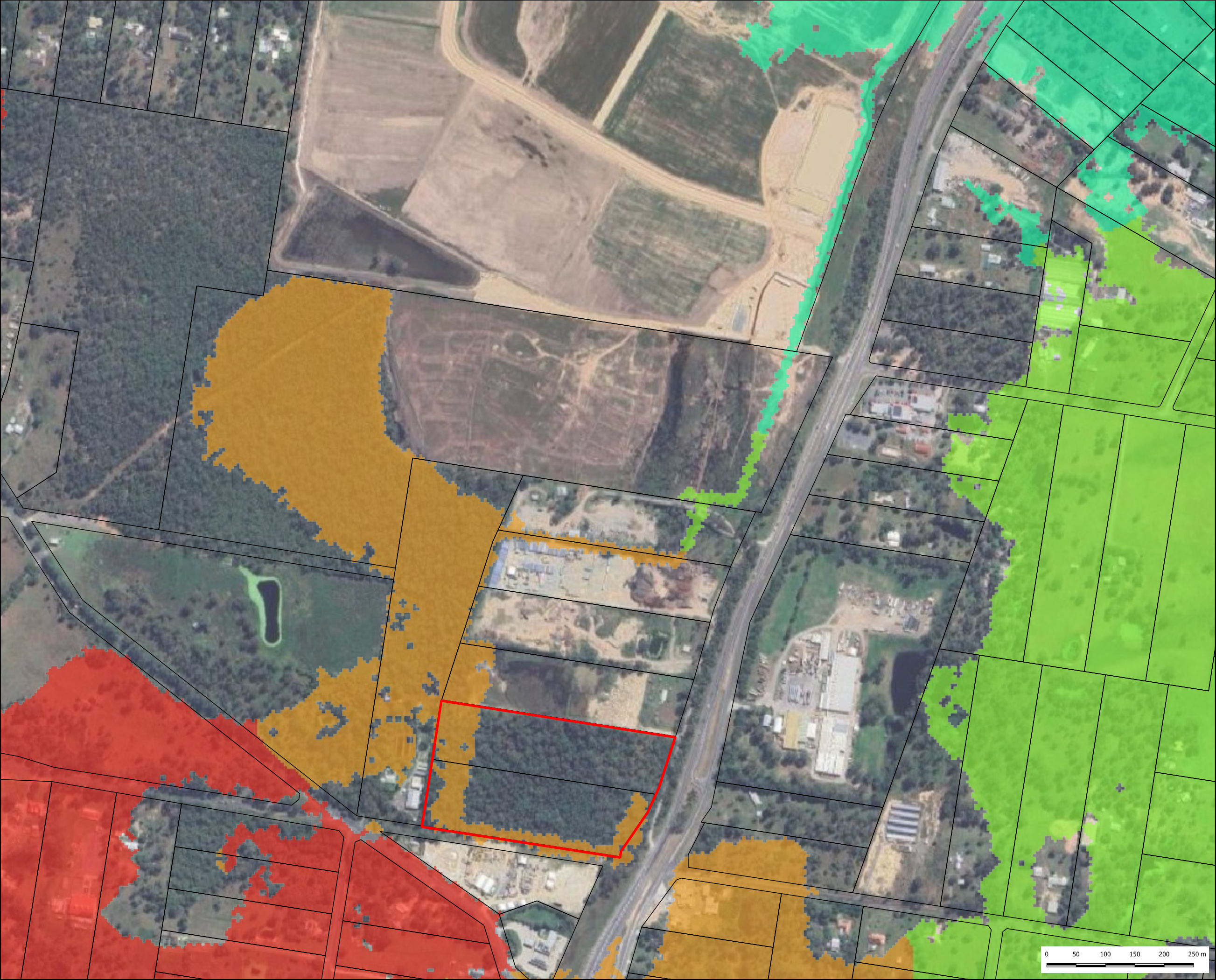
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Figure I01 - Regional  
Developed 1% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



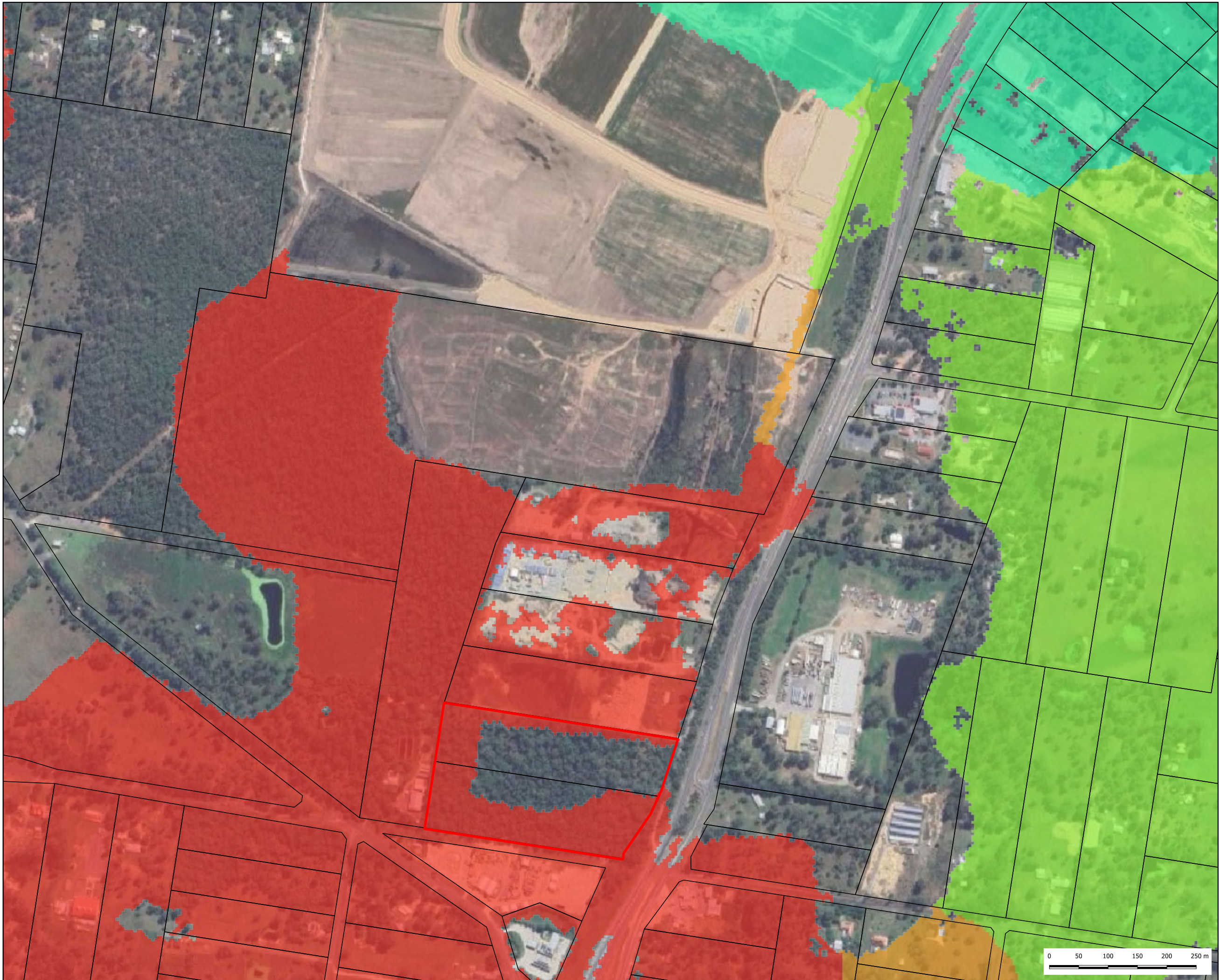
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Figure I02 - Regional  
Developed 0.5% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

- Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



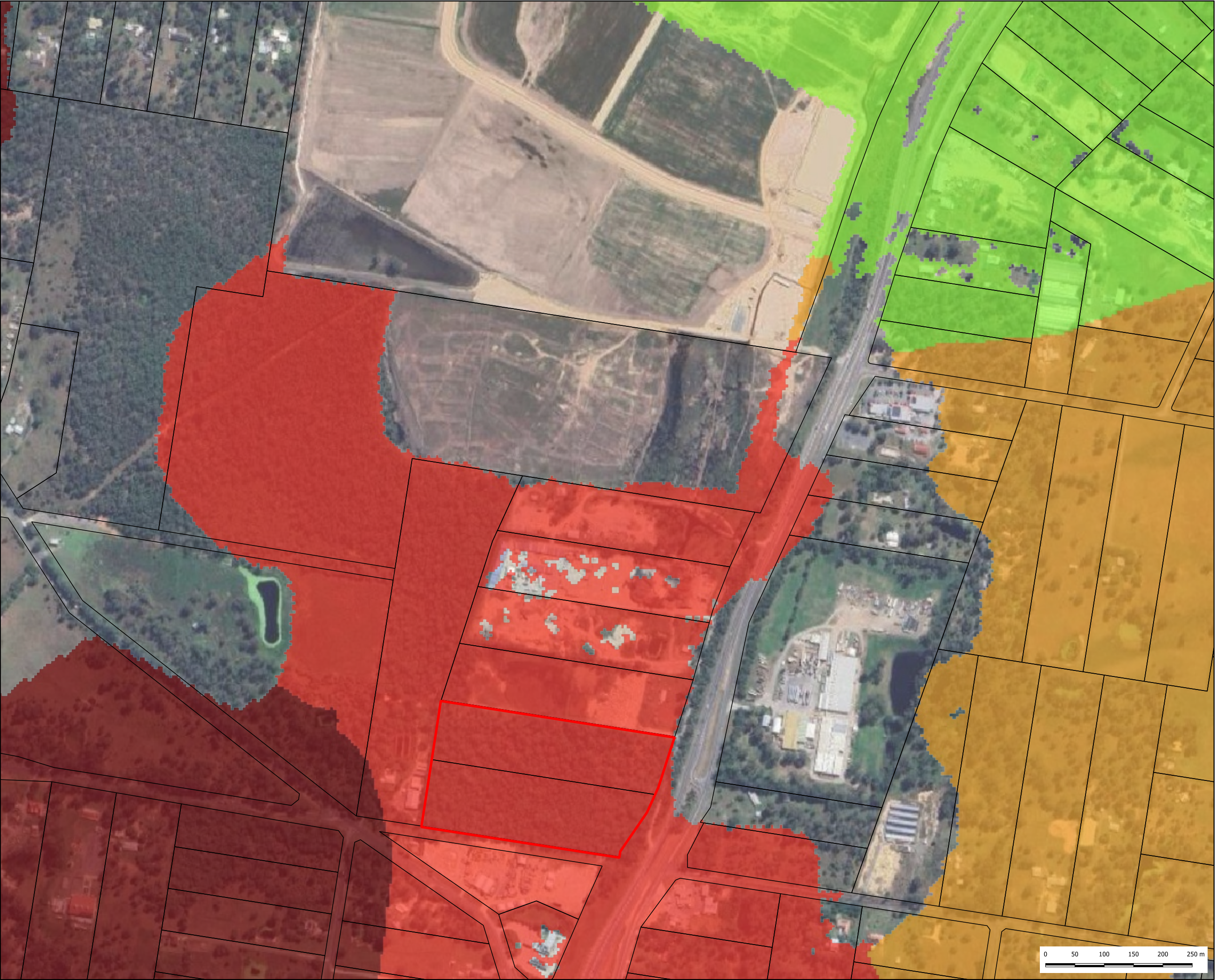
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Figure I03 - Regional  
Developed 0.2% AEP  
Climate Change -  
Water Surface Level



Location of the site within the Logan City

Legend

- Cadastral Project site

Water Level (mAHD)

- <= 21.25  
 21.25 - 22.50  
 22.50 - 23.75  
 23.75 - 25.00  
 25.00 - 26.25  
 26.25 - 27.50  
 27.50 - 28.75  
 > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



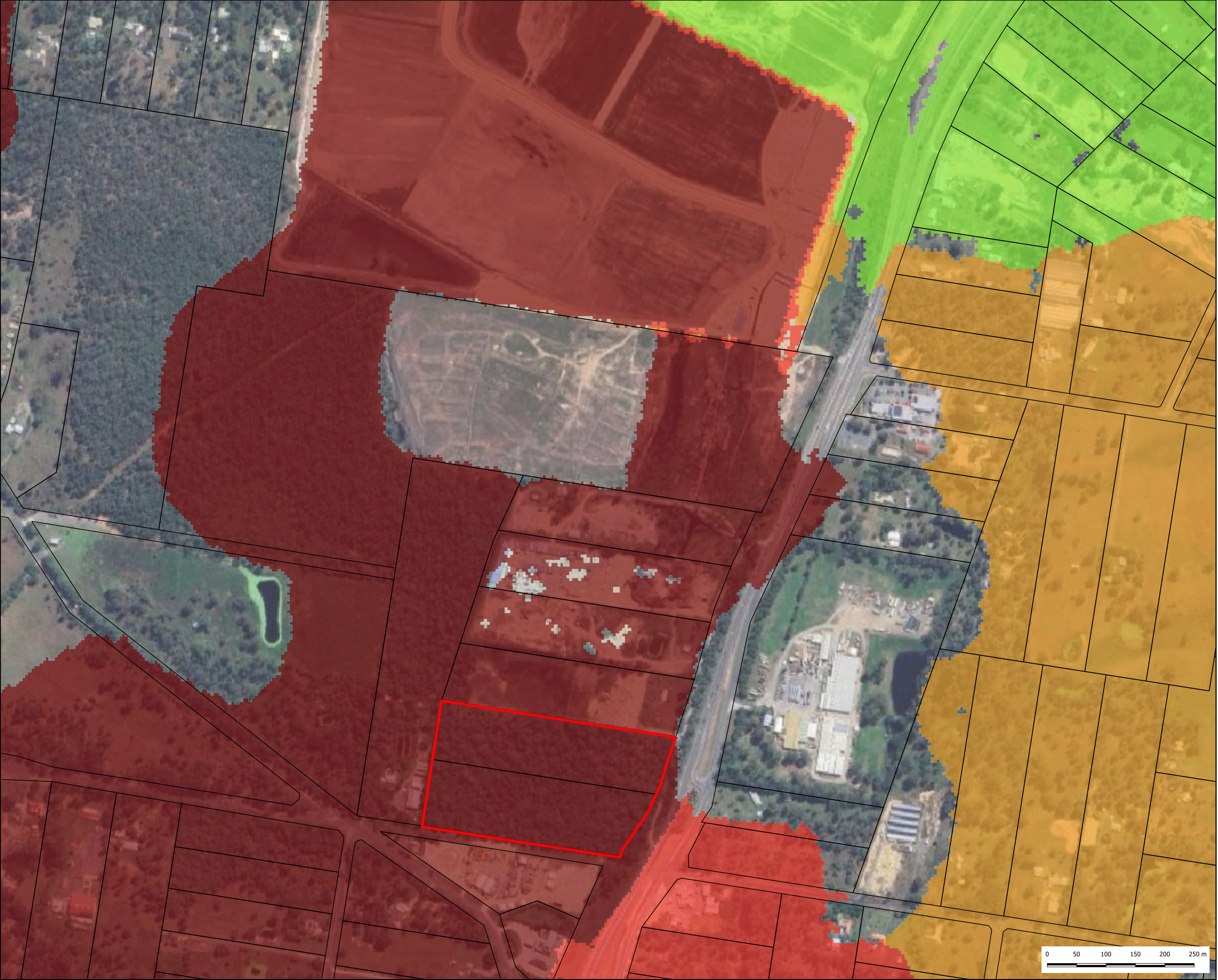
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Figure I04 - Regional  
Developed 0,05% AEP  
- Water Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHD)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



