Notice of Application for a Planning Permit

Cardinia

The land affected by the application is located at:	2003\PP3953, L1 TP828779, L1 TP84823, L1 TP808002, 65, 70 and 75A Heads Road, Lang Lang
The application is for a permit to:	Building and works for a Utility Installation (fish lock) and associated vegetation removal.

A permit is required under the following clauses of the planning scheme:

35.04-5	Construct a building or construct or carry out works associated with a use in Section 2 (Utility Installation)
42.03-2	Construct a building or construct or carry out works
42.03-2	Remove, destroy or lop vegetation

APPLICATION DETAILS

The applicant for the permit is:	Melbourne Water
Application number:	T250442

You may look at the application and any documents that support the application at the office of the Responsible Authority:

Cardinia Shire Council, 20 Siding Avenue, Officer 3809.

This can be done during office hours and is free of charge.

Documents can also be viewed on Council's website at cardinia.vic.gov.au/advertisedplans or by scanning the QR code.

HOW CAN I MAKE A SUBMISSION?

This application has not been decided. You can still make a submission before a decision has been made. The Responsible Authority will not decide on the application before:	12 December 2025

WHAT ARE MY OPTIONS?

Any person who may be affected by the granting of the permit may object or make other submissions to the responsible authority.

If you object, the Responsible Authority will notify you of the decision when it is issued.

An objection must:

- be made to the Responsible Authority in writing;
- include the reasons for the objection; and
- state how the objector would be affected.

The Responsible Authority must make a copy of every objection available at its office for any person to inspect during office hours free of charge until the end of the period during which an application may be made for review of a decision on the application.

Application is here

1 Application lodged — 2 Council initial assessment — 3 Notice — 4 Consideration of submissions — 5 Assessment — 6 Decision

Cardinia ePlanning

Application Summary

Portal Reference	A32580N

Basic Information

Proposed Use	Building and works associated with Utility Installation and ancillary vegetation removal, LSIO Clause 44.04 - Building and Works SLO Clause 42.03 - Building and Works and Vegetation Removal
Current Use	Heads Road Weir Structure, Lang Lang
Cost of Works	$6,500,000
Site Address	Heads Road, Lang Lang Vic 3984 – Parcel ID: 2003\PP3953 and 1\TP626779 75A Heads Road, Lang Lang Vic 3984 - Parcel ID: 1\TP808802 75 Heads Road, Lang Lang Vic 3984 - Parcel ID: 1\TP84823

Covenant Disclaimer

Does the proposal breach, in any way, an encumbrance on title such as restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope?	No such encumbrances are breached

☐ Note: During the application process you may be required to provide more information in relation to any encumbrances.

Contacts

Type	Name	Address	Contact Details
Applicant	[redacted] Melbourne Water	P.O. Box 4342, Melbourne VIC 3001	W: 0483-283-584 E: vicki.grima2@melbournewater.com.au
Owner	[redacted] Melbourne Water	P.O. Box 4342, Melbourne VIC 3001	W: 0483-283-584 E: vicki.grima2@melbournewater.com.au
Preferred Contact	[redacted] GHD	Level/8 180 Lonsdale Street, Melbourne VIC 3000	W: 8687-8152 E: nicole.bartley@ghd.com

Fees

Regulation	Fee Condition	Amount	Modifier	Payable
9 - Class 14	More than $5,000,000 but not more than $15,000,000	$9,875.90	100%	$9,875.90
		Total		**$9,875.90**

Meetings

Meeting Type	Officer Name	Date of Meeting
Pre Application	[redacted]	04 Jul 2025

Documents Uploaded

Date	Type	Filename
24-07-2025	Additional Document	12637984-REPO_Lang River Fish Lock - Application for a Planning Permit.pdf

☐ Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit

Lodged By

Site User	[redacted] Melbourne Water	P.O. Box 4342, Melbourne VIC 3001	W: 0483-283-584 E: vicki.grima2@melbournewater.com.au
Submission Date	24 July 2025 - 02:48 PM		

Declaration

☑ By ticking this checkbox, [redacted] declare that all the information in this application is true and correct; and the Applicant and/or Owner (if not myself) has been notified of the application.

Civic Centre
20 Siding Avenue, Officer, Victoria

Council's Operations Centre (Depot)
Purton Road, Pakenham, Victoria

Postal Address
Cardinia Shire Council
P.O. Box 7, Pakenham VIC, 3810

Email: mail@cardinia.vic.gov.au

Monday to Friday 8.30am–5pm
Phone: 1300 787 624
After Hours: 1300 787 624
Fax: 03 5941 3784

Lang Lang River Fish Lock Project

Application for a Planning Permit

Melbourne Water

24 July 2025

The Power of Commitment

180 Lonsdale Street, Level 9
Melbourne, Victoria 3000
Australia
Australia

Our ref: 12637984

24 July 2025

[redacted]
Principal Statutory Planner
Cardinia Shire Council
PO Box 7
Pakenham, Victoria 3810

Lang Lang River Fish Lock Project

Dear [redacted]

GHD Pty Ltd (GHD) has prepared this planning report on behalf of Melbourne Water (MW) to support an application for a planning permit to construct a fish lock retrofitted within the existing drop structure at Lang Lang River (the Project).

A planning permit is required to develop land and to remove vegetation for the Project pursuant to the Cardinia Planning Scheme (the Scheme).

This application details the proposal and provides an assessment of the Project against the relevant provisions of the Scheme. Details of the application are set out in this report and includes the following supporting documentation:

- *Attachment 1 – Certificate of Title*
- *Attachment 2 – Development Plans*
- *Attachment 3 – Flora and Fauna Assessment*
- *Attachment 4 – Native Vegetation Removal Report*
- *Attachment 5 – Vegetation Offset Availability Statement*
- *Attachment 6 – Cultural Heritage Due Diligence Assessment*
- *Attachment 7 – Flooding Report*
- *Attachment 8 – MW Pre-development Advice Response*

MW has had correspondence with yourself about this Project and would therefore appreciate if the application could please be allocated to you for assessment.

MW has placed a high priority on the provision of adequate fish passage at this site and are eager to progress the application. It would be greatly appreciated if you could please respond to this application in a timely manner to best support the provision of this critical infrastructure.

I look forward to receiving a positive response to the Project. Please do not hesitate to contact me via the details below if you have any queries.

Regards,

[redacted]
Technical Director

[redacted]

Project name	Lang Lang River Fish Lock						
Document title	Lang Lang River Fish Lock Project | Application for a Planning Permit						
Project number	12637984						
File name	12637984-REP_Lang River Fish Lock - Application for a Planning Permit						
Status Code	**Revision**	**Author**	**Reviewer**		**Approved for issue**		
			Name	**Signature**	**Name**	**Signature**	**Date**
S4	0	[redacted]					24/07/25
[Status code]							
[Status code]							
[Status code]							
[Status code]							

GHD Pty Ltd | ABN 39 008 488 373
Contact [redacted] Technical Director | GHD
180 Lonsdale Street, Level 9
Melbourne, Victoria 3000, Australia
T 03 8687 8000 | **F** 03 8732 7046 | **E** melmail@ghd.com | **ghd.com**

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1. Introduction

1.1 Purpose of this report

This planning report has been prepared by GHD Pty Ltd (GHD) on behalf of Melbourne Water (MW) to accompany an application for a planning permit for the development of land for a fish lock retrofitted within the existing drop structure (Heads Road Weir) at Lang Lang River.

Under the Scheme, a planning permit is required pursuant to:

- Clause 42.03 - Significant Landscape Overlay (SLO3) to construct a building or construct or carry out works and to remove destroy or lop any vegetation
- Clause 44.04 - Land Subject to Inundation Overlay (LSIO) to construct a building or construct or carry out works

This application provides an overview of the proposed development and an assessment against the relevant provisions of the Scheme.

