



225 - 245 Martin Road, Bradfield Bulk Earthworks SSD-97711727

Riparian Land Assessment

Goodman Property Services (Aust) Pty Ltd

The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018

Prepared by:

SLR Consulting Australia Pty Ltd

SLR Project No.: 625.010786.00001

16 March 2026

Revision: 01

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
01	16 March 2026	A Murray	M Freeman	M Freeman

Basis of Report

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Acronyms and Abbreviations

Abbreviation	Definition
AHD	Australian Height Datum
BC Act	<i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity Development Assessment Report
BOM	Bureau of Meteorology
CBD	Central Business District
DPI	Department of Primary Industries
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	<i>Fisheries Management Act 1994</i>
GIS	Geographic Information System
GPS	Global Positioning System
GPT	Gross Pollutant Trap
Growth Centres SEPP	<i>State Environmental Planning Policy (Sydney Region Growth Centres) 2006</i>
ha	Hectares
NRAR	National Resources Access Regulator
NSW	New South Wales
PCT	Plant Community Type
the Project	Proposed development of 225-245 Martin Road, Bradfield
Site	The property located at 225-245 Martin Road, Bradfield
SEPP	State Environmental Planning Policy
SLR	SLR Consulting Pty Ltd
Parklands SEPP	<i>State Environmental Planning Policy (Precincts-Western Parkland City) 2021</i>
PCT	Plant Community Type
SSD	State Significant Development
Disturbance area	The land proposed as a development site (see Figure 1)
VMP	Vegetation Management Plan
TEC	Threatened Ecological Community
WM Act	<i>Water Management Act 2000</i>
WSEA	Western Sydney Employment Area



1.0 Introduction

This Riparian Lands Assessment has been prepared by SLR Consulting Pty Ltd (SLR) to address the site-specific Secretary's Environmental Assessment Requirements (SEARs) received in respect of the proposed State Significant Development Application (SSDA) No. 97711727. The proposed development includes rehabilitation, quarrying and bulk earthworks and is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of Goodman Western Sydney Pty Limited as trustee for the Goodman Western Sydney Trust (Owner). The development is located at 225 – 245 Martin Road, Bradfield, 2556 (the Site).

This SSDA seeks approval for the following;

- Site preparation works only (i.e no buildings, retaining walls or other infrastructure works);
- Rehabilitation of areas disturbed by historic mining and brick-making operations under major project approval MP10_0014 and MP10_0033;
- Bulk Earthworks to the site to align with the Connecting to Country and Precinct Plan principles including both the disturbed and undisturbed portions to capture the following proposed works:
 - Rehabilitation of Pits 1 & 2 using predominantly on-site fill (Engineered fill import required); and
 - Preparation of the remaining site area to Bulk Earthwork Levels (not including detailed trimming) for the proposed industrial development as considered under SSDA 97688711.
- Quarrying and Export of Bringelly Shale and Clay from select areas of Pit 1 & 2 to rectify the previous approved pit designs to ensure they are geotechnically stable to suit the proposed industrial masterplan;
- Vegetation removal of 6.97Ha over land that is not certified under the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centre SEPP):
 - Vegetation being cleared involves communities protected under both the *Biodiversity Conservation Act 2016* (BC Act) and *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act); and
 - EPBC Act Referral completed on a precautionary measure given small amount of EPBC Act listed communities.
- Demolition of any remaining structures on the Site;
- Rehabilitation of identified and unidentified contamination and, if required, the construction of a containment cell in the proposed northeastern corner of the site (currently identified as Lot 55 of DP 3050). The containment cell proposed to trigger Designated Development threshold due to the proposed upper limit storage volume of 100,000m³;
- Relocation of the Jemena Gas main predominantly burdening Lot 3 of DP127878.0; and
- If required through an Aboriginal Cultural Heritage Assessment Report (ACHAR), relocation and reburial of artefacts.



Additionally, this SSDA application seeks to rely on already existing authority approvals issued under MP10_0014 (subject to any applicable modifications). These are as follows:

- Mining Lease 1771;
- Environmental Protection Licence 684;
- Ground Water Access Licence WAL24346; and
- Ground Water Supply Works Approval No. 10WA109463.

It is important to note that a number of the proposed activities being sought for approval under this SSDA have previously been assessed and approved under MP10_0014. The existing DA relates to approximately 70Ha of Net Developable Area (NDA), with the new portion of site approx. 36ha NDA. Cumulatively the area is approximately 116ha NDA.

This report further outlines this in **Section 1.2.2**.

The area of land proposed to be developed within the Site is hereafter referred to as the 'disturbance area' and is shown in **Figure 1**. The proposed development (hereafter referred to as the project) is largely located within the boundaries of the Western Sydney Growth Centres and therefore has been biodiversity certified (bio-certified) under the former Growth Centres SEPP (now repealed and consolidated under the *State Environmental Planning Policy (Precincts-Western Parkland City) 2021* (Parklands SEPP) (**Figure 2**), and these areas will be progressively developed for industrial development and affiliated infrastructure. The bio-certified portion of the Site is currently zoned a mix of ENT – Enterprise and ENZ – Environment and Recreation under Chapter 4 of the Parklands SEPP.

1.1 Purpose

The purpose of this Riparian Lands Assessment is to provide an assessment of the riparian ecology within the disturbance area including four mapped watercourses and seven waterbodies, comprising two quarry pits and five farm dams. The watercourses mapped on the disturbance area are labelled in **Figure 1** with the letters A – D, and the waterbodies are labelled Quarry Pit 1-2, Farm Dam 1-5 and Freshwater Wetland. The Riparian Lands Assessment identifies the potential impacts of the project and provides recommendations to mitigate those impacts.

This report will form part of the EIS to support an application for a State Significant Development (SSD) under Part 4, Division 4.7 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 Background

1.2.1 Location

The Site is located along Martin Road, Badgery Creek, and comprises Lots 1-3 DP 1278780 and Lots 55 & 56 DP 3050 within the Western Sydney Employment Area (WSEA), approximately 42 km west of the Sydney Central Business District (CBD) and 15 km northwest of the Liverpool CBD. It is located within the Liverpool Local Government Area (LGA) and covers an area of approximately 189.5 ha.

The WSEA was established to supply businesses in the region with land for industry and employment including transport, logistics, warehousing, and office space. The WSEA is located approximately 50 km from the Sydney CBD and provides businesses access to roads and utility services. The WSEA includes eleven precincts, and the disturbance area is located within the Aerotropolis Precinct.



1.2.2 Project Context

There are two additional related applications associated with the proposed development as detailed below.

1. SSDA 97688711 – 14 warehouse buildings, Active Open Space & amenities precinct (including a café) and internal site infrastructure works.

The SSDA seeks approval for the construction, fit-out (including office and standard warehouse racking) and operation of 14 warehouse buildings, Active Open Space & amenities precinct (including a café) and internal site infrastructure works.

This development application assumes the bulk earthworks are completed under a previous development application: SSDA 97711727, of which this Riparian Land Assessment is to form part of the Environmental Impact Statement.

2. Part 5 Activity – External Works Lead in Roads and Services

The Applicant is proposing access to the Site via the following route which will be upgraded to be in accordance with the Precinct Plan.

- Part 1 - Martin Road / Elizabeth Drive intersection upgrades
 - It is expected that these works will be approved by way of amendment to the existing Part 5 approval by Transport for New South Wales ('TfNSW'); and
 - It is understood that Transport for NSW will construct the work with a target completion date of December 2029.
- Part 2 -4 - Martin Road / East West Collector Road / Lawson Road Upgrades
 - Further to Part 1, access to the site is proposed to be constructed concurrently as follows:
 - Part 2 – Access from the Martin Road / Elizabeth Drive intersection will continue down Martin Road and join the future East / West Collector Road identified within the Precinct Plan through Lot 36 DP 3050:
 - The portion of road between the Intersection and future East / West Collector Road will be upgraded with a temporary access strategy that is consistent with Condition DS5 of the Precinct Plan.
 - Part 3 – The East / West Collector Road through Lot 36 DP 3050 is proposed to be delivered in ultimate form consistent with the Precinct Plan, connecting Martin Road and Lawson Road; and
 - Part 4 – From the East / West Collector Road connection on Lawson Road, the portion of Lawson Road South through to the Site will be upgraded in ultimate form consistent with the Precinct Plan.
 - It is expected that these works are completed by December 2029, based on a commencement date of June 2028.

It is the Applicants expectation that the above-mentioned works (Part 1-4) are completed prior to the receipt of the first building Occupation Certificate (expected December 2029).

Notwithstanding the above, the Applicant notes that access to the site under SSD 97711727 will continue to be via Martin Road based on the intersection upgrades completed under MP10_0014.



1.2.3 Description of the Disturbance area and Riparian Lands

1.2.3.1 General Description

The disturbance area and wider Site have been operating as a clay mining and brick manufacturing facility since 1976.