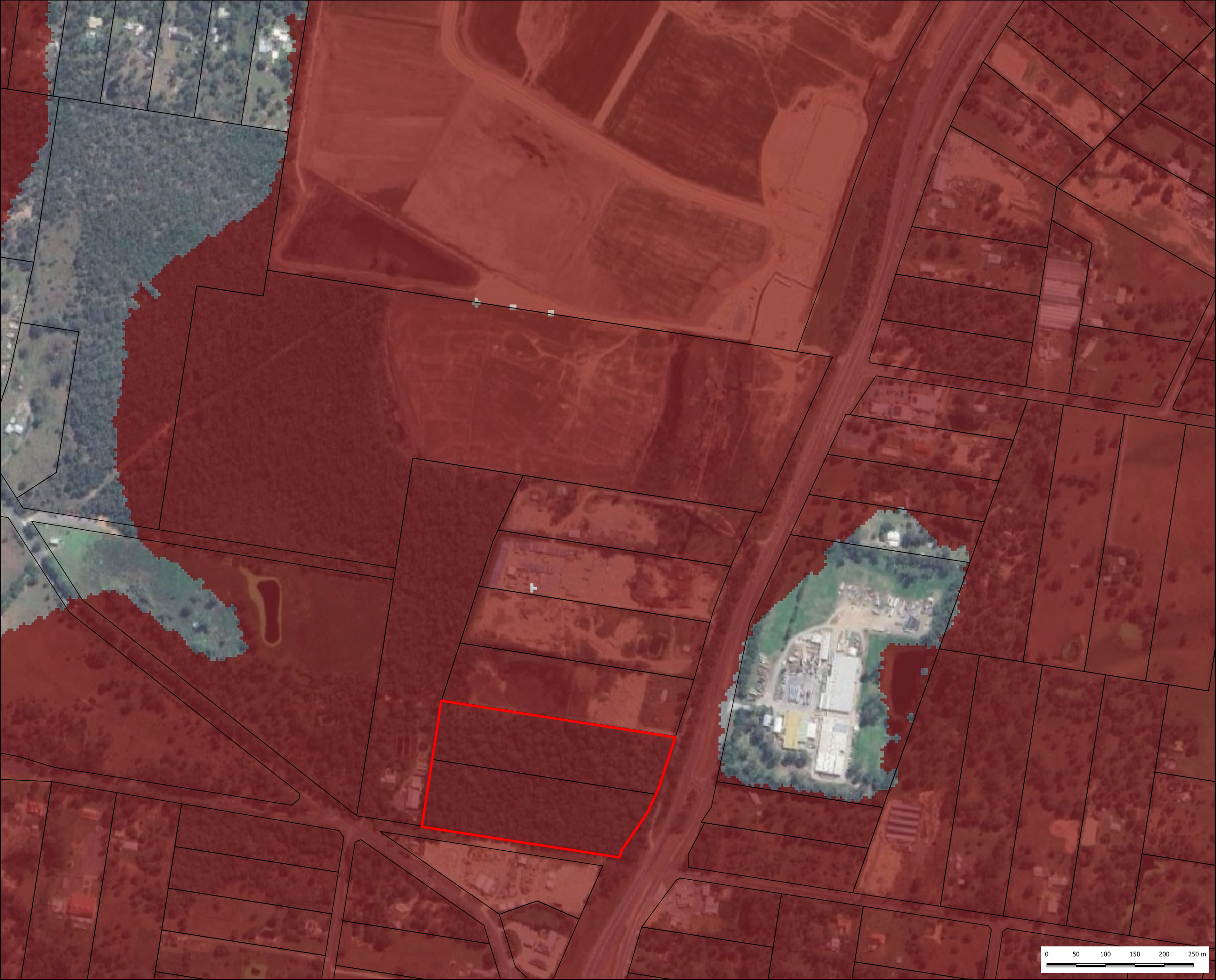
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Figure I05 - Regional  
Developed PMF - Water  
Surface Level



Location of the site within the Logan City

Legend

Cadastral Project site

Water Level (mAHd)

- <= 21.25
- 21.25 - 22.50
- 22.50 - 23.75
- 23.75 - 25.00
- 25.00 - 26.25
- 26.25 - 27.50
- 27.50 - 28.75
- > 28.75

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



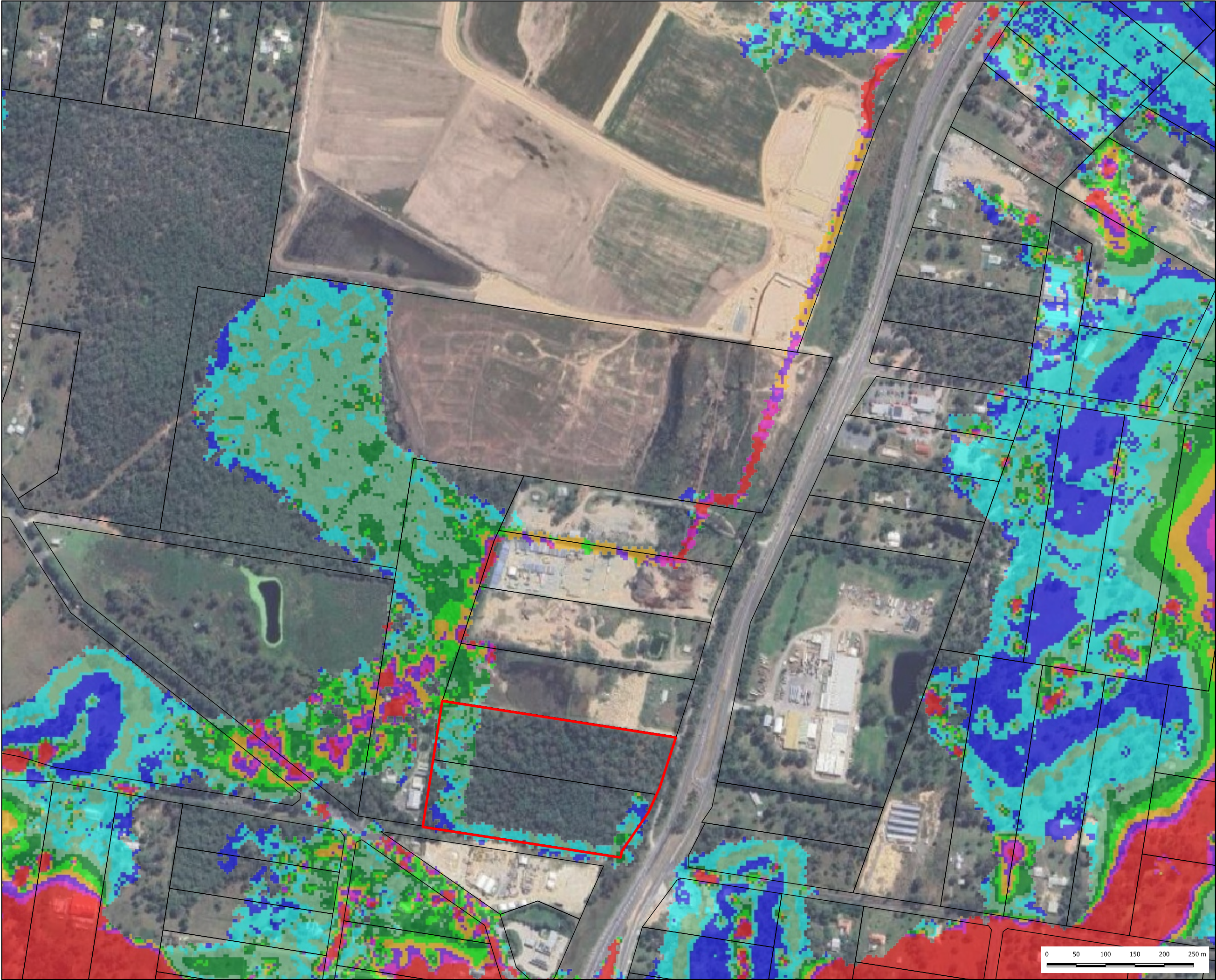
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DEVELOPMENT APPROVAL  
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Figure I06 - Regional  
Developed 1% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

Legend

Cadastral Project site

Water Velocity (m/s)

- <= 0.025
- 0.025 - 0.050
- 0.050 - 0.075
- 0.075 - 0.100
- 0.100 - 0.125
- 0.125 - 0.150
- 0.150 - 0.175
- 0.175 - 0.200
- > 0.200

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



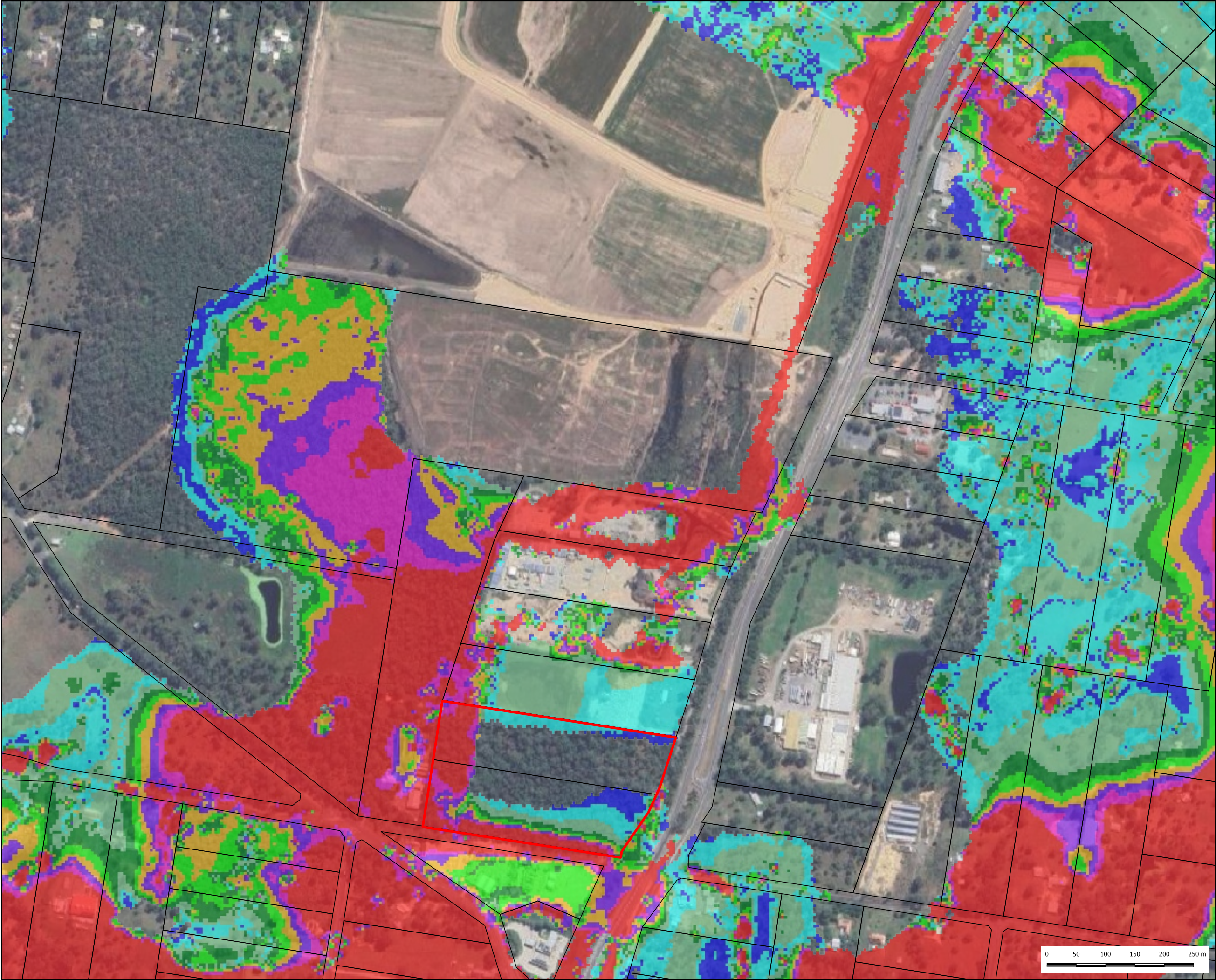
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Figure I07 - Regional  
Developed 0.5% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

Legend

Cadastral Project site

Water Velocity (m/s)

- <= 0.025
- 0.025 - 0.050
- 0.050 - 0.075
- 0.075 - 0.100
- 0.100 - 0.125
- 0.125 - 0.150
- 0.150 - 0.175
- 0.175 - 0.200
- > 0.200

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



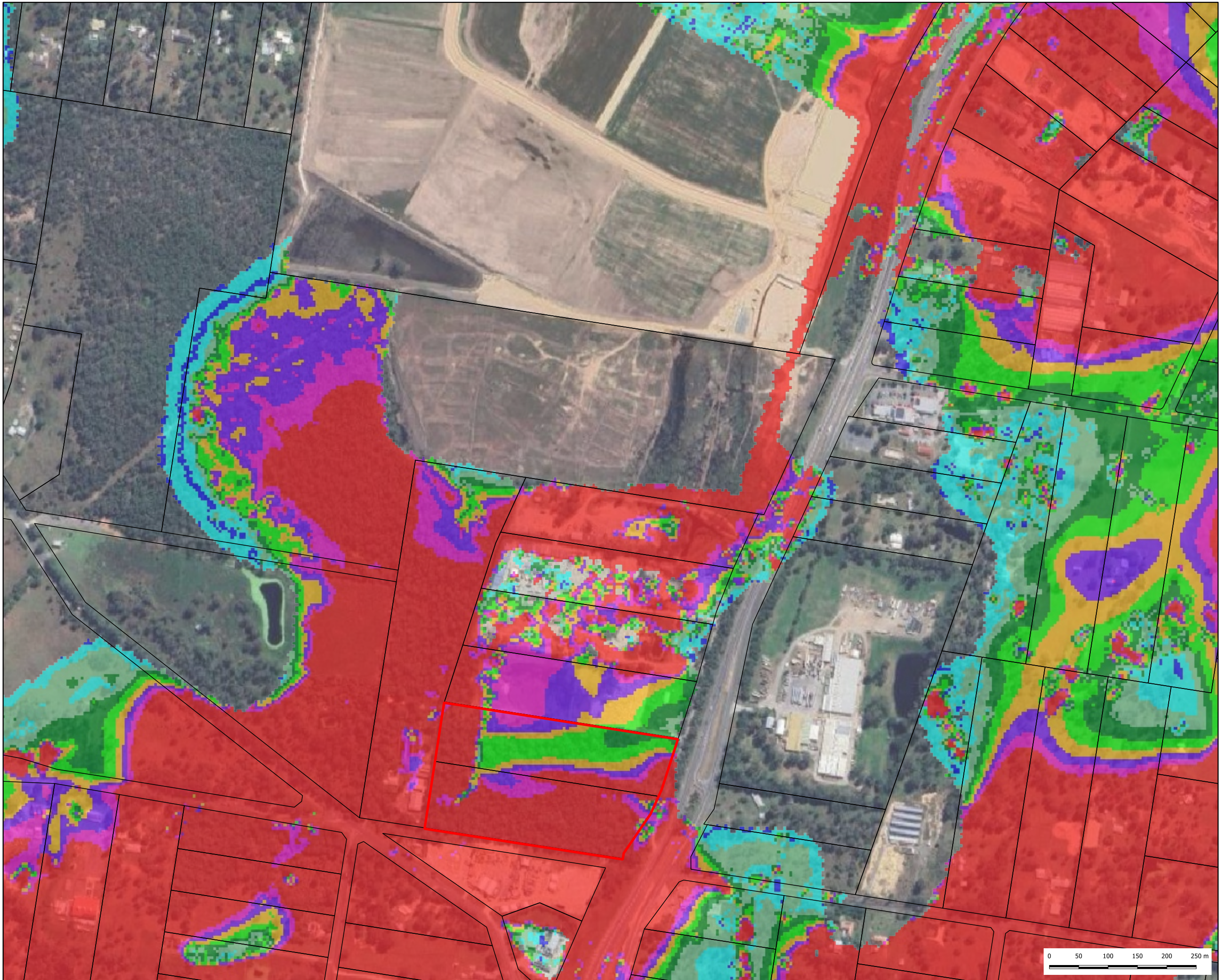
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I08 - Regional  
Developed 0.2% AEP  
Climate Change -  
Velocity



Location of the site within the Logan City

Legend

- Cadastral
- Project site

Water Velocity (m/s)

- <= 0.025
- 0.025 - 0.050
- 0.050 - 0.075
- 0.075 - 0.100
- 0.100 - 0.125
- 0.125 - 0.150
- 0.150 - 0.175
- 0.175 - 0.200
- > 0.200

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



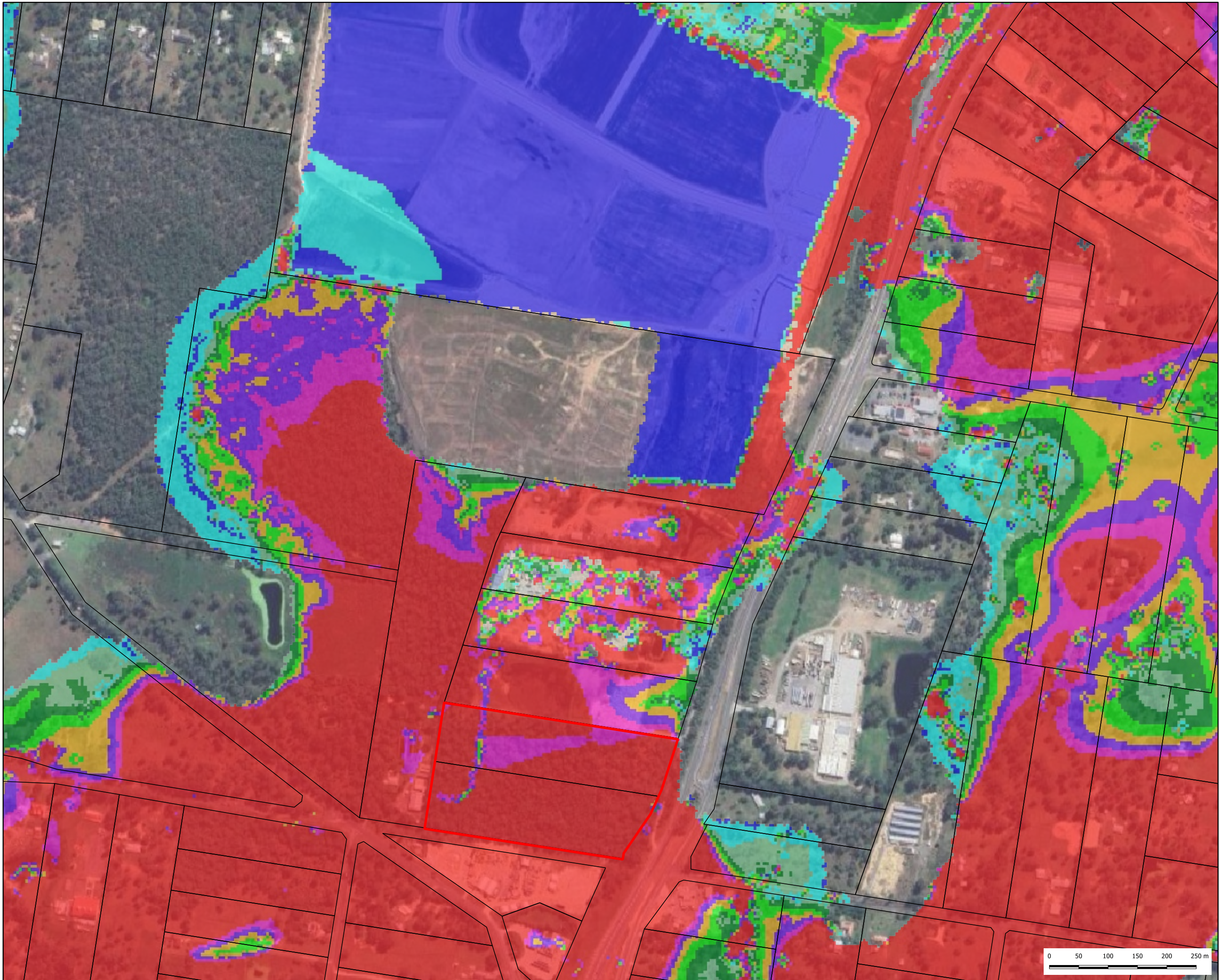
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I09 - Regional  
Developed 0,05% AEP  
- Velocity