A summary of the application details is provided in Table 1 below.

Table 1 Application details

Application details	
Applicant	Melbourne Water
Property details	Heads Road, Lang Lang VIC 3984
Title details	2003\PP3953 1\TP828779 1\TP808002 1\TP848223
Responsible Authority	Cardinia Shire Council
Land use definition	Clause 73.03 – Utility installation
Zones	Clause 35.04 – Green Wedge Zone, Schedule 1 (GWZ1) Clause 36.01 – Public Use Zone, Schedule 1 (PUZ1)
Overlays	Clause 42.03 – Significant Landscape Overlay, Schedule 3 (SLO3) Clause 44.04 – Land Subject to Inundation Overlay (LSIO1)
Particular provisions	Clause 52.17 – Native Vegetation
General provisions	Clause 63 – Existing Uses Clause 66 – Referrals and Notice Provisions
Permit triggers	Clause 42.03 – SLO3 to construct a building or construct or carry out works and to remove destroy or lop any vegetation Clause 44.04 – LSIO1 to construct a building or construct or carry out works
Notification / Referrals	Clause 66.03 – Determining referral to Melbourne Water for an application under the LSIO Clause 66.06 – Notification to the National Trust for an application under the SLO3
Applicant details	[redacted]oject Manager Melbourne Water 990 Latrobe Street Docklands, VIC 3008
Contact person	[redacted] Technical Director GHD Level 8, 180 Lonsdale Street Melbourne VIC 3000

2. Project details

This section presents an overview of the Project, including a description of the site (Project footprint) and its surrounds (Project area), the proposed works, and relevant environmental, heritage, and design considerations.

2.1 Project background

MW is seeking to construct a fish lock within the existing Heads Road weir at Lang Lang River, Victoria, 500 metres (m) west of Heads Road to enable fish passage upstream of the existing concrete drop structure.

The Lang Lang River is a regionally important waterway and supports a number of native flora and fauna species. Since European settlement, it has been subject to significant modification that has compromised the health of fish. The Heads Road weir downstream of Heads Road was subsequently identified as a significant barrier to the passage of native fish.

MW has placed a high priority on the provision of adequate fish passage at this site. Once completed, the Project will provide a substantial length of excellent habitat for native fish.

2.2 Subject site and surrounding environment

The Project is located within a section of the Lang Lang River located within the Cardinia Shire municipality, approximately 6 kilometres (km) east of the Lang Lang township and 75.5 km south-east of Melbourne. The fish lock will be retrofitted into the existing weir structure 478.5 metres (m) west of the Heads Road bridge.

The Lang Lang River is a 10 km perennial river located in the Gippsland Plain Bioregion of the Westernport Catchment in Victoria. The topography of the land is flat, with native vegetation lining the banks on either side of the river. This section of the river is a man made channel.

Adjoining land uses comprise agricultural paddocks, large rural land holdings and residential homesteads. The surrounding topography is flat, and the majority of land is introduced pasture vegetation. The Lang Lang Sands Quarry is located approximately 0.5 km of the Project area, at 270 Westernport Road.

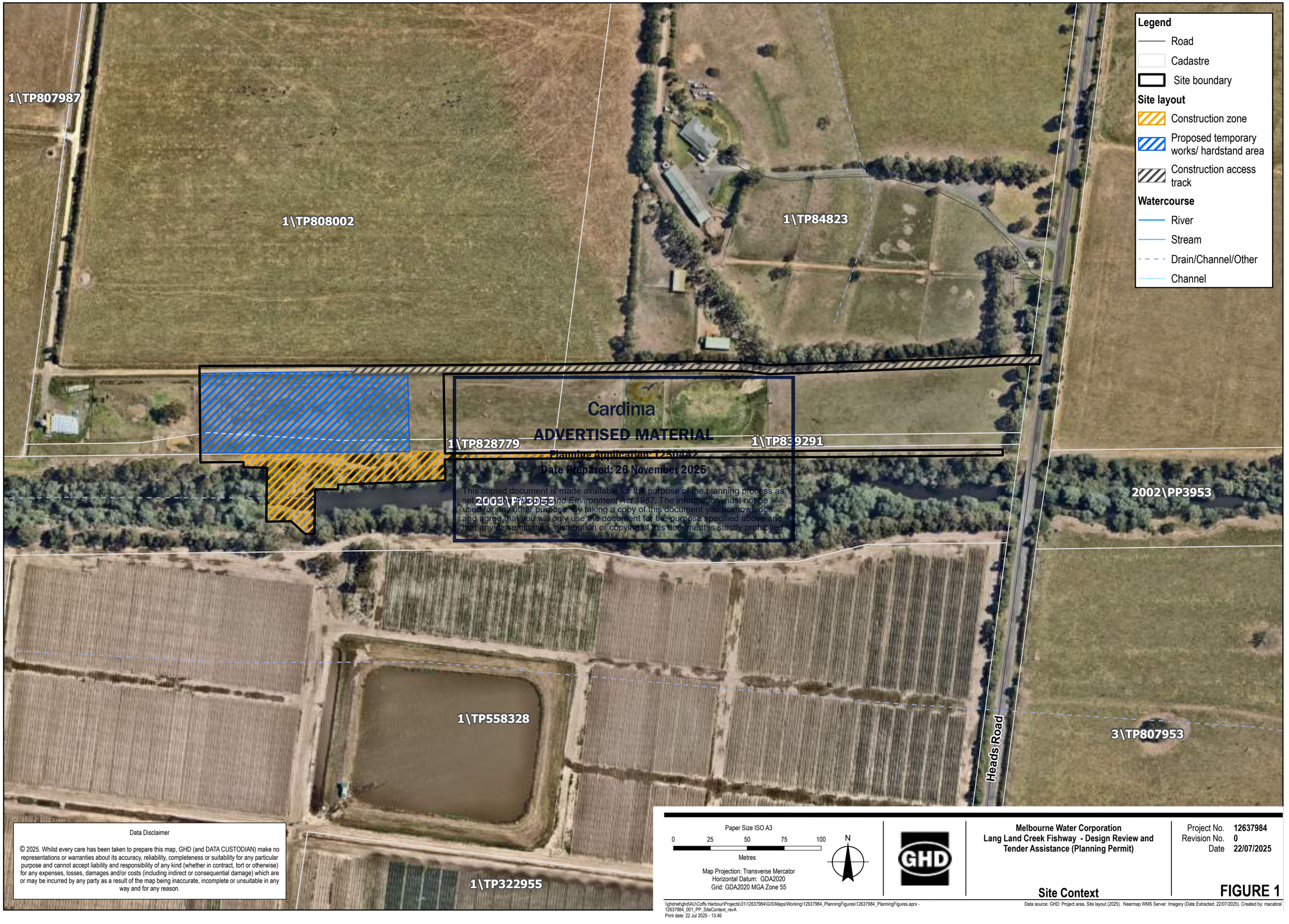
2.2.1 Land tenure

The Project will be located within several parcels along the Lang Lang River. Copies of the Certificates of Title are included in Attachment 1.

The details of land tenure are presented in Table 2 below.

Table 2 Land tenure

Address of land	Parcel ID	Landowner details	Encumbrances etc.
Heads Road, Lang Lang VIC 3984	2003\PP3953	[redacted]	None.
	1\TP828779		None.
75A Heads Road, Lang Lang VIC 3984	1\TP808002		None.
75 Heads Road, Lang Lang VIC 3984	1\TP84823		None.



