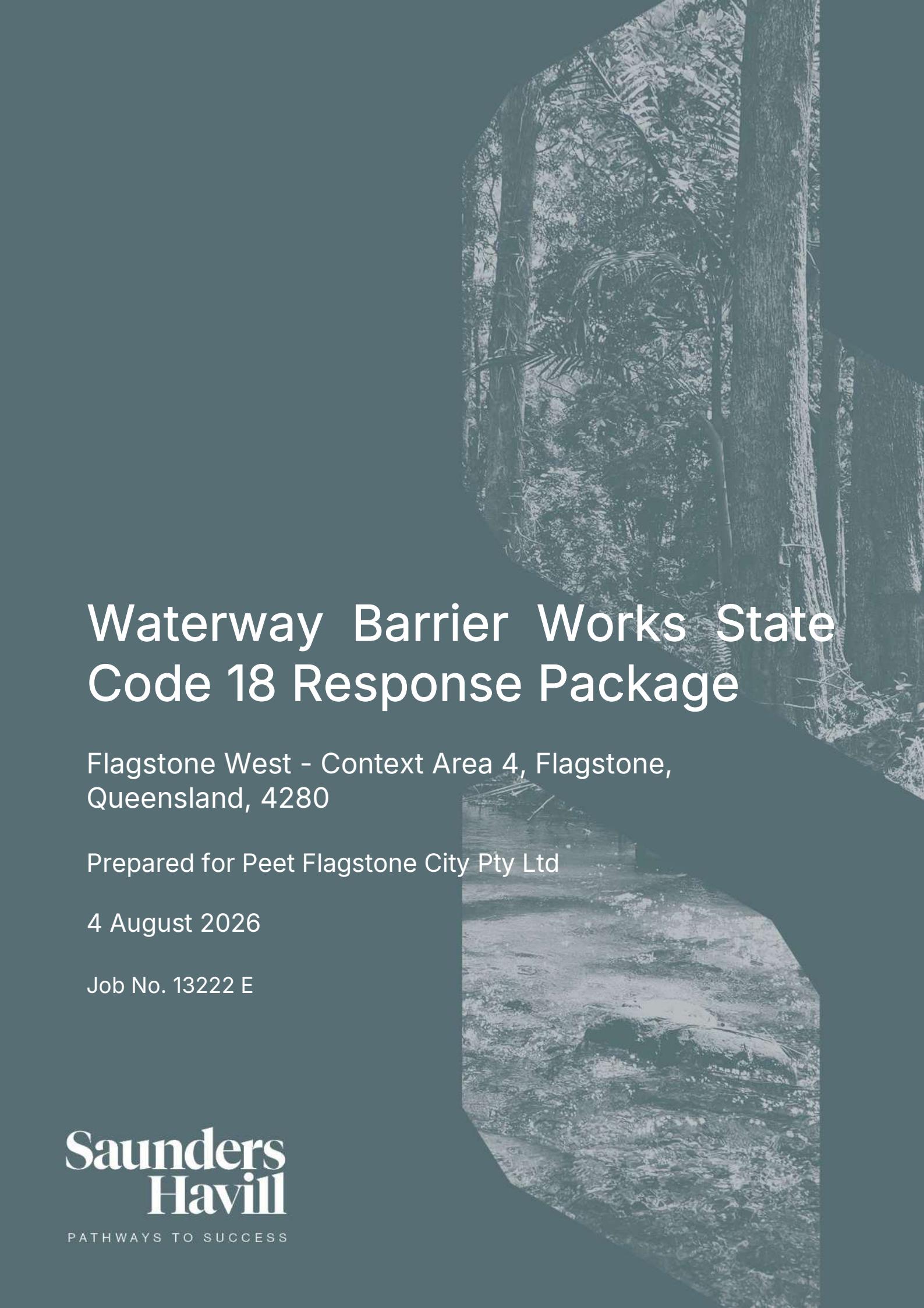




Waterway Barrier Works State Code 18 Response Package

Flagstone West - Context Area 4, Flagstone,
Queensland, 4280

Prepared for Peet Flagstone City Pty Ltd

4 August 2026

Job No. 13222 E

**Saunders
Havill**

PATHWAYS TO SUCCESS

Document Control

Document: Waterway Barrier Works State code 18 Response for Flagstone West - Context Area 4, Flagstone, prepared by Saunders Havill for Peet Flagstone City Pty Ltd.

Document Issue

Issue	Date	Prepared By	Checked By
Issue A	04.08.2026	TM	AD

Prepared by

© Saunders Havill Pty Ltd 2026.

ABN 24 144 972 949

www.saundershavill.com

Reports and plans by others may be included in this document.

SH has prepared this document for the sole use of the Client and for a specific purpose, as expressly stated in the document. No other party should rely on this document without the prior consent of SH. SH undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use the document. This document has been prepared based on the Client's description of their requirements and SH's experience, having regard to assumptions that SH can reasonably be expected to make in accordance with sound professional principles. SH may have also relied upon information provided by the Client and other third parties to prepare this document, some of which may have not been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.



Table of Contents

1. Introduction	1
1.1. Property Summary	2
1.2. Desktop Analysis	8
1.2.1 Historical Aerial Imagery Analysis	8
1.2.2 Hillshade Analysis	8
2. Field Survey Results	12
2.1. Field Waterway Determination	12
2.1.1 Mapped <i>low-risk</i> WWBW (Impact area)	12
2.1.2 Adjoining Tributaries	15
2.2. Proposed Rehabilitation	21
3. State Code 18 Response	22
3.1. Waterway Barrier Works	22
3.2. Operational Works Code Response	24
4. Conclusions	45
4.1. Recommendations	45
4.1.1 Post-works Monitoring Program	45
5. Appendices	47



Figures

Figure 1:	Site Context	3
Figure 2:	Site Aerial	4
Figure 3:	Fisheries Act 1994	5
Figure 4:	Water Act 2000	6
Figure 5:	MSES	7

Plans

Plan 1:	Historical Aerial Imagery Analysis	10
Plan 2:	Hillshade Analysis	11
Plan 3:	Field Survey Results – Waterway Mapping	20
Plan 4:	Impact Analysis	44

Tables

Table 1:	Property Summary	2
Table 2:	Response to Table 18.1 Operational Work of State Code 18	24



1. Introduction

The Environmental Management division of Saunders Havill (SH) was engaged by Peet Flagstone City Pty Ltd to prepare a response to the State Assessment and Referral Agency's (SARA) State Development Assessment Provisions (SDAP Version 3.6) *State Code 18: Constructing or raising waterway barrier works in fish habitats* to support an Operational Works (OPW) application for waterway barrier works (WWBW) within the proposed works area. Further sections of the waterway downstream from the application area are mapped as *low risk* (green), a *high risk* (red), and a *major risk* (purple) WWBW where the flow path transitions from an unnamed tributary of Sandy Creek to Sandy Creek, and then to Flagstone Creek. There is also some *low risk* (green) WWBW mapping upstream of the impact area, though the upper limit of the waterway, as determined on ground via referral to SARA occurs partway through the proposed impact area (refer **Appendix A**).

The proposed development seeks to infill approximately 240 metres (m) of mapped *low risk* (green) WWBW as part of Flagstone West - Context Area 4 (CA4) works within the greater Flagstone West project, approved by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) as EPBC 2014/7206. The application area is located on Lot 907 on SP332140 within the Logan City Council (LCC) Local Government Area and the Greater Flagstone Priority Development Area (PDA). The proposed works are generally in accordance with the Economic Development Queensland (EDQ) endorsed PDA Context Plan for CA4 (refer **Appendix B**). Proposed waterway barrier works will only impact the upper portion of the mapped *low risk* (green) WWBW, with no impacts to downstream values (green, red, and major waterways) anticipated.

The proposed waterway barrier works are located approximately 17.44 kilometres (km) south-west of Logan Village (refer **Figure 1**). The broader surrounding landscape within this PDA either contains or is slated for development, which exists currently in a variety of stages. Comprising and immediately adjoining CA4 to the south is some land dominated by cleared paddocks, with vegetation corridors retained along flow paths where historic clearing has been less prevalent. North is the in-progress residential development for Flagstone City (CA1), and further north again is vacant bushland recently approved by the EPBC Act for development (EPBC 2019/8398). Similarly, west of the application area also contains vacant bushland approved for development (EPBC 2015/530). East of the application area is a matrix of residential and rural residential properties intersected by environmental corridors along Sandy Creek and its tributaries.

The identified mapped *low risk* (green) WWBW has experienced significant historical disturbance as part of clearing and maintenance for agricultural land uses. As mentioned, pre-lodgement SARA advice determined the upper limit for this waterway is located centrally along the mapped flow path, within the western portion of the proposed works area (**Appendix A**). Vegetation occurs as scattered trees through cleared paddock north and south of the waterway, and as narrow linear strips and patches along the waterways and drainage features (refer **Figure 2**). The highly disturbed adjoining tributaries will provide opportunity for mitigation rehabilitation works within proximity to the proposed waterway barrier works.



This report provides a response to *State Code 18: Constructing or raising waterway barrier works in fish habitats Table 18.1: Operational Work*. Under the *Fisheries Act 1994*, the proposed works area will interact with one (1) mapped waterway classified as a *low risk* (green) WWBW (refer **Figure 3**). Mapped *high risk* (red) and *major risk* (purple) WWBW occur further downstream of the proposed works area and will not be impacted.

The OPW application area is also mapped as containing a drainage feature under the *Water Act 2000* (Qld), and as a Matters of State Environmental Significance (MSES) watercourse intersected by regulated vegetation, although no regulated vegetation occurs within the impact area (refer **Figure 4** and **Figure 5**, respectively).

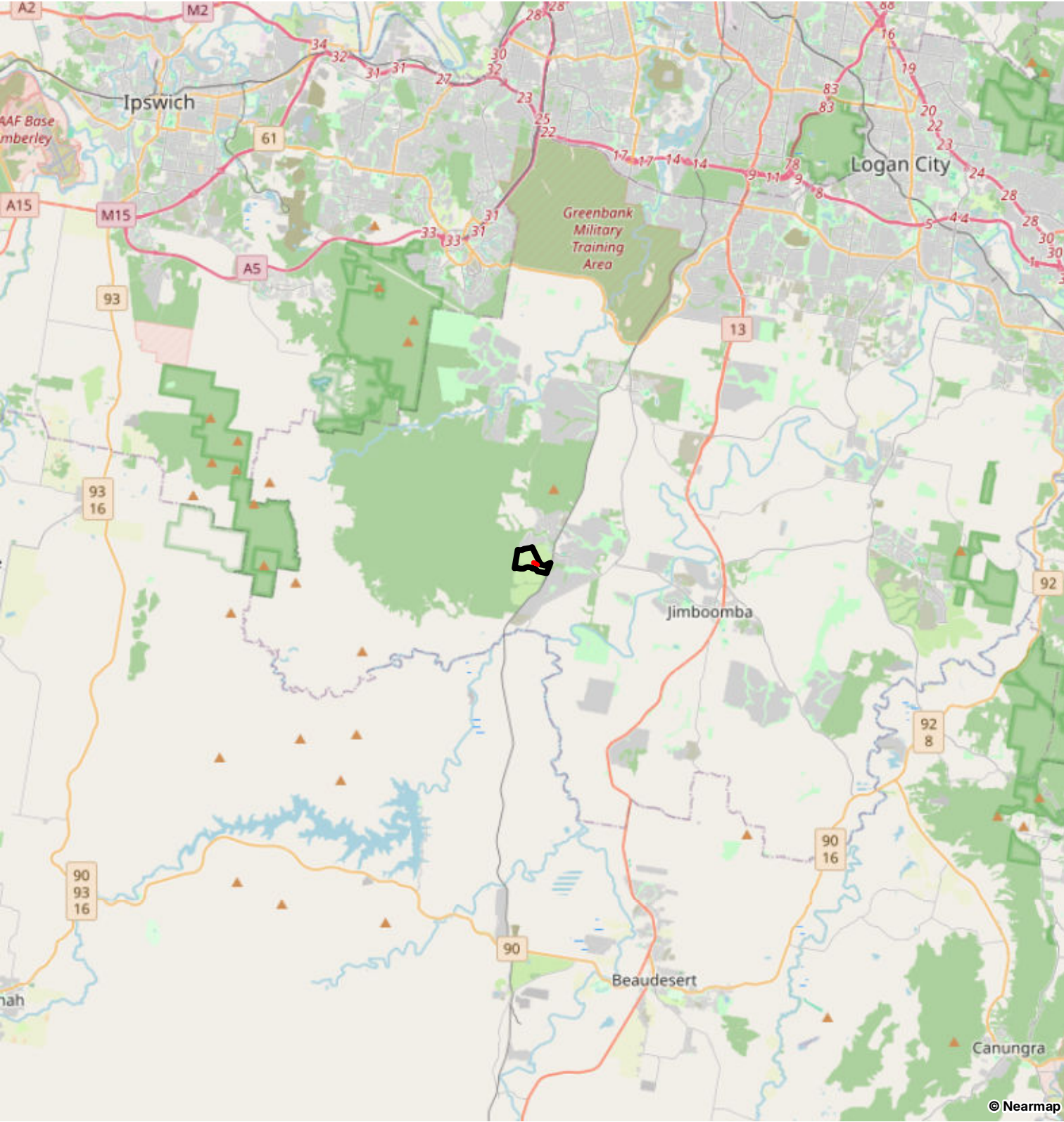
1.1. Property Summary

Key site details are provided in **Table 1** below.

Table 1: Property Summary

Address	Flagstone West - Context Area 4, Flagstone, QLD, 4280
Lot/plan	Lot 907 on SP332140
Vegetation Management Act 1999	Category X (non-remnant)
Fisheries Act 1994	<i>Low risk</i> (green) waterway (within OPW area) <i>High risk</i> (red) waterway (downstream from OPW area) <i>Major risk</i> (purple) waterway (downstream from OPW area, outside of property boundary)
Water Act 2000	Drainage Feature
State Planning Policy	MSES – Regulated vegetation (intersecting a watercourse)
LGA	Logan City Council
PDA	Flagstone Development Scheme
Existing Land Use	Rural
Proposed Land Use	Residential development





LEGEND

CA4 Boundary

Impact Area

Figure 1

Site Context

CLIENT

PEET
FLAGSTONE
CITY PTY LTD

FILE REFERENCE
13222 E Figure 1 Site Context A

DATE
22/07/2026

FLAGSTONE CITY CONTEXT AREA FOUR

0246

km

COORDINATE SYSTEM

GDA 2020 MGA Z56

SCALE (A4)

1:250,000

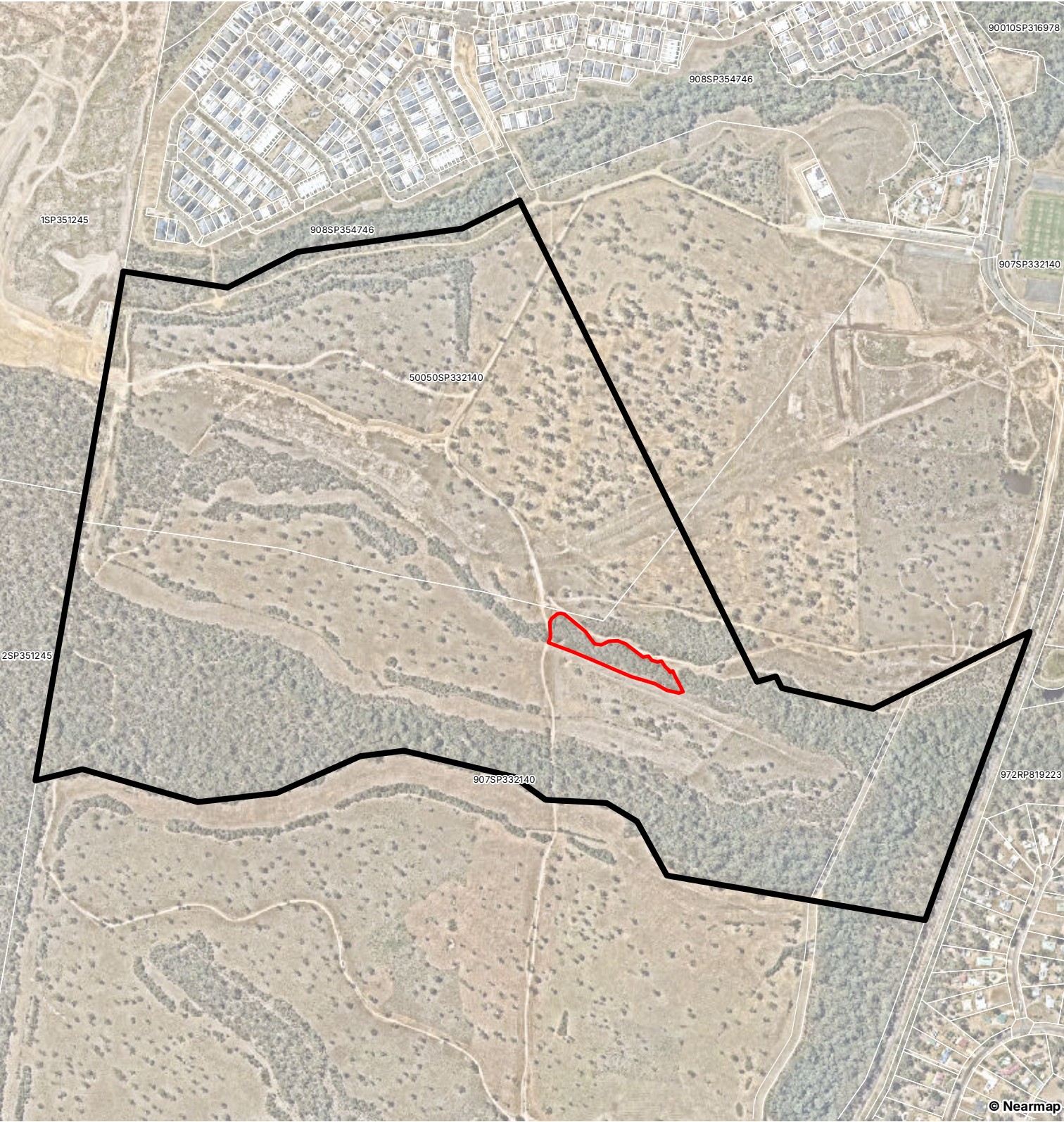
N

**Saunders
Havill**

BOWENHILLS | SPRINGFIELD
1300 123 744 | mail@saundershavill.com

DISCLAIMER

THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT. SAUNDERS HAVILL CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.