Location of the site within the Logan City

Legend

- Cadastral
- Project site

Water Velocity (m/s)

- <= 0.025
- 0.025 - 0.050
- 0.050 - 0.075
- 0.075 - 0.100
- 0.100 - 0.125
- 0.125 - 0.150
- 0.150 - 0.175
- 0.175 - 0.200
- > 0.200

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



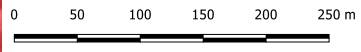
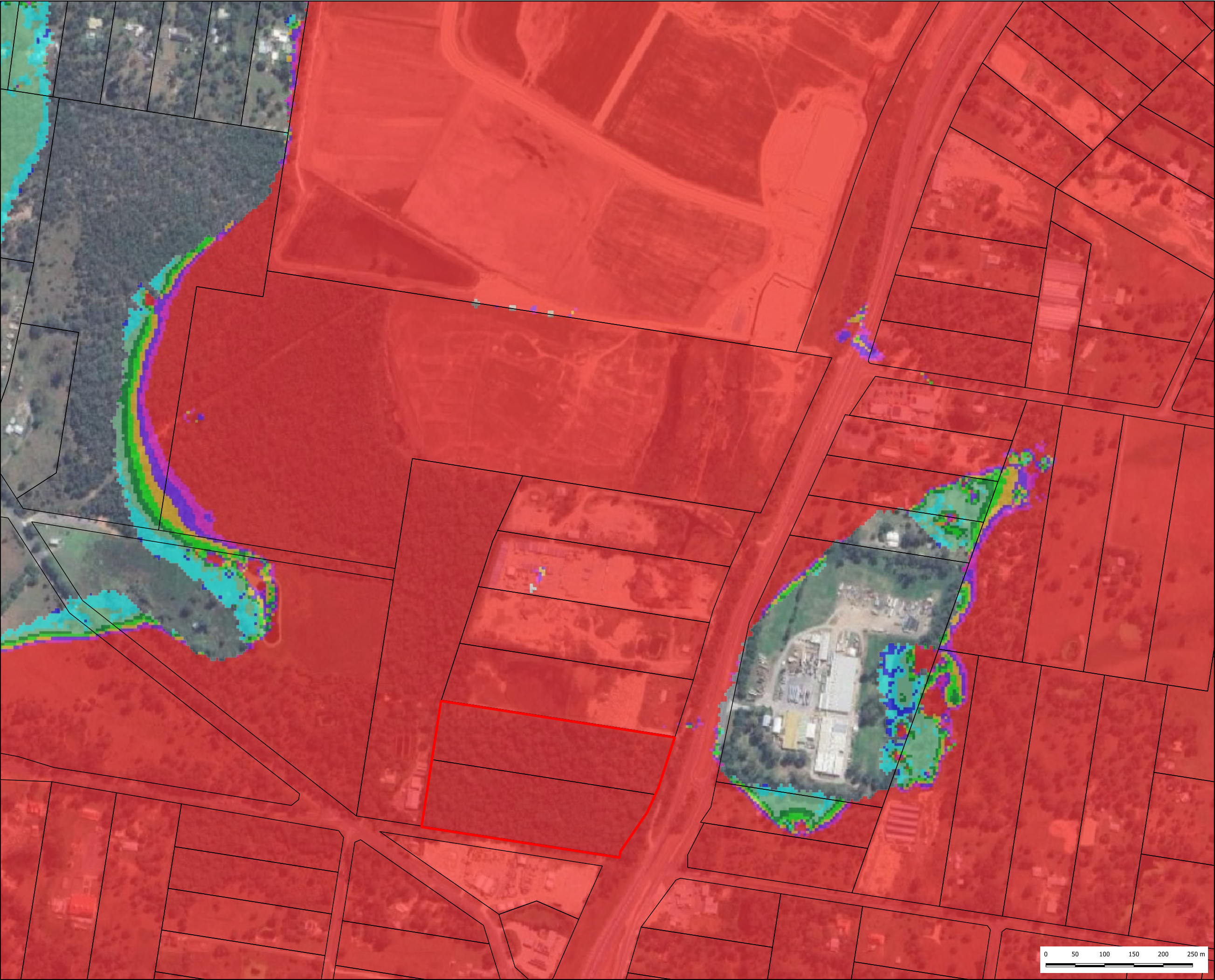
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I10 - Regional  
Developed PMF -  
Velocity



Location of the site within the Logan City

Legend

Cadastral Project site

Water Velocity (m/s)

- <= 0.025
- 0.025 - 0.050
- 0.050 - 0.075
- 0.075 - 0.100
- 0.100 - 0.125
- 0.125 - 0.150
- 0.150 - 0.175
- 0.175 - 0.200
- > 0.200

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



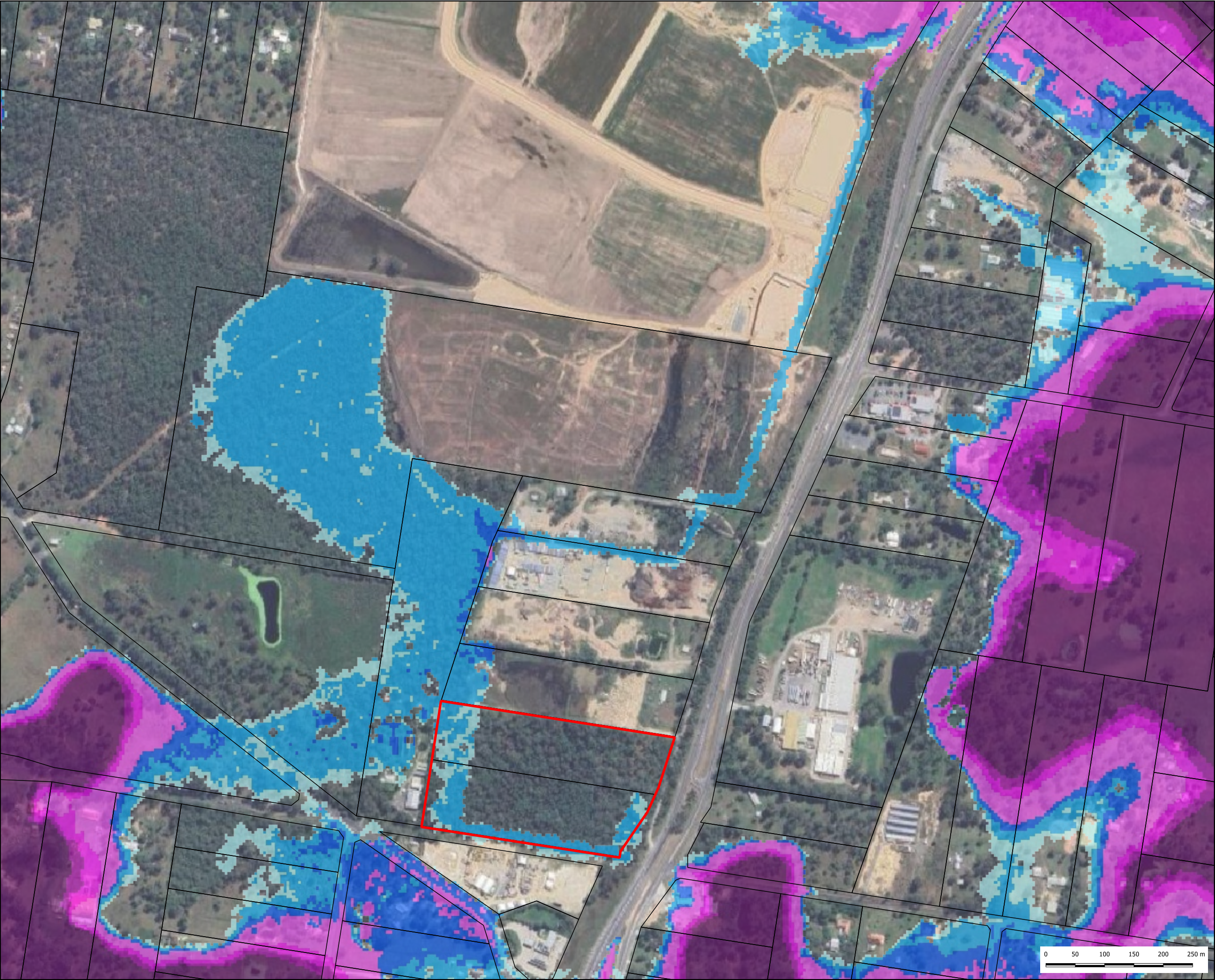
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I11 - Regional  
Developed 1% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

Cadastral Project site

Water Depth (m)

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



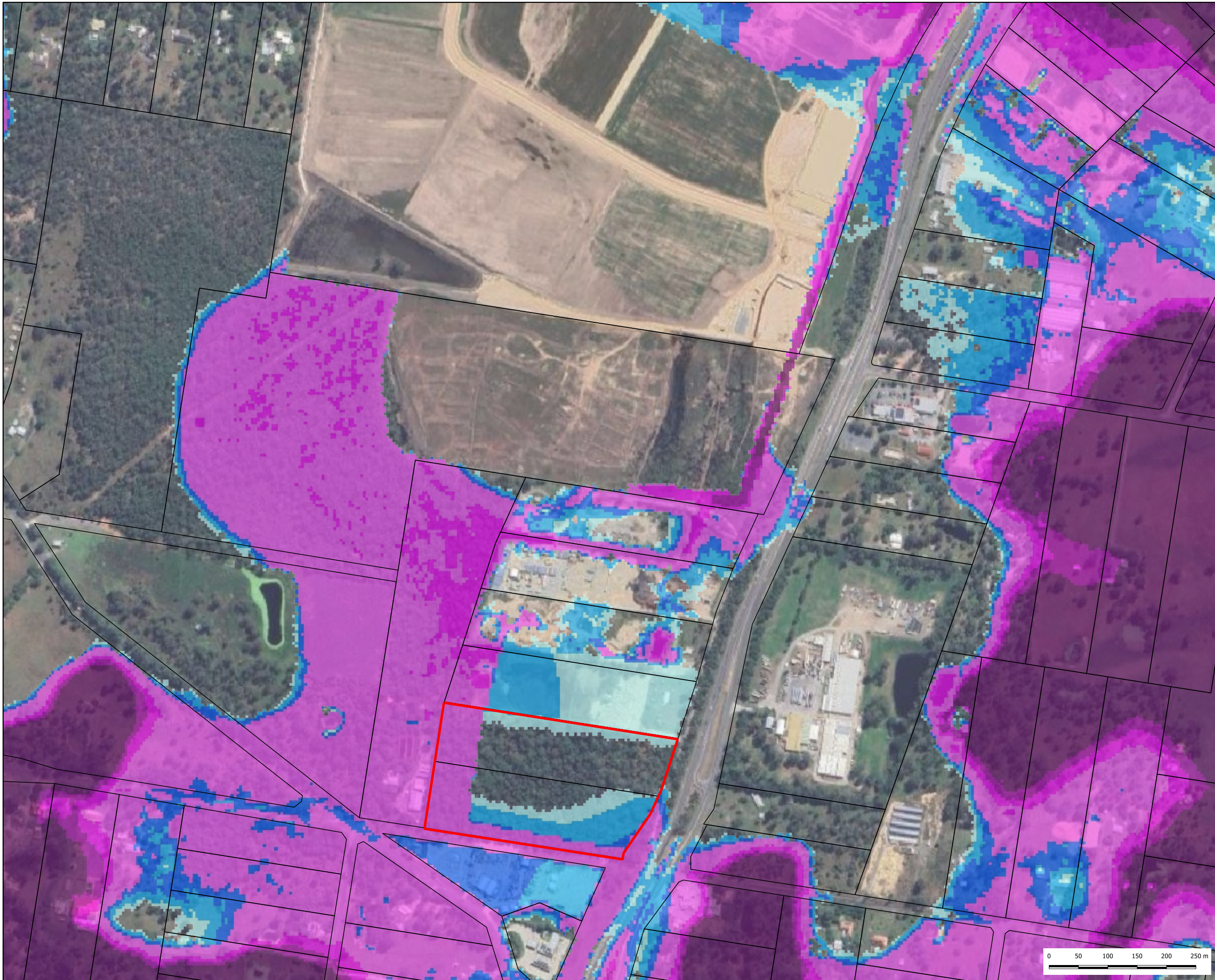
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I12 - Regional  
Developed 0.5% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Depth (m)**

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



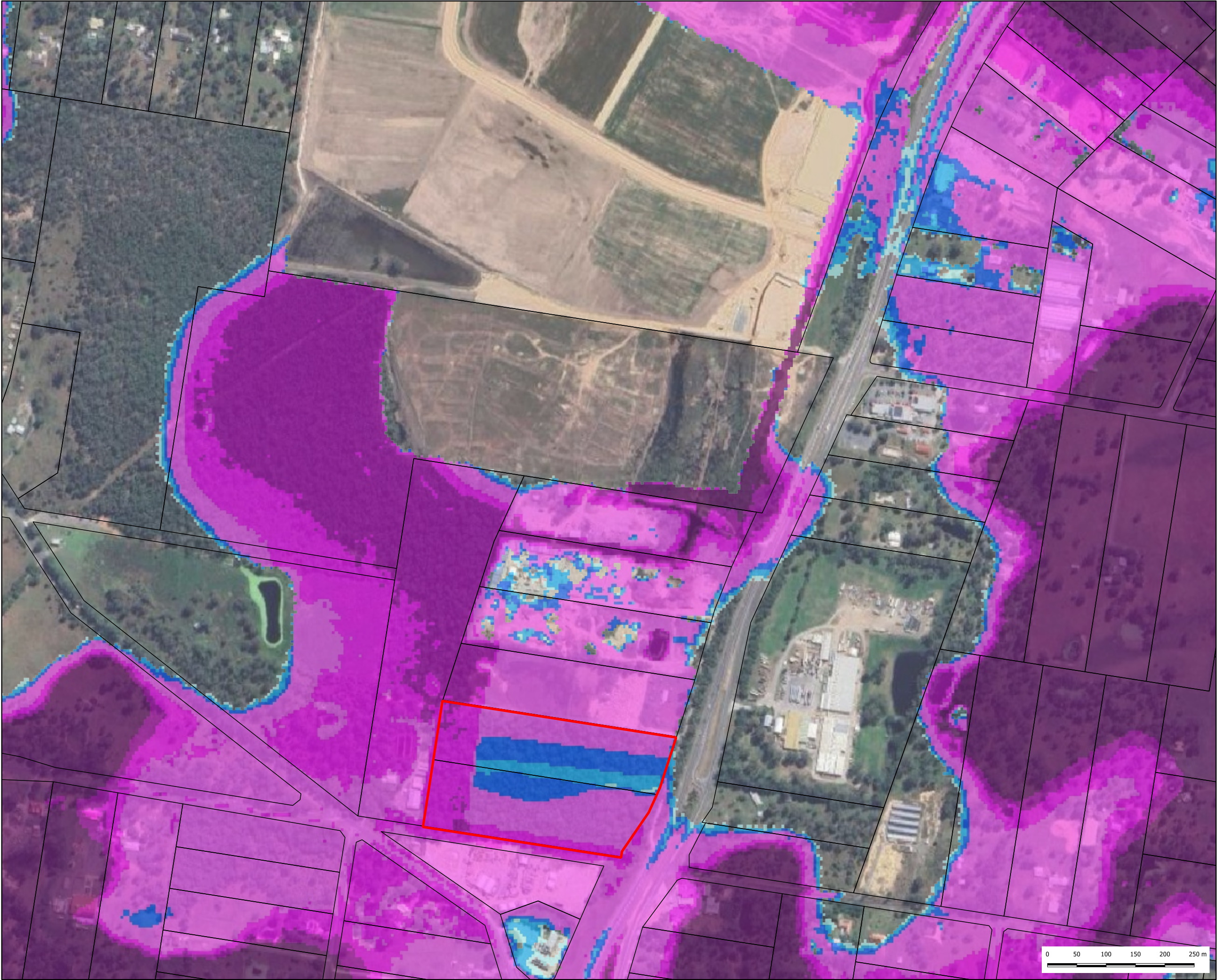
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I13 - Regional  
Developed 0.2% AEP  
Climate Change -  
Depth



Location of the site within the Logan City

Legend

Cadastral Project site

Water Depth (m)