Data Disclaimer

Paper Size ISO A3

0 25 50 75 100

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Melbourne Water Corporation
Lang Land Creek Fishway - Design Review and Tender Assistance (Planning Permit)

Project No. **12637984**
Revision No. **0**
Date **22/07/2025**

Site Context

FIGURE 1

\\ghdnet\ghd\AU\Coffs Harbour\Projects\31\12637984\GIS\Maps\Working\12637984_PlanningFigures\12637984_PlanningFigures.aprx - 12637984_001_PP_SiteContext_revA
Print date: 22 Jul 2025 - 13:46

Data source: GHD: Project area, Site layout (2025). Nearmap WMS Server: Imagery (Date Extracted: 22/07/2025). Created by: macabral

2.3 Existing use and proposed development

Lang Lang River Fish Lock is a type of structure which helps enable fish passage past a weir (both upstream and downstream). It will be a concrete structure built within the existing weir and apron footprint. Water enters the lock chamber via the top gate and cascades over internal weirs. The entrance slot has been sized and located to provide fish passage through optimum attraction velocities and turbulence criteria.

The proposed works for the project consist of a fish lock, concrete steps from the access track to the fish lock structure, an electrical cabinet and access track.

The fishway is considered an ancillary use to the existing weir, as its function is to maintain the role of the Lang Lang River as a natural system and to enhance biodiversity and instream values upstream of the weir through provision of fish passage past the weir. It is ancillary to the dominant land use of managing instream flows and storm and flood water. The Project will not change the existing use or introduce a new use.

Table 3 Proposed works

Proposed works	Features	
Fish lock	– Concrete stairs and control cabinet pad (cast in situ) with significant footings to secure the pad – Installation of control cabinet and electrical elements – Fish lock chamber construction – Weir panel construction – Plunge pool weir construction (precast) – Installation of grating walkway and platform – Aluminium bulkheads and stoplogs installation – Sidewinder gate installation – DLF gate installation – Installation of hydraulics components and cable housing – Installation of scour valves and diffuser – Installation of remaining grating, handrails, and ladders	
Temporary works	***Access track***	– Vehicles will access the site via an existing well-formed access track that leads off Heads Road – Access track will be widened to 6 m to allow for construction vehicles onto the site – Track will be reinstated to its previous conditions at the end of construction
	Laydown area	– Laydown area has been designed to support all traffic and truck movements, the crane pad, and amenities required for the site – After construction, the laydown area will be removed and all rock, topsoil, and seeding will be removed
	Crane pad	– A crane pad will be required to support a 200-tonne crane to safely install the fish lock – The crane pad will be built within the hardstand area and rehabilitated afterwards
	Fencing	– A chain mesh fence will be installed around the site

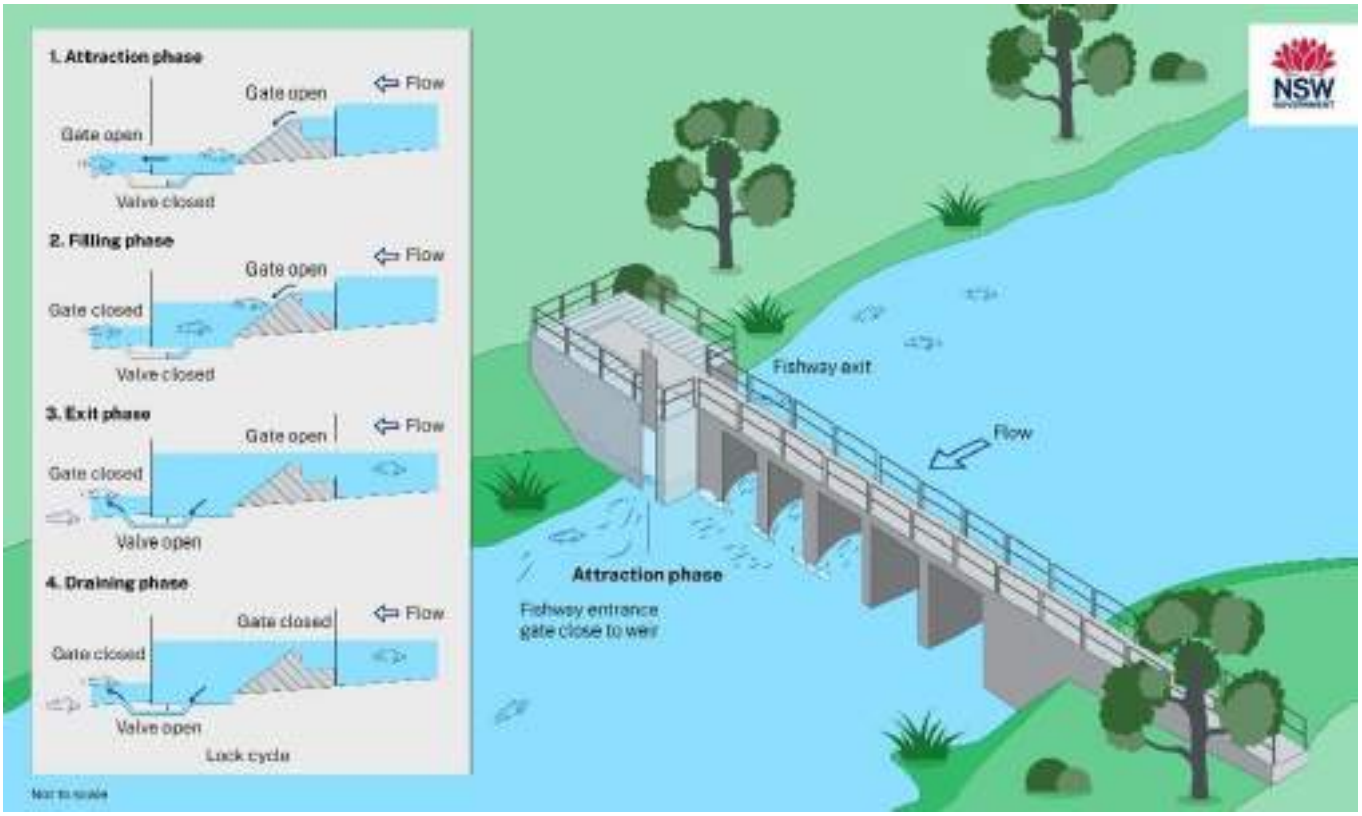


Figure 2 Diagram of a fish lock in operation (MDBA, 2024)

2.3.1 Construction and operation

Temporary laydown and construction activities will occur partly on privately-owned land at 75 Heads Road. This land is presently used for farmland activities. The owners of this land have provided permission to lop vegetation on their property and has been provided at Attachment 8.

2.4 Environmental, heritage, and design considerations

2.4.1 Flora and fauna assessment

GHD prepared a Flora and Fauna Assessment in June 2024 to assess the current ecological values and potential impacts associated with the Project. The key findings of this assessment include:

- The Project area comprises remnant patches of native vegetation including Ecological Vegetation Class (EVC) 937 (Swampy Woodland) and EVC 125 (Plains Grassy Wetland), both listed as Endangered in the Gippsland Plain Bioregion
- The retention of potentially impacted native vegetation will be determined by the successful contractor post-award. Therefore, both impacted and potentially impacted native vegetation have been considered in the Native Vegetation Removal Report and offset calculations. If potentially impacted native vegetation can be retained, this should be reconciled post-works by an accredited native vegetation assessor.
- No communities listed under the *Environment Protection and Biodiversity Act 1999* (EPBC Act) or the *Flora and Fauna Guarantee Act 1988* (FFG Act) were identified
- No flora species listed as threatened under the EPBC Act or FFG Act were identified during the site assessment
- One protected flora species (restricted use) was identified within the Project footprint, however an FFG Permit to Take Protected Species is not required for the incidental take of protected flora listed as restricted use as long as reasonable care is taken to not impact the taxon
- Five weed species listed under the *Catchment and Land Protection Act 1994* (CaLP Act) were identified within the Project area and will require management during, and after, construction
- Five fauna species listed as threatened under the EPBC Act may occur within or near the study site
- Four fauna species listed as migratory under the EPBC Act are considered likely to be rare visitors to the study site
- One FFG Act-listed fauna species, Platypus (*Ornithorhynchus anatinus*), is known to occur within the study site
- Four additional FFG Act-listed fauna species are considered as possibly occurring within or near the study site

2.4.1.1 Native vegetation impacts

Despite efforts undertaken to avoid and minimise impacts on native vegetation during the Project, the proposed works will impact 0.17 hectares of native vegetation across one habitat zone, Swampy Woodland (EVC 937). This is comprised of 0.123 hectares of impacted native vegetation and 0.047 hectares of potentially impacted native vegetation.