The vegetation within the disturbance area has largely been cleared to facilitate the quarry works, however small patches of native vegetation remain in the form of remnant canopy trees over a largely exotic understorey. The remaining vegetation within the disturbance area consists of exotic dominated grassland, that has been utilised for agricultural purposes over the recent past.

Native vegetation occurring within the disturbance area occurs as scattered patches and consists of remnant native vegetation. Three Plant Community Types (PCT's) have been identified within the disturbance area, PCT 3320, PCT 3975 and PCT 4025, occurring in different condition states. The PCTs within the disturbance area each align with threatened ecological communities (TECs) listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Further details on the PCTs within the disturbance area are provided within the Biodiversity Development Assessment Report (BDAR) prepared by SLR (2026a). The remainder of the disturbance area comprises farm dams and previously cleared land.

1.2.3.2 Hydrology

The disturbance area occurs within the Sydney water catchment and Hawkesbury-Nepean sub-catchment and contains one unnamed 2nd order watercourse and three 1st order watercourses (as per the Strahler System of ordering watercourses). The disturbance area also contains seven waterbodies, consisting of two quarry pits and five farm dams. The two quarry pits contain surface water only and will be completely dewatered under existing authority approvals issued under MP10_0014, and so this RLA only applies to the five farm dams.

The location of the watercourses and waterbodies within the disturbance area are shown in **Figure 1**.

1.3 Legislative Context

Legislation relevant to this assessment includes:

- *Biodiversity Conservation Act 2016*;
- *Environment Protection and Biodiversity Conservation Act 1999*;
- *Environmental Planning and Assessment Act 1979*;
- *Fisheries Management Act 1994*;
- *Water Management Act 2000*;
- *State Environmental Planning Policy (Western Sydney Employment Area) 2009*;
- *Growth Centres SEPP*; and
- *Parklands SEPP*.

These are considered below in subsequent sections.



1.3.1 Environmental Planning and Assessment Act 1979

The NSW *Environment Planning and Assessment Act 1979* (EP&A Act) is the overarching planning legislation in NSW and provides for the creation of planning instruments that guide land use. The EP&A Act also provides for the consideration of the environment and biodiversity values, including threatened species, communities, habitat and processes as listed under the BC Act and *Fisheries Management Act 1994* (FM Act).

1.3.2 Fisheries Management Act 1994

The NSW *Fisheries Management Act 1994* (FM Act) governs the management of fish and their habitat in NSW. The objectives of the FM Act are to conserve fish stocks and key fish habitats, conserve threatened species, populations and ecological communities of fish and marine vegetation and to promote ecologically sustainable development. The FM Act also regulates activities involving dredging and / or reclamation of aquatic habitats, obstruction of fish passage, harming marine vegetation and use of explosives within a watercourse.

In accordance with Part 4, Division 1.7, Section 4.41 (b) of the EP&A Act, applications for separate permits under Sections 201, 205 or 219 of the FM Act are not required for SSD.

1.3.3 Water Management Act 2000

Under the *Water Management Act 2000* (WM Act), waterfront land includes the bed and bank of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary. The Natural Resources Access Regulator (NRAR) is an independent water regulator, responsible for enforcement of water laws while NSW Water administers the WM Act and is required to assess the impact of any proposed controlled activity to ensure that no more than minimal harm will be done to waterfront land because of carrying out the controlled activity. This means that a controlled activity approval must be obtained from NSW Water before commencing the controlled activity. The design and construction of works or activities within a watercourse or adjoining waterfront land should protect and enhance water flow, water quality, stream ecology and existing riparian vegetation. Impacts on the hydrologic, hydraulic and geomorphic functions of a watercourse should also be minimised.

Controlled activity means:

- Erection of a building;
- Carrying out a work;
- Removing material from waterfront land, such as vegetation or extractive material;
- Depositing material on waterfront land, such as extractive material; and
- Carrying out an activity which affects the quantity or flow of water in a water source.

As the project is to be assessed through the SSD process, it is exempt from the need to obtain a Controlled Activity Approval from NRAR.

1.3.4 Growth Centres SEPP

The former Growth Centres SEPP was established in 2006 to prepare for predicted population growth in Sydney, which would present significant challenges to governments to provide appropriate and affordable housing, infrastructure and services. Since then, the NSW Government has commenced coordinated planning and infrastructure delivery within identified Growth Centres, to facilitate the supply of new land to the market as quickly and efficiently as possible.



The former Growth Centres SEPP has now been repealed and consolidated under the Parklands SEPP. The provisions of the former Growth Centres SEPP are now provided in Chapter 3 of the Parklands SEPP (see below). References to the old SEPP in planning legislation are taken as references to the new consolidated SEPPs, and the provisions remain largely unchanged.

The project is largely located within the boundaries of the Western Sydney Growth Centres, and the majority has been biodiversity certified (bio-certified) under the former Growth Centres SEPP (now the Parklands SEPP) (see **Section 1.3.5.1**).

1.3.5 Parklands SEPP

The aims of Chapter 3 of the Parklands SEPP are as follows:

- a) To co-ordinate the release of land for residential, employment and other urban development in the North West Growth Centre, the South West Growth Centre, the Wilton Growth Area and the Greater Macarthur Growth Area;
- b) To enable the Minister from time to time to designate land in growth centres as ready for release for development;
- c) To provide for comprehensive planning for growth centres;
- d) To enable the establishment of vibrant, sustainable and liveable neighbourhoods that provide for community well-being and high-quality local amenity;
- e) To provide controls for the sustainability of land in growth centres that has conservation value;
- f) To provide for the orderly and economic provision of infrastructure in and to growth centres;
- g) To provide development controls in order to protect the health of the waterways in growth centres;
- h) To protect and enhance land with natural and cultural heritage value; and
- i) To provide land use and development controls that will contribute to the conservation of biodiversity.

1.3.5.1 Bio-certification of Land under the Growth Centres SEPP/Parklands SEPP

To streamline the provision of land releases, bio-certification was granted under the former Growth Centres SEPP over land designated as 'certified land' within the Growth Centres to allow for development in these areas to proceed without further NSW biodiversity assessment on the basis that the agreed conservation outcomes are delivered. Since the repeal of the Growth Centres SEPP, bio-certification of the Growth Centres is managed under the Parklands SEPP.

The order to confer bio-certification on the Growth Centres was originally in force until 30 June 2025, however the NSW Government has extended the certification order until 30 June 2026. During the one-year extension period, a comprehensive review of the certification will be completed. Depending on the outcomes of the review, the certification may be extended for up to 9 more years to 2035, enabling recommendations identified during the review to be implemented and any remaining offset commitments for the certification to be met.



In 2012, the Australian Commonwealth Government approved the bio-certification of the Growth Centres under the EPBC Act which harmonises NSW and Commonwealth Government environmental approvals for the Growth Centres and removes the need for individual approvals under the EPBC Act.

The majority of the Site is located within the boundaries of the Western Sydney Growth Centres and is bio-certified under the Parklands SEPP, and so further biodiversity assessment is not required under the BC Act or the EPBC Act within these areas. A Biodiversity Development Assessment Report has been prepared for the areas of land within the Site that are non-certified (our reference: 625.010786.00001-R01-BEWBDAR-20260326).



FIGURE 1

- LEGEND**
- Disturbance Area
 - The Site
 - Farm Dam
 - Quarry Pit
 - Freshwater Wetland
 - Watercourses