LEGEND

QSCF

CA4 Boundary

Impact Area

Figure 2

Site Aerial

CLIENT

PEET
FLAGSTONE
CITY PTY LTD

FILE REFERENCE
13222 E Figure 2 Site Aerial A

DATE
22/07/2026

FLAGSTONE CITY CONTEXT AREA FOUR

**Saunders
Havill**

BOWENHILLS | SPRINGFIELD
1300 123 744 | mail@saundershavill.com

0100200 m

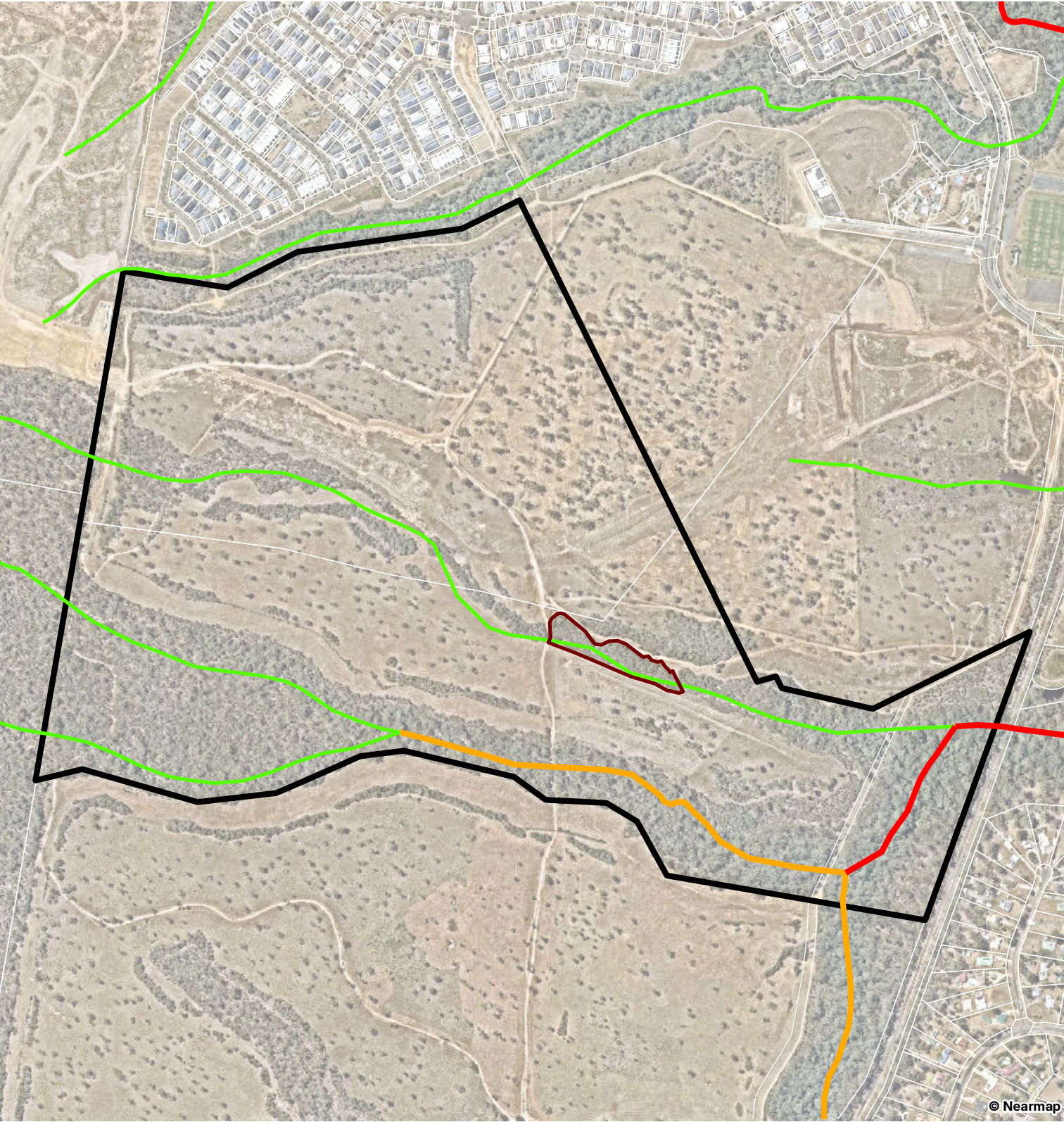
COORDINATE SYSTEM
GDA 2020 MGA Z56

SCALE (A4)
1:9,000

N

DISCLAIMER

THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT. SAUNDERS HAVILL CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.



LEGEND

QSCF

CA4 Boundary

Impact Area

Waterways

Risk of Impact

1 - Low

2 - Moderate

3 - High

Figure 3

Fisheries - Waterway for
Waterway Barrier Works

FILE REFERENCE
13222 E Figure 3 Fisheries A

DATE
22/07/2026

FLAGSTONE CITY CONTEXT AREA FOUR

0 50 100 150 m

COORDINATE SYSTEM
GDA 2020 MGA Z56

SCALE (A4)
1:9,000



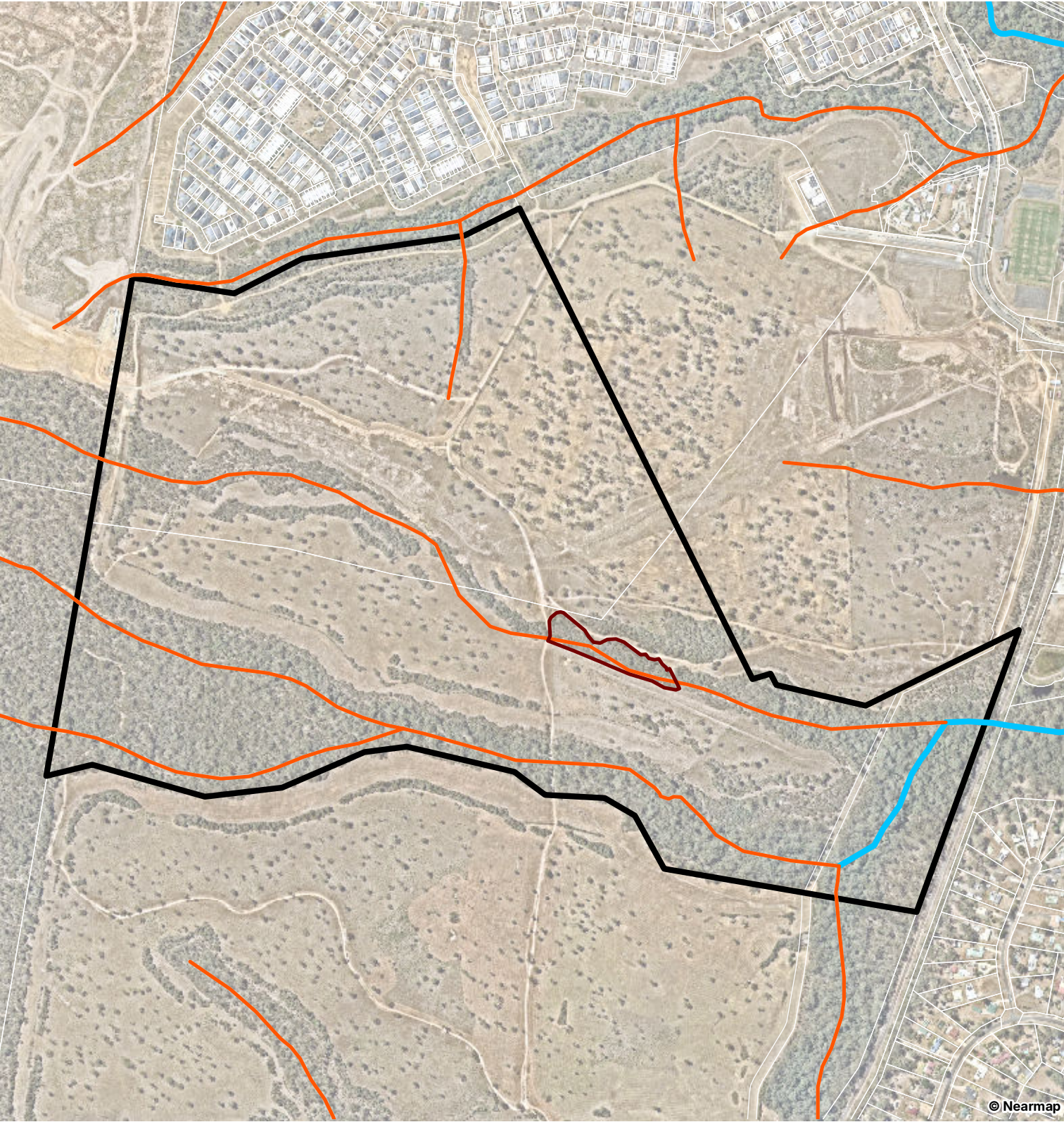
CLIENT

PEET
FLAGSTONE
CITY PTY LTD

**Saunders
Havill**

BOWENHILLS | SPRINGFIELD
1300 123 744 | mail@saundershavill.com

DISCLAIMER
THESE PLANS HAVE BEEN PREPARED FOR THE
EXCLUSIVE USE OF THE CLIENT. SAUNDERS
HAVILL CANNOT ACCEPT RESPONSIBILITY FOR
ANY USE OF OR RELIANCE UPON THE CONTENTS
OF THESE DRAWINGS BY ANY THIRD PARTY.



- LEGEND**
- QSCF
 - CA4 Boundary
 - Impact Area
 - Drainage Feature [defined by Water Act 2000]
 - Watercourse [defined by Water Act 2000]

Figure 4

Water Act - Waterways and
Drainage Features

FILE REFERENCE
13222 E Figure 4 Water Act Waterways A
DATE
22/07/2026

FLAGSTONE CITY CONTEXT AREA FOUR

0 50 100 150 m

COORDINATE SYSTEM
GDA 2020 MGA Z56

SCALE (A4)
1:9,200

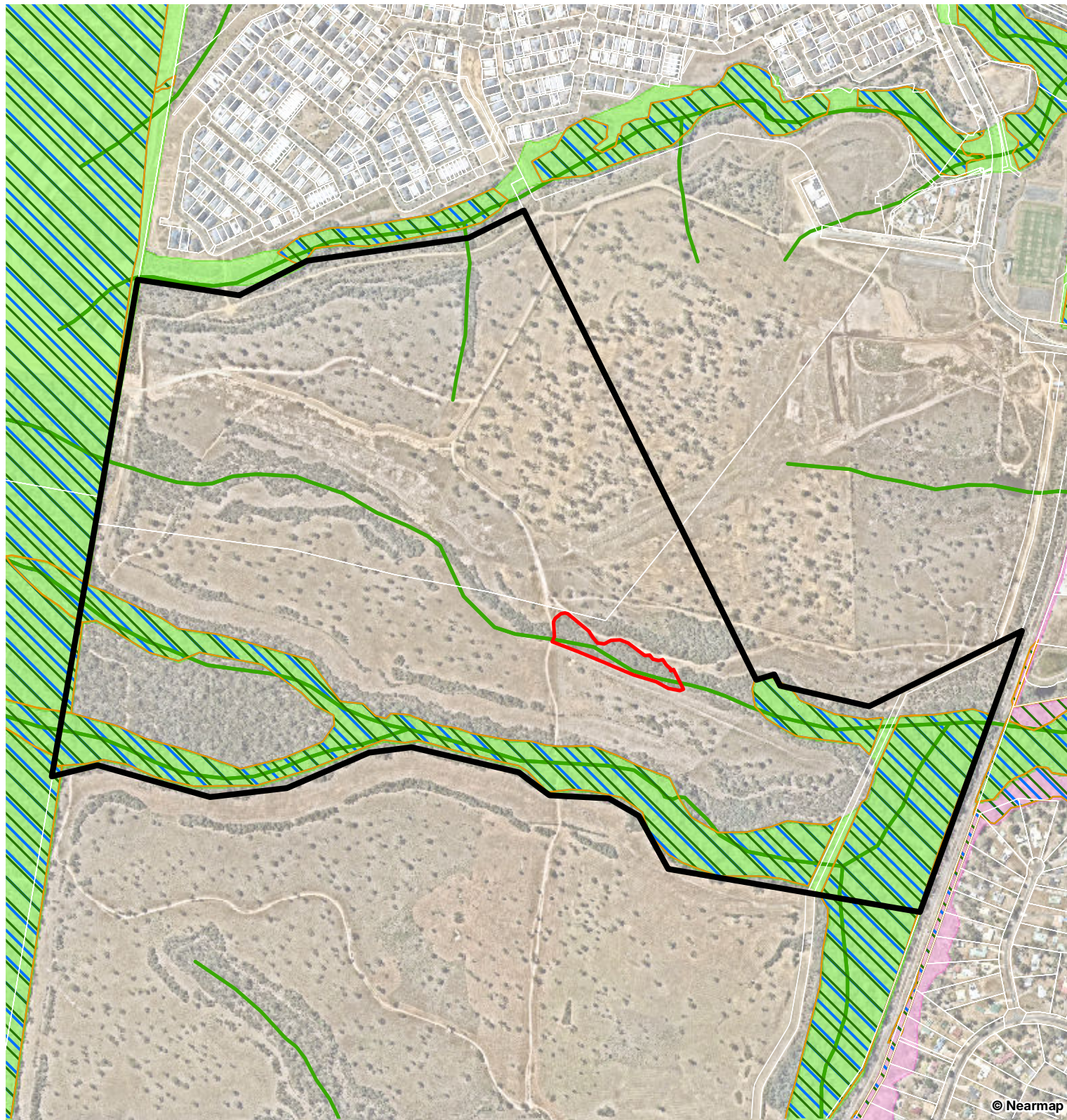


CLIENT

PEET
FLAGSTONE
CITY PTY LTD

**Saunders
Havill**
BOWENHILLS | SPRINGFIELD
1300 123 744 | mail@saundershavill.com

DISCLAIMER
THESE PLANS HAVE BEEN PREPARED FOR THE
EXCLUSIVE USE OF THE CLIENT. SAUNDERS
HAVILL CANNOT ACCEPT RESPONSIBILITY FOR
ANY USE OF OR RELIANCE UPON THE CONTENTS
OF THESE DRAWINGS BY ANY THIRD PARTY.