General offsets are required for this Project, 0.053 General Habitat Units (GHU) with a minimum strategic biodiversity value score of 0.3464 are required from within the Port Phillip and Westernport (Melbourne Water) CMA or Cardinia Shire Council.

MW has an 'in house' offset bank and is proposing to source offsets for the Project from their own offset bank. The Vegetation Offset Availability Statement is included at Attachment 5.

2.4.1.2 Avoid and minimise statement

The report provided the following recommendations to avoid impacts to native vegetation:

- Contractors undertaking the works will access the fish lock via the previously disturbed property on the northern side of the waterway. This area is currently used for agricultural purposes (including stock and horse grazing) and as such contains minimal native vegetation.
- Contractors will utilise an access route through the farm property rather than using the access road immediately adjacent to the waterway. The alternative access track is larger and will not require the removal or lopping of native vegetation in order to facilitate access by heavy machinery.

– GHD has worked with MW to refine the works footprint. These alterations included removing the coffers from the weir design and incorporating construability advice which reduced impacts on native vegetation from 0.425 ha to 0.17 ha.
– Of the 0.17 ha of impacted native vegetation, 0.047 ha will potentially be retained which is to be determined by the successful contractor post-award

Prior to works commencing, it is recommended a Construction Environmental Management Plan (CEMP) is developed and implemented for the Project to further avoid and minimise impacts to ecological values. The CEMP should include measures to avoid or minimise impacts on ecological values including:

– Implement measures, such as temporary No-Go Zones, to protect native vegetation to be retained. No Go Zones should be clearly delineated so that construction workers are able to avoid any accidental damage to native vegetation during construction, beyond the approved Project footprint.
– Sediment control devices such as silt traps and sediment fencing during the construction period
– Measures to prevent contaminants (e.g., oils, chemicals) from entering aquatic habitat or waterways as the results of accidental spills
– Based on our understanding of the proposed works, dewatering will be conducted across approximately three weeks during summer, avoiding works during Platypus breeding season (August to September)
– Works during Platypus nesting season (September to February) will avoid disturbing river banks as heavy machinery can impact platypus burrows if they are present
– It is understood that the water level would be drawn down for approximately three weeks in summer during which precast panels will be installed. Ensuring water levels aren't completely reduced in the weir pool during this period is necessary to secure access to habitat for Platypus and reduce the possibility of bank erosion.
– Water levels do not usually drop below one metre during summer in this section of the Lang Lang River and should ideally be kept at this level. Water quality monitoring with a focus on dissolved oxygen (the parameters of which are to be determined by a suitably qualified ecologist) is recommended to observe if lowering the water level is having an impact on macroinvertebrates fauna which platypus prey on.
– Any in-water works that can impact water quality, flow levels or aquatic habitat conducted during Dwarf Galaxias spawning season (May to September) should be avoided if possible
– Weed, disease, and pest control measures to prevent the spread of existing and/or the introduction of new weeds, diseases, or pests to the Project area

A copy of the Flora and Fauna Assessment is included as Attachment 3.

Paper Size ISO A4

0 20 40 60 80 100 120

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

Melbourne Water Corporation
Lang Lang Creek Fishway -
Design Review and Tender Assistance

Project No. **12637984**
Revision No. **0**
Date **22/07/2025**

Native vegetation impacts

FIGURE 3

Data source: VicMap, DEECA,2024; MW.2024, Ecology Data, GHD, 2024 Nearmap WMS Server: . Created by: macabral

\\ghdnet\ghd\AU\Coffs Harbour\Projects\31\12637984\GIS\Maps\Working\12637984_Ecology_figures\12637984_Ecology_figures.aprx
Print date: 22 Jul 2025 - 11:36

2.4.2 Cultural heritage

GHD undertook a Cultural Heritage Due Diligence Assessment (CHDDA) for the Project in June 2024. The key findings of this assessment are as follows:

- A mandatory Cultural Heritage Management Plan (CHMP) is not required for the Project under Section 46(1)(a) of the *Aboriginal Heritage Act 2006*
- The works are deemed a high impact activity under the *Aboriginal Heritage Regulations 2018*, however the Project footprint is not located within an area of Cultural Heritage Sensitivity
- There are no Victorian Heritage Register (VHR) or Victorian Heritage Inventory (VHI) places intersecting with the Project footprint
- The 'Lang Lang Rural' landscape (Hermes Number 70322) covers the Project footprint, however the proposed works will not impact this feature
- No registered heritage values under the World Heritage List, National Heritage List, or Cultural Heritage List intersect the area, so there are no triggers under the EPBC Act
- The potential for Aboriginal cultural heritage material to be present at the Project footprint is considered low
- The Bunurong Land Council Aboriginal Corporation (BLCAC) do not have a Land Use Activity Agreement (LUAA) in place

A copy of the CHDDA has been included as Attachment 6.

2.4.3 Flood considerations

GHD undertook a Flood Study for the Project in September 2018, a copy is provided at Attachment 7. Hydraulic modelling was undertaken to determine the impacts of the fish lock on the existing condition of Lang Lang River. The results of the investigation and modelling revealed the following:

- The hydraulic modelling analysis was undertaken in CFD to enable a more accurate representation of the new works to be incorporated
- The original HEC-RAS model was updated to include the existing weir, the new rock chutes and calibration for a Manning's
- Afflux in the nominal 100-year ARI flow is limited to 42 mm under the proposed arrangement at the structure and 30 mm at the Heads Road Bridge
- All hydraulic modelling is reliant on the existing gauging information available, however this gauging information should be validated as anecdotal evidence suggests that there is a discrepancy

The results above indicated that from the information used and after implementing rigorous modelling techniques, the afflux of 30mm indicates very limited impact of the proposed fish lock on Lang Lang River.

3. Planning assessment

The following section outlines the relevant planning provisions that apply to the Project area under the Scheme and the *Planning and Environment Act 1987* (the Act). This section assesses the Project against the relevant provisions, controls and policies of the Scheme.

3.1 Land use definition

The purpose of the weir is to regulate the flow of the river in order to minimise erosion. This meets the definition of a *utility installation*, defined in Clause 73.03 as *land used:*

d) to collect, treat, transmit, store, or distribute water; or

e) to collect, treat, or dispose of storm or flood water, sewage, or sullage

The fish way is considered an ancillary use to the existing weir, as its function is to maintain the role of the Lang Lang River as a natural system and to enhance biodiversity and instream values upstream of the weir. It is ancillary to the dominant land use of managing instream flows and storm and flood water. The Project will not change the existing use or introduce a new use.

3.2 Planning policy

The following section discusses the local and state policies that are relevant to the Project.