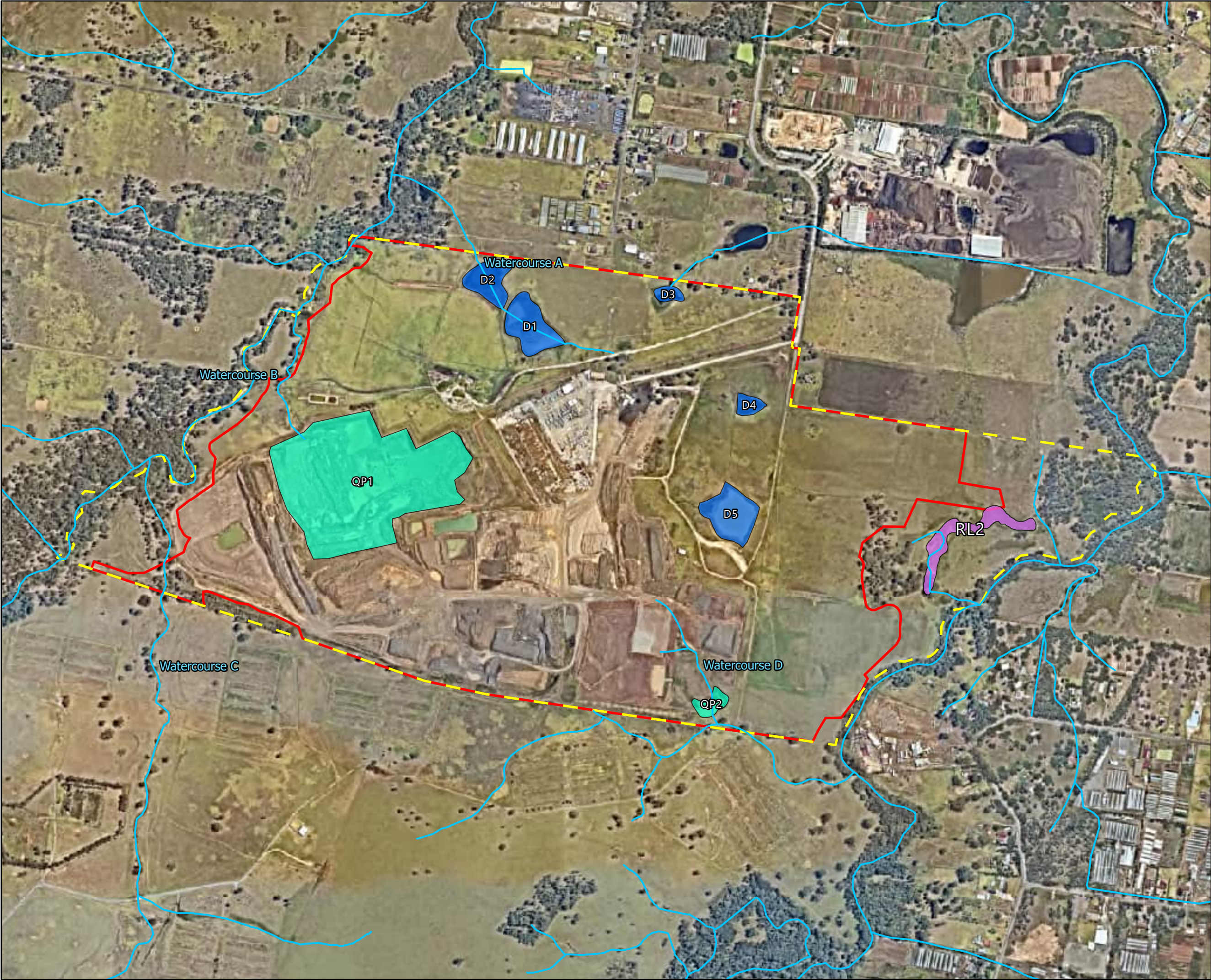


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Scale: 1:8,431 at A3

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FIGURE 2

LEGEND

Disturbance Area

The Site

State Environmental Planning Policy
(Sydney Region Growth Centres) 2006

Existing Certified

Existing Non Certified

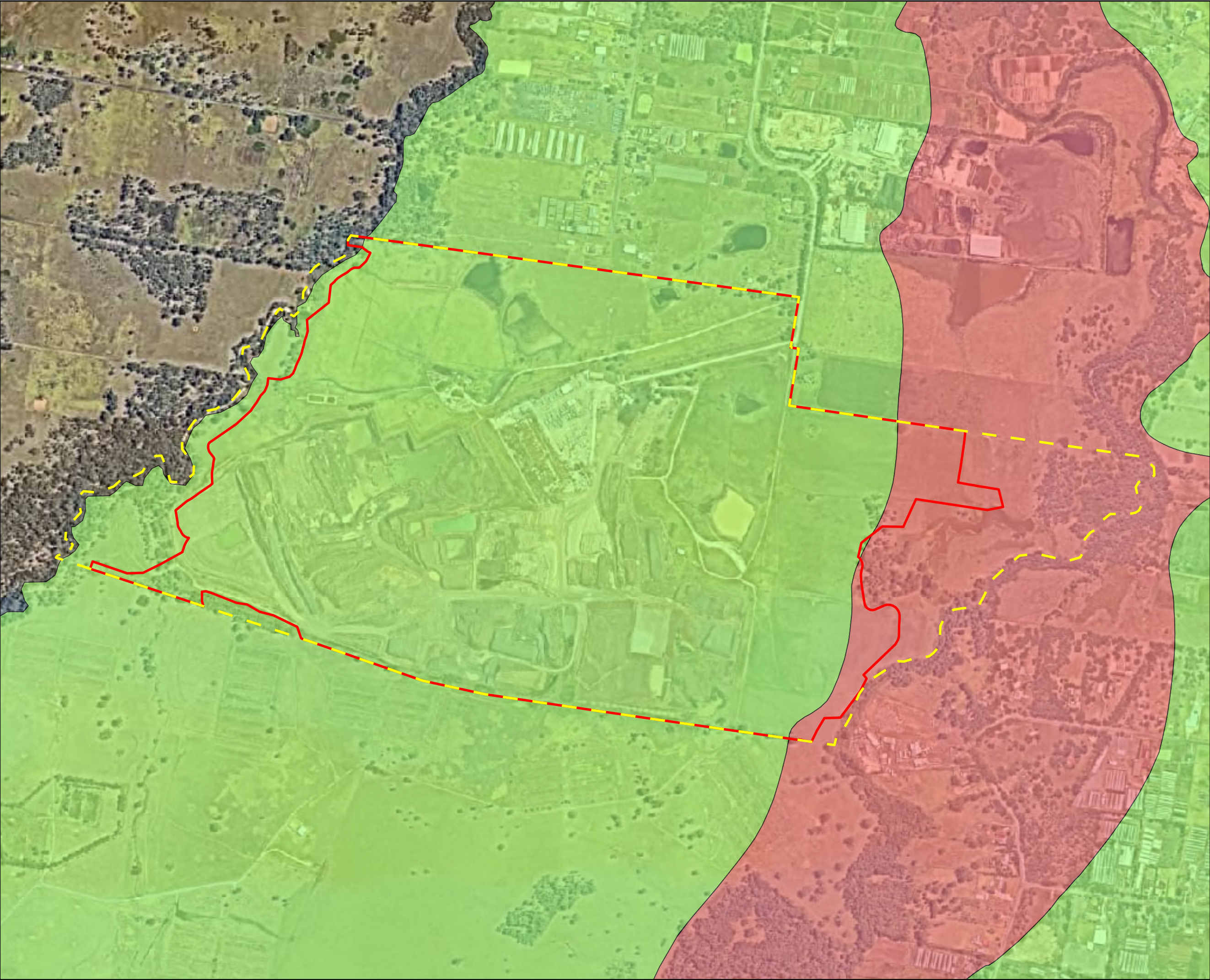


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2.0 Methodology

This section provides details of the methods used in the preparation of this Riparian Lands Assessment. Detailed ecological assessments have been undertaken in the disturbance area to support the proposed development. This section details those assessments specific to the riparian lands in the disturbance area. Please refer to the BDAR (SLR, 2026a) for further details of the methods used in other terrestrial flora and fauna surveys undertaken in the disturbance area.

2.1 Desktop Assessment

A review of the NSW Government Spatial Information Exchange Maps (NSW Government Spatial Services, 2025) as well as the Commonwealth Department of Planning and Environment's Environmental Planning layers was undertaken to determine the vegetation communities mapped within the disturbance area as well as the location of the watercourse and its stream order. Additionally, the following documents were also reviewed for information relevant to this assessment:

- Bureau of Meteorology (BOM) Groundwater Dependant Ecosystems Atlas (BOM 2026);
- NSW Department of Primary Industries (DPI) Fisheries NSW Spatial Data Portal (DPI 2026);
- NSW DPI Policy and guidelines for fish habitat conservation and management (update 2013) (DPI 2013);
- Why do fish need to cross the road? Fish passage requirements for waterway crossings (Fairfull and Witheridge 2003);
- NSW DPE Controlled activities – Guidelines for watercourse crossings on waterfront land (DPE 2026d);
- NSW DPE Controlled activities – Guidelines for riparian corridors on waterfront land (DPE 2026b);
- NSW DPE Controlled activities – Guidelines for instream works on waterfront land (DPE 2026a); AND
- NSW DPE Controlled Activities – Guidelines for vegetation management plans on waterfront land (DPE 2026c)

2.2 Site Inspection

Site inspections were undertaken on 8-12 September 2025 and 28 January 2026 by a botanist and an ecologist from SLR. The site inspections involved a random meander survey within the disturbance area to identify and map vegetation communities and assess the condition of the land. Notes were taken at multiple locations within the disturbance area and locations were recorded using a hand-held Global Positioning System (GPS).

During the site inspection an assessment of riparian vegetation was conducted for the watercourses in the disturbance area. This assessment considered native vegetation cover, connectivity and quality, bed and bank stability and habitat diversity. An assessment of the aquatic habitat within the watercourse was completed, which examined the quality of aquatic habitats, including vegetation structure and regeneration, weed infestation, woody debris, fish habitat, patch size and connectivity potential. A photograph was taken at representative



locations along each of the four watercourses within the disturbance area and are presented in **Appendix A**. **Figure 3** identifies where each of the photographs in **Appendix A** were taken.