- <= 0.0
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



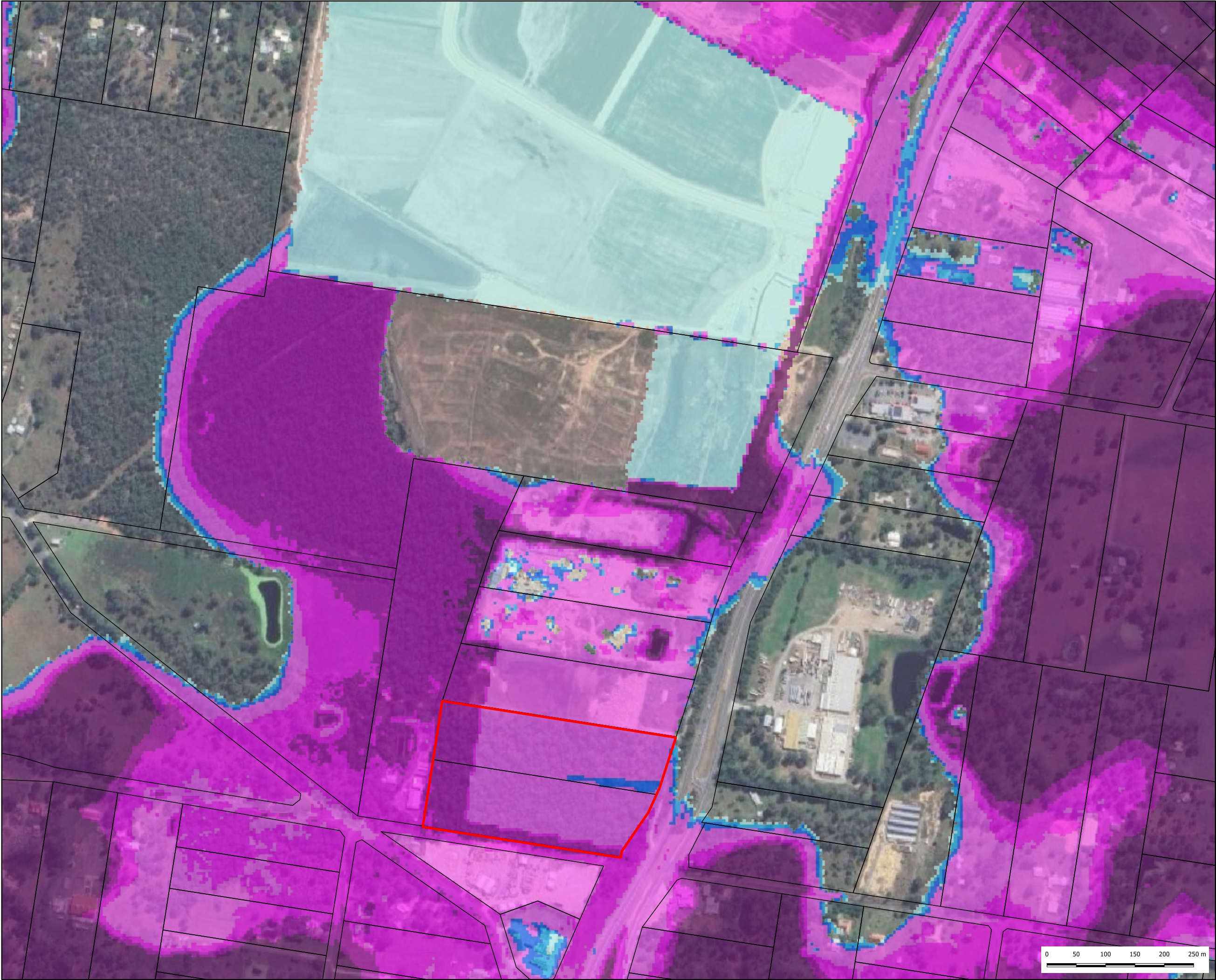
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESA HWY

Figure I14 - Regional  
Developed 0,05% AEP  
- Depth



Location of the site within the Logan City

Legend

Cadastral Project site

Water Depth (m)

- $\leq 0.0$
- 0.0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



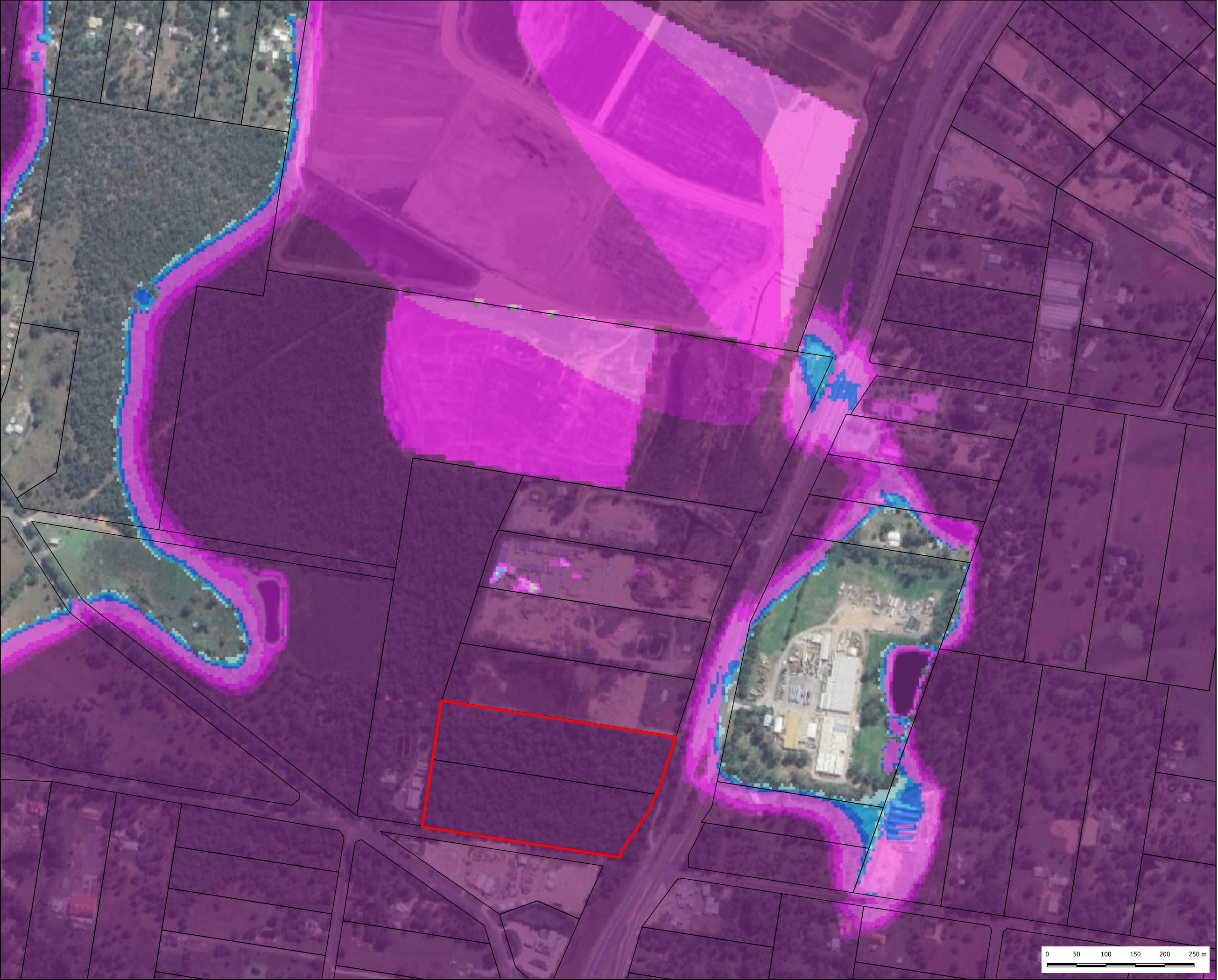
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4733-4743 MT LINDESAY HWY

Figure I15 - Regional  
Developed PMF - Depth



Location of the site within the Logan City

**Legend**

 Cadastral  Project site

**Water Depth (m)**

-   $\leq 0.0$
-  0.0 - 0.1
-  0.1 - 0.3
-  0.3 - 0.5
-  0.5 - 1.5
-  1.5 - 2.0
-  2.0 - 2.5

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



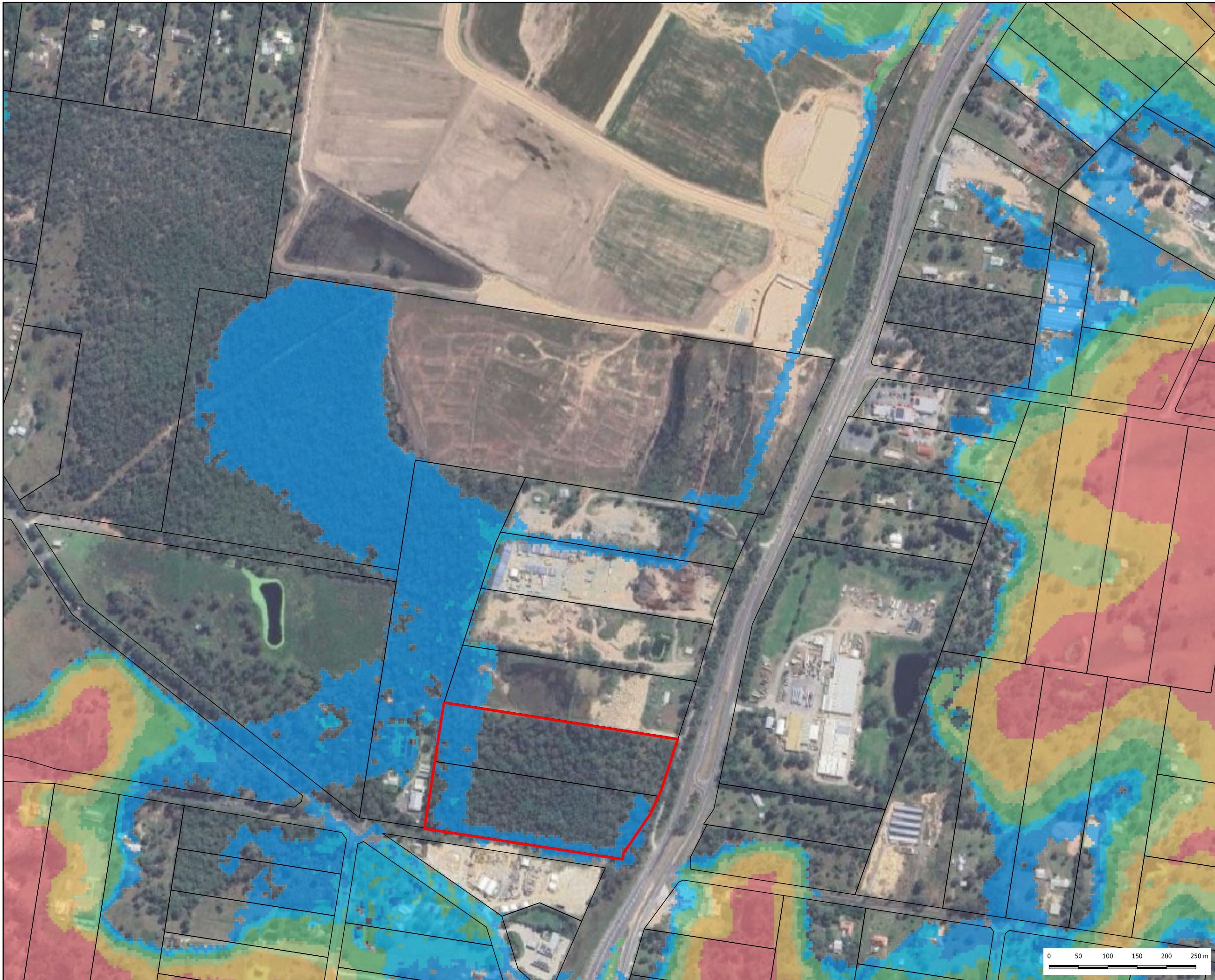
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I16 - Regional  
Developed 1% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



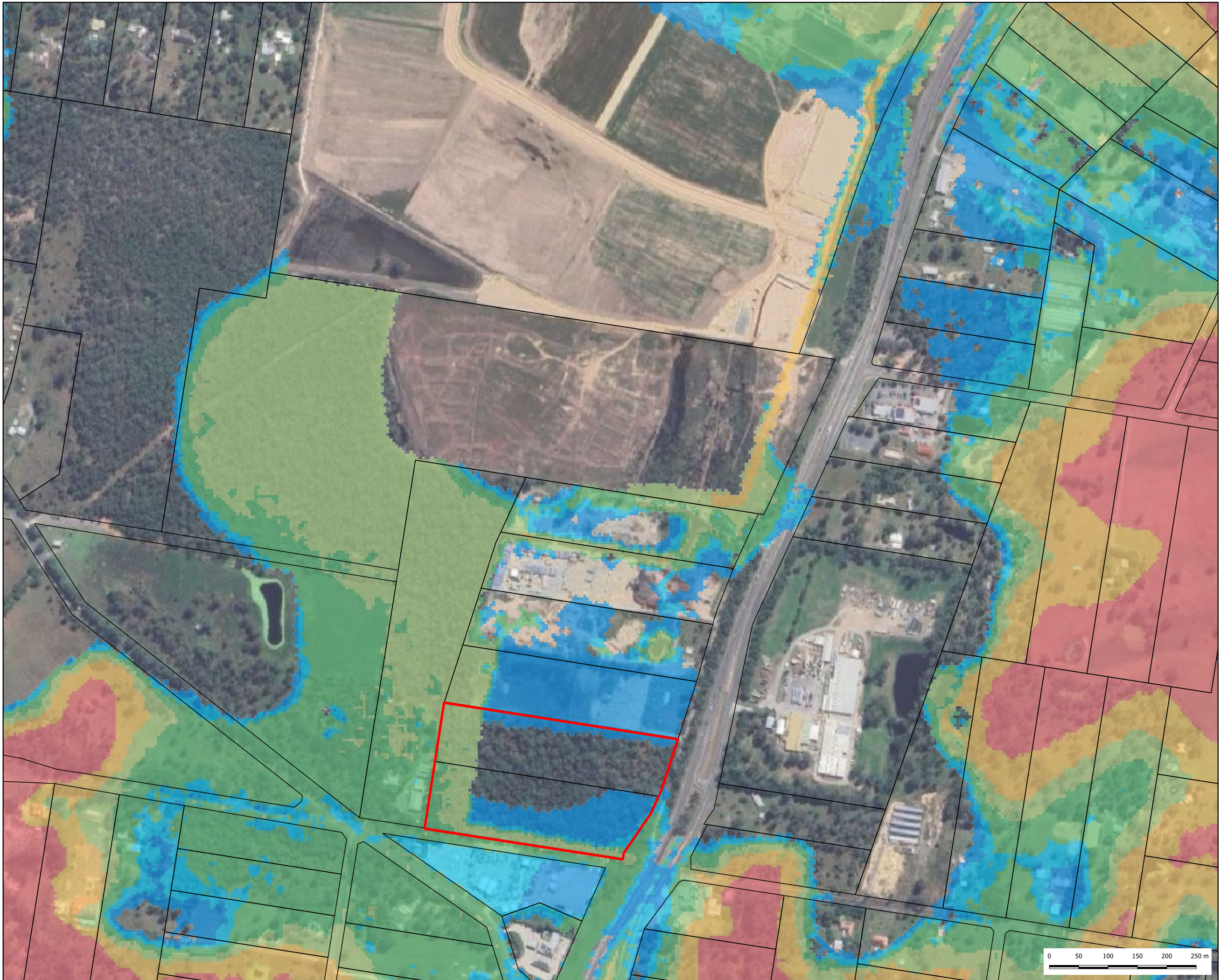
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I17 - Regional  
Developed 0.5% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