© Nearmap

LEGEND

- QSCF
- CA4 Boundary
- Impact Area
- MSES Wildlife habitat (endangered or vulnerable)
- MSES Wildlife habitat (SEQ koala habitat - core)
- MSES Regulated vegetation (intersecting a watercourse)
- MSES High ecological value waters (watercourse)
- MSES Regulated vegetation (essential habitat)
- MSES Regulated vegetation (category B)
- MSES Regulated vegetation (category C)
- MSES Regulated vegetation (wetland)

Figure 5

Matters of State Environmental Significance

FILE REFERENCE
13222 E Figure 5 MSES A

DATE
22/07/2026

FLAGSTONE CITY CONTEXT AREA FOUR

0 50 100 150 m

COORDINATE SYSTEM
GDA 2020 MGA Z56

SCALE (A4)
1:9,200



CLIENT

PEET
FLAGSTONE
CITY PTY LTD

**Saunders
Havill**
BOWENHILLS | SPRINGFIELD
1300 123 744 | mail@saundershavill.com

DISCLAIMER
THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT. SAUNDERS HAVILL CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.



1.2. Desktop Analysis

The proposed works area does not occur within a mapped fish habitat management area nor within tidal waterways.

The OPW application area is mapped as containing one (1) *low risk* (green) WWBW, an unnamed tributary of Sandy Creek. This mapped WWBW runs horizontally through the centre of CA4 surrounded by a narrow strip of linear vegetation bordered by open, maintained paddocks with scattered trees. It begins approximately 200 m into the eastern adjoining lot (Lot 1 on SP351245) and is intersected vertically by three (3) internal roads in the west and centre of the property. The OPW application area begins immediately east of the central road intersection and continues east, bound also to the north by another internal road. Downstream approximately 480 m from the eastern boundary of the OPW area, along the eastern property boundary for Lot 907, this waterway transitions into Sandy Creek that is mapped as a *high risk* (red) WWBW. Approximately 3.7 km further downstream, Sandy Creek transitions into Flagstone Creek, a *major risk* (purple) waterway.

1.2.1 Historical Aerial Imagery Analysis

An assessment of historical aerial imagery was undertaken as part of desktop analysis of the impact area (refer **Plan 1**).

The proposed impact area and surrounding CA4 have contained disturbed vegetation for agriculture since at least 1944. Some erosion is visible along the western portion of the mapped waterway, and the railway line adjoining the CA4 eastern boundary is present. Land use and vegetation coverage is relatively consistent from the 1940s through to the 1990s, with some regrowth of vegetation visible in that time.

In the late 1990s this vegetation is again notably disturbed, with the appearance of vehicle tracks that are still present on the site today. This includes the three (3) vertical tracks that intersect the centrally mapped waterway, and bound the western edge of the proposed impact area. As such, barriers to water flow and potential fish movement have been present and likely degrading the waterway channel and general condition for approximately thirty (30) years. The adjoining lots east of the railway line also experienced notable clearing and urbanisation through the 1990s for residential and rural development, reducing connectivity and potential habitat for fauna. The southern-most paddock lot associated with the Flagstone West area is also seen to be cleared up to and adjoining the waterway by this time.

In the late 2000s, the site and adjoining southern lots underwent significant vegetation clearing that is generally maintained to the present day. Vegetation is preserved in an approximately 25 m buffer around most mapped waterways. This vegetation seems to have generally declined or been reduced along the western waterway extent, measuring at an approximately 15 m buffer by the present day. Notably, vegetation connecting the upstream extent of the mapped waterway to the western neighbouring property was not retained, though vegetation has since regrown, suggesting limited waterway features were observed. The eastern adjoining residential area is also relatively developed by 2008, with retained vegetation limited to the waterway corridors still present currently.

1.2.2 Hillshade Analysis

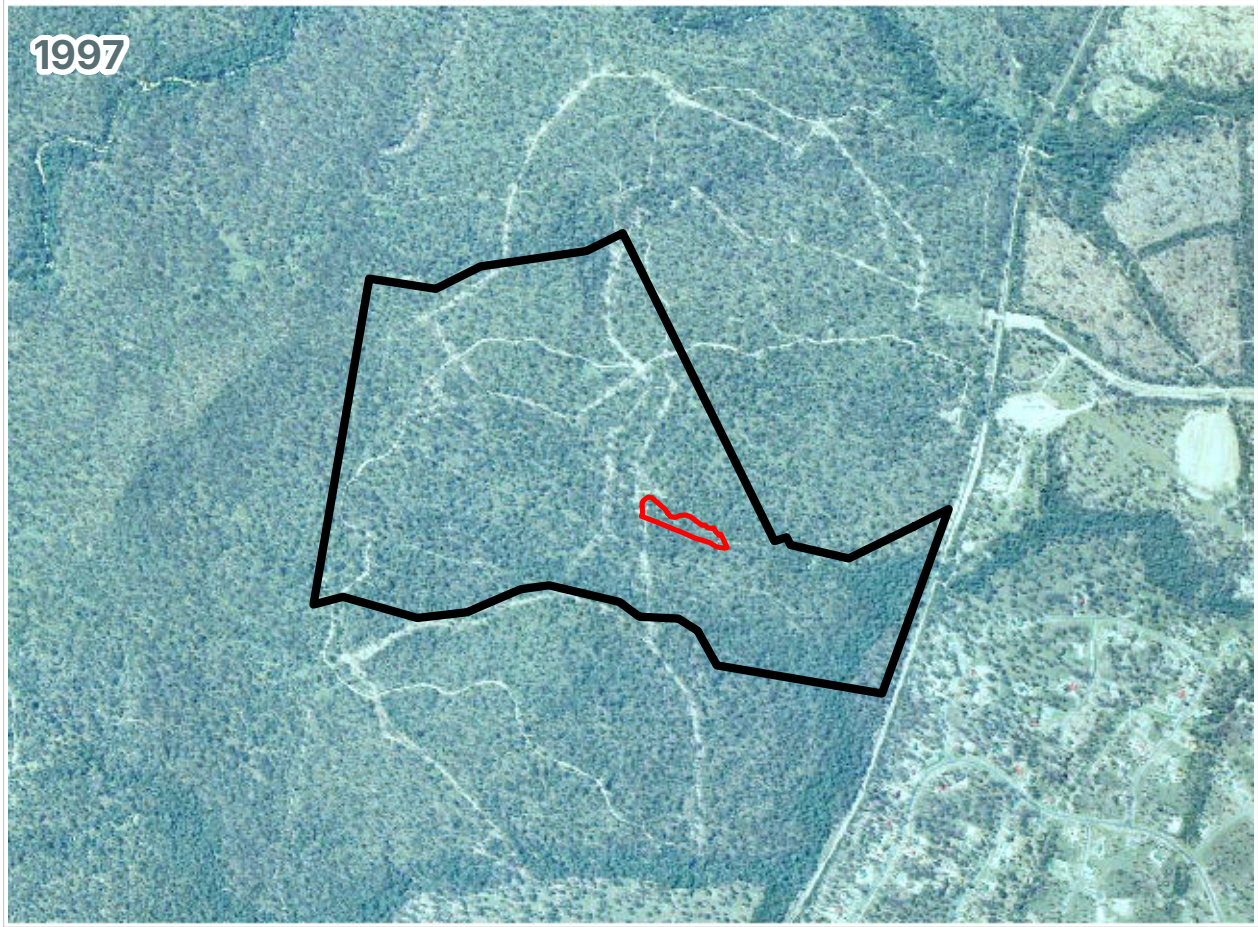
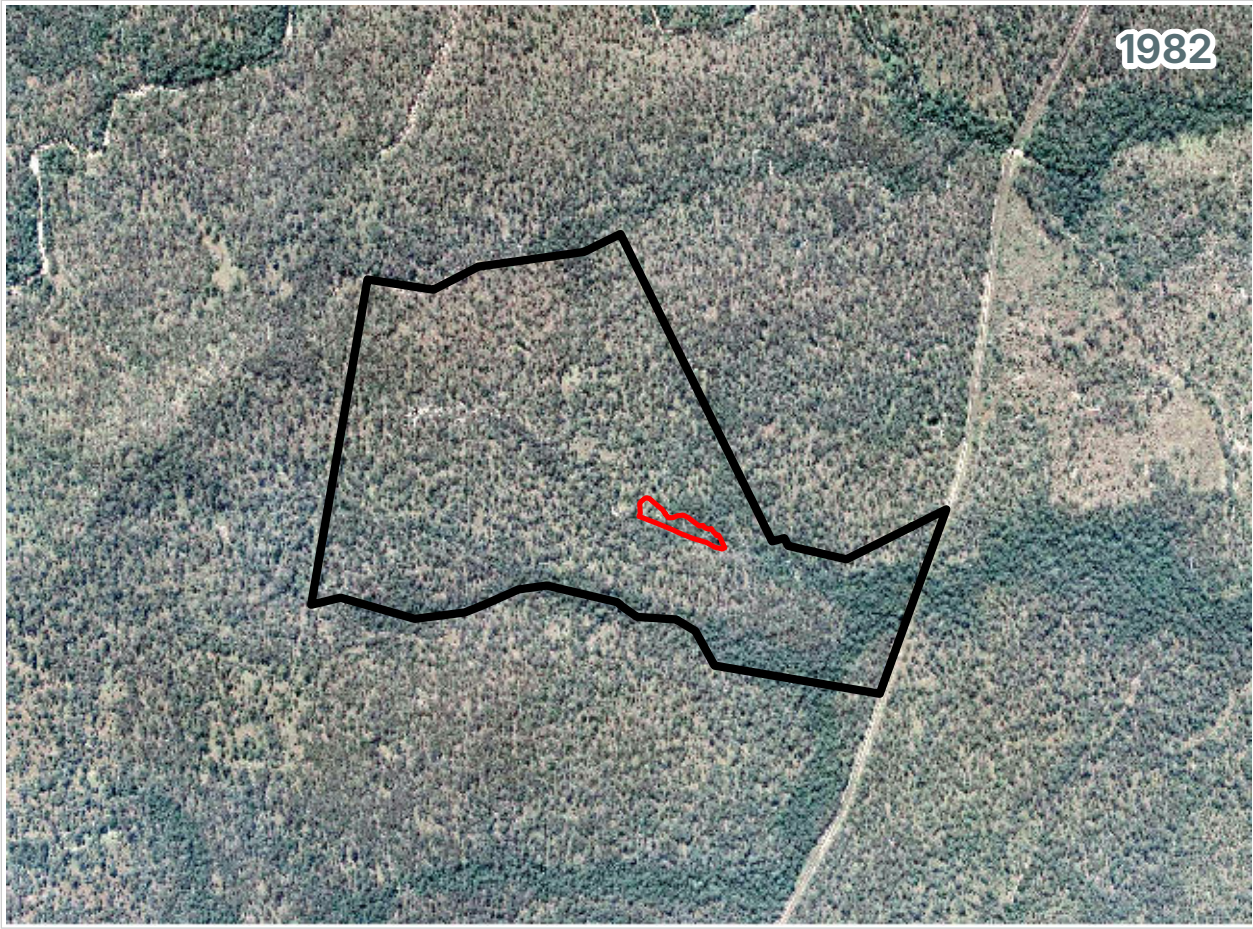
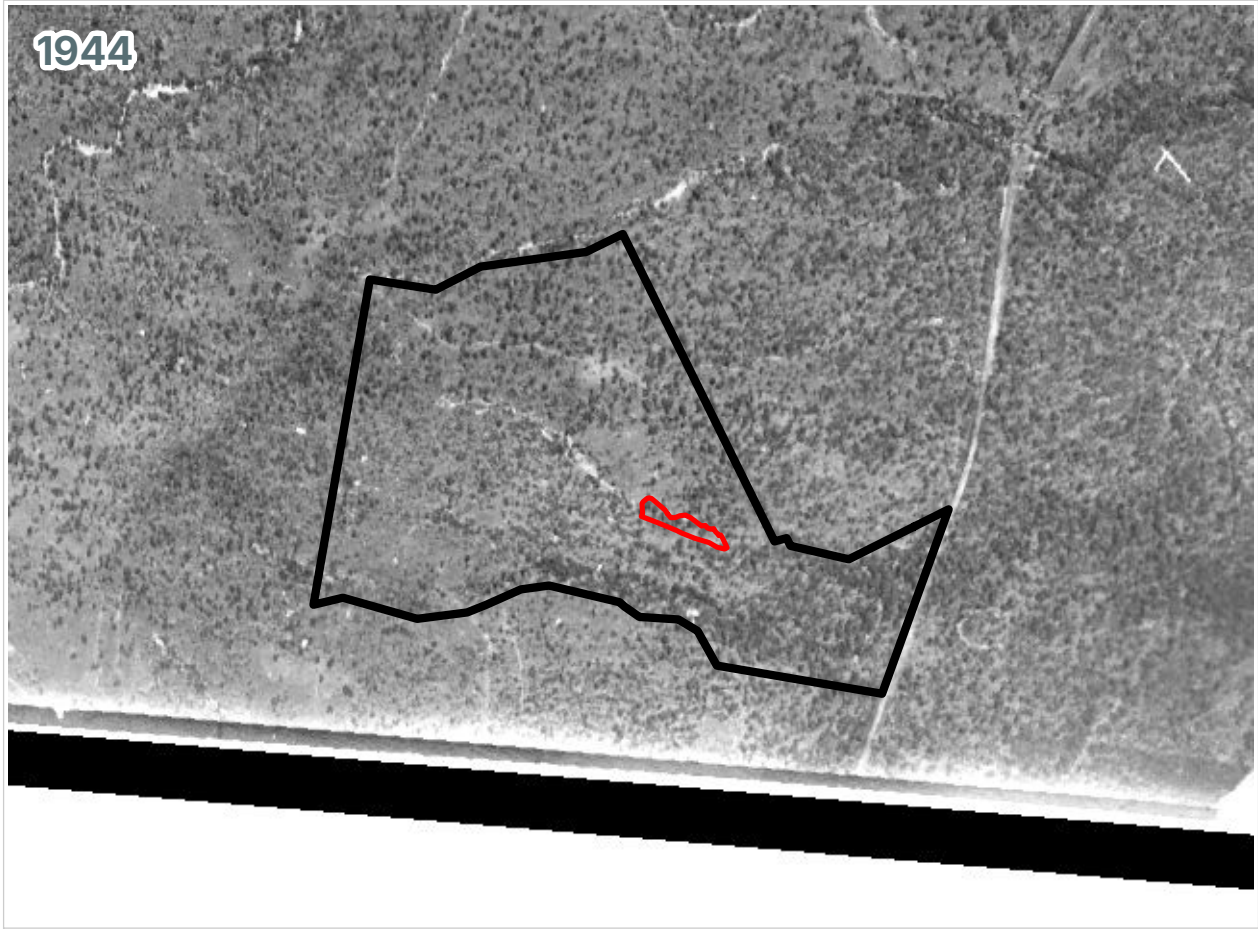
An assessment of Hillshade imagery was undertaken as part of the desktop analysis conducted (refer **Plan 2**). The mapped waterway and surrounding land is shown to be heavily modified due to historical and ongoing agricultural and rural land practices. The general waterway flow path is apparent within the



Hillshade imagery, adjoining otherwise flat, cleared land. The nearby internal roads are also clear, bounding the impact area to the west, north, and south. The western road vertically intersects the flow path, removing connectivity to the balance of the formerly mapped waterway to the west. There is no culvert or sign of altered flow, suggesting only an overland flow path during heavy rain events. Either side of the intersecting road the flow path channel is disturbed, lacking defined bed and banks. The channel becomes more singular and visible as it continues east. This is representative of the upper limit point determined by SARA, which does not map the waterway as being present within the western-most portion of the impact site, nor west beyond the road intersection.



01. HISTORICAL AERIAL IMAGERY



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.