2.2.1 Weather Conditions

It should be noted that the watercourse assessment was carried out after a period of extremely heavy rainfall (**Table 1**), and so the watercourses and waterbodies across the disturbance area were holding much more water than normally expected. Weather data (BOM Weather Station 67108, Badgery's Creek, NSW) leading to and during the field survey is provided in **Table 1** (Bureau of Meteorology 2025).

Table 1 Weather conditions during field surveys

Date	Temperature Minimum (°C)	Temperature Maximum (°C)	Rainfall (mm)
Preceding Months*			
June 2025	5.4	17.8	54.7
July 2025	4.3	17.6	34.7
August 2025	5.0	19.4	39.1
September 2025			
8/09/2025	10.8	29.5	0
9/09/2025	13.9	27.0	0
10/09/2025	13.2	18.1	11.2
11/09/2025	9.4	18.4	48.8
12/09/2025	6.1	21.1	0.2
January 2026			
28/01/2026	13.9	34.2	0

* For preceding months values, temperatures are provided as a mean value, and rainfall is provided as a total.



PHOTO LOCATIONS ALONG
WATERCOURSE

FIGURE 3

LEGEND

- Disturbance Area
- The Site
- Farm Dam
- Quarry Pit
- Freshwater Wetland
- Watercourses
- Photo Points

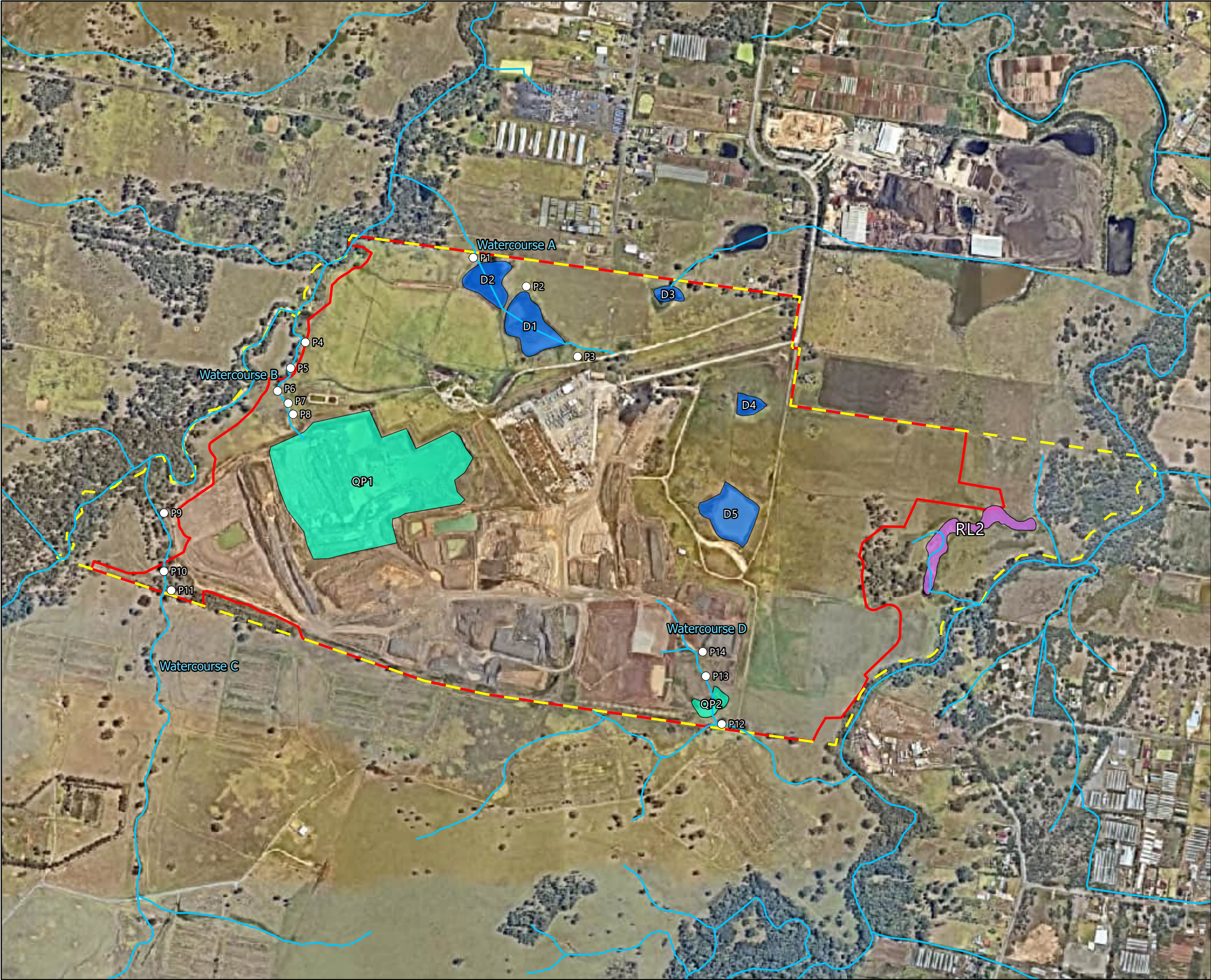


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3.0 Existing Environmental Conditions

The Site largely comprises an existing quarry and brickmaking facility, with the remaining land consisting of gently undulating farmland that has been historically cleared of most forest and woodland and used for livestock grazing. It is bounded to the east by South Creek and to the west by Badgery's Creek and contains four unnamed watercourses and eight waterbodies (two quarry pits, five dams and a Freshwater Wetland).

This chapter describes the current condition of aquatic habitats on the Site and the flora and fauna species that occur, or are likely to occur, within them.

3.1 Aquatic Habitats

3.1.1 Streams

All the watercourses within the Site are tributaries, or eventually become tributaries, of either South Creek or Badgery's Creek, two sixth order streams along the eastern and western boundaries, respectively. Within the disturbance area, there are two second order streams (located in the southeast and southwest) and two first order streams (both located in the northern portion) (**Table 2**).

Table 2 Strahler orders

Watercourse Name	Strahler Order
Watercourse A	First order
Watercourse B	First order
Watercourse C	Second order
Watercourse D	Second order

The site inspection by SLR assessed the condition of mapped watercourses within the disturbance area. It was determined that two watercourses, Watercourses A and D, did not conform to the definition of a river under the WM Act as they did not comprise a natural or artificial channel as they exhibited no defined bed or bank structure and contained little to no riparian vegetation (**Photograph 1 to Photograph 3** and **Photograph 12 to Photograph 14, Appendix A**). Any riparian vegetation that did occur along these watercourses was dominated by the exotic species such as *Lolium perenne* and *Paspalum dilatatum*. The other two watercourses, Watercourses B and C, did meet the definition of a river due to the presence of a defined channel with clear bed and bank structure (**Photograph 4 to Photograph 8** and **Photograph 9 to Photograph 11, Appendix A**). These two watercourses contained a large amount of riparian vegetation that conformed to the TEC Riverflat Eucalypt Forest (in parts).

3.1.2 Dams

Within the Site, 8 waterbodies were recorded during surveys by SLR on the 28th January 2026, and these are shown in **Figure 1**.

All the waterbodies that occur on the Site are artificial quarry pits or artificial dams for the purpose of farm production, with the exception of the Freshwater Wetland that is due to be retained as part of the project (**Photograph 22, Appendix A**). All the dams that occur on the Site, except for Quarry Pit 1 (**Photograph 15 to Photograph 21, Appendix A**), contain fringing wetland vegetation comprising a mix of native species, such as *Persicaria decipiens* (Slender Knotweed), *Juncus usitatus* and *Typha orientalis* (Broad-leaved Cumbungi), as well as exotic species, such as *Paspalum dilatatum* and *Cenchrus clandestinus* (Kikuyu).



A review of the DPI Fisheries NSW Spatial Data Portal (DPI 2025) found that no key fish habitat or threatened freshwater fish species are mapped as occurring in the disturbance area, however both Badgery's Creek and South Creek along the boundaries do. Key fish habitat is defined to include most permanent and semipermanent freshwater habitats including rivers, creeks, lakes, lagoons, billabongs, weir pools and impoundments up to the top of the bank. Small headwater creeks and gullies containing first and second order streams, that only flow for a short period after rain are generally excluded, as are farm dams constructed on such systems. Wholly artificial waterbodies such as irrigation channels, urban drains and ponds, salt and evaporation ponds are also excluded except where they are known to support populations of threatened fish or invertebrates.

3.1.3 Riparian and Aquatic Vegetation

As shown in the photographs provided in **Appendix A**, watercourses B and C contain riparian vegetation that conforms to the TEC Riverflat Eucalypt Forest as shown in **Figure 4**.