3.2.1 Planning Policy Framework (PPF)

The Planning Policy Framework (PPF) provides the overarching framework which informs land use and development across

Table 4 Response to Planning Policy Framework

Clause	Response to policy
State policy	
Clause 12.01-1S Protection of biodiversity	This clause seeks *to protect and enhance Victoria's biodiversity.* The restoration of fish passage through Lang Lang River will contribute to, and enhance, the biodiversity of the river by redistributing fish species, improving aquatic habitat, and rebuilding fish populations.
Clause 12.01-2S Native vegetation management	This clause seeks *to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.* Efforts have been made to avoid and minimise impacts to native vegetation where possible in the design and construction methodology. Nevertheless, the unavoidable loss of 0.158 ha of native vegetation will be removed to facilitate the Project.
Clause 12.03-1S River and riparian corridors, waterways, lakes, wetlands and billabongs	This clause intends *to protect and enhance waterway systems including river and riparian corridors, waterways, lakes, wetlands and billabongs.* The main driver of this Project is to provide safe passage for fish in the Lang Lang River. This Project will protect the environmental quality of the larger catchment and contribute to fish biodiversity. The fish lock and construction methodology have been designed to avoid erosion and detrimental impacts to the water body and to ensure the river's natural capacity to manage flood flow is not compromised.
Clause 12.05-1S Environmentally sensitive areas	This clause aims *to protect and conserve environmentally sensitive areas with significant recreational value.* This Project will provide ecologically beneficial infrastructure, which will assist 'environmental conservation' of the Lang Lang River. The Project will have a positive impact on the environment of the West Gippsland region.

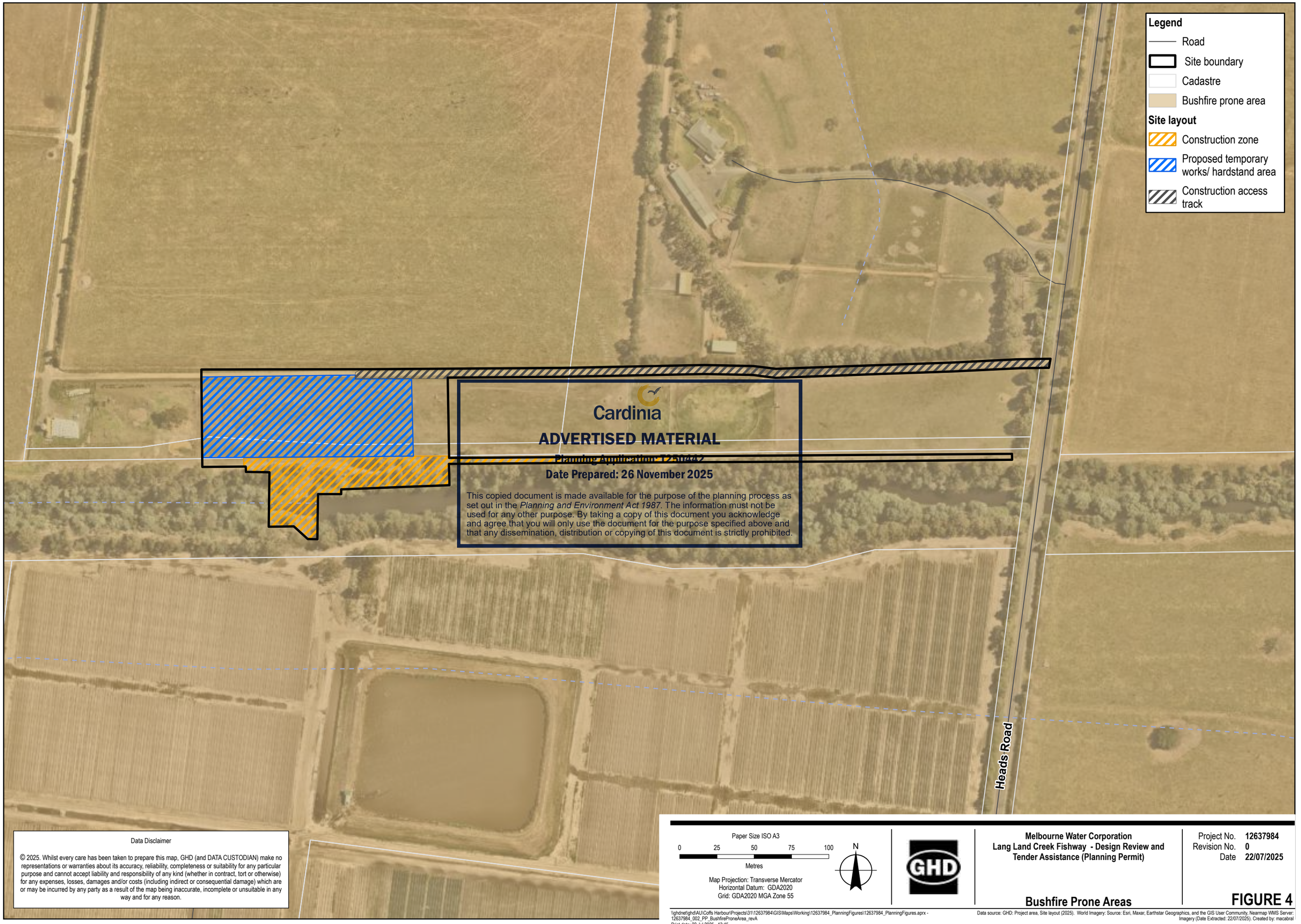
Clause	Response to policy
Clause 12.05-2S **Landscape**	This clause seeks *to protect and enhance significant landscapes and open spaces that contribute to character, identify and sustainable environments.* The Project is situated within Heath Hill, a landscape of heritage significance identified by the National Trust of Australia. The fish lock will be retrofitted into the existing weir, and the surrounding native vegetation provides natural screening from the nearby roads.
Clause 13.02-1S **Bushfire planning**	The objective of this clause is *to strengthen the resilience of settlements and communities to bushfires through risk-based planning that priorities the protection of human life.* The proposed works are wholly located within a Bushfire Prone Area (BPA), as seen in Figure 4. However, it is not expected that the proposed works will increase the risk of bushfire, now will it increase the vulnerability of the community to bushfire and surrounding landscape due to the works being designed and sited by engineers.
Clause 13.03-1S **Floodplain management**	The purpose of this clause is to protect infrastructure from flood hazards and protect the natural flood carrying capacity of waterways and floodplains. The fish lock will be retrofitted into the existing weir for the purpose of providing safe passage for fish to move through the river. It will not intensify the impact of flooding.
Clause 14.01-1S **Protection of agricultural land**	This clause seeks to protect Victoria's agricultural base by preserving productive farmland. Part of the Project area is located within the GWZ1. The temporary works are situated within the GWZ1 and will not compromise the ongoing use of the land for agricultural farming purposes. The permanent infrastructure proposed is situated within the river, zoned PUZ1.
Clause 14.02-1S **Catchment planning and management**	This clause aims to protect and restore catchments, waterways, estuaries, bays, water bodies, groundwater, and the marine environment. The main driver of this Project is to provide safe passage for fish in the Lang Lang River. This Project will protect the environmental quality of the larger catchment and contribute to fish biodiversity.
Clause 14.02-2S **Water quality**	This clause seeks to protect water quality. The construction methodology has been designed to ensure water quality is preserved, minimising any run-off and impacts to the river.
Clause 15.03-2S **Aboriginal cultural heritage**	The purpose of this clause is *to ensure the protection and conservation of places of Aboriginal cultural heritage significance.* In June 2024 a cultural heritage due diligence assessment was undertaken for the proposed works, a copy is provided at Attachment 6. The assessment concluded that a mandatory Cultural Heritage Management Plan is not required for the Project.
Regional policy	
Clause 14.01-1R **Protection of agricultural land – Metropolitan Melbourne**	This clause seeks to agricultural land in Metropolitan Melbourne's green wedges and peri-urban areas to avoid the permanent loss of agricultural land in those locations. Some works are proposed within the GWZ1; however, these works are temporary and will not compromise the ongoing use of the land for agricultural farming purposes.
Local policy	
There are no policies within the local PPF that are relevant to the Project.	