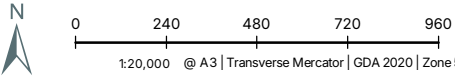
Layer Sources
© State of Queensland (Department of Resources) 2026.
Updated data available at
<http://qldspatial.information.qld.gov.au/catalogue/>
* Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

LEGEND

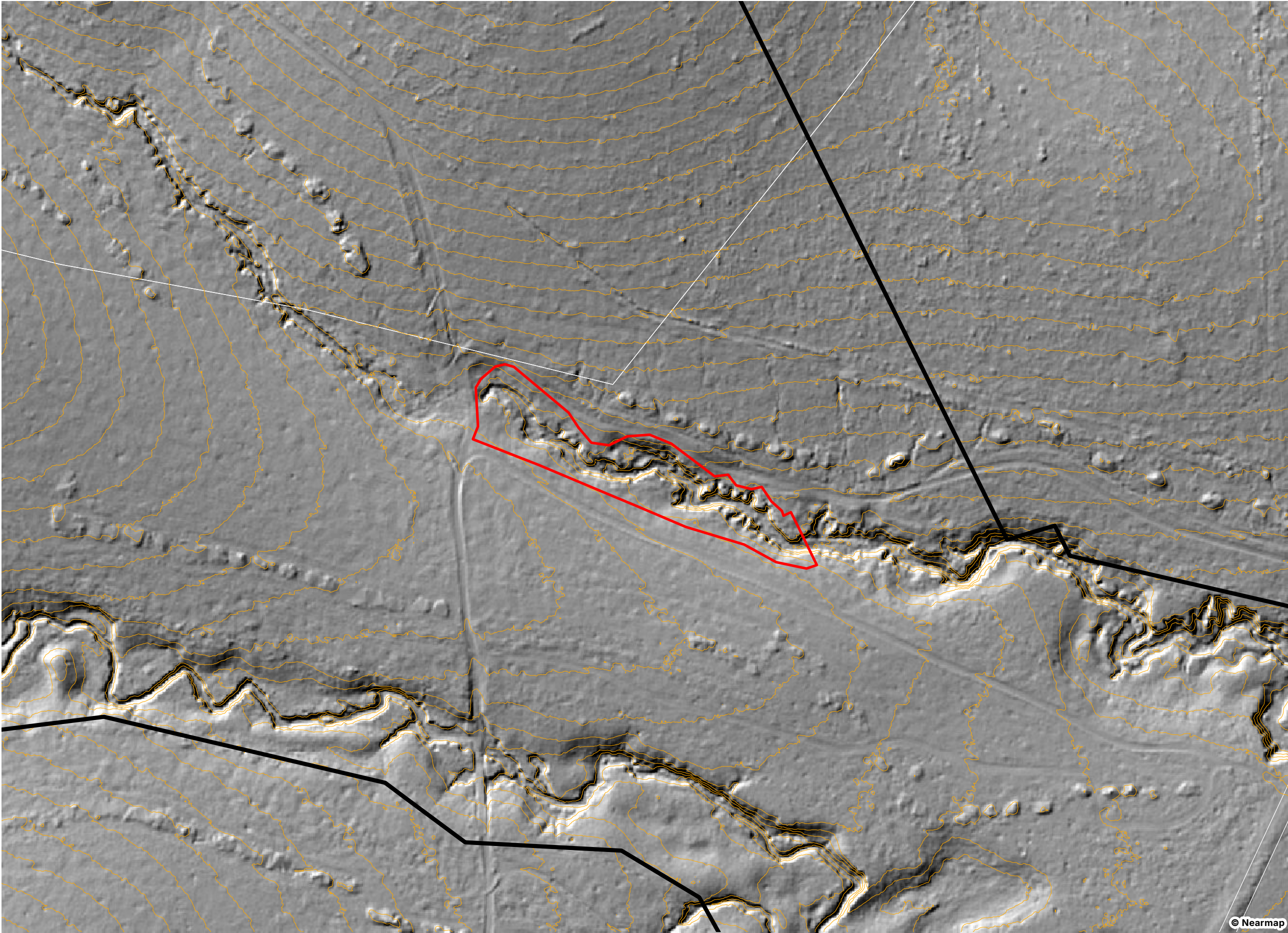
CA4 Boundary

Impact Area

AMENDMENTS				
Issue	Date	Description	Drawn	Checked
A	23/07/2026	Preliminary	LS	KT



02.HILLSHADE ANALYSIS



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources
© State of Queensland (Department of Resources) 2026.
Updated data available at
<http://qldspatial.information.qld.gov.au/catalogue/>
* Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

- LEGEND**
- CA4 Boundary
 - QSCF
 - Impact Area
 - 1m Contours

AMENDMENTS				
Issue	Date	Description	Drawn	Checked
A	23/07/2026	Preliminary	LS	KT

N

050100m

1:2,500 @ A3 | Transverse Mercator | GDA 2020 | Zone 56



2. Field Survey Results

Field survey of the impact area and adjoining tributaries was undertaken 16 June 2026 by two (2) SH Ecologists to determine the status of the waterway characteristics and the on-ground extent. The upper and lower waterway banks within and directly adjoining the east of the impact area were mapped using a handheld GPS, and observational assessment of the waterway condition including bed and bank features, erosion, weed coverage, and the presence of water and flow, riparian vegetation, and fish habitat was conducted. The balance of the waterway mapping to the east as well as the southern adjoining waterway were also walked in their entirety to assess their condition, particularly regarding erosion, dispersive soils and weed extent for potential rehabilitation works. The mapped waterway banks and survey extent are shown on **Plan 3**.

Additional field surveys were also previously conducted to support a Significant Biodiversity Assessment Report for PDA assessment on 18 February and 03 March 2026. These surveys assessed the mapped waterway as per the Australian River Assessment System (AUSRIVAS) field protocol, including inspection of geomorphology and waterway features similar to those assessed during recent field surveys. The results of these surveys, which found the proposed impact area to reflect severely eroded and eroded drainage features, supplement the overall understanding and description of the waterway.

2.1. Field Waterway Determination

2.1.1 Mapped *low-risk* WWBW (Impact area)

The proposed works do not occur within a mapped fish habitat management area nor within tidal waterways. However, a *low-risk* (green) WWBW is mapped as traversing west to east through the proposed works area. This mapped *low-risk* (green) WWBW is also mapped as a drainage feature by the *Water Act 2000*.

It is noted that pre-lodgement advice from SARA has determined that a waterway is not considered to be present above the upper limit point (**Plan 3**). Vegetation surrounding the mapped waterway is mapped entirely as Category X (non-remnant) under the *Vegetation Management Act 1999* (VMA). This mapping has been secured by a Property Map of Assessable Vegetation (PMAV 2008/005503). Pre-clear Regional Ecosystem (RE) mapping indicates the area as historically containing *Of Concern* composite RE 12.9-10.2/12.9-10.7 not representative of riparian and zones. Vegetation present within and adjoining the impact area is significantly modified and generally lacks characteristics of pre-clear mapping.

On-ground, the feature exists slightly more north of the mapped line. Generally, the waterway is highly disturbed, with a moderate-high level of erosion and scouring (refer **Photo set 1**). Banks, though discontinuous, were observed along most of the channel, with deep erosion in some sections resulting in upper banks ≥ 4 m. The channel substrate comprises a mixture of rocks, soil, and grass. Surveys confirmed there is no culvert to connect the waterway upstream across the intersecting road. Water was present during field survey as pooled water and low, narrow flow through the channel. Pooled water typically has a high level of turbidity despite some observed past attempts at sediment control, including rocks, geo-fabric, and degraded fencing (refer **Photo set 2**). At multiple points the low flow transitions into overland flow across grass between narrow, eroded channels (refer **Photo set 3**). Habitat features are



minimal, restricted to rocks, sparse woody debris, and a single observed burrow. Fish were not observed within the proposed impact area, nor along the balance of downstream or adjoining flow paths.

Adjoining vegetation is similarly disturbed. No macrophyte or riparian vegetation is present, though vegetation is generally water-tolerant, indicating flow is ephemeral. Vegetation is generally dominated by regrowth *Melaleuca quinquenervia* (Broad-leaved Paperbark), *Corymbia citriodora* (Spotted Gum), and *Lophostemon suaveolens* (Swamp Box), with *Acacia* and *Casuarina* spp. through the understory (refer **Photo set 4**). There is a moderate coverage of non-native species such as *Conyza sumatrensis* (Tall Fleabane), *Passiflora suberosa* (Corky Passion Vine), and *Lantana camara* (Lantana).

Overall, field surveys confirmed the portion of the mapped *low risk* (green) feature upstream of the determined upper limit point is significantly modified and does not reflect a waterway. The downstream portion contains marginal fish passage habitat largely limited to low or overland flow between discontinuous pooling water in an eroded drainage feature.



Photo set 1: General characteristics of mapped waterway impact area.



Photo set 2: Evidence of old sediment control techniques along mapped waterway impact area (Right - rocks and geofabric; Left - old sediment fencing).



Photo set 3: Overland flow across grassed sections of the mapped waterway impact area.



Photo set 4: Vegetation adjoining the mapped waterway impact area.



2.1.2 Adjoining Tributaries

The adjoining tributaries were walked in their entirety as part of detailed surveys assessing potential rehabilitation requirements. These waterways, similar to the impact area, were found to be highly disturbed by both weed infestation and erosion. The highest levels of weed infestation and erosion were noted in the eastern and western portion of the southern mapped waterways that run parallel to the *low-risk* (green) WWBW comprising part of the impact area. Field surveys found water flow along the adjoining tributaries was generally less than recorded through the impact area and the balance of its mapped *low-risk* (green) WWBW.

Balance of the *low-risk* (green) WWBW

East of the proposed impact area the mapped *low-risk* (green) WWBW continues in a similar condition as within the impact area, with pooling and low flow water with moderate weed infestation and areas of high erosion (refer **Photo set 5**). A cleared easement runs vertically through the mapped waterway, and east of this cleared area is a higher abundance of sediment deposit, despite similar sediment control techniques implemented (refer **Photo set 6**) noting heavy preceding rains. Vegetation becomes denser along the eastern boundary of CA4. Weed infestations also become more prevalent, with notable patches of *Solanum mauritianum* (Wild Tobacco), *Thunbergia alata* (Black-eyed Susan), and *Lantana camara* (Lantana). In the centre of the eastern CA4 boundary vegetation the *low-risk* (green) waterway joins the southern mapped *high-risk* (red) WWBW and continues east off the property.



Photo set 5: General condition of the eastern portion of the mapped *low-risk* WWBW, east of the impact area.





Photo set 6: Sediment deposits present along the mapped WWW within the eastern CA4 boundary vegetation.

Mapped *high-risk* (red) WWBW

The southern mapped *high-risk* (red) WWBW is mapped vertically through the eastern CA4 boundary vegetation. It appears to be ephemeral, with very little water present at the time of survey, and similarly as disturbed as the *low-risk* WWBW (refer **Photo set 7**). However, for much of this mapping the bed and banks are clearly defined, and the channel is on average wider than the *low-risk* mapped waterway. Field surveys noted only isolated pools of water. *Lanata camara* (Lantana) infestation is most severe in the southern extent of this waterway (refer **Photo set 8**). In the south-eastern portion of the CA4 area this waterway transitions into two *moderate-risk* (amber) waterways that runs south beyond the CA4 area and west through the CA4 area, in parallel with the *low-risk* (green) waterway.



Photo set 7: General condition of the mapped high-risk WWBW south-east of the impact area.



Photo set 8: Heavy infestation of *Lantana camara* in the south-east of CA4, along the high-risk WWBW.

Mapped moderate-risk (amber) WWBW

This mapped waterway runs west-east through CA4, approximately 165 m south of the impact area. It is generally highly disturbed and comprises an eroded drainage channel (refer **Photo set 9**). This waterway is disturbed by heavy weed infestations, namely *Lantana camara* (Lantana) along the banks. Erosion is highest through the centre of this mapping, with sediment deposits also noted near the intersecting vehicle track (refer **Photo set 10**). The pre-lodgement SARA advice determined that the upper limit point to this waterway occurs just as it splits into two *low-risk* (green) WWBW that fork west through CA4. Field surveys assessed these flow paths for rehabilitation potential.



Photo set 9: General condition of the mapped moderate-risk WWBW south of the impact area.



Photo set 10: Erosion present along the mapped moderate-risk WWBW south of the impact area.

Southern mapped low-risk (green) WWBWs

These waterways were confirmed to have some of the lowest values of the waterways assessed. Bed and bank features are discontinuous and often not present. The channel is relatively small, often less than 1 m wide. Water was present only as very isolated standing pools. Where banks are present there is a high level of erosion, with sediment and woody debris deposits and tall unstable banks. Weed infestation also remains high, dominated by *Lantana camara* (Lantana) along the banks.



Photo set 11: General condition of the mapped low-risk WWBWs south of the impact area.

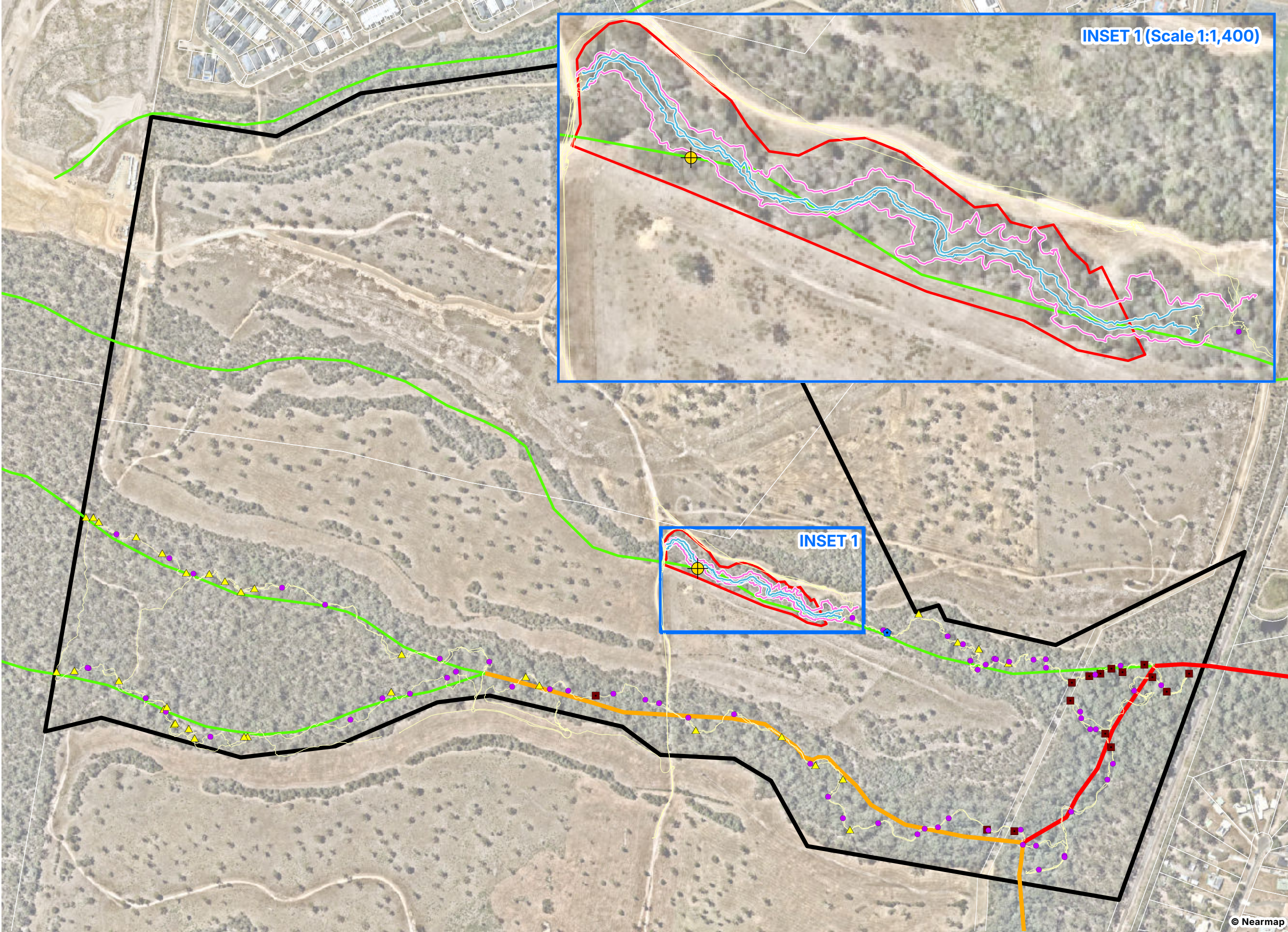




Photo set 12: Erosion present along the mapped low-risk WWBWs south of the impact area.