The riparian vegetation along Watercourse B conforms to the degraded condition state of Riverflat Eucalypt Forest, which has a ground layer that is dominated by exotic species, and a shrub layer that only sparsely contains native species. The canopy is dominated by *Eucalypts amplifolia* subsp. *amplifolia*, and *Eucalyptus moluccana* and *Eucalyptus tereticornis* occur less frequently. A sub-canopy is present in some areas, and where present is dominated by *Melaleuca decora*. The native shrub *Bursaria spinosa* is present and sparse in the shrub layer. *Microlaena stipoides* var. *stipoides* (Weeping Grass) is the most common species in the ground layer, with the exception of *Cynodon dactylon* var. *dactylon* (Couch), which is considered exotic by most botanical authorities in Australia. Other native species include the sedge *Carex appressa*, the rushes *Juncus usitatus* and *Juncus subsecundus*, and the forbs *Einadia nutans* subsp. *nutans*, *Lythrum hyssopifolia*, and *Persicaria decipiens*. Exotic species are dominant in the ground layer. Species include the grasses *Ehrharta erecta* and *Lolium perenne*, and the forbs *Senecio madagascariensis*, *Ranunculus sceleratus*, and *Plantago lanceolata*.

The riparian vegetation along Watercourse C conforms to the moderate condition state of Riverflat Eucalypt Forest, which is the best condition state across the entire Site. It is mostly dominated by native species in all strata, though exotic species are common, particularly in the ground layer. The canopy is dominated by *Eucalyptus amplifolia* subsp. *amplifolia*. There are isolated occurrences of *Casuarina glauca*. The native shrub *Bursaria spinosa* (Blackthorn) is common and dominates the shrub layer in most areas with a moderately high coverage. There are scattered occurrences of the exotics *Solanum sisymbriifolium* and *Senecio pterophorus* in the stratum. The ground layer varies in condition, and although has higher dominance of native species than the other condition states, is frequently co-dominated or sub-dominated by exotic species. The native species with highest coverage include the sedge *Carex appressa*, the grasses *Microlaena stipoides* var. *stipoides* and *Oplismenus aemulus* (Basket Grass), and the forb *Tetragona tetragonioides*. Other native species are common in the layer, and include the forbs *Lobelia purpurascens* (Whiteroot), *Geranium solanderi* (Native Geranium) and *Einadia nutans* subsp. *nutans*. Exotic species are common to subdominant in the ground layer and include the forbs *Tradescantia fluminensis* (Wandering Trad), *Solanum pseudocapsicum* (Madeira Winter Cherry), and *Galium aparine* (Goosegrass), and the grasses *Ehrharta erecta*, *Lolium perenne*, and *Bromus catharticus*.

Aquatic native plant species are confined to the farm dams in the disturbance area, and include *Persicaria decipiens*, *Marsilea mutica* (Large-leaved Nardoo), and *Ludwigia peploides* subsp. *montevidensis* (Water Primrose).



3.2 Aquatic Species

3.2.1 Fish & Aquatic Invertebrates

Originally, the Site would have been largely dry and drained by ephemeral streams with little if any fish habitat, or habitat for aquatic invertebrates. This has now been altered historically by the creation of large farm dams.

The farm dams provide substantial habitat for a range of fish and aquatic invertebrates. Such fauna would be typical of many of the farm dams that occur in Western Sydney. Based on SLR's experience draining many farm dams in Western Sydney, the fish species most likely to occur are shown in **Table 3** below. Note that the eels, Plague Minnow, and Eurasian Carp are very likely to be present. Australian Bass and Silver Perch may be present as they are sometimes introduced to farm dams for fishing purposes, however, they have not been recorded and it is unknown whether they occur.

The types of invertebrates present would include a range of hardy, mobile aquatic animals including Yabbies (*Decapoda*), damselflies and dragonflies (Odonata), water beetles (Coleoptera), midges and aquatic fly larvae (Diptera) and others. The invertebrates would provide food for a range of vertebrate fauna including fish, turtles, frogs, bats, and birds, as outlined below.

Table 3 Fish species typically found within farm dams in Western Sydney

Common Name	Scientific Name
Long-finned Eel	<i>Anguilla reinhardtii</i>
Plague Minnow (Mosquito Fish) *	<i>Gambusia holbrooki</i>
Eurasian Carp *	<i>Cyprinus carpio</i>
Australian Bass	<i>Macquaria novemaculeata</i>
Silver Perch	<i>Bidyanus bidyanus</i>

Note: * = exotic species

3.2.2 Reptiles and Amphibians

The dams on Site are substantial in size and would likely support two species of turtles, the Eastern Snake-necked and Macquarie River Turtles as listed in **Table 4**. Riparian vegetation around the dams would likely support a range of commonly occurring frogs as listed in **Table 5**.

Table 4 Reptiles known or likely to occur within dams on the Site

Common Name	Scientific Name
Eastern Snake-necked Turtle	<i>Chelodina longicollis</i>
Macquarie River Turtle	<i>Emydura macquarii</i>

Table 5 Frog species known or likely to occur within fringing vegetation of dams on the Site

Common Name	Scientific Name
Common Eastern Froglet	<i>Crinia signifera</i>
Striped Marsh Frog	<i>Limnodynastes peronii</i>



Common Name	Scientific Name
Peron's Tree Frog	<i>Litoria peronii</i>
Eastern Dwarf Tree Frog	<i>Litoria fallax</i>

3.2.3 Birds

The farm dams on site are relatively large and provide productive feeding areas for a range of birds. While many bird species would utilise the dams on occasion to drink water, numerous wetland species have been recorded from the Site that occur as semi-permanent or permanent residents and have the potential to utilise these areas for foraging, roosting and breeding.

Table 6 lists the species of recorded birds likely to occur in association with the waterbodies on the Site.

Table 6 Bird species likely to occur in association with waterbodies on the Site

Scientific Name	Common Name
<i>Anas castanea</i>	Chestnut Teal
<i>Anas gracilis</i>	Grey Teal
<i>Anas superciliosa</i>	Pacific Black Duck
<i>Ardea intermedia</i>	Intermediate Egret
<i>Ardea pacifica</i>	White-necked Heron
<i>Chenonetta jubata</i>	Australian Wood Duck
<i>Cygnus atratus</i>	Black Swan
<i>Egretta novaehollandiae</i>	White-faced Heron
<i>Fulica atra</i>	Eurasian Coot
<i>Gallinula tenebrosa</i>	Dusky Moorhen
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle
<i>Microcarbo melanoleucos</i>	Little Pied Cormorant
<i>Pelecanus conspicillatus</i>	Australian Pelican
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant
<i>Platalea flavipes</i>	Yellow-billed Spoonbill
<i>Porphyrio porphyrio</i>	Purple Swamphen
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe
<i>Threskiornis moluccus</i>	Australian Ibis
<i>Threskiornis spinicollis</i>	Straw-necked Ibis
<i>Todiramphus sanctus</i>	Sacred Kingfisher
<i>Vanellinae miles</i>	Masked Lapwing



3.2.4 Mammals

The watercourses and waterbodies on the Site are unlikely to support aquatic animals such as the platypus (*Ornithorhynchus anatinus*) or rakali/water rats (*Hydromys chrysogaster*). However, they may provide foraging for the threatened Southern Myotis (*Myotis macropus*), which is listed as Vulnerable under the BC Act. This bat species:

- Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage; and
- Forage over streams and pools catching insects and small fish by raking their feet across the water surface.

In addition to the Southern Myotis, a number of exotic mammal species are likely to occur across the Site (**Table 7**).

Table 7 Mammal species likely to occur in association with watercourses and waterbodies on the Site

Common Name	Scientific Name
Southern Myotis	<i>Myotis macropus</i>
European Red Fox *	<i>Vulpes vulpes</i>
European Rabbit *	<i>Oryctolagus cuniculus</i>
Black Rat *	<i>Rattus rattus</i>
House Mouse *	<i>Mus musculus</i>

Note: * = Exotic species

3.2.5 Threatened Species

No aquatic threatened species of fish or invertebrates are considered likely to occur naturally on the Site.

The Southern Myotis (*Myotis macropus*) listed as vulnerable under the BC Act is known to occur in the locality. This species roosts in hollow trees around water and forages in association with farm dams. It is likely to occur on site from occasion, however, it was not recorded during the preparation of the BDAR (SLR, 2025). The individuals of this species that could occur would be likely to remain and benefit from the active management proposed for the revegetation of the park lands and from the management of water.

3.2.6 Weeds and Feral Animals

3.2.6.1 Weeds

A range of exotic riparian and aquatic plants have been recorded on the Site, as set out in **Table 8** below.

Table 8 Exotic riparian and aquatic species known to occur within, or along the fringes of, waterways and waterbodies in the Site

Common Name	Scientific Name
Alligator Weed	<i>Alternanthera philoxeroides</i>
Green Cestrum	<i>Cestrum parqui</i>
Spear Thistle	<i>Cirsium vulgare</i>



Common Name	Scientific Name
Dallas Grass	<i>Paspalum dilatatum</i>
Narrow-leaved Privet	<i>Ligustrum sinense</i>
Kikuyu	<i>Cenchrus clandestinus</i>
Sharp Rush	<i>Juncus acutus</i>

3.2.6.2 Feral Animals

Due to a long history of agricultural usage, the Site contains a suite of feral animals that are associated with the aquatic and riparian habitats on site. A list of potentially occurring threatened animals is provided in **Table 9**.