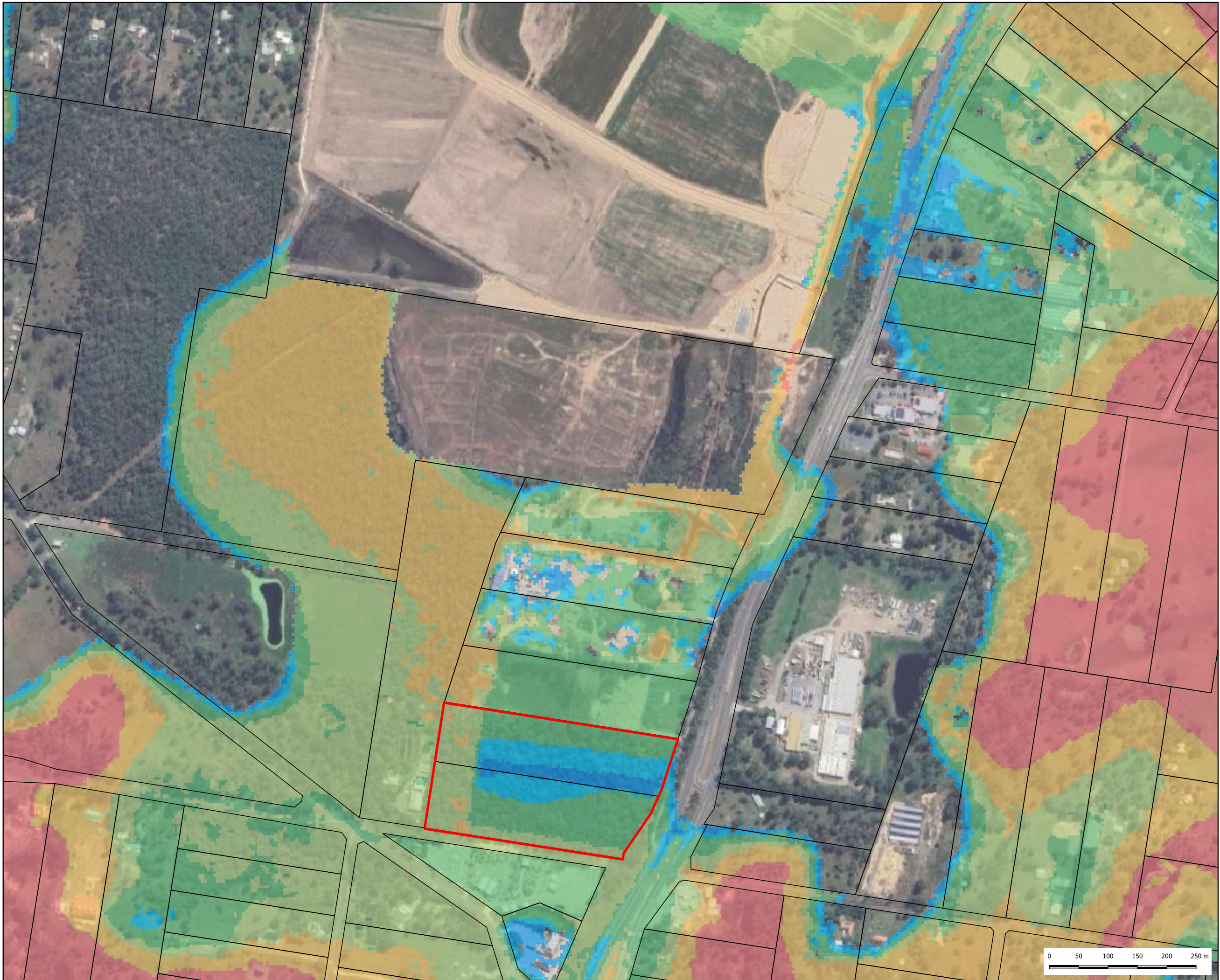
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I18 - Regional  
Developed 0.2% AEP  
Climate Change -  
Hazard



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



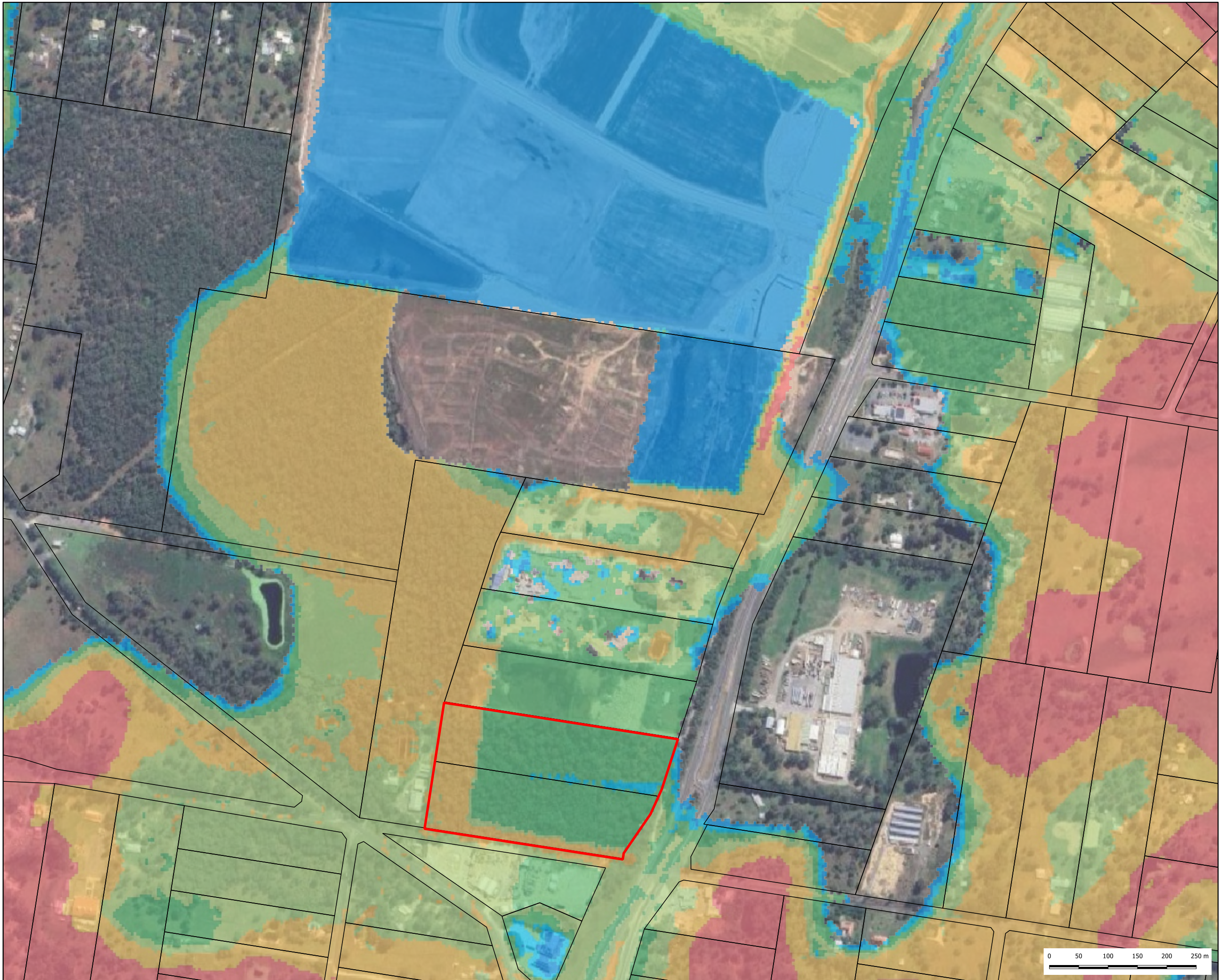
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I19 - Regional  
Developed 0,05% AEP  
- Hazard



Location of the site within the Logan City

Legend

- Cadastral
- Project site

Water Hazard

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



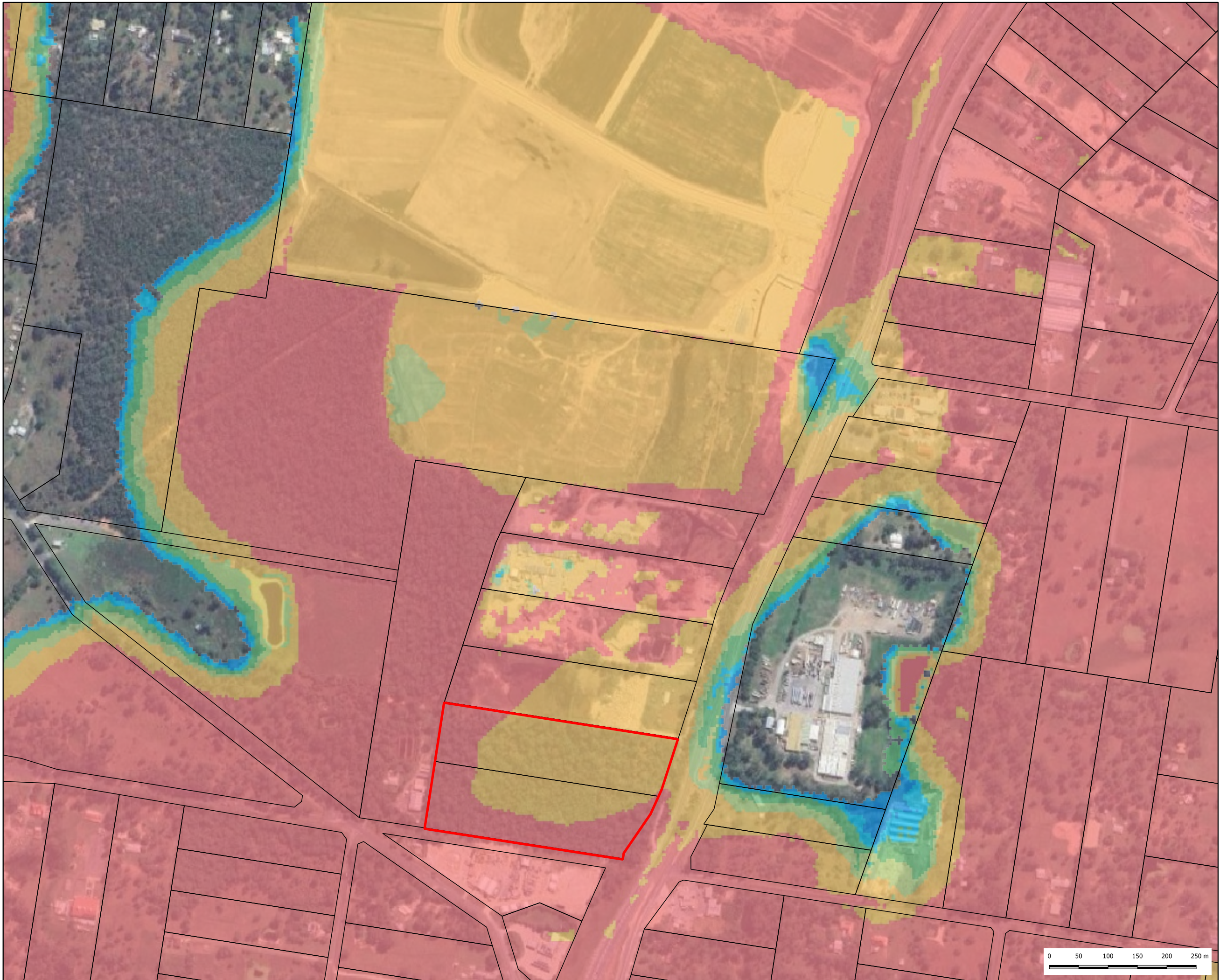
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure I20 - Regional  
Developed PMF -  
Hazard



Location of the site within the Logan City

**Legend**

- Cadastral
- Project site

**Water Hazard**

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

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



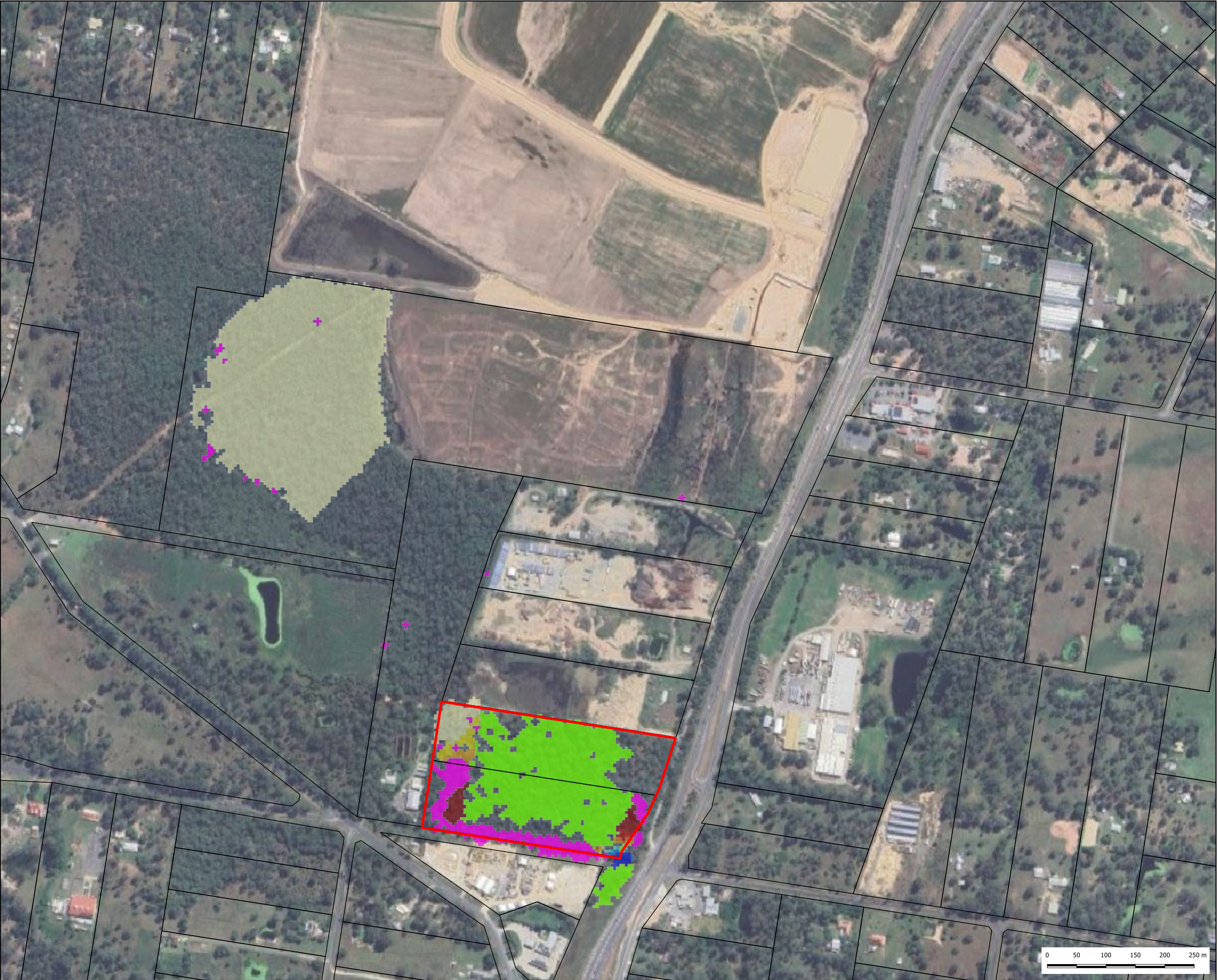
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure J01 - Regional  
Water Level Afflux -  
1% AEP CC



Location of the site within the Logan City

Legend

Cadastral Project site

Water Impact (m)

- <= -0.1
- 0.1 - -0.05
- 0.05 - -0.03
- 0.03 - -0.02
- 0.02 - -0.01
- 0.01 - 0.01
- 0.01 - 0.02
- 0.02 - 0.04
- 0.04 - 0.06
- 0.06 - 0.08
- 0.08 - 0.1
- 0.1 - 0.2
- Was Wet Now Dry
- Was Dry Now Wet

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



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Figure J02 - Regional  
Water Level Afflux -  
0.5% AEP CC



Location of the site within the Logan City

Legend

- Cadastral Project site

Water Impact (m)

- $\leq -0.1$
- $-0.1 - -0.05$
- $-0.05 - -0.03$
- $-0.03 - -0.02$
- $-0.02 - -0.01$
- $-0.01 - 0.01$
- $0.01 - 0.02$
- $0.02 - 0.04$
- $0.04 - 0.06$
- $0.06 - 0.08$
- $0.08 - 0.1$
- $0.1 - 0.2$
- Was Wet Now Dry
- Was Dry Now Wet

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

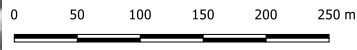
Projection: GDA94 / MGA zone 56

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Figure J03 - Regional  
Water Level Afflux -  
0.2% AEP CC



Location of the site within the Logan City

Legend

- Cadastral Project site

Water Impact (m)

- $\leq -0.1$
- 0.1 - -0.05
- 0.05 - -0.03
- 0.03 - -0.02
- 0.02 - -0.01
- 0.01 - 0.01
- 0.01 - 0.02
- 0.02 - 0.04
- 0.04 - 0.06
- 0.06 - 0.08
- 0.08 - 0.1
- 0.1 - 0.2
- Was Wet Now Dry
- Was Dry Now Wet

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

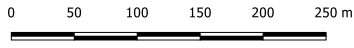
Projection: GDA94 / MGA zone 56

Data Sources:



FOR

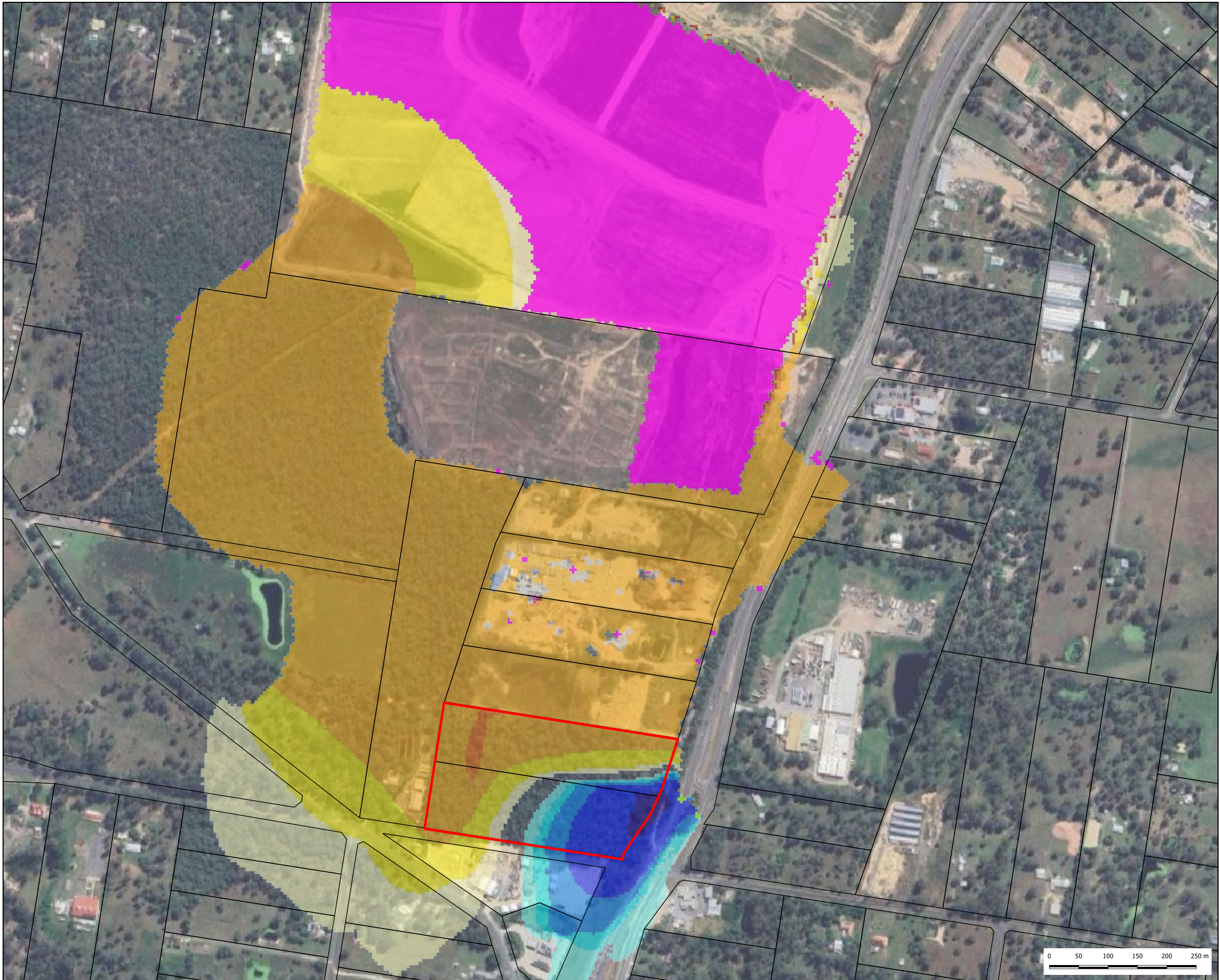
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DEVELOPMENT APPROVAL  
4733-4743 MT LINDESAY HWY

Figure J04 - Regional  
Water Level Afflux -  
0,05% AEP



Location of the site within the Logan City

Legend

- Cadastral
- Project site

Water Impact (m)

- <= -0.1
- 0.1 - -0.05
- 0.05 - -0.03
- 0.03 - -0.02
- 0.02 - -0.01
- 0.01 - 0.01
- 0.01 - 0.02
- 0.02 - 0.04
- 0.04 - 0.06
- 0.06 - 0.08
- 0.08 - 0.1
- 0.1 - 0.2
- Was Wet Now Dry
- Was Dry Now Wet

Project: BE220566

Date: 17/11/2025

Scale: 1:6000 at A3

Projection: GDA94 / MGA zone 56

Data Sources:



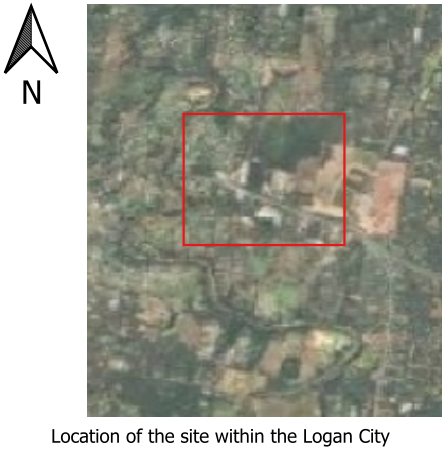
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Figure J05 - Regional  
Water Level Afflux -  
PMF



**Legend**

□ Cadastral      □ Project site

**Water Impact (m)**

- ≤ -0.1
- 0.1 - -0.05
- 0.05 - -0.03
- 0.03 - -0.02
- 0.02 - -0.01
- 0.01 - 0.01
- 0.01 - 0.02
- 0.02 - 0.04
- 0.04 - 0.06
- 0.06 - 0.08
- 0.08 - 0.1
- 0.1 - 0.2
- Was Wet Now Dry
- Was Dry Now Wet

Project: BE220566  
Date: 17/11/2025  
Scale: 1:6000 at A3  
Projection: GDA94 / MGA zone 56  
Data Sources:

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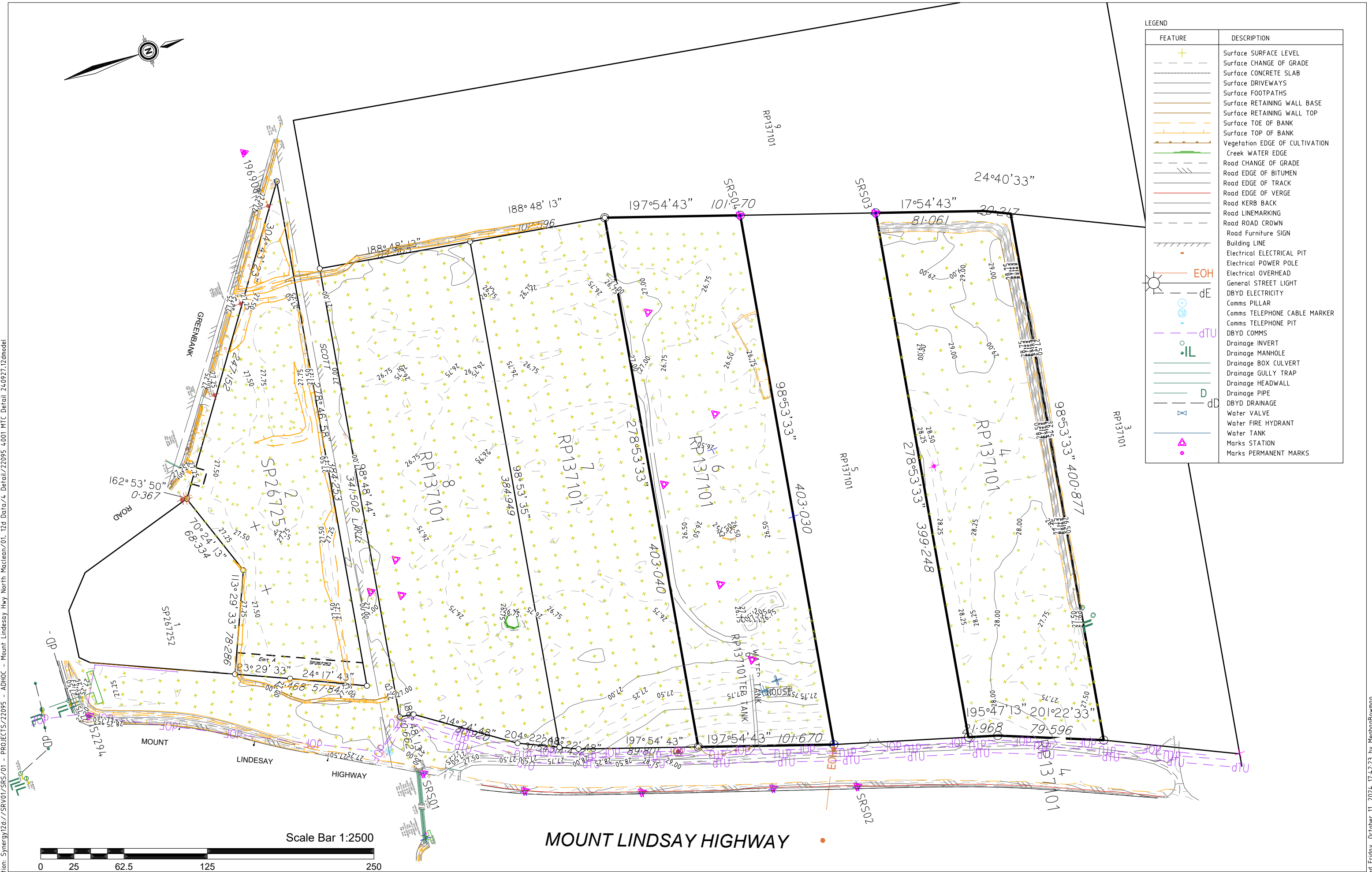
## Appendix G – Survey Provided by Sunrise Surveying

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Project Location: Synergy/24/01/22095 - ADHOC - Mount Lindsay Hwy North Maclean/01. 12d Data/4. Detail/22095 4001 MTC Detail 240927.12dmodel

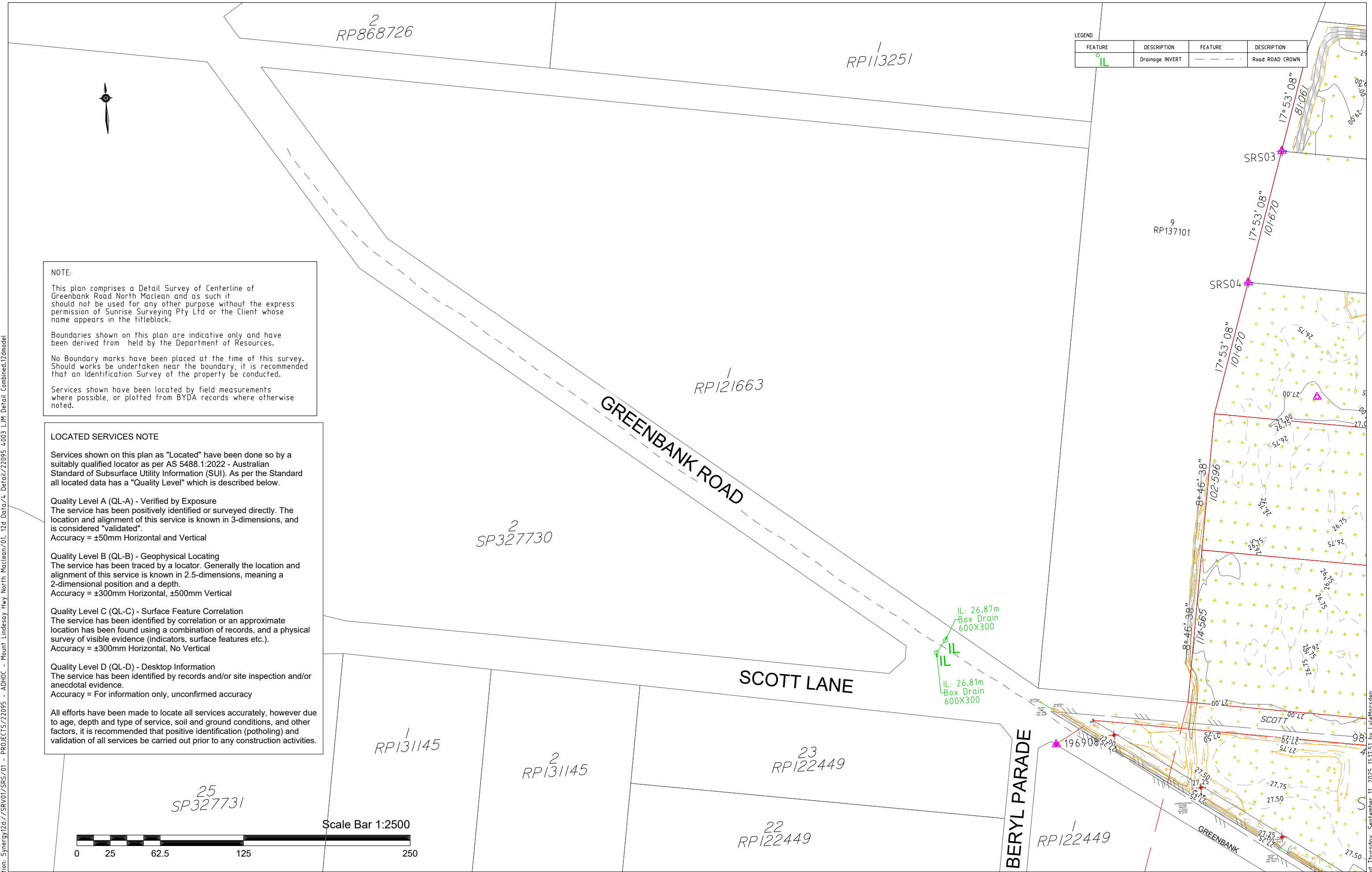


| LEGEND  |                                |
|---------|--------------------------------|
| FEATURE | DESCRIPTION                    |
|         | Surface SURFACE LEVEL          |
|         | Surface CHANGE OF GRADE        |
|         | Surface CONCRETE SLAB          |
|         | Surface DRIVEWAYS              |
|         | Surface FOOTPATHS              |
|         | Surface RETAINING WALL BASE    |
|         | Surface RETAINING WALL TOP     |
|         | Surface TOE OF BANK            |
|         | Surface TOP OF BANK            |
|         | Vegetation EDGE OF CULTIVATION |
|         | Creek WATER EDGE               |
|         | Road CHANGE OF GRADE           |
|         | Road EDGE OF BITUMEN           |
|         | Road EDGE OF TRACK             |
|         | Road EDGE OF VERGE             |
|         | Road KERB BACK                 |
|         | Road LINEMARKING               |
|         | Road ROAD CROWN                |
|         | Road FURNITURE SIGN            |
|         | Building LINE                  |
|         | Electrical ELECTRICAL PIT      |
|         | Electrical POWER POLE          |
|         | Electrical OVERHEAD            |
|         | General STREET LIGHT           |
|         | DBYD ELECTRICITY               |
|         | Comms PILLAR                   |
|         | Comms TELEPHONE CABLE MARKER   |
|         | Comms TELEPHONE PIT            |
|         | DBYD COMMS                     |
|         | Drainage INVERT                |
|         | Drainage MANHOLE               |
|         | Drainage BOX CULVERT           |
|         | Drainage GULLY TRAP            |
|         | Drainage HEADWALL              |
|         | Drainage PIPE                  |
|         | DBYD DRAINAGE                  |
|         | Water VALVE                    |
|         | Water FIRE HYDRANT             |
|         | Water TANK                     |
|         | Marks STATION                  |
|         | Marks PERMANENT MARKS          |

| Project Log | REV. | DATE     | DESCRIPTION     | DRAWN    | SURV | CHKD | <br><b>SUNRISE</b><br>SURVEYING | Brisbane (Head Office)<br>Ground Floor, 18 Finchley St, Milton<br>admin@sunrisesurveying.com.au<br>Toowoomba<br>Tenancy 1, 4 Laurel St, Toowoomba<br>toowoomba@sunrisesurveying.com.au<br>Rockhampton<br>Level 1, 159 Denison St, Rockhampton<br>rockhampton@sunrisesurveying.com.au<br>Yeppoon<br>47 Normanby St, Yeppoon<br>yeppoon@sunrisesurveying.com.au | CLIENT. | PROJECT.<br>Mt Lindsay Highway<br>Maclean | DRAWING DESCRIPTION.<br>Detail Survey<br>Combined Data over Various Lots | DRAWING NAME:<br><br>22095 4001 001-A | SITE ADDRESS.                         | SURVEY DATE<br>- |                                             |
|-------------|------|----------|-----------------|----------|------|------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------|--------------------------------------------------------------------------|---------------------------------------|---------------------------------------|------------------|---------------------------------------------|
|             | A    | 11/10/24 | Issue to Client | 11/10/24 | MAB  | MC   |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                               |         |                                           |                                                                          |                                       |                                       |                  | CONTOUR INTERVAL<br>Minor: 0.25<br>Major: 1 |
|             |      |          |                 |          |      |      |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                               |         |                                           |                                                                          |                                       |                                       |                  |                                             |
|             |      |          |                 |          |      |      |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                               |         |                                           |                                                                          |                                       |                                       |                  |                                             |
|             |      |          |                 |          |      |      |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                               |         |                                           |                                                                          |                                       |                                       |                  |                                             |
|             |      |          |                 |          |      |      |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                               |         |                                           |                                                                          |                                       |                                       |                  |                                             |
|             |      |          |                 |          |      |      |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                               |         |                                           |                                                                          |                                       | LOCAL AUTHORITY<br>Logan City Council | REV<br>A         |                                             |



Project Location: Synergy12a//SRV01/SRS/01 - ADHOC - Mount Lindesay Hwy North Maclean/01. 12a Data/4. Detail/22095 4003 LJM Detail Combined.12dmodel



| LEGEND  |             |         |                 |
|---------|-------------|---------|-----------------|
| FEATURE | DESCRIPTION | FEATURE | DESCRIPTION     |
|         | IL          |         | Drainage INVERT |
|         |             |         | Road ROAD CROWN |

NOTE:

This plan comprises a Detail Survey of Centerline of Greenbank Road North Maclean and as such it should not be used for any other purpose without the express permission of Sunrise Surveying Pty Ltd or the Client whose name appears in the titleblock.

Boundaries shown on this plan are indicative only and have been derived from held by the Department of Resources.

No Boundary marks have been placed at the time of this survey. Should works be undertaken near the boundary, it is recommended that an Identification Survey of the property be conducted.

Services shown have been located by field measurements where possible, or plotted from BYDA records where otherwise noted.

LOCATED SERVICES NOTE

Services shown on this plan as "Located" have been done so by a suitably qualified locator as per AS 5488.1:2022 - Australian Standard of Subsurface Utility Information (SUI). As per the Standard all located data has a "Quality Level" which is described below.