03.FIELD SURVEY RESULTS - WATERWAY MAPPING

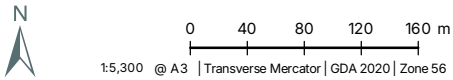


Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources
© State of Queensland (Department of Resources) 2026.
Updated data available at
<http://qldspatialinformation.qld.gov.au/catalogue/>
* Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

- LEGEND**
- CA4 Boundary
 - QSCF
 - Impact Area
 - Field Survey Effort
 - GPS Track Log
 - Ground Truthed Low Bank
 - Ground Truthed Top Bank
 - Erosion / Scouring Present
 - Fallen Log Obstruction
 - Sediment Deposit Present
 - Weed Presence Observation
 - Waterways - Risk of Impact
 - 1 - Low
 - 2 - Moderate
 - SARA Upper Limit Point

AMENDMENTS				
Issue	Date	Description	Drawn	Checked
A	4/08/2026	Preliminary	LS	KT



2.2. Proposed Rehabilitation

Given the high level of disturbance found in the adjoining tributaries that are to be retained under the broader Flagstone CA4 project it is proposed that these will be rehabilitated to facilitate improved fish passage as part of the action in order to mitigate impacts to potential fish habitat and passage caused by the removal of the western extent of the *low-risk* (green) mapped waterway. Rehabilitation will include weed management, barrier removal and stabilisation works within the mapped waterway channels and banks. A Concept Rehabilitation Plan (CRP) for these areas has been developed and is provided at **Appendix C**. It is expected that given the low value habitat observed within the proposed impact area, rehabilitation of these surrounding waterways will mitigate the risk of any significant residual impacts.



3. State Code 18 Response

The Queensland *Fisheries Act 1994* (the Act) regulates the use, conservation and improvement of Queensland's fisheries resources (fish and marine plants) and fish habitats. The Act seeks to ensure adequate provision for fish movement and habitat access during development processes that include:

- Building work in a declared fish habitat area;
- Carrying out operational work completely or partly within a declared fish habitat area;
- Carrying out operational work that is the removal, destruction or damage of marine plants; and
- Carrying out Waterway Barrier Works.

SARA mapping for the proposed works area identifies the development area as containing *Fisheries Act 1994* feature layers (refer **Figure 3**) including one (1) green *low-risk* Waterway for Waterway Barrier Works.

3.1. Waterway Barrier Works

The purpose of *State Code 18: Constructing or raising waterway barrier works in fish habitats* is:

to ensure that development involving the constructing or raising of waterway barrier works in a fish habitat:

1. *maintains fish movement and connectivity throughout waterways and within and between fish habitats*
2. *maintains the health and productivity of fisheries resources and fish habitat*
3. *maintains the community and fishing sectors' use of the area and access to fisheries resources*
4. *provides adequate fish passage including a fish way, if necessary*
5. *avoids impacts or, where the matters of state environmental significance cannot be reasonably avoided, impacts are reasonably minimised and mitigated does not result in a significant residual impact on a matter of state environmental significance unless the significant residual impact is acceptable, and an offset is provided*

Schedule 1 of the Act defines the following terms below:

- fish habitat: *'includes land, waters and plants associated with the life cycle of fish, and includes land and waters not presently occupied by fisheries resources'*.
- fisheries resources: *'includes fish and marine plants'*.
- waterway barrier works: *'a dam, weir, crossing, fill or other complete or partial barrier within a waterway if the barrier limits fish access to, or movement within, a waterway'*.

The proposed action is to infill a total 3,101 m² of the upstream end of a mapped *low risk* (green) waterway to facilitate the approved development of CA4 within the greater Flagstone West urban development project (refer **Plan 4**). The ground-truthed impacts are slightly reduced from this total as a determination from SARA (refer **Appendix A**) confirmed WWBW are not present beyond the upper limit point marked on **Plan 4**, a result of severe disturbance from historical and ongoing clearing and disruption of the flow path



and potential fish passage from the western adjoining road. The rectified impact including portions above the upper limit of the waterway is 3,101 m². As such, the development triggers a response to *State code 18: Constructing or raising waterway barrier works in fish habitats (v3.6)*, specifically Table 18.1 (refer **Section 3.2**).

To mitigate impacts to 3,101 m² of ground-truthed waterway, the action also proposes to rehabilitate the adjoining tributaries retained within CA4 that are highly disturbed. Field surveys noted multiple areas of severe weed infestation and erosion leading to siltation that would be rectified generally in accordance with the provided CRP.

This proposed action and broader development is also aligned with the CA4 Context Plan endorsed by EDQ for the Greater Flagstone PDA (**Appendix B**). Under this Context Plan, the proposed works area comprises part of a major centre, while the balance of the mapped waterway and adjoining tributaries are to be retained within open space/conservation area.



3.2. Operational Works Code Response

Table 2: Response to Table 18.1 Operational Work of State Code 18

Performance outcomes	Acceptable outcomes	Response
All development - Impacts on waterway		
PO1 Waterway barrier works do not result in adverse impacts on waterways.	No acceptable outcome is prescribed.	Response to PO1 The upper limit point of the waterway as determined by SARA (Appendix A) is located within the western portion of the proposed works area. Upstream of this point is not considered to constitute a waterway, however, these values have been included in the impact assessment. As such, the works area comprises 3,101 m² of the upstream end of a <i>low-risk</i> WWBW. Field surveys found the balance of the waterway through the works area and beyond contains limited value for fish habitat and passage. The <i>low-risk</i> waterway is highly disturbed, reflective of an ephemeral, eroded drainage feature. No evidence of fisheries resources was recorded. As such, the utility and relative value to fish passage of the proposed works area given the lack of upstream values is considered to be minimal. The rehabilitation of the balance of the mapped waterway and adjoining tributaries within CA4 will mitigate the risk for a potential significant residual impact of the removal of 3,101 m² of the upstream end of a disturbed <i>low-risk</i> waterway.



Performance outcomes	Acceptable outcomes	Response
PO2 Development is designed, constructed and maintained to avoid and minimise impacts on matters of state environmental significance.	No acceptable outcome is prescribed.	Complies with PO2 <i>Fish Habitat Area</i> No fish habitat areas are mapped as occurring within the proposed works area. <i>Fish Passage</i> The proposed action will remove 3,101 m² of the upstream end of one (1) mapped <i>low-risk</i> (green) WWBW. The development has been designed to avoid and minimise impacts to fish passage by removing only the highly disturbed upstream end of the mapped waterway in line with approval intent. This will not fragment a waterway. Downstream values beyond the works area will be retained and rehabilitated alongside the adjoining tributaries with an open space/conservation area to preserve and improve fish passage and habitat within the broader CA4 project area. <i>MSES Regulated Vegetation (intersecting a watercourse)</i> The mapped <i>low-risk</i> waterway is also mapped as 'MSES regulated vegetation intersecting a watercourse' (Figure 5). Notably, the flow path is defined as a drainage feature under the <i>Water Act 2000</i>, and the VMA that controls regulated vegetation relies on the same definition. Further, regulated vegetation is not present.



Performance outcomes	Acceptable outcomes	Response
		Field surveys confirmed this waterway is highly disturbed, reflective of an ephemeral, eroded drainage feature. The proposed works will remove only the highly disturbed upstream extent of the waterway. Downstream values beyond the works area will be retained and rehabilitated alongside the adjoining tributaries with an open space/conservation area to preserve and improve fish passage and habitat within the broader CA4 project area.
PO3 Where development impacts on matters of state environmental significance, development mitigates impacts and provides an offset for any acceptable significant residual impact on matters of state environmental significance. <i>Statutory note: For Brisbane core port land, an offset may only be applied to development on land identified as E1 Conservation / Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan.</i>	No acceptable outcome is prescribed.	Complies with PO3 Mapping under the SPP, including MSES, will trigger specific requirements for development. Notably, the flow path is not a watercourse as defined by the VMA so the MSES mapping layer is considered inaccurate. Vegetation along the waterway is disturbed and is entirely mapped as Category X (non-remnant) vegetation. No riparian vegetation was recorded. The development has minimised the impact to potential fish habitat and passage by removing only the upstream extent of the disturbed <i>low-risk</i> waterway. This waterway is reflective on ground of an ephemeral, disturbed, and eroded drainage feature. Regardless, the removal of the upstream extent of the waterway will reduce potential fish habitat and passage. This is proposed to be mitigated by the rehabilitation of highly disturbed downstream



Performance outcomes	Acceptable outcomes	Response
		and adjoining values beyond the works area within CA4. These mapped <i>low-</i> , <i>moderate-</i> , and <i>high-risk</i> waterways will be retained and rehabilitated within an open space/conservation area to preserve and improve fish passage and habitat within the broader CA4 project area. As such, the proposal will mitigate any potential impact on MSES and is not considered to have a significant residual impact.
All development in general		
PO4 Aspects of development are only permitted within a waterway where there is a functional requirement, and the development cannot be feasibly located elsewhere. Ancillary elements are to be located outside of the waterway.	No acceptable outcome is prescribed.	Complies with PO4 The proposed action is to infill the upstream extent of a disturbed <i>low-risk</i> waterway. This is required to facilitate the approved development of CA4 within the broader Flagstone West urban development also approved under the EPBC Act within the Greater Flagstone PDA. The proposed works area aligns with the EDQ-approved Context Plan and is necessary for construction of the 'major centre'. The balance of mapped waterways within CA4, including the downstream extent of the impacted waterway, will be retained and rehabilitated within open space/conservation area to preserve and improve fish habitat and passage where connectivity values are highest and can be practically facilitated alongside the required development. In addition, best practice erosion and sediment control will be conditioned on operational works approval.



Performance outcomes	Acceptable outcomes	Response
PO5 For the life of the barrier, adequate fish passage is provided and maintained through: 1. fish way(s) that adequately provide for the movement of fish; or 2. the movement of fish is adequately provided for in another way.	<i>For all crossings:</i> AO5.1 Hydraulic conditions (depth, velocities and turbulence) from the downstream to the upstream limit of the structure allow for fish passage of all fish attempting to move through the crossing at all flows up to the drownout of the structure. AND AO5.2 For the life of the crossing, the relative levels of: 1. a bed level crossing or a culvert invert; 2. bed erosion protection; 3. apron scour protection; and 4. the stream bed are maintained to avoid drops in elevation at their joins. AND AO5.3 The crossing and associated erosion protection structures are installed at no steeper gradient than the waterway bed gradient.	Complies with PO5 Complies with AO5.1 – AO5.22. Current fish passage is highly modified, comprising an ephemeral, eroded drainage feature. The project will remove only the disturbed upstream extent of the <i>low-risk</i> waterway and maintain and rehabilitate fish passage downstream of the impact area and within adjoining tributaries within CA4. No crossings will be installed under these proposed works.



Performance outcomes	Acceptable outcomes	Response
	AND AO5.4 The crossing and associated erosion protection structures are roughened throughout to approximately simulate natural bed conditions. AND AO5.5 Design and maintenance measures are in place for the life of the crossings to keep crossings clear of blockages through a regular inspection program in order to retain fish passage through the crossing. AND <i>For waterway crossings other than bridges and culverts:</i> AO5.6 The crossing is built at or below bed level so that the surface of the crossing is no higher than the stream bed at the site. AND	



Performance outcomes	Acceptable outcomes	Response
	AO5.7 The lowest point of the crossing is installed at the level of the lowest point of the natural stream bed (pre-construction), within the footprint of the proposed crossing. AND AO5.8 There is a height difference between the lowest point of the crossing and the edges of the low flow section of the crossing so that water is channelled into the low flow section of the crossing. AND AO5.9 The level of the remainder of the crossing is no higher than the lowest point of the natural stream bed outside of the low flow channel. AND <i>For bridges:</i> AO5.10 Bridge support piles are not constructed within the low-flow channel and do not constrict the edges of the low-flow channel, and the number of piles in-stream are minimised.	



Performance outcomes	Acceptable outcomes	Response
	AND	
	AO5.11 Bridge abutments and bank revetment works do not extend into the waterway beyond the toes of the banks.	
	AND	
	AO5.12 Suitable fish habitats are maintained within the low-flow channel.	
	AND	
	<i>For culverts:</i>	
	AO5.13 Culverts are only installed where the site conditions do not allow for a bridge.	
	AND	
	AO5.14 The combined width of the culvert cell apertures is equal to 100 percent of the main channel width.	
	AND	
	AO5.15 The base of the culvert incorporates a low flow channel	



Performance outcomes	Acceptable outcomes	Response
	consistent with the natural low flow channel and: 1. is buried a minimum of 300 millimetres to allow bed material to deposit and reform the natural bed on top of the culvert base; or 2. the base of the culvert is the stream bed; or 3. the base of the culvert cell and any instream scour protection is roughened throughout to approximately simulate natural bed conditions. AND AO5.16 The outermost culvert cells incorporate roughening elements such as baffles on their bankside sidewalls. AND AO5.17 Roughening elements are installed on the upstream wingwalls on both banks to the height of the upstream obvert or the full height of the wingwall. AND	



Performance outcomes	Acceptable outcomes	Response
	AO5.18 Roughening elements provide a contiguous lower velocity zone (no greater than 0.3 metres/second) for at least 100 millimetres width from the wall through the length of the culvert and wingwalls. AND AO5.19 Culvert alignment to the stream flow minimises water turbulence. AND AO5.20 There is sufficient light at the entrance to and through the culvert so that fish are not discouraged by a sudden darkness. AND AO5.21 The depth of cover above the culvert is as low as structurally possible, except where culverts have an average recurrence interval (ARI) greater than 50 years. AND	



Performance outcomes	Acceptable outcomes	Response
	AO5.22 For culvert crossings designed with a flood immunity ARI greater than 50 years, fish passage is provided up to culvert capacity. <i>For all other development no acceptable outcome is prescribed.</i>	
PO6 Waterway barrier works are designed, constructed, operated and maintained to provide lateral and longitudinal fish passage for all members of the fish community.	No acceptable outcome is prescribed. <i>For new dams and weirs, refer to PO23.</i>	Complies with PO6 The proposed rehabilitated waterways will maintain lateral and longitudinal fish passage to downstream values.
PO7 The development is designed and operated so that all components of waterway barrier works and pathways of potential fish movement provide for safe fish passage. Stepped spillways are not acceptable.	No acceptable outcome is prescribed.	Complies with PO7 The proposed development will maintain and rehabilitate existing fish passage channels downstream of the proposed works area and within adjoining tributaries within CA4.
PO8 The drownout characteristics of the waterway barrier works are designed and constructed to not result in adverse impacts to fish passage.	No acceptable outcome is prescribed.	PO8 not applicable. There are no drownout characteristics of the waterway barrier works. The upper extent of the <i>low-risk</i> waterway will be in-filled to meet approved planning intent and the downstream and adjoining tributaries within CA4 will be retained and rehabilitated.



Performance outcomes	Acceptable outcomes	Response
PO9 Development does not result in adverse impacts to fisheries resources.	No acceptable outcome is prescribed.	Complies with PO9 Overall, the development will maintain the current waterway values downstream of the proposed works area. The removal of 3,101 m² of the upstream extent of the ephemeral, disturbed, and eroded drainage channel is expected to have a minimal impact on fisheries resources. Any risk of potential residual impacts will be further mitigated via the rehabilitation of the downstream balance of the impacted waterway and other adjoining tributaries within CA4. Thus, the proposed works are not expected to result in a significant residual impact on fisheries resources.
PO10 The design, construction and maintenance of the development does not result in non-essential hardening or unnatural modification of the main channel of the waterway.	No acceptable outcome is prescribed.	Complies with PO10 The upper extent of the <i>low-risk</i> waterway will be in-filled and the downstream and adjoining tributaries within CA4 will be retained and rehabilitated to improve fish passage and habitat value. The project will not result in any unnatural hardening or modification of the retained waterways.
PO11 The development retains natural fish habitat and features such as shade, pools, riffles, rock outcrops and boulders, wherever possible.	No acceptable outcome is prescribed.	Complies with PO11 Field surveys noted there are minimal habitat features within the proposed <i>low-risk</i> waterway works area as it is highly disturbed, reflective of an ephemeral, eroded drainage channel. The proposed development will maintain and rehabilitate current



Performance outcomes	Acceptable outcomes	Response
		fish habitat values through the balance of waterways within and adjoining CA4.
PO12 The design, construction and maintenance of the development does not result in straightening of meandering waterways.	No acceptable outcome is prescribed.	Complies with PO12 The proposed development will maintain and rehabilitate currently existing waterway features outside of the proposed works area. The 3,101 m ² impacted area will be entirely removed.
PO13 Where channels are to be significantly modified, the design and construction of the development replicates natural waterways and habitat features.	No acceptable outcome is prescribed.	Complies with PO13 The proposed development will maintain and rehabilitate currently existing waterway features outside of the proposed works area. The 3,101 m ² impacted area will be entirely removed.
PO14 Where waterway barrier works will modify water levels or flow characteristics of the waterway, existing up and downstream structures are upgraded to provide adequate fish passage in accordance with the new levels or flow characteristics.	No acceptable outcome is prescribed.	Complies with PO14 It is possible that removal of the upstream extent of the <i>low-risk</i> waterway and general following development of the area as a mixed-use urban area will increase water flow along the balance of the retained waterway. However, given the current state of the waterway as an ephemeral drainage channel and the adoption of best practice erosion and sediment controls on approval, this increase is not expected to be a significant impact. Rehabilitation of the retained waterway flow paths, including stabilisation works within the waterway channels, will ensure adequate fish passage is maintained.