The main aquatic feral animals that are likely to occur are Plague Minnow (*Gambusia holbrooki*) and Eurasian Carp (*Cyprinus carpio*).

Predation by Plague Minnow is listed as a Key Threatening Process on Schedule 4 of the BC Act. According to the species profile provided by the Department of Primary Industries (DPI 2014b), Plague Minnow, is a small freshwater fish originally introduced into Australia in the 1920s. The fish was imported as an aquarium fish, but some were released into creeks around Sydney, Melbourne, and Brisbane. Plague Minnow is now widespread in NSW and is an aggressive and voracious predator of native fauna, particularly threatened frogs. Presence of Plague Minnow has been linked to the decline of threatened frog species including the Green and Golden Bell Frog, the New England Bell Frog, Southern Bell Frog, and the Southern Tablelands Bell Frog. Breeding by the Green and Golden Bell Frog is almost completely restricted to water bodies lacking Plague Minnow. There are also potential effects of predation by the plague minnow on non-threatened frog species, freshwater fishes, and other aquatic organisms such as macro-invertebrates.

According to the species profile for the Eurasian Carp (DPI 2014a), this species forage by uprooting vegetation and stirring up sediments. This contributes to poor water quality due to increased turbidity, reducing light penetration and therefore plant growth. Suspended sediments can also smother plants and clog fishes' gills. The feeding habits of Eurasian Carp can also contribute to erosion by undermining riverbanks, leading to the collapse of banks and vegetation. Eurasian Carp are also known to prey on native macroinvertebrates and directly graze on aquatic plants.

In addition to exotic fish, exotic mammals are also likely to occur within riparian vegetation associated with dams and watercourses on the Site. These include the European Red Fox (*Vulpes vulpes*) the European Rabbit (*Oryctolagus cuniculus*), Black Rat (*Rattus rattus*) and House Mouse (*House mouse*).

Table 9 Exotic fauna species that are likely to occur in dams, or in riparian vegetation, on the Site

Common Name	Scientific Name
Plague Minnow (Mosquito Fish)	<i>Gambusia holbrooki</i>
Eurasian Carp	<i>Cyprinus carpio</i>
European Red Fox	<i>Vulpes vulpes</i>
European Rabbit	<i>Oryctolagus cuniculus</i>
Black Rat	<i>Rattus rattus</i>
House Mouse	<i>Mus musculus</i>



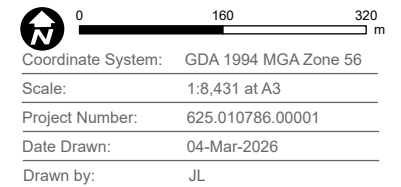
VEGETATION MAPPING OF THE SITE

FIGURE 4

LEGEND

- Disturbance Area
- The Site
- Plant Community Type**
 - PCT 3320 (Canopy)
 - PCT 3320 (Grassland)
 - PCT 3320 (Exotic Ground)
 - PCT 3975 (Artificial)
 - PCT 3975 (Natural)
 - PCT 4023 (Native Ground)
 - PCT 4023 (Degraded)
 - PCT 4025 (Moderate)
 - PCT 4025 (Moderate/Low)
 - PCT 4025 (Degraded)
 - PCT 4025 (Exotic Ground)
 - PCT 4025 (Grassland)
- Other Map Units (Non-PCTs)**
 - Planted Native Vegetation
 - Exotic Woody Vegetation
 - Exotic Grassland and Cleared Land
 - Farm Dam

Image Source: Nearmap © (2025) Dated: 14/12/2025
Data source: Sixmaps Clip & Ship, 2026, NSW Spatial Services
DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



4.0 Impact Assessment

This chapter assesses the direct and indirect impacts arising from the proposed development within the disturbance area on riparian and aquatic habitats, and the species that inhabit them.

The impacts of the proposal should be evaluated against the current rural situation. Currently, the Site is utilised as quarry, with areas of farmland where riparian habitats and farm dams are freely available for farm animals, currently cattle. There is no active management of any lands for conservation and there is a suite of environmental issues as a result. These include but are not limited to:

- Erosion and sedimentation of hillsides and creek beds;
- Pugging of the dam's edges and riparian zones from stock hooves;
- Weed invasion;
- Impacts from feral animals;
- Impacts to remaining native woodland vegetation caused by grazing;
- Removal of woody debris; and
- Nutrient pollution from domestic animals of streams on site, leading to downstream impacts on South Creek and Badgery's Creek.

As a result of the project, the existing quarry and farmlands will be progressively replaced by a combination of industrial development and open space development. However, areas of beyond the disturbance area with a higher conservation value such as the riparian corridors of South Creek and Badgery's Creek are due to be retained. Furthermore, a suite of mitigation measures (see **Section 5.0**) will be implemented to minimise the impacts of the project.

4.1 Direct Impacts

4.1.1 Impacts to Watercourses

4.1.1.1 Watercourse A

Watercourse A is located in the northern portion of the disturbance area and runs through Farm Dams 1 and 2 (**Figure 1**). This watercourse does not meet the definition of river or waterfront land under the WM Act, and it will be removed as part of the project.

The watercourse is an overland flow path that is generally dry, but contains water following heavy rainfall, and has been artificially improved to channel overland flow into Farm Dams 1 and 2. It is currently highly degraded and has been heavily modified for agricultural uses with the majority of native vegetation cleared and now consists primarily of exotic dominated grassland and lacks a defined bed and bank structure (see **Photograph 1** to **Photograph 3**, **Appendix A**). No riparian vegetation is present along the watercourse and as a result it contains low biodiversity value and does not serve as a suitable biodiversity corridor in its current form. There is potential for some aquatic species to utilise it periodically during periods of flow, but this is likely to be highly limited due to the absence of riparian vegetation, or even fringing vegetation such as reeds and rushes. Additionally, no frogs or aquatic species were observed during the initial surveys, which occurred after very heavy rainfall (**Table 1**). Stock have had access to the mapped watercourse for many years and trampling and grazing have contributed to its current highly degraded condition.



4.1.1.2 Watercourse B

Watercourse B is a first-order watercourse located in the north-west of the disturbance area and flows into Badgery's Creek which is located along the western boundary (**Figure 1**).

The hydroline provided by the NRAR for Watercourse B extends approximately 100m further south than the physical stream that exists in the disturbance area. The northern portion of Watercourse B (**Photograph 4 to Photograph 6, Appendix A**) consist of a stream with defined channel with bed and bank structure, however the southern portion (**Photograph 7 and Photograph 8, Appendix A**) does not contain a defined channel with bed or bank structure and occurs as an overland flow path comprised of exotic dominated grassland that is subject to flooding after periods of heavy rainfall (as shown in **Appendix A**).

The northern portion of Watercourse B (i.e. the portion that conforms to a watercourse under the WM Act) contains a riparian corridor that conforms to the degraded condition state of Riverflat Eucalypt Forest, that provides a low-quality biodiversity corridor for native fauna within the disturbance area, and there is potential that aquatic species may utilise it periodically. The northern portion of Watercourse B is due to be retained and to undergo bank stabilisation works as outlined in the Vegetation Management Plan (VMP) that has been prepared for the concurrent Internal Works SSD-97688711 (our reference: 625.010786.0001-R4-VMP-20260320). This may result in temporary impacts such as soil disturbance and sedimentation; however, they are expected to be short lived and biodiversity gains are expected due to future management under the VMP.

The southern portion of the watercourse which does not exhibit a natural or artificially improved channel and is not considered to conform to a watercourse under the WM Act, will be removed to facilitate the Active Open Space area as required under the Western Sydney Airport Precinct Plan. The southern portion of Watercourse B is comprised of exotic dominated grassland, and does not conform to a native PCT.

4.1.1.3 Watercourse C

Watercourse C is a second-order watercourse located in the south-west of the Site, and flows into Badgery's Creek which is located along the western boundary (**Figure 1**).

Watercourse C has clearly defined channel with bed and bank structure, and the riparian corridor conforms to the best quality Riverflat Eucalypt Forest within the Site (**Photograph 9 to Photograph 11, Appendix A**). This watercourse is to be retained as part of SSD-97711727 and managed under the future VMP. The VMP will focus on the revegetation of the riparian vegetation (where necessary), weed control measures and the stabilisation of the creek banks. As such the project will not result in any direct impacts on this watercourse.

4.1.1.4 Watercourse D

Watercourse D is located in the south-eastern portion of the disturbance area and runs through Quarry Pit 2 (**Figure 1**). This watercourse does not meet the definition of a river or waterfront land under the WM Act, and it will be removed as part of the project.