3.2.2 Municipal Planning Strategy (MPS)

The Municipal Planning Strategy (MPS) provides the overarching strategic policy directions of the municipality, responding to local issues and challenges. An assessment of the Project against the MPS is provided in Table 5.

Table 5 Response to the Municipal Planning Strategy

Clause	Response to policy
Clause 21.01 **Cardinia Shire Key Issues and Strategic Vision**	The Cardinia Shire landscape generally comprises flat alluvial plains, which have been substantially cleared of vegetation for agricultural land uses of State significance. Key issues of focus for Cardinia Shire include the protection of environmentally significant landscapes, and the protection and management of biodiversity. The main driver of this Project is to provide safe passage for fish in the Lang Lang River. The Lang Lang River is a regionally significant waterway, supporting a diversity of flora and fauna species. The fish lock will facilitate access to a substantial area of high-quality habitat for native fish species.
Clause 21.02-2 **Landscape**	Cardinia Shire has a diversity of significant landscapes, including Heath Hill, which has been recognised by the National Trust. This clause seeks to protect these significant landscape values from development inconsistent with the surrounding area. The fish lock will be retrofitted into the existing weir which sits within the river. The river banks and surrounding native vegetation provide natural screening from the nearby roads and sightlines.
Clause 21.02-3 **Biodiversity**	Habitat decline and fragmentation resulting in biodiversity loss is a key issue within the municipality. This clause seeks to protect and re-establish native vegetation and wildlife corridors to support biodiversity. The proposed construction of the fish lock will allow adequate fish passage through the Lang Lang River, re-establishing an essential corridor through the river for aquatic species.



Paper Size ISO A3

0 25 50 75 100

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Melbourne Water Corporation
Lang Land Creek Fishway - Design Review and Tender Assistance (Planning Permit)

Bushfire Prone Areas

Project No. **12637984**
Revision No. **0**
Date **22/07/2025**

FIGURE 4

\\ghdnet\ghd\AU\Coffs Harbour\Projects\31\12637984\GIS\Maps\Working\12637984_PlanningFigures\12637984_PlanningFigures.aprx - 12637984_002_PP_BushfireProneArea_revA
Print date: 22 Jul 2025 - 13:45

Data source: GHD: Project area, Site layout (2025). World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, Nearmap WMS Server: Imagery (Date Extracted: 22/07/2025). Created by: macabral

3.3 Planning controls

An assessment of the Project against the applicable zones, overlays and particular provisions of the Scheme is presented below.

3.3.1 Planning zones

The Project is subject to the following zones:

– Clause 35.04 – Green Wedge Zone (GWZ1)

– Clause 36.01 – Public Use Zone (PUZ1)

A zoning map is provided at Figure 5.

Clause 35.04 – Green Wedge Zone – Schedule 1 (GWZ1)

The Project is partially located within the GWZ1.

The purpose of the GWZ is to:

– *To implement the Municipal Planning Strategy and the Planning Policy Framework*

– *To provide for the use of land for agriculture*

– *To recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources*

– *To encourage use and development that is consistent with sustainable land management practices*

– *To encourage sustainable farming activities and provide opportunity for a variety of productive agricultural uses*

– *To protect, conserve and enhance the cultural heritage significance and the character of open rural and scenic non-urban landscapes*

– *To protect and enhance the biodiversity of the area*

Pursuant to clause 35.04-1, a planning permit is required to use the land for a utility installation as it is a Section 2 Use within the GWZ1, however due to the site being afforded existing use rights (see discussion below at section 3.3.4) a permit is not required for the use.

In addition, works proposed within the GWZ1 relate to a temporary laydown/ site accessway. Therefore, the Project can benefit from clause 62.02-1 – buildings and works not requiring a permit:

– *A temporary shed or temporary structure for construction purposes*

Therefore, there are no planning permit requirements under this provision.

Clause 36.01 – Public Use Zone (PUZ1)

The Project is partially located within the Public Use Zone (PUZ1). Public land within the PUZ1 is for the purpose of *Service & Utility*.

The purpose of the PUZ is:

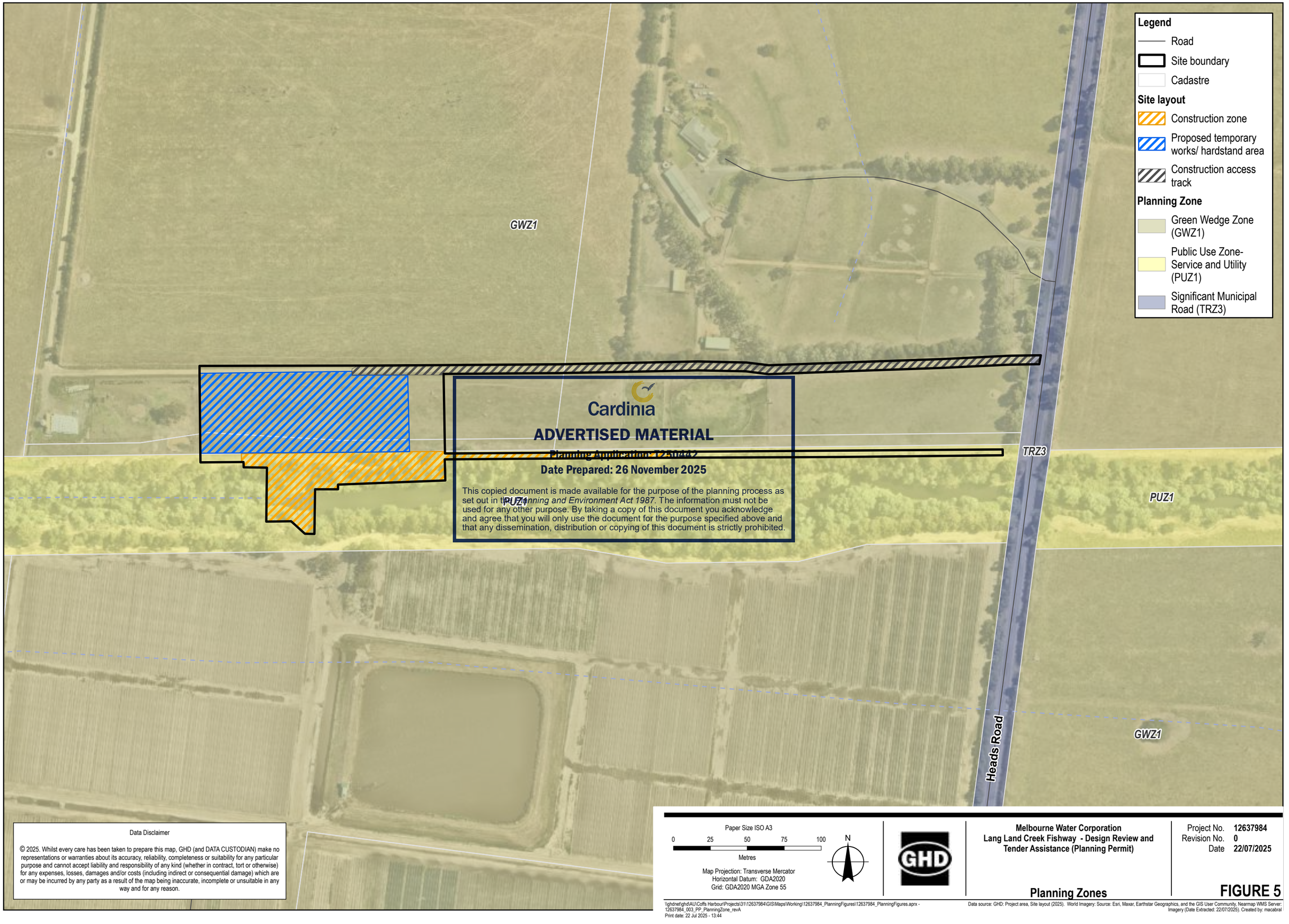
– *To implement the Municipal Planning Strategy and the Planning Policy Framework*

– *To recognise public land use for public utility and community services and facilities*

– *To provide for associated uses that are consistent with the intent of the public land reservation or purpose*

A permit is not required for land use or buildings and works within the PUZ1.