Performance outcomes	Acceptable outcomes	Response
PO15 The development is designed, constructed and maintained to provide water exchange sufficient to maintain or improve water quality and flow conditions on which fisheries resources depend.	No acceptable outcome is prescribed.	Complies with PO15 Field surveys found water quality and flow conditions to be low through all the mapped waterways within CA4. The 3,101 m² upstream extent of the impacted <i>low-risk</i> waterway will be removed. Rehabilitation within the retained waterways will include stabilisation works within the channels, removal of weeds and mitigation of sedimentation. This will improve water quality and flow conditions.
PO16 Development likely to cause drainage or disturbance to acid sulfate soils, prevents the release of contaminants and impacts on fisheries resources and fish habitats.	No acceptable outcome is prescribed.	Complies with PO16 The proposed works area is not mapped as containing acid sulfate soils under Logan City Council mapping. If any acid sulfate soils are detected, best practice management will be applied.
PO17 The development is designed, constructed and maintained to not result in adverse impacts to beds, banks and vegetation adjacent to the permanent development footprint.	No acceptable outcome is prescribed.	Complies with PO17 The proposed development will maintain currently existing waterway features outside of the proposed works area. The 3,101 m² impacted area will be entirely removed. Retained waterways will be buffered and rehabilitated within an open space/conservation area bordering and providing connectivity through and around the CA4 development (Appendix B). There is not expected to be any adverse impacts to the bed, banks, and vegetation adjacent to the permanent development footprint.



Performance outcomes	Acceptable outcomes	Response
PO18 After completion of in-stream works, disturbed areas of the bed and banks of the waterway outside the permanent development footprint are returned to their original profile and stabilised to promote regeneration of natural fish habitats.	No acceptable outcome is prescribed.	Complies with PO18 The proposed development will maintain and rehabilitate currently existing waterway features outside of the proposed works area. The 3,101 m ² impacted area will be entirely removed. No areas outside the development footprint are set to be disturbed as a part of the project.
PO19 The development is designed and constructed to maintain or restore the natural substrate of the waterway bed.	No acceptable outcome is prescribed.	Complies with PO19 The proposed development will maintain and rehabilitate currently existing waterway features outside of the proposed works area. The 3,101 m ² impacted area will be entirely removed.
PO20 Development does not adversely impact on community access to tidal land and waterways.	No acceptable outcome is prescribed.	PO20 not applicable The premises does not currently facilitate community access to tidal land and waterways.
PO21 Development does not adversely impact on community access to fisheries resources and fish habitats including recreational and indigenous fishing access.	No acceptable outcome is prescribed.	PO21 not applicable The premises are private, freehold land and do not currently facilitate community access to Fisheries resources and fish habitats. Access may be somewhat increased upon completion of the final, broader CA4 development as a mixed-use urban community as the retained waterways will adjoin residential areas within open space.
PO22	No acceptable outcome is prescribed.	PO22 not applicable



Performance outcomes	Acceptable outcomes	Response
Development does not adversely impact on commercial fishing access and linkages between a commercial fishery and infrastructure, services and facilities.		The premises are not currently associated with commercial fishing access and linkages between a commercial fishery and infrastructure, services and facilities and this will remain unchanged.

Development involving fish ways

PO23

The development provides adequate fish passage through bidirectional fish way(s) at the location of impact or through a net benefit to fish passage at other existing barrier location(s). Other existing barrier location(s) must be located within:

- i. the same river or catchment system; or
- ii. a nearby catchment system with similar aquatic ecology.

AO23

Fish passage is provided and maintained through bidirectional fish way(s) where economically feasible and where it provides environmental benefit.

PO23 not applicable

The proposed action does not include installation of a fish way. The proposed works will maintain and rehabilitate currently existing waterway features outside of the proposed works area. The impacted area will be entirely removed.

Development involving fish ways

PO24

Having regard to the hydrology of the site and fish movement characteristics, the fish way is capable of operating, and will operate:

1. for as long as the waterway barrier work is in position; and
2. whenever there are inflows into the impoundment or waterway, release out of the impoundment and during overtopping events; and

No acceptable outcome is prescribed.

PO24 not applicable

The proposed action does not include installation of a fish way.



Performance outcomes	Acceptable outcomes	Response
3. when the impoundment is above dead storage level.		
PO25 The development is designed, constructed and maintained to ensure the hydrology allows for fish movement for the life of the waterway barrier works.	No acceptable outcome is prescribed.	PO25 not applicable The proposed action does not include installation of a fish way.
PO26 Fish ways are designed, constructed and maintained to not adversely impact on fish and fish movement.	No acceptable outcome is prescribed.	PO26 not applicable The proposed action does not include installation of a fish way.
PO27 Fish ways are designed, constructed and operated to direct release water through the fish way as a priority over the outlet works.	No acceptable outcome is prescribed.	PO27 not applicable The proposed action does not include installation of a fish way.
PO28 Fish ways are designed, constructed and operated to ensure flows and releases of water do not result in adverse impacts to fish or fish passage.	No acceptable outcome is prescribed.	PO28 not applicable The proposed action does not include installation of a fish way.
PO29 The development is designed, constructed and operated to ensure fishway operational issues are promptly rectified for the life of the fishway including: 1. all components are designed to be durable, reliable and adequately	No acceptable outcome is prescribed.	PO29 not applicable The proposed action does not include installation of a fish way.



Performance outcomes	Acceptable outcomes	Response
protected from damage during high flow and flood events		
2. all components can be replaced; and		
3. a contingency plan ensures provision of alternate adequate fish passage during the fish way re-instatement process.		
P030 The development is designed to allow for installation of monitoring equipment and to allow access for monitoring and maintenance.	No acceptable outcome is prescribed.	P030 not applicable The proposed action does not include installation of a fish way.
P031 Fish ways are designed, constructed and operated to source water supply from surface water or equivalent water quality.	No acceptable outcome is prescribed.	P031 not applicable The proposed action does not include installation of a fish way.
P032 Tailwater control structures are designed, constructed and maintained to allow for fish passage.	No acceptable outcome is prescribed.	P032 not applicable The proposed action does not include installation of a fish way.
Development involving floodgates		
P033 The design, construction and operation of a floodgate does not result in adverse impacts on fish, fish passage or fish habitat.	No acceptable outcome is prescribed.	P033 not applicable The proposed action does not include installation of floodgates.
P034 Floodgates are designed, constructed and maintained to ensure the invert is at bed level.	No acceptable outcome is prescribed.	P034 not applicable The proposed action does not include installation of a floodgates.



Performance outcomes	Acceptable outcomes	Response
Temporary waterway barrier works		
PO35 The temporary waterway barrier works will exist only for a specified temporary period.	No acceptable outcome is prescribed.	PO35 not applicable The proposed waterway barrier works are permanent. All temporary works will be conducted under Accepted Development Requirements and conditions of approval.
PO36 The temporary waterway barrier works provides adequate fish movement	No acceptable outcome is prescribed.	PO36 not applicable The proposed waterway barrier works are permanent. All temporary works will be conducted under Accepted Development Requirements and conditions of approval.
PO37 The development is designed, constructed and maintained to ensure temporary barriers are removed and the bed and banks are returned to their original profile and stability.	No acceptable outcome is prescribed.	PO37 not applicable The proposed waterway barrier works are permanent. All temporary works will be conducted under Accepted Development Requirements and conditions of approval.
PO38 Temporary waterway barrier works are designed, constructed and maintained to allow for downstream movement during works, where required by species present.	No acceptable outcome is prescribed.	PO38 not applicable The proposed waterway barrier works are permanent. All temporary works will be conducted under Accepted Development Requirements and conditions of approval.
PO39 The condition and value of aquatic macrophytes and other fish habitats is maintained.	No acceptable outcome is prescribed.	PO39 not applicable The proposed waterway barrier works are permanent. All temporary works will be conducted

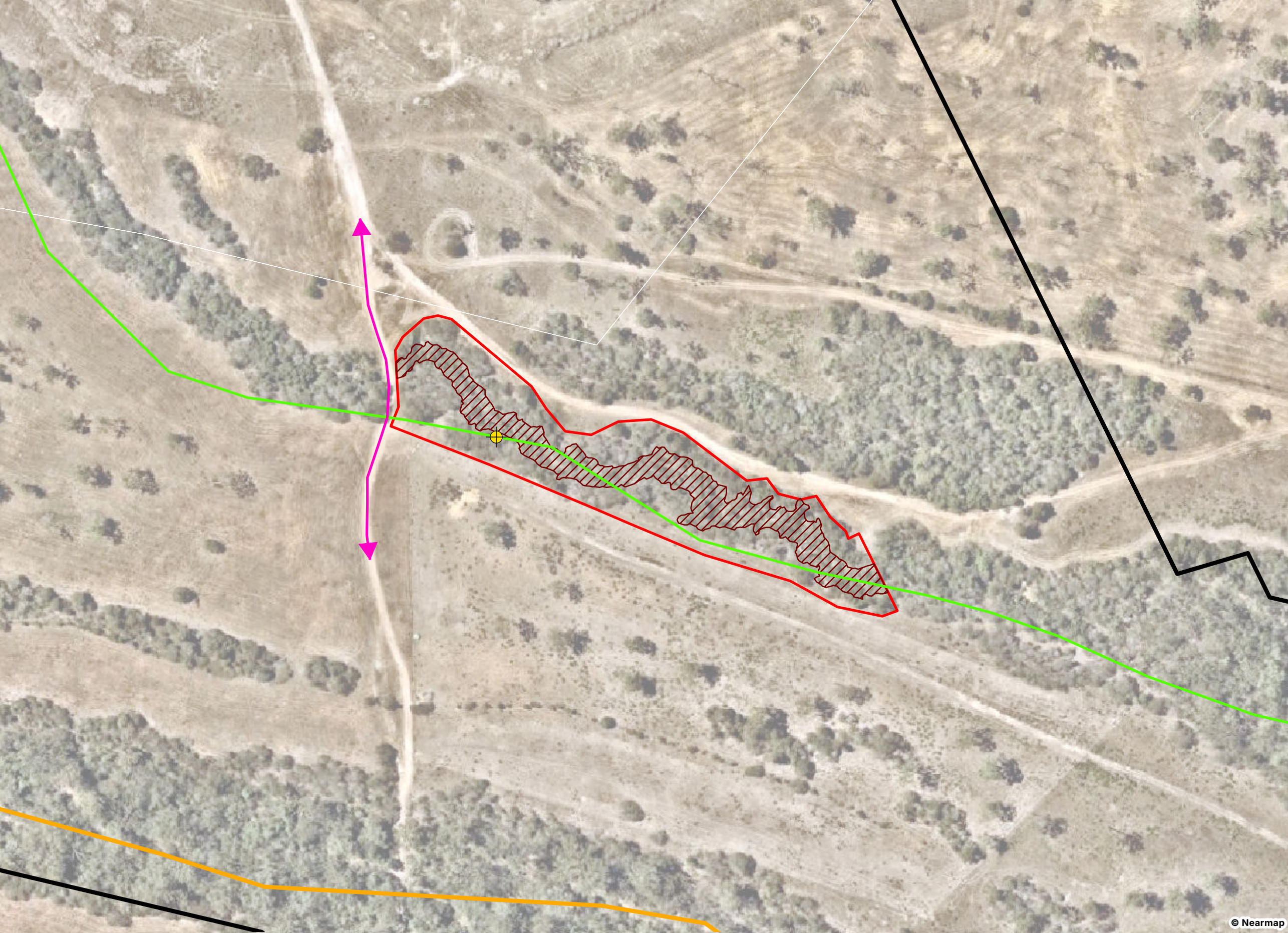


Performance outcomes	Acceptable outcomes	Response
----------------------	---------------------	----------

under Accepted Development Requirements and conditions of approval.



04.IMPACT PLAN



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.
Layer Sources
© State of Queensland (Department of Resources) 2026.
Updated data available at
<http://qldspatial.information.qld.gov.au/catalogue/>
* Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

- LEGEND**
- CA4 Boundary
 - QSCF
 - Impact Area [0.95 ha]
 - Ground Truthed Impact [3,101m²]
 - Barrier to Fish Dispersal
 - SARA Upper Limit Point
 - Waterways - Risk of Impact
 - 1 - Low
 - 2 - Moderate

AMENDMENTS				
Issue	Date	Description	Drawn	Checked
A	4/08/2026	Preliminary	LS	KT

N

0204060 m

1:1,700 @ A3 | Transverse Mercator | GDA 2020 | Zone 56

Address / RPD: 50050SP332140 & 907SP332140

Date: 4/08/2026

13222 E 04 Impact A

4. Conclusions

The Environmental Management division of SH was engaged by Peet Flagstone City Pty Ltd to provide a *State Code 18* (V. 3.6) response to support an OPW application to infill the disturbed upstream extent of a *low-risk* waterway to facilitate the approved development of CA4 within the broader Flagstone West project. The balance of downstream values, as well as adjoining tributaries within CA4, will be retained within an open space/conservation area within CA4 and rehabilitated to mitigate the risk of any potential significant residual impacts.

This report responds to State Code 18, specifically Table 18.1. No dams, weirs, fish ways or floodgates, or are proposed as a part of the waterway reconstruction (PO23 to PO34).

With respect to Table 18.1, one (1) *low risk* (green) mapped waterway occurs and is mapped as entering the broader CA4 area from the western adjoining property and traversing east through CA4 before meeting a southern mapped *high-risk* (red) waterway along the eastern boundary and continuing off the site. The proposed works area comprises 3,101 m² located centrally along this waterway mapping within CA4, adjoining the eastern side of an internal road that vertically intersects the waterway. Pre-lodgement advice from SARA determined that a waterway is not considered to be present above the upper limit point located centrally through the mapped *low risk* (green) waterway and in the western portion of the proposed works area. Downstream of the upper limit point and including upstream areas to the adjoining road, the proposed works impact a total of 3,101 m² of *low-risk* waterway.

SH undertook a desktop assessment of the proposed works area and identified that the waterway is surrounded by cleared paddocks and likely lacked significant waterway features. This was confirmed on ground during field surveys where it was determined waterway values are highly disturbed by weed infestation, dispersive soils and erosion. The waterway is considered to reflect an ephemeral, eroded drainage channel with low potential fish habitat and passage values. No Fisheries resources were recorded. As such, the removal of 3,101 m² of the disturbed upstream extent of this waterway is considered unlikely to have a notable impact. Regardless, to mitigate the risk of any potential significant residual impacts the proposed action will rehabilitate the balance of downstream values and adjoining tributaries (including mapped *low*, *moderate*, and *high-risk* waterways) that were found to be similarly disturbed by weed infestation, erosion and siltation. This is expected to improve the current potential fish habitat and passage within CA4.