**Quality Level A (QL-A) - Verified by Exposure**  
The service has been positively identified or surveyed directly. The location and alignment of this service is known in 3-dimensions, and is considered "validated".  
Accuracy = ±50mm Horizontal and Vertical

**Quality Level B (QL-B) - Geophysical Locating**  
The service has been traced by a locator. Generally the location and alignment of this service is known in 2.5-dimensions, meaning a 2-dimensional position and a depth.  
Accuracy = ±300mm Horizontal, ±500mm Vertical

**Quality Level C (QL-C) - Surface Feature Correlation**  
The service has been identified by correlation or an approximate location has been found using a combination of records, and a physical survey of visible evidence (indicators, surface features etc.).  
Accuracy = ±300mm Horizontal, No Vertical

**Quality Level D (QL-D) - Desktop Information**  
The service has been identified by records and/or site inspection and/or anecdotal evidence.  
Accuracy = For information only, unconfirmed accuracy

All efforts have been made to locate all services accurately, however due to age, depth and type of service, soil and ground conditions, and other factors, it is recommended that positive identification (potholing) and validation of all services be carried out prior to any construction activities.

| REV. | DATE     | DESCRIPTION | DRAWN | SURV | CHKD |
|------|----------|-------------|-------|------|------|
| A    | 11/09/25 | 1st Issue   | LJM   | LJM  | MJI  |
|      |          |             |       |      |      |
|      |          |             |       |      |      |
|      |          |             |       |      |      |
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|      |          |             |       |      |      |
|      |          |             |       |      |      |



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Ground Floor, 18 Finchley St, Milton  
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toowoomba@sunrisesurveying.com.au  
Rockhampton  
Level 1, 159 Denison St, Rockhampton  
rockhampton@sunrisesurveying.com.au  
Yeppoon  
47 Normanby St, Yeppoon  
yeppoon@sunrisesurveying.com.au

CLIENT.



PROJECT.  
GREENBANK RD  
DEATIL SURVEY

HORIZONTAL DATUM.  
MGA2020 Zone 56 (Ground) AHD  
PM196908  
VERTICAL DATUM.  
AHD  
PM196908  
RL: RL27.348

DRAWING DESCRIPTION.  
Greenbank Rd  
Centerline Survey

Sheet 1 of 1

DRAWING NAME:  
22095 4003 002-A

SCALE.  
1: 2500 @ A3

SITE ADDRESS.  
Mount Lindesay Hwy  
North Maclean

LOCAL AUTHORITY  
LOGAN CITY COUNCIL

SURVEY DATE  
10/9/25  
CONTOUR INTERVAL  
Minor: 0.25  
Major: 1  
REV  
A

Drawing Plotted Thursday, September 11, 2025 11:17:51 by Lyle Marsden





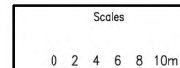
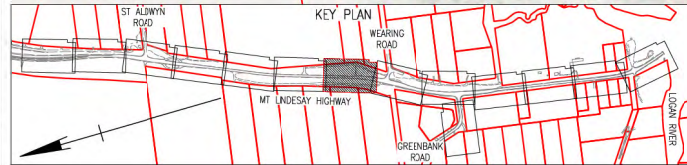
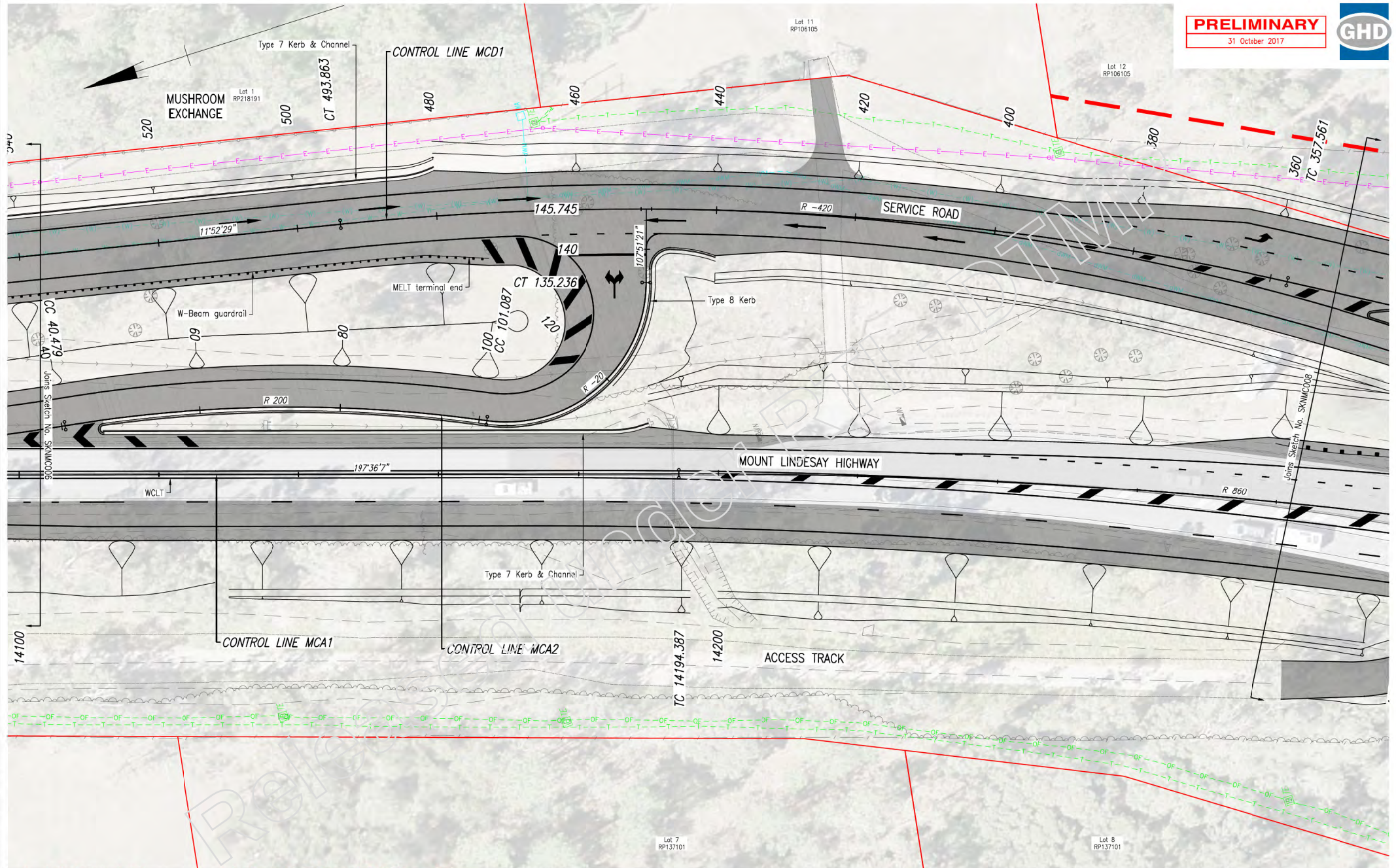
## Appendix H – Mount Lindesay Highway, North Maclean Upgrade Plans

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**PRELIMINARY**  
31 October 2017



Dimensions shown in metres  
except where shown otherwise

**MOUNT LINDESAY HIGHWAY, NORTH MACLEAN UPGRADE  
WORKING PLANS  
SHEET 7 OF 14**

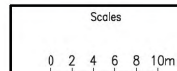
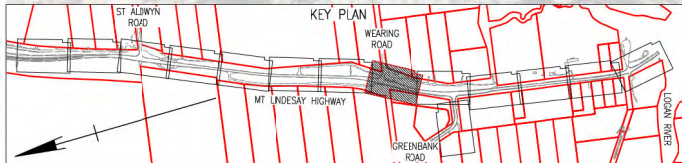
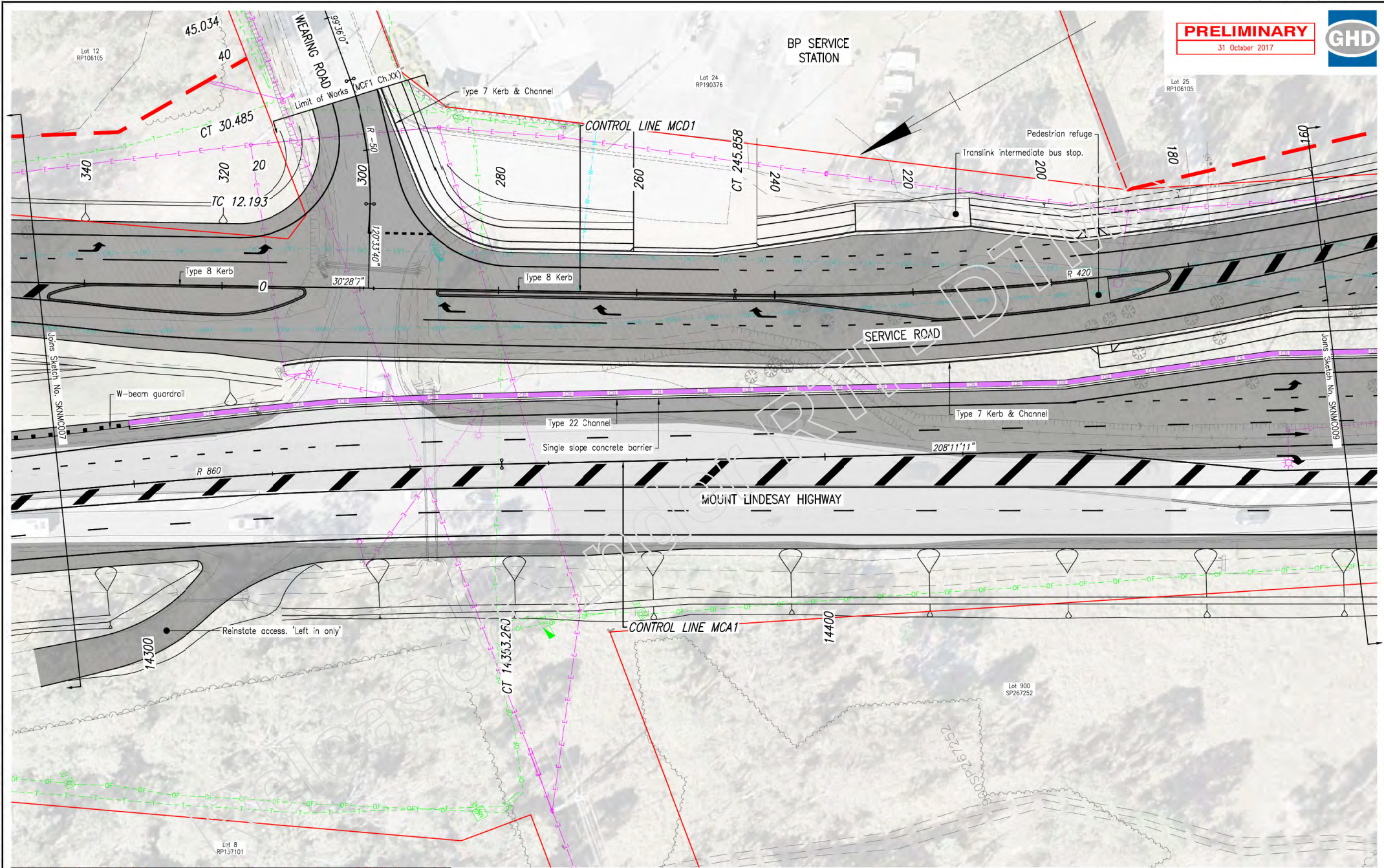
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| Approved      |           | ENGINEERING CERTIFICATION (RPEQ) |           |     |      |  |
| PI            | ENG. AREA | NAME                             | SIGNATURE | NO. | DATE |  |
|               |           |                                  |           |     |      |  |
| Date. 28/9/17 |           |                                  |           |     |      |  |

|                      |          |
|----------------------|----------|
|                      |          |
| Job No.              | 459813   |
| Contract No.         | CN7746   |
| Sketch No.           | SKNMC013 |
| Revision No.         | 1        |
| GHD Job No. 41-31134 |          |

D:\00 FILES - G:\41\31134\000\Drawings\North Maclean\Sketches\41-31134-SKNMC001\_2000.plt.dwg



**PRELIMINARY**  
31 October 2017



**MOUNT LINDSAY HIGHWAY, NORTH MACLEAN UPGRADE  
WORKING PLANS  
SHEET 8 OF 14**

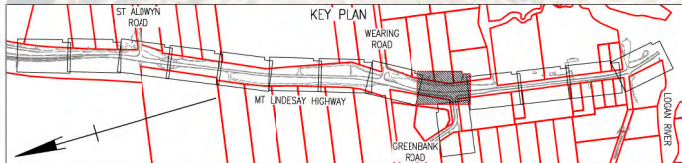
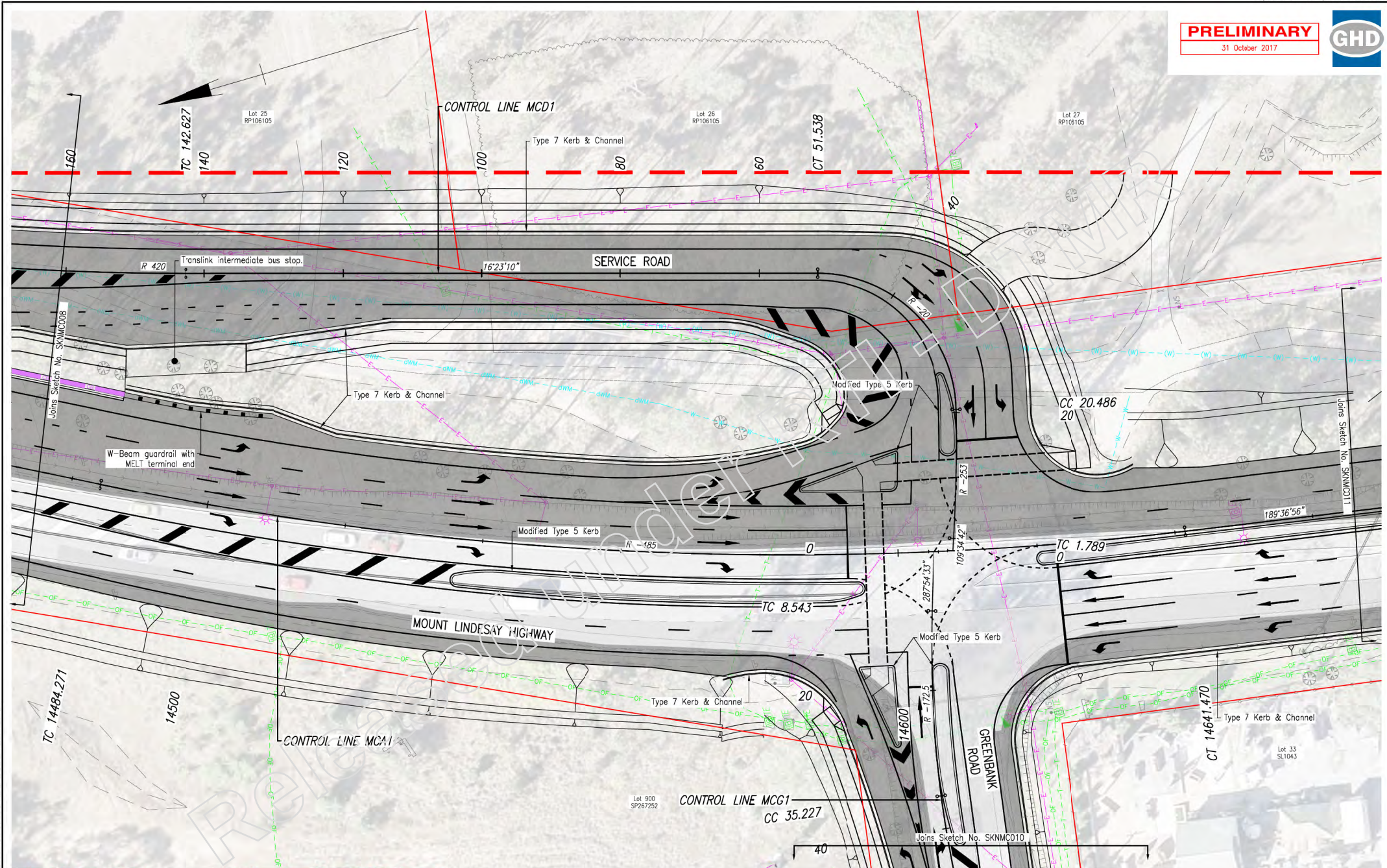
| Approved |         | ENGINEERING CERTIFICATION (RPEQ) |      |           |          |
|----------|---------|----------------------------------|------|-----------|----------|
| PI       |         | ENG. AREA                        | NAME | SIGNATURE | NO. DATE |
| Date:    | 28/9/17 |                                  |      |           |          |

|                      |          |
|----------------------|----------|
|                      |          |
| Job No.              | 459813   |
| Contract No.         | CN7746   |
| Sketch No.           | SKNMC014 |
| Revision No.         | 1        |
| GHD Job No. 41-31134 |          |



**PRELIMINARY**

31 October 2017



Scales

0 2 4 6 8 10m

### MOUNT LINDSAY HIGHWAY, NORTH MACLEAN UPGRADE WORKING PLANS SHEET 9 OF 14

Approved

PI

Date: 28/9/17

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA

NAME

SIGNATURE

NO.