As the Project is associated with a Utility installation, the land use is a Section 1 Use (Permit not required), as the land use is consistent with the purpose of the land for *Service & Utility*. Additionally, a permit is also not required for buildings and works as the works are associated with a Section 1 use.



Paper Size ISO A3

0 25 50 75 100

Metres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

GHD

Melbourne Water Corporation
Lang Land Creek Fishway - Design Review and Tender Assistance (Planning Permit)

Project No. **12637984**
Revision No. **0**
Date **22/07/2025**

Planning Zones

FIGURE 5

\\ghdnet\ghd\AU\Coffs Harbour\Projects\31\12637984\GIS\Maps\Working\12637984_PlanningFigures\12637984_PlanningFigures.aprx - 12637984_003_PP_PlanningZone_revA
Print date: 22 Jul 2025 - 13:44

Data source: GHD: Project area, Site layout (2025). World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, Nearmap WMS Server: Imagery (Date Extracted: 22/07/2025). Created by: macabral

3.3.2 Planning overlays

As seen in Figure 6, the following overlays apply to the Site:

Clause 42.03 – Significant Landscape Overlay (SLO3)

The purpose of the SLO is to:

– *To implement the Municipal Planning Strategy and the Planning Policy Framework*
– *To identify significant landscapes*
– *To conserve and enhance the character of significant landscapes*

Under clause 42.03- 2, a permit is required to construct or carry out works within the SLO unless a schedule to this overlay states that a permit is not required.

Under this clause a permit is required to remove, destroy or lop any vegetation specified in a schedule to this overlay.

Significant Landscape Overlay – Schedule 3 – Lang Lang/ Heath Hill (SLO3)

Under the SLO3, the landscape character objectives to be achieved are:

– *To protect and enhance the environmental and landscape values of the Lang Lang/Heath Hill area*
– *To protect, conserve and improve habitat for flora and fauna which contributes to the significance of the landscape and provides fauna habitat and biolinks*
– *To ensure that any new buildings and works are located and designed to avoid detrimental effects on the key characteristics of the landscape*
– *To maintain and protect vegetation as an important element within the landscape*

The SLO3 does not state that a permit is not required to construct a building or to construct or carry out works associated with a utility installation and therefore a planning permit is required. A planning permit is not required to construct a fence under the SLO3.

A response to the application requirement and decision guidelines of the SLO and SLO3 are presented at section 4.1 and section 4.1.1.

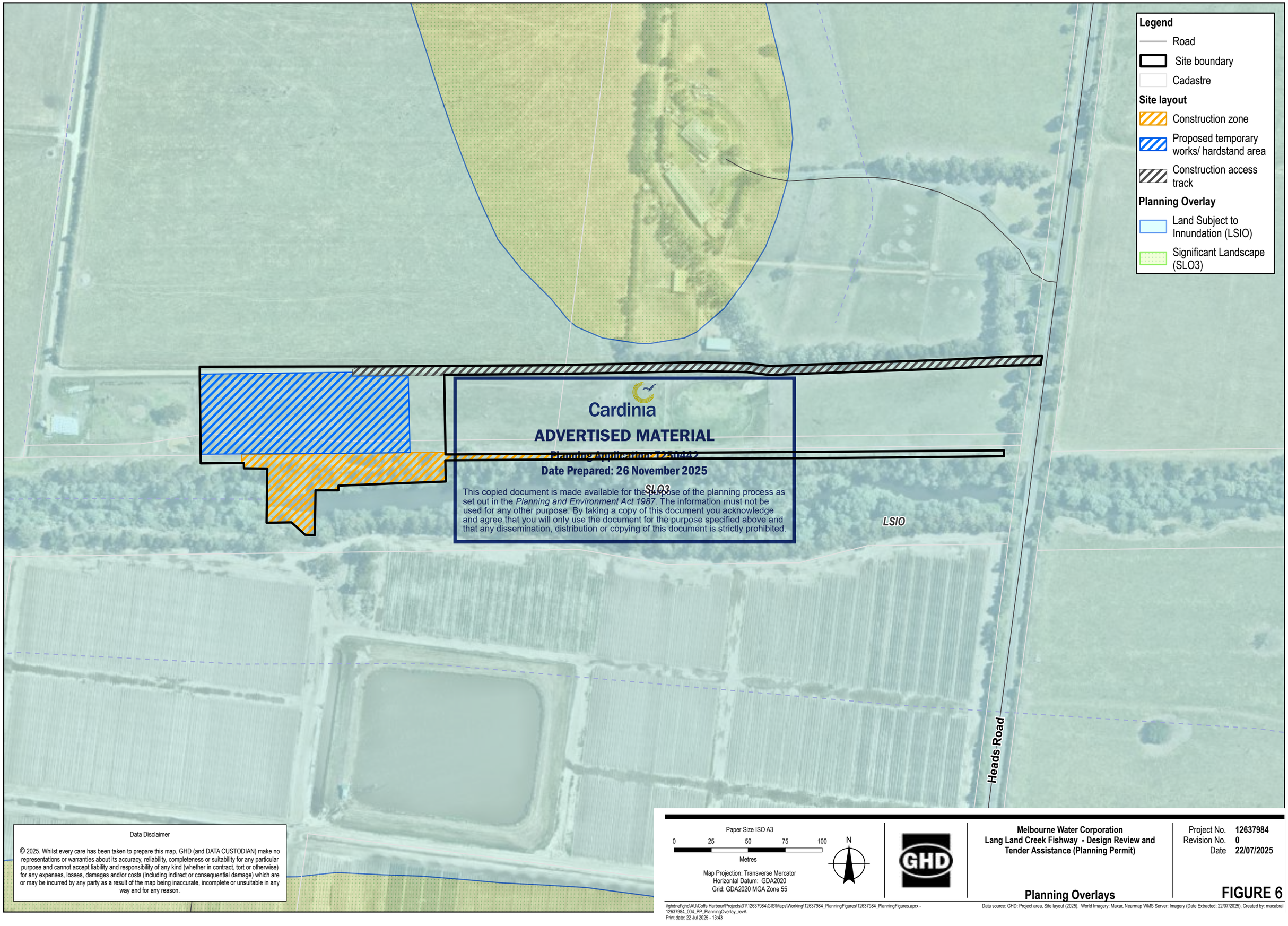
Clause 44.04 – Land Subject to Inundation Overlay (LSIO)

The purpose of the LSIO is:

– *To implement the Municipal Planning Strategy and the Planning Policy Framework*
– *To identify flood prone land in a riverine or coastal area affected by the 1 in 100 (1 per cent Annual Exceedance Probability) year flood or any other area determined by the floodplain management authority*
– *To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, responds to the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity*
– *To minimise the potential flood risk to life, health and safety associated with development*
– *To reflect a declaration under Division 4 of Part 10 of the Water Act, 1989*
– *To protect water quality and waterways as natural resources by managing urban stormwater, protecting water supply catchment areas, and managing saline discharges to minimise the risks to the environmental quality of water and groundwater*
– *To ensure that development maintains or improves river, marine, coastal and wetland health, waterway protection and floodplain health*

Pursuant to clause 44.04-2 a permit is required to construct a building or to construct or carry out works. Under the Schedule to clause 44.04 a permit is not required to construct or carry out an open-style fence, the proposed fence is made of chain mesh and therefore meets the definition of an open-style fence.