4.1. Recommendations

4.1.1 Post-works Monitoring Program

A post-works monitoring program should be prepared to mitigate potential adverse impacts on fish passage post-construction and maintain rehabilitation efforts (refer also **Appendix C**), including:

- Program description



■ State code 18 response

- Objectives
- Framework
- Management roles and responsibilities
- Reporting
- Emergency contacts and procedures
- Audit and review



5. Appendices

Appendix A

SARA Pre-lodgement Advice

Appendix B

Context Area 4 Greater Flagstone PDA Endorsed Context Plan

Appendix C

Concept Rehabilitation Management Plan



Appendix A

SARA Pre-lodgement Advice





SARA reference: 2403-39339 SPL
Applicant reference: PR110056

13 May 2024

PEET Flagstone City Pty Ltd
c/- RPS AAP Consulting Pty Ltd
emma.gurney@rpsgroup.com.au

Attention: Ms Emma Gurney

Dear Ms Gurney

Amended SARA Pre-lodgement advice - 71 Flagstonian Drive and Parklands Drive, Flagstone and New Beith Road, Silverbark Ridge

I refer to your pre-lodgement request received on 1 March 2024 in which you sought pre-lodgement advice from the State Assessment and Referral Agency (SARA) regarding the proposed development at the above address. This notice provides advice on aspects of the proposal that are of relevance to SARA.

On 29 April 2024, the proponent requested SARA issue amended pre-lodgement advice including 2 Queensland low (green) waterways for clarity when identifying waterway barrier works in the future. To support this request, the proponent submitted an amended plan with coordinates where the 2 waterways intersect with the boundaries of investigation areas 1 and 2. SARA has annotated this plan, so it is clear there are no waterways present above these coordinates.

SARA's understanding of the project

It is understood the proponent is seeking to establish development under the Greater Flagstone Priority Development Area Development Scheme at 71 Flagstonian Drive and Parklands Drive, Flagstone and New Beith Road, Silverbark more formally described as Lots 907 and 50050 on SP332140 and Lot 989 on RP854074 (the site).

The site contains additional Queensland low (green) waterways on the recently released updated Queensland waterway mapping on the Development Assessment Mapping System (DAMS). The proponent has advised the environmental features on the site have been investigated and considered to inform the detailed planning for several approvals and applications over the site.

The proponent has provided a Waterway Investigation Report, prepared by Fishology and dated 29.02.2024, and supplementary information to confirm the presence and extent of DAMS Queensland waterways on the site. The proponent requests SARA's confirmation that the revised waterways presented by Fishology are acceptable, and any works outside this are not considered to constitute waterway barrier works.

Supporting information

The advice in this letter is based on the following documentation that was submitted with the pre-lodgement request.

Drawing/report title	Prepared by	Date
Waterway Mapping within PEET Land of the Greater Flagstone PDA Request for Prelodgement Meeting with SARA (reference: PR110056)	RPS	1 March 2024
Waterway investigation within the proposed Flagstone City Centre/Context Area 4 and Context Area 3 – Lots 989 RP854074, 50050 SP332140 and 907 SP332140	Fishology	29.02.2024
Attachment 2a – Context Area 1 (Investigation Area 1)	-	-
Attachment 2b – Context Area 4 and TC (Investigation Area 2)	-	-
Email received 18/03/2024 with attachments: Attachment 1 – Response Table _18 March 2024 Attachment 2 – Waterway Mapping Attachment 3 – Concept Plans	Louisa Sloan RPS	18/03/2024
Email received 21/03/2024 with attachment: DAF comments to RFI response by Fishology	Louisa Sloan RPS	21/03/2024
Email received 28/03/2024 with attachment: Flagstone waterway investigation_survey 2_Final_28-3-2024	Louisa Sloan RPS	28/03/2024
Email received 2/05/2024 with attachment: Flagstone waterway mapping 30 4 2024	Louisa Sloan RPS	2/05/2024

Pre-lodgement advice

The following advice outlines the aspects of the proposal that are of relevance to SARA.

SARA's jurisdiction and fees	
1.	Under the Planning Regulation 2017, works involving constructing or raising waterway barrier works must be undertaken in accordance with the relevant accepted development requirements (ADR) or under a development approval (assessable development). In the instance any works do not comply with the ADR, a development permit will be required for constructing or raising waterway barrier works. In this instance, lodgement to SARA as the assessment manager is required under the following provision of the Planning Regulation: Schedule 10, Part 6, Division 4, Subdivision 2, Table 1, Item 1 – Operational works for waterway barrier works. The associated fee is unable to be determined at this stage, as the application fee depends on the nature of the work. To assist with determining the correct fee for a development

	application, a schedule of fees converting the fee units to dollar values is available on the Department of Housing, Local Government, Planning and Public Works website available at: https://dsdmipprd.blob.core.windows.net/general/planning-regulation-2017-fee-schedule.pdf.
Key matters and action items	
2.	The Waterway Investigation Report, prepared by Fishology and dated 29.02.2024, provides evidence of the upper extent of the waterways through surveys for the presence of habitat throughout the length of the waterways and via a fish survey on the site. Based on the results of these surveys, the Department of Agriculture and Fisheries (DAF) agrees with the proponent that the 'upper limit' of 3 waterways for which advice was sought (Attachment 1) is: • Lot 989 on RP854074: -27.79453S 152.83141E (Attachment 2) • Lot 907 on SP332140: -27.81204S 152.93911E and -27.7852S 152.9568E (Attachment 3). In addition, DAF also agrees that 2 waterways are not present above the coordinates below: • Lot 989 on RP854074: -27.78711S 152.93476E (Attachment 2) • Lot 907 on SP332140: -27.8097S 152.9475E (Attachment 3). If any work is proposed downstream of the agreed upper limit of the waterway, the works would need to be undertaken as per the ADR, and where this is not possible, would require a development permit. If a development permit is required, the 'SDAP Guideline for State Code 18' is available at: https://www.publications.qld.gov.au/dataset/fisheries-development-activities/resource/36cc6985-f44d-426d-b499-4d20ed606f70, will assist in the preparation of a development application and responding to the relevant Performance Outcomes for assessable development impacting waterways. Note: Some waterway coordinates have changed slightly from the original pre-lodgement advice although this is considered minor.
Lodgement material	
3.	If a development permit is required, it is recommended that the following information is submitted, as a minimum, when lodging an application to SARA: • DA form 1. • Landowner's consent. The prescribed application fees. • Relevant plans as per the DA Forms guide, available at: https://dsdmipprd.blob.core.windows.net/general/guide-da-forms.pdf. Response to State code 18: Constructing or raising waterway barrier works in fish habitats of the SDAP.

This advice outlines aspects of the proposed development that are relevant from the jurisdiction of SARA. This advice is provided in good faith and is:

- based on the material and information provided to SARA
- current at the time of issue
- not applicable if the proposal is changed from that which formed the basis of this advice.

This advice does not constitute an approval or an endorsement that SARA supports the development proposal. Additional information may be required to allow SARA to properly assess the development proposal when a formal application has been lodged.

If you require further information please contact Amanda Hosken, Principal Planning Officer, on (07) 5644 3216 or via email SEQSouthPlanning@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

*Signature
placeholder*

Grace Heatherley

A/Principal Planning Officer, Planning and Development Services (SEQ South)

Encl

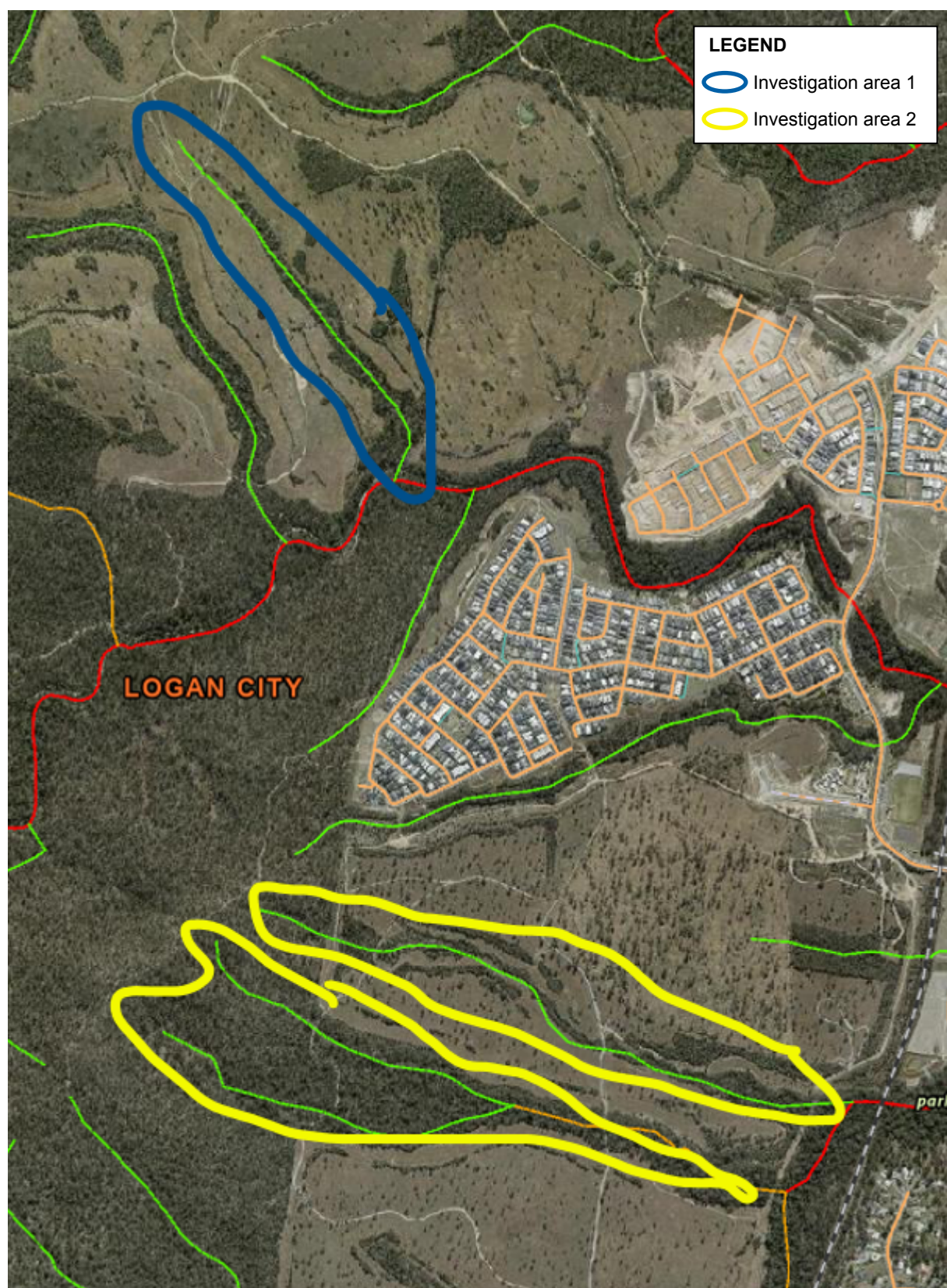
Attachment 1 - Waterways for which this advice relates to located in investigation area 1 (blue circle) and investigation area 2 (yellow circles)

Attachment 2 - Coordinates of the agreed upper limit of the waterway in investigation area 1 (circled red) and waterway not present above coordinates on boundary of investigation area 1 (circled in yellow)

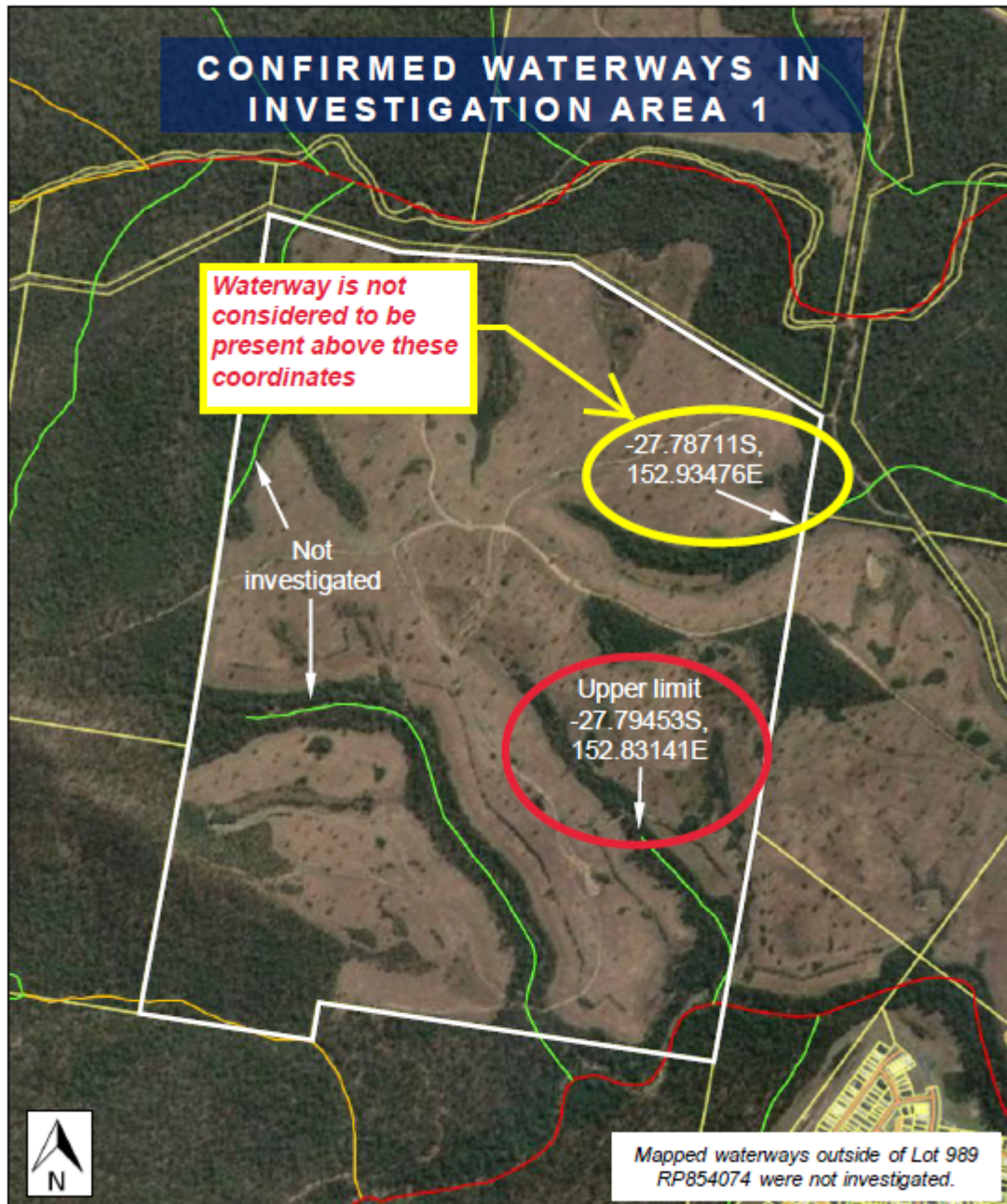
Attachment 3 - Coordinates of the agreed upper limit of the waterway in investigation area 2 (circled red) and waterway not present above coordinates on boundary of investigation area 2 (circled in yellow)

Development details	
Proposal:	Development under the Greater Flagstone Priority Development Area Development Scheme
Street address:	71 Flagstonian Drive and Parklands Drive, Flagstone and New Beith Road, Silverbark
Real property description:	Lots 907 and 50050 on SP332140 and Lot 989 on RP854074
SARA role:	Assessment Manager
Assessment Manager:	SARA
Assessment criteria:	State code 18 of the SDAP
Existing use:	Unimproved
Relevant site history:	Greater Flagstone Priority Development Area and associated approvals