The watercourse is an overland flow path that is usually dry, but contains water following rainfall, and serves as a flow path into Quarry Pit 2. It lacks a defined channel with bed and bank structure (see **Photograph 11 to Photograph 13, Appendix A**). It is currently highly degraded and has been heavily modified for agricultural uses with the majority of native vegetation cleared and now consists primarily of exotic dominated grassland with scattered patches of *Juncus usitatus* present in the most waterlogged areas, and as a result contains low biodiversity value and does not serve as a suitable biodiversity corridor in its current form. Additionally, no frogs or aquatic species were observed from this area during the field surveys, which occurred after very heavy rainfall (**Table 1**). Stock have had access to this flow path for



many years and trampling and grazing have contributed to its current highly degraded condition.

4.1.2 Impacts to Waterbodies

The project requires the dewatering and decommissioning of the two quarry pits and five farm dams present in the disturbance area, and so a Dam Dewatering Plan has been prepared (our reference: 625.010786.0001-R4-DDP-20260313). This will result in the reduction aquatic habitat available for aquatic species commonly associated with farm dams such as waterbirds, fish, amphibians and crustaceans. In particular this may include some marginal habitat for the Southern Myotis (*Myotis macropus*), however this species was not recorded during targeted surveys undertaken for the BDAR.

The waterbodies represent relatively lower quality foraging habitat for the Southern Myotis as they are surrounded by predominantly cleared land and preferred roosting habitat in mature trees adjacent to the dams is not present. Numerous similar farm dams occur in the surrounding areas that will remain and a very large area of much higher quality habitat is present around Prospect Reservoir, approximately 8 km to the north-east. Additional habitat will also be created within the disturbance area with the construction of the stormwater detention basins as part of the future, Internal Works SSDA.

It should be noted that the two quarry pits contain surface water only and will be completely dewatered and removed under existing authority approvals issued under MP10_0014.

4.2 Indirect Impacts

The indirect impacts of the project relate mainly to changes in the hydrological regime as a result of the changes to watercourses and urban development. Urban development, as part of the future Internal Works SSDA, will create a new landscape that has broad areas of hard, impervious surfaces in the form of rooftops, roads and footpaths.

Post development flow rates will be equal to, or less than, pre-developed flow rates for the Site, with all flows passing through a treatment train approach consisting of Gross Pollutant Traps (GPT) and rain gardens prior to discharge into the watercourse - thereby ensuring no 'dirt water' enters the watercourse. As adopted during the masterplan stage, detention will be undertaken through the construction of four retention basins

As is typically the case for urban development of rural environments, whilst post development peak flows will be managed to generally align with pre-development peak flows, the actual volume of flow entering the watercourse during and after storm events will increase. This will therefore change the availability of water to riparian flora and fauna within the riparian corridors of Badgerys Creek and South Creek, however, it's not expected that this change will have a significant negative impact on the livelihood of existing flora and fauna.

In addition to changes in the flow regime into Watercourse B and C, the urbanisation of the majority of the Site for industrial purposes will likely lead to an increase in surface runoff of sediments, pollution and fertiliser into Watercourse B and C. This could result in the water quality within Watercourse B and C to degrade significantly, negatively impacting on the surrounding vegetation, as well as any aquatic fauna occurring within the dams following the development. Sediment runoff may also contain weed propagules, leading to occurrences of weeds within the riparian corridor.



4.2.1 Aquatic Environment Impacts

Although the Site is located within the terrestrial environment, due to the proximity to the Badgerys Creek and South Creek, there are potential for the following indirect impacts on adjacent aquatic habitats.

4.2.1.1 Sedimentation and Erosion

There are natural rates of sedimentation and erosion in the estuary and riverine systems which can vary in space and time, especially during and following large rainfall/flood events. These include erosion due to flood flows and reworking of sediment shoals and increased suspended sediment/turbidity in floodwaters which can enhance rates of sedimentation.

The future development has some potential to increase the amount of erosion occurring adjacent to the Site through vegetation clearing required for the project, given the role that vegetation plays in stabilising soils. The project will require removal of vegetation within 100m from Badgerys Creek, and rainfall and tidal energy can wash away any disturbed earth relatively easily. This may result in excessive or highly localised erosion and sedimentation (above the natural baseline) that is damaging to aquatic habitats and flora/fauna they support. This has the potential to increase sedimentation and turbidity of adjacent estuarine environment with flow on effects to the high-quality habitats in Badgerys Creek, however due to the distance of vegetation to be removed from the creek, this impact is not considered likely. Erosion may also be exacerbated by any kind of vegetation clearance, given the role that vegetation plays in stabilising soils.

The risk of this impact is greatest during the construction phase of the project. Sediment in stream beds disrupts the natural food chain by destroying the habitat where the smallest stream organisms live and causing declines in fish populations. Sediment can clog fish gills, reducing resistance to disease, lowering growth rates, and affecting fish egg and larvae development.

Sediment movement can also mobilise nutrients and pollutants to adjacent aquatic and marine habitats. Soils from the exposed areas, and potential pollutants, will be readily mobilised into local drainage lines and water bodies via erosion processes. Nutrient pollution has the potential to impact upon a system via the stimulation of growth of nuisance plants and cyanobacteria (ANZECC and ARMCANZ 2000).

Although erosion and sedimentation can potentially give rise to significant impacts on aquatic and marine ecosystems, the impacts are manageable through implementation of a comprehensive range of mitigation measures. Further details of the measures to be implemented to avoid sedimentation of wetlands are provided in the detailed Sediment and Erosion Plan. With the implementation of comprehensive sedimentation control measures, it is considered unlikely that the proposed works will result in an increase in sedimentation of estuarine habitats.

4.2.1.2 Fish Passage

As the Site is located along the banks of Badgerys Creek and South Creek and largely runs parallel to the flow path of the two, the proposed development will not result in the blockage or diversions of any fish passages within either watercourse.

4.2.1.3 Key Fish Habitat

The FM Act aims to conserve, develop and share the fishery resources of the State for the benefit of present and future generations and, in particular to:

- Conserve fish stocks and key fish habitats;



- Conserve threatened species, populations and ecological communities of fish and marine vegetation, and
- Promote ecologically sustainable development, including the conservation of biological diversity, and, consistently with those objects.

Badgerys Creek and South Creek are both mapped as containing “Key Fish Habitat” under the FM Act. The project will not impact either Badgerys Creek or South Creek, and so there will be no impact to Key Fish Habitat.

4.3 Key Threatening Processes

A threat may be formally listed as a key threatening process under the FM Act if it:

- Adversely affects threatened species, populations, or ecological communities; or
- Could cause species, populations or ecological communities that are not threatened to become threatened.

Listed key threatening processes that are relevant to the project include the following:

- Degradation of native riparian vegetation along New South Wales water courses (Fisheries Scientific Committee 2009); and
- Removal of large woody debris from New South Wales rivers and streams (Fisheries Scientific Committee 2001).

Under the *status quo*, these key threatening processes will continue to have a negative impact on the retained riparian habitats of the Site. In future, the key threatening processes will be managed and/or eliminated within the retained areas, as the lands are progressively restored. There will no longer be livestock grazing, riparian vegetation will be regenerated, any exotic fish species (carp) will be removed during dam draining, and removal of large woody debris will no longer be permitted. Despite the loss of farm dams within the disturbance area, it is expected that there will be downstream benefits to water quality within the South Creek and Badgerys Creek, because of cessation of grazing, construction, and operation of storm water controls. It is not expected that the project will exacerbate these key threatening processes and outlined above, it will ameliorate their impact in the wider Site.



5.0 Mitigation Measures

5.1 Dam Dewatering Plan

To reduce the impacts of the dam dewatering works on fauna potentially occurring within the fringing vegetation around each dam, and within the dams themselves, a Dam Dewatering Plan will be prepared for the project.

The Dam Dewatering Plan will include, but will not be limited to:

- Description of aquatic habitat within and surrounding each dam, including assessment of water quality against Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), 2000 Water Quality Guidelines and Ecological Trigger Values;
- Description of recorded and potential aquatic fauna occurring within each dam;
- Identified release points for captured fauna and justification of suitability of proposed release points;
- Identification of requisite licences and permits;
- Aquatic fauna handling protocols;
- Procedures and protocols for relocation of native fauna;
- Procedures and protocols for management of injured fauna;
- Procedures and protocols for humane euthanasia of pest species; and
- Survey and reporting requirements.

5.2 Erosion, Sedimentation and Pollution Controls

The project has been designed using water sensitive urban design to maintain or improve quality of discharge into creeks and drainage lines. Erosion and sediment control measures will be implemented throughout the construction periods in order to minimise potential impacts to the existing hydrological processes of the Site. A Sediment and Erosion Control Plan will be prepared in accordance with Technical guidance for achieving Wianamatta–South Creek stormwater management targets (DPE, 2022) and implemented prior to works, with the aim of achieving an outcome of ‘no visible turbid plumes migrating through the waterway’. The Plan will include, as a minimum, the locations and type of erosion and sediment controls to be erected within and adjacent to the existing watercourse as well as the re-aligned watercourse and associated corridor.