DATE



Job No. 459813

Contract No. CN7746

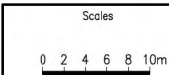
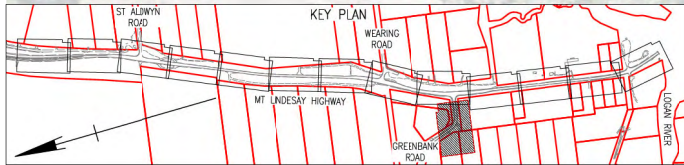
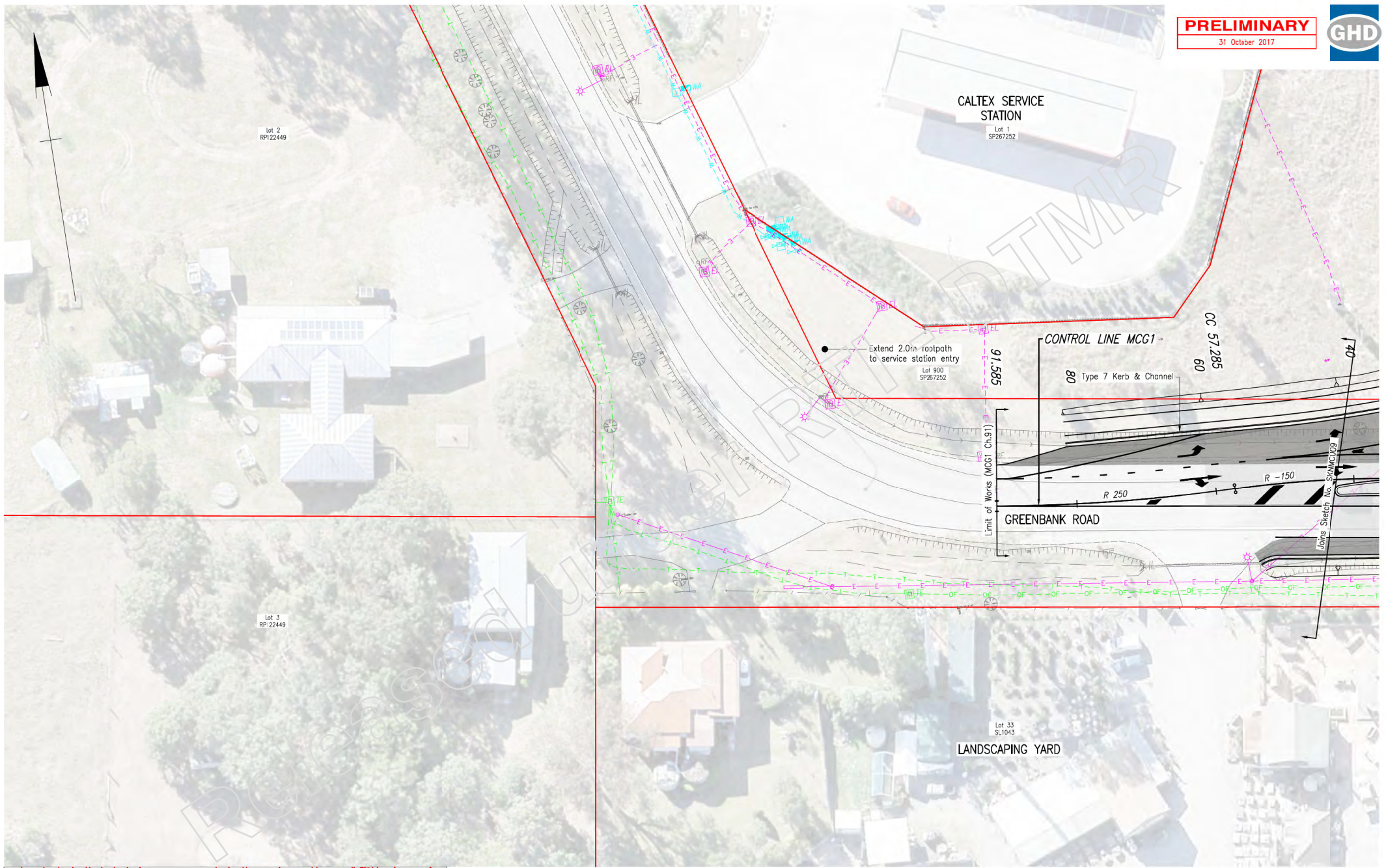
Sketch No. SKNMC015

Revision No. 1

GHD Job No. 41-31134



**PRELIMINARY**  
31 October 2017



Dimensions shown in metres  
except where shown otherwise

**MOUNT LINDESAY HIGHWAY, NORTH MACLEAN UPGRADE  
WORKING PLANS  
SHEET 10 OF 14**

Approved  
**PI**

Date, 28/9/17

ENGINEERING CERTIFICATION (RPEQ)

| ENG. AREA | NAME | SIGNATURE | NO. | DATE |
|-----------|------|-----------|-----|------|
|           |      |           |     |      |

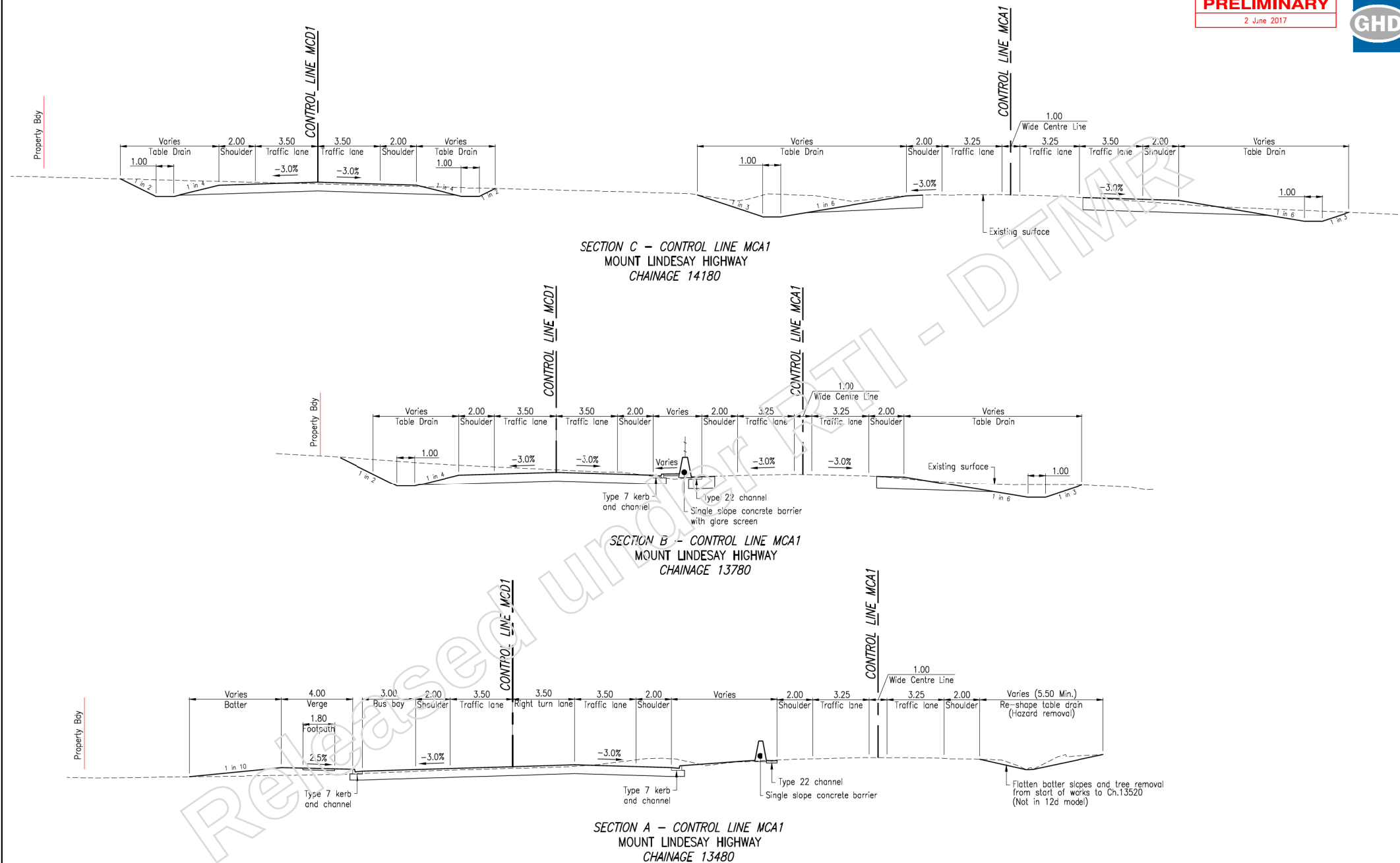


Job No. 459813  
Contract No. CN7746  
Sketch No. SKNMC016  
Revision No. 1  
GHD Job No. 41-31134



**PRELIMINARY**

2 June 2017



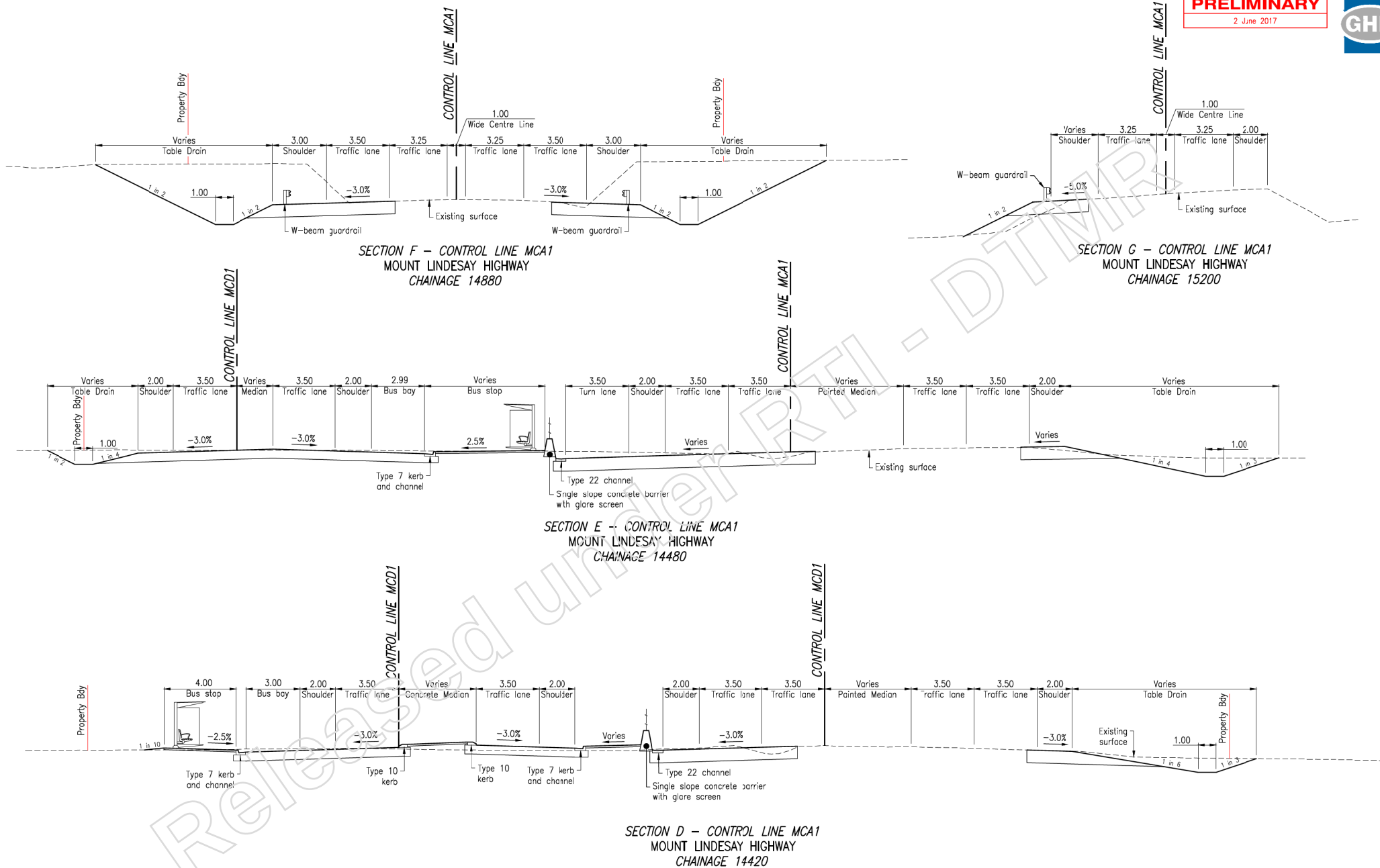
Last Modified: Jun 02, 2017 - 4:35pm

|                                                             |  |  |  |                    |               |            |                                                         |  |                                                                                                        |  |  |  |                                      |  |                                   |  |                                                                                                                    |              |              |           |
|-------------------------------------------------------------|--|--|--|--------------------|---------------|------------|---------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------|--|--|--|--------------------------------------|--|-----------------------------------|--|--------------------------------------------------------------------------------------------------------------------|--------------|--------------|-----------|
|                                                             |  |  |  | Associated Job Nos | Survey Date   |            | Scales                                                  |  | LOGAN CITY COUNCIL                                                                                     |  |  |  | NORTH MACLEAN SAFETY IMPROVEMENTS    |  |                                   |  |  <b>Queensland Government</b> |              |              |           |
|                                                             |  |  |  |                    |               |            | 0 1 2 3 4m                                              |  | MOUNT LINDESAY HIGHWAY                                                                                 |  |  |  | BUSINESS CASE DRAWINGS               |  |                                   |  |                                                                                                                    |              |              |           |
|                                                             |  |  |  | Auxiliary Drg Nos  | Datum         |            |                                                         |  | CTL CHGE 13.24km - 15.26km                                                                             |  |  |  | TYPICAL CROSS SECTION - SHEET 1 OF 2 |  |                                   |  | Job No.                                                                                                            | 240/25A/900  |              |           |
|                                                             |  |  |  |                    | Horiz. Grid   |            |                                                         |  | Reference Points                                                                                       |  |  |  | Drawn                                |  | ENGINEERING CERTIFICATION (RPEQ)  |  |                                                                                                                    |              | Contract No. | SCHD-3531 |
|                                                             |  |  |  |                    | Height Origin |            |                                                         |  | Preceding RP Dist. to start of job (km) From start to end of job From end to Following RP Following RP |  |  |  | PI Designed                          |  | ENG. AREA NAME SIGNATURE NO. DATE |  | Drawing No.                                                                                                        | NMBC_TC_0110 |              |           |
|                                                             |  |  |  |                    | Survey Books  |            | Dimensions shown in metres except where shown otherwise |  | Through Chainage from                                                                                  |  |  |  | PI                                   |  |                                   |  | Series Number                                                                                                      | 2 of 25      |              |           |
| 0 Original Issue                                            |  |  |  |                    |               |            |                                                         |  |                                                                                                        |  |  |  |                                      |  |                                   |  | MRR Detail (02/14)                                                                                                 |              |              |           |
| Revisions/Descriptions                                      |  |  |  | Certification      | Date          | Microfiled |                                                         |  |                                                                                                        |  |  |  |                                      |  |                                   |  |                                                                                                                    |              |              |           |
| CAD FILES G:\41\30498\CADD\Drawings\41-30498_NMBC_TC_01.dwg |  |  |  |                    |               |            |                                                         |  |                                                                                                        |  |  |  |                                      |  |                                   |  |                                                                                                                    |              |              |           |



**PRELIMINARY**

2 June 2017



Last Modified: Jun 02, 2017 - 4:35pm

|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|------------------|--|--|--|----------------------------------------------------|---------------|---------------------------------------------------------|------------|------------|--------------------|----------------------------|--|----------------------------|-----------------------------------|--------------------------------------|--|--------------------------|--|--------------|--------------------------------------------------------------------------------------------------------------------|----------|-----------|------|-----------|--|-----|------|
|                  |  |  |  | Associated Job Nos                                 | Survey Date   |                                                         | Scales     |            | LOGAN CITY COUNCIL |                            |  |                            | NORTH MACLEAN SAFETY IMPROVEMENTS |                                      |  |                          |  |              |  <b>Queensland Government</b> |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    | Datum         |                                                         |            | 0 1 2 3 4m |                    | MOUNT LINDESAY HIGHWAY     |  |                            |                                   | BUSINESS CASE DRAWINGS               |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  | Auxiliary Drg Nos                                  | Horiz. Grid   |                                                         |            |            |                    | CTL CHGE 13.24km – 15.26km |  |                            |                                   | TYPICAL CROSS SECTION – SHEET 2 OF 2 |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    | Height Origin |                                                         |            |            |                    | Reference Points           |  |                            |                                   | ENGINEERING CERTIFICATION (RPEQ)     |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    | Survey Books  | Dimensions shown in metres except where shown otherwise |            |            |                    | Preceding RP               |  | Dist. to start of job (km) |                                   | From start to end of job             |  | From end to following RP |  | Following RP |                                                                                                                    | Drawn    | ENG. AREA | NAME | SIGNATURE |  | NO. | DATE |
| 0 Original Issue |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    | M. Mason |           |      |           |  |     |      |
|                  |  |  |  | Revisions/Descriptions                             | Certification | Date                                                    | Microfiled |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    | Designed |           |      |           |  |     |      |
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|                  |  |  |  |                                                    |               |                                                         |            |            |                    | Through Chainage from      |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |
|                  |  |  |  |                                                    |               |                                                         |            |            |                    |                            |  |                            |                                   |                                      |  |                          |  |              |                                                                                                                    |          |           |      |           |  |     |      |