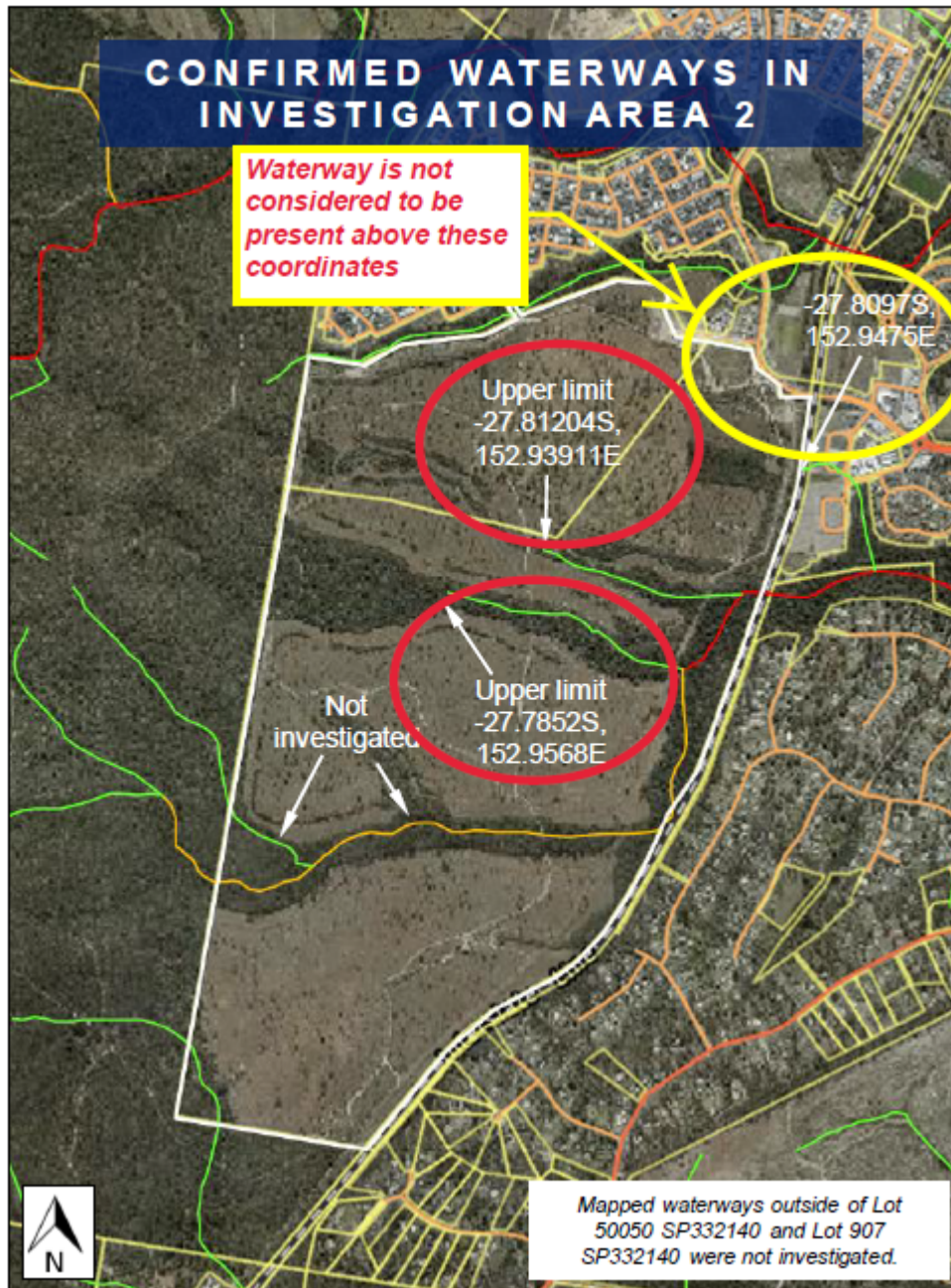
Attachment 1 - Waterways for which this advice relates to in investigation area 1 (blue circle) and investigation area 2 (yellow circles)



Attachment 2 – Coordinates of the agreed upper limit of the waterway in investigation area 1 (circled red) and waterway not present above coordinates on boundary of investigation area 1 (circled in yellow)



Attachment 3 – Coordinates of the agreed upper limit of the waterway in investigation area 2 (circled red) and waterway not present above coordinates on boundary of investigation area 2 (circled in yellow)

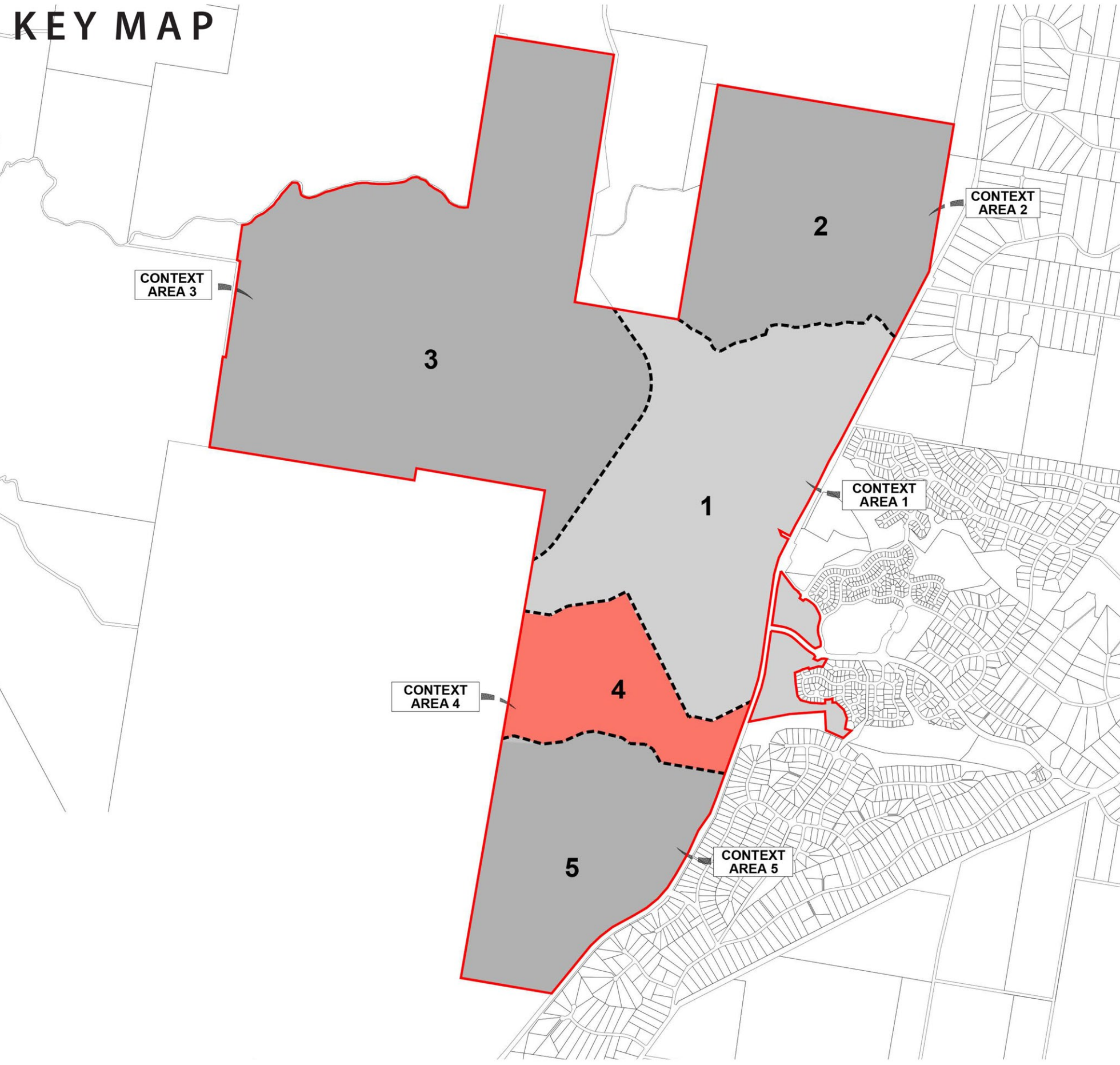


Appendix B

Context Area 4 Greater Flagstone PDA Endorsed Context Plan



KEY MAP



LEGEND

- PEET Flagstone Site Boundary
- Context Area Four Site Boundary
- Other Context Area Boundaries
- Rail Line
- Railway Widening (Refer to Condition 15 of DEV2012/209)
- 400m Walkable Catchments
- Arterial Road (Potential Bus Route)
- Trunk Connector Road (Potential Bus Route)
- Minor Road Linkages (Potential Bus Route)
- Conservation - Remnant Vegetation
- Linear Open Space Network / Stormwater Management
- Regional Recreation Park
- Neighbourhood Recreation Node
- Civic Park Node
- Private School
- Urban Living - 15 dw/ha
- Major Centre Core
- Major Centre Frame
- Industry and Business
- Potential Indicative School Site Location (Subject to State Agency Acquisition)

12ha is generally required for a State High School site. Any reduction in area will be subject to confirmation by the State Agency in the future.

AMENDED IN RED
By: Gabrielle Shepherd
Date: 3 June 2025

ENDORSED
Date: 4 June 2025
MEDQ

CONTEXT PLAN
AREA THREE
(INDICATIVE FUTURE
DEVELOPMENT)

SANDY CREEK

CONTEXT PLAN
AREA ONE
(APPROVED AND
EXISTING DEVELOPMENT)

FUTURE
RESIDENTIAL
DEVELOPMENT

CONTEXT PLAN
AREA FOUR

HOMESTEAD DRIVE

SANDY GULLY

CONTEXT PLAN
AREA FIVE
(INDICATIVE FUTURE
DEVELOPMENT)

SANDY GULLY

FLAGSTONE
CONTEXT AREA 4
CONTEXT PLAN

PLAN REF: 110056-500E
DATE: 20 JUNE 2024
CLIENT: PEET
DRAWN BY: MD
CHECKED BY: DG

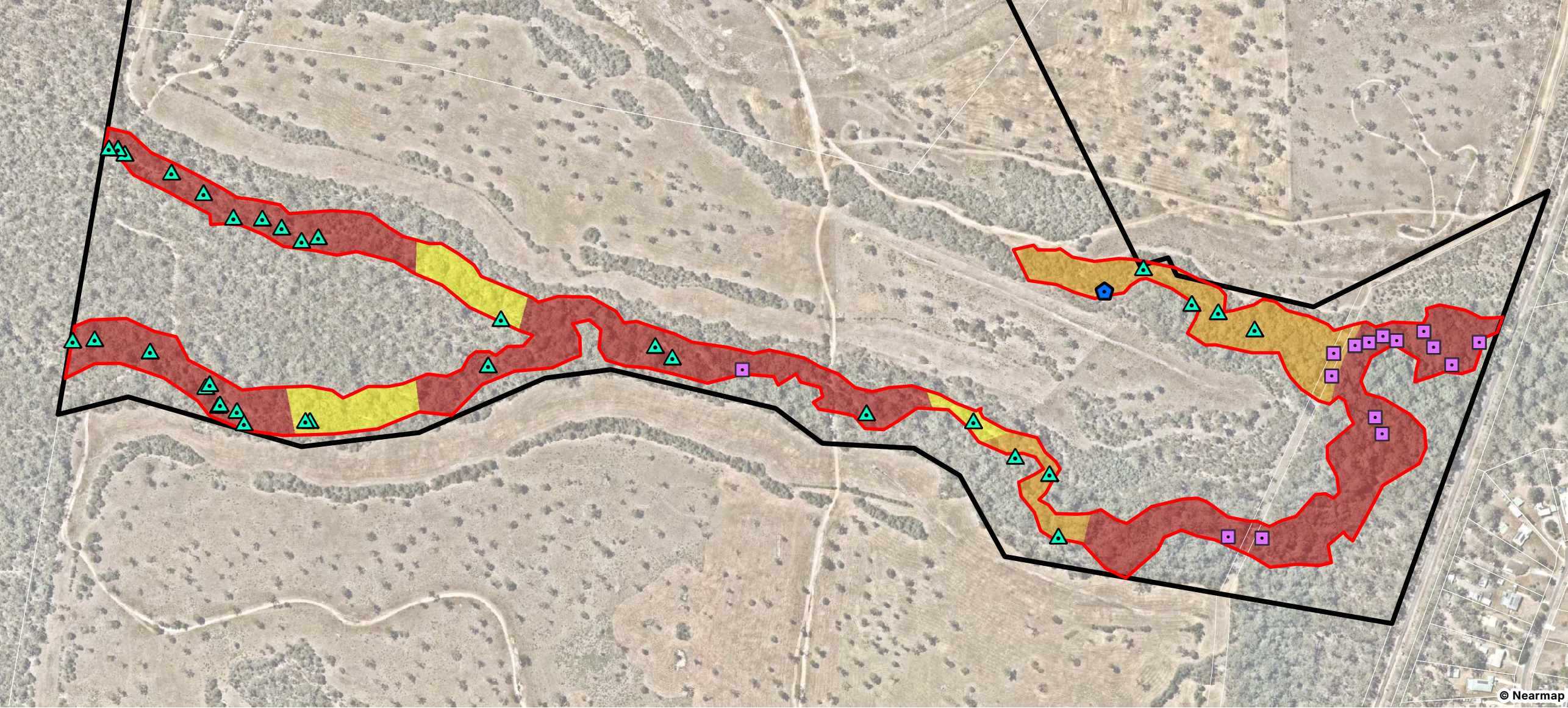
Appendix C

Concept
Management Plan

Rehabilitation



01. CONCEPT REHABILITATION PLAN



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources
© State of Queensland (Department of Resources) 2026.
Updated data available at
<http://qldspatial.information.qld.gov.au/catalogue/>
* Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

- LEGEND**
- CA4 Boundary
 - QSCF
 - Rehabilitation Area [120,040m²]
 - Low Weed Presence
 - Moderate Weed Presence
 - Dense Weed Presence
 - Erosion / Scouring Present
 - Fallen Log Obstruction
 - Sediment Deposit Present

GENERAL REHABILITATION NOTES

The approach chosen for the whole of site is Assisted Natural Regeneration of the waterway via the removal barriers, stabilisation of eroded areas and removing excessive weed presence blocking the waterway

Existing native trees, shrubs and groundcovers to be protected and retained.

The management methodology should utilise sensitive techniques that will minimise damage to existing native vegetation, and stabilise soil. Appropriate weed to encourage natural regeneration.

All rehabilitation works are to be undertaken in accordance with the South East Queensland Ecological Restoration Framework.

WEED MANAGEMENT NOTES

All weed management works are to be undertaken in accordance with the Queensland Biosecurity Act 2014.

Where possible weed management to minimise impact to aquatic and semi-aquatic fauna by utilising manual / mechanical weed removal techniques and using a frog-friendly herbicide where required. Application of herbicide to be avoided during period of frog egg-laying to juvenile emergence (generally late Autumn to early Spring but varies between species).

Where possible weed management to be conducted in a manner that does not promote erosion. Roots of weed vegetation may be required to be left in place after treatment along banks.

SOIL AND STABILISATION NOTES

Bare soil susceptible to erosion and scouring to be appropriately stabilised. Eroded areas prone to inundation may be secured with appropriate control measures (eg. matting, coir logs).

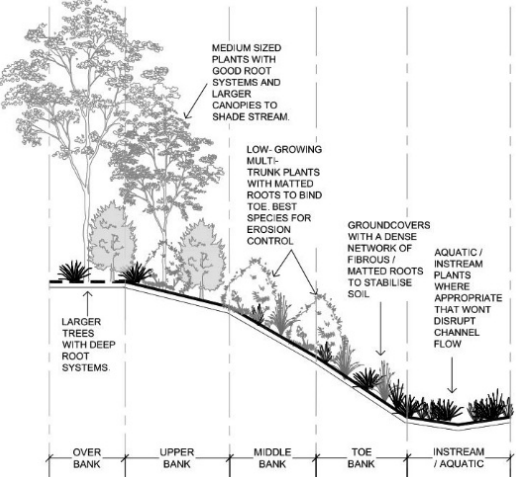
PLANTING METHODOLOGY NOTES

If planting is required for stabilisation, planting is to comprise native canopy and subcanopy species. Planting is to occur in a random pattern and at a similar density to the existing vegetation community.

Tube stock used in planting are to comprise healthy, vigorous stock sourced from a local nursery using locally sourced seed where possible.

Revegetation works shall be either undertaken or directly supervised by an experienced and qualified contractor. All works shall be in accordance with local government policies and Australian Standards.

Planting on creek bank to comply with the following figure:



Categories of channel vegetation adapted from the Brisbane City Council Natural Channel Design Guidelines.

AMENDMENTS				
Issue	Date	Description	Drawn	Checked
A	23/07/2026	Preliminary	LS	KT

1:5,200 @ A3 | Transverse Mercator | GDA 2020 | Zone 56

Address / RPD: 50050SP332140 & 907SP332140

Date: 23/07/2026

13222 E 01 WW Rehab A