To reduce sedimentation on the construction site, erosion control measures will be implemented including minimising the amount of exposed soils at any given time. All soil stockpiles will be adequately covered when not in use to prevent erosion from heavy rainfall.

Additionally, sediment fences will be established around the perimeter of the development area to prevent the impacts of sedimentation on retained vegetation.

During construction, precautions will be taken to ensure that no pollution, such as petrochemical solutions or water containing suspended solids, escapes the construction site. Pollution traps and efficient removal of pollution to an off-site location will help minimise pollution impacts.



5.3 Timing of Works

It is recommended that any soil disturbance works not be undertaken during periods of moderate to heavy rain. Avoiding soil disturbance during times of rain will minimise the risk of the project indirectly impacting areas downslope of the site through erosion and/or sedimentation.

5.4 Future Mitigation Measures

A VMP and a Landscape Plan have been prepared for the future Internal Works SSDA (SSD-97688711) package, that have both focused on enhancing and rehabilitating the retained riparian vegetation within the Site. The current SSDA (SSD-97711727) do not include these two documents, however they have been included below as they speak to the future of the project, and are both relevant to this Riparian Lands Assessment.

5.4.1 Vegetation Management Plan

As part of the Internal Works SSDA package (SSD-97688711), as described in **Section 1.2.2**, a VMP has been prepared by SLR for the Site that details the revegetation requirements for the riparian corridor of Watercourses B and C. The VMP will outline ecological management of the VMP Area and includes prescriptions for management of native flora and fauna, weeds, and feral animals within a 5-year maintenance period.

Furthermore, revegetation will be conducted with species characteristic of locally occurring vegetation communities along the watercourse to establish a corridor that will improve habitat connectivity across the Site. The corridor will consist of vegetation that is broadly representative of the locally occurring native vegetation communities, including the TECs River-Flat Eucalypt Forest and Freshwater Wetlands. Revegetation will include the planting of canopy, shrub and ground cover species throughout the corridor, including aquatic species within the watercourses.

5.5 Landscape Plan

A Landscape Plan to inform the design of future internal estate works, which are proposed to be assessed under a separate Internal Works SSDA (SSD-97688711), as described in **Section 1.2.2**, has been prepared by Scape for the Site. This Landscape Plan details the specifications of artificial structures that are to be constructed, including limited in-formal crushed aggregate paths, bridges, shelters, and seating areas. The Landscape Plan also details the specific plant species that are to be used in areas requiring revegetation. The paths, watercourse crossings, shelters and seating areas have been carefully chosen through review of detailed survey information and ground truthing onsite, to cause minimal disturbance or harm to the watercourses and associated biodiversity within the VMP Areas. The riparian area works are generally in keeping with permissible activities included within the 'Riparian and Corridor Matrix' table contained within DHPI's Guidelines for Development on Waterfront Land.

The Landscape Plan does not form part of the current SSDA for bulk earthworks and remediation (SSD-97711727) and is not relied upon for the assessment or approval of this application. Notwithstanding, the Landscape Plan has been informed by detailed survey information and site investigations to ensure that, at a concept level, future landscape and riparian area works can be designed to minimise disturbance to watercourses and associated biodiversity within the VMP areas. These matters will be assessed in detail as part of the future Internal Works SSDA.



6.0 Conclusion

This Riparian Lands Assessment has provided an assessment of the impact to riparian lands in the disturbance area as a result of the project. Riparian lands within the disturbance area comprise two 2nd order watercourses, two 1st order watercourses, two quarry pits (that contain surface water only) and five farm dams. Additional areas comprising riparian land occur within the broader Site which will be retained by the project including two 6th order watercourses and a Freshwater Wetland.

Currently, the Site is largely used as a quarry and brickmaking facility, with the remaining land utilised as farmland, where a series of riparian habitats and farm dams are freely available for farm animals, currently cattle. There is no active management for conservation and there is a suite of environmental issues as a result. These include but are not limited to:

- Erosion and sedimentation of hillsides and creek beds;
- Weed invasion;
- Impacts from feral and domestic animals;
- Impacts to remaining native woodland vegetation caused by grazing;
- Removal of woody debris; and
- Nutrient pollution of streams on site, and downstream into South Creek and Badgery's Creek.

The direct impacts of the project mostly comprise the loss of aquatic habitat. As the bio-certified land is progressively developed and replaced by a combination of industrial development and open space development, all of the quarry pits and farm dams, and two of the unnamed watercourses will be removed or relocated, as permitted under the WM Act. There will be a resultant net loss of aquatic habitats associated with quarry pits and farm dams across the Site.

The farm dams provide some aquatic habitat for native species including wetland birds, amphibians and fish, and may provide some marginal habitat for the Southern Myotis. These dams are unlikely to provide important habitat for aquatic species however as they are relatively small, and much larger areas of aquatic habitat occur in surrounding areas and in nearby Prospect Reservoir. A Dam Dewatering Plan will be prepared to minimise impacts to fauna species during dewatering, and the minor loss of habitat will be compensated for by the establishment of the realigned watercourse as well as the water detention basins within the disturbance area as part of the future Internal Works SSDA, and will not be prohibited by the proposed Bulk Earthworks SSDA.

Indirect impacts of the project largely relate to hydrology as a result of the creation of large areas of impervious surfaces, thereby increasing stormwater runoff and the potential for water contamination from urban areas. The project has been designed using water sensitive urban design to maintain or improve quality of discharge into creeks and drainage lines. A sedimentation and erosion control plan will be prepared in order to minimise potential impacts from sedimentation and erosion on the existing hydrological processes of the disturbance area and wider Site.

A suite of mitigation measures are proposed for the development of the disturbance area including the implementation of Dam Dewatering Plan and Storm Water Management Plan, and a VMP and Landscape Plan that have focused on enhancing the riparian vegetation have been prepared for the future Internal Works SSDA (SSD-97688711). The retention and rehabilitation of the retained riparian habitat will result in the improvement of riparian habitat and will result in a significant increase in the area and quality of riparian habitat relative to



current conditions. A range of water quality measures will be implemented to mitigate the potential indirect impacts of the project including sediment and pollution controls and the establishment of water retention basins.

Accordingly, the impacts to the riparian lands in the disturbance area are not considered to be significant and it is likely that biodiversity and hydrological outcomes associated with the riparian lands within the disturbance area will improve in the long term.

7.0 Closure

Sincerely,

SLR Consulting Australia Pty Ltd

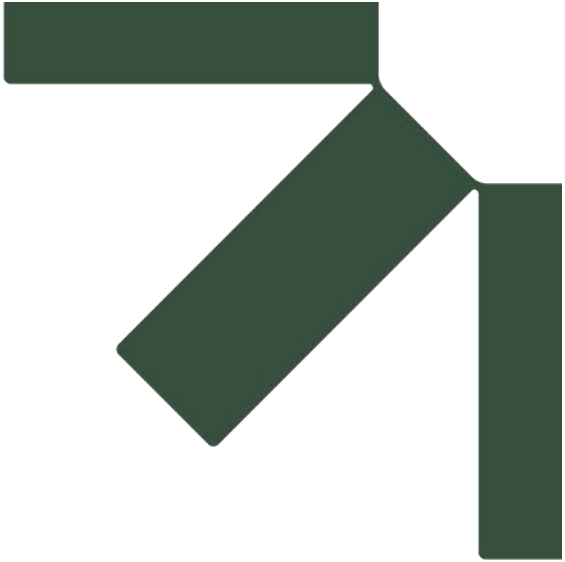


Alix Murray, MSc
Senior Ecologist



Matt Freeman, BNatSci
Principal Ecologist





Appendix A Photographs

225 - 245 Martin Road, Bradfield Bulk Earthworks SSD-97711727

Riparian Land Assessment

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 625.010786.00001

16 March 2026

Photograph 1 Watercourse A



Photograph 2 Watercourse A



Photograph 3 Watercourse A



Photograph 4 Watercourse B



Photograph 5 Watercourse B



Photograph 6 Watercourse B



Photograph 7 Watercourse B



Photograph 8 Watercourse B



Photograph 9 Watercourse C



Photograph 10 Watercourse C



Photograph 11 Watercourse C



Photograph 12 Watercourse D



Photograph 13 Watercourse D



Photograph 14 Watercourse D



Photograph 15 Quarry Pit 1 (since been dewatered under MP10_0014)



Photograph 16 Quarry Pit 2 (since been dewatered under MP10_0014)



Photograph 17 Farm Dam 1



Photograph 18 Farm Dam 2



Photograph 19 Farm Dam 3



Photograph 20 Farm Dam 4



Photograph 21 Farm Dam 5



Photograph 22 Freshwater wetland





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