A response to the application requirement and decision guidelines of the LSIO is presented at section 4.2 and section 4.2.1. Pre-development advice from MW has been provided at Attachment 8 and therefore, in accordance with Clause 44.04-7 a referral to MW is not required.



Paper Size ISO A3

0 25 50 75 100

Metres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

GHD

Melbourne Water Corporation
Lang Land Creek Fishway - Design Review and Tender Assistance (Planning Permit)

Project No. **12637984**
Revision No. **0**
Date **22/07/2025**

Planning Overlays

FIGURE 6

\\ghdnet\ghd\AU\Coffs Harbour\Projects\31\12637984\GIS\Maps\Working\12637984_PlanningFigures\12637984_PlanningFigures.aprx - 12637984_004_PP_PlanningOverlay_revA
Print date: 22 Jul 2025 - 13:43

Data source: GHD: Project area, Site layout (2025). World Imagery: Maxar, Nearmap WMS Server: Imagery (Date Extracted: 22/07/2025). Created by: macabral

3.3.3 Particular provisions

Particular provisions applicable to the Project are identified in Table 6 below.

Table 6 Particular provisions

Clause	Purpose	Permit trigger
Clause 52.17 – Native vegetation	To ensure no net loss to biodiversity as a result of the removal, destruction, or lopping of native vegetation in accordance with the *Guidelines for the removal, destruction, or lopping of native vegetation* (the Guidelines).	× Water service providers are exempt from requiring a permit to remove less than 0.5 ha of native vegetation in accordance with the *Procedure to rely on the utility installations exemption in planning schemes (Water service providers)* (the Procedure). Under the Procedure, MW must obtain written consent from the Secretary to DEECA via an endorsement application.

A total of 0.17 ha of native vegetation will be removed to facilitate the proposed works, therefore MW has decided to pursue the exemption pathway identified in Table 6.

This Project will follow the Intermediate Assessment Pathway. To compensate for the loss of 0.17 ha of native vegetation, offsets equating to 0.053 general habitat units with a strategic biodiversity value of 0.3464 will be secured from the Cardinia Shire Council or the Port Phillip and Westernport Catchment Management Authority (CMA) prior to construction commencing.

MW has an 'in house' offset bank and are proposing to source offsets for the Project from their own offset bank. The NVR Report and Vegetation Offset Availability Statement is included at Attachment 4 and Attachment 5.

3.3.4 General provisions

In Victorian planning schemes, general provisions set out the provisions about existing uses, decision guidelines, referrals of applications and other matters. The following general provisions apply to this Project.

3.3.4.1 Clause 63 – Existing uses

Pursuant to clause 63.01 – extent of use rights, *an existing use right is established in relation to the use of land under this scheme if any of the following apply:*

– *The use is a lawful continuation by a utility service provider or any other private body of a use previously carried on by a Minister, government department or public authority, even where the continuation of the use is no longer for a public purpose*

– *Proof of continuous use for 15 years is established under clause 63.11*

Both apply to the Project, therefore MW will be able to rely on this clause to further exempt them from requiring a permit under the PUZ1 and GWZ1.

Under clause 63.05 – section 2 and 3 uses, *a use in section 2 or 3 of a zone for which an existing use right is established may continue provided:*

– *No buildings or works are constructed or carried out without a permit. A permit must not be granted unless the buildings or works complies with any other building or works requirements in this scheme.*

This provision only concerns the use and does not extend to the buildings and works.

3.3.4.2 Clause 66 – Referral and Notice Provisions

Table 7 Referrals and notice provisions

Clause	Type of referral	Trigger
Clause 66.03	Determining referral to Melbourne Water	An application under the overlay within the waterway management district of Melbourne Water Corporation. To construct or carry out works within clause 44.04-7- LSIO. However, given MW has provided their consent in letter dated 17 July 2025, a referral to MW is not required.
Clause 66.06	Notification to the National Trust	An application to construct a building or construct or carry out works (including a sign) within clause 42.03- SLO3

3.3.4.3 Notification

Clause 44.04 - Land Subject to Inundation Overlay (LSIO)

The following exemption in Clause 44.04-6 of the LSIO applies for the notice and decision requirements only:

– *An application under this overlay is exempt from the notice requirements of section 52(1)(a), (b) and (d), the decision requirements of section 64(1), (2) and (3) and the review rights of section 82(1) of the Act*

Therefore, the works required under this provision are exempt from requiring notice.

Clause 42.03 - Significant Landscape Overlay (SLO)

As required by clause 66.06 notice to the National Trust is required and therefore the requirements of section 52 (1)(c) of the *Planning and Environment Act 1987* must be adhered to.

Pursuant to the requirements of section 52 (1)(a) and (d) of the *Planning and Environment Act 1987* we are of the opinion that there will be no material detriment caused to any person and therefore notice under this provision is not required based on the following:

– The works are not changing the status quo of the use of the land
– The works are consistent with the existing use of the land and will not introduce a new use
– The works are modest in nature and have been designed to not be detrimental on the landscape
– The works have been designed to be contained within the existing Lang Lang River
– The works are to enhance the environmental values of the river
– The works will improve the habitat for fauna within the river
– The colours and materials are muted in tone and non-reflective
– The extent of vegetation removal is modest and has been minimised to extent possible to facilitate the Project
– A letterbox drop has been undertaken by MW to all adjoining properties informing them of the Project

4. Planning assessment

As identified in Section 4.2 of this report, the Project requires a planning permit to:

– Significant Landscape Overlay (SLO3) to construct a building or construct or carry out works and to remove destroy or lop any vegetation
– Land Subject to Inundation Overlay (LSIO) to construct a building or construct or carry out works

An overview of the applicable planning controls and planning approval requirements for the Project is presented in Table 8 below and further outlined in the proceeding sections.

Table 8 Planning assessment findings

Planning control	Planning Approval	Referral/Notification	Permit requirement
Zones			
Clause 35.04 – Green Wedge Zone (GWZ1)	×	×	There are no planning permit triggers for the Project under clause 35.04
Clause 36.01 – Public Use Zone (PUZ1)	×	×	There are no planning permit triggers for the Project under clause 36.01
Overlays			
Clause 42.03 – Significant Landscape Overlay (SLO3)	✓	Notification to the national trust	To construct a building or construct or carry out works and remove, destroy or lop any vegetation
Clause 44.04 – Land Subject to Inundation Overlay (LSIO)	✓	There is a referral requirement to the relevant floodplain management authority, however, this is not required given MW has provided their recent consent to the Project as provided in Attachment 8.	To construct a building or construct or carry out works
Particular Provisions			
Clause 52.17 – Native Vegetation	×	×	There are no planning permit triggers under clause 52.17

4.1 Assessment against the SLO

The relevant decision guidelines of the SLO are addressed below.

Response to decision guidelines

General issues and rural issues

The proposed access route and temporary laydown area are located within the SLO3. The access route will utilise an existing gravel road that runs through the agricultural paddocks to the north of the river. These paddocks are primarily used for grazing for livestock. The temporary laydown area will not compromise the long-term use of the land for future sustainable agricultural activities. The land will be restored to its pre-existing condition once construction of the fish lock has been completed.

The fish lock will be retrofitted into the existing weir structure on the Lang Lang River. The main Project driver is to restore fish passage and migration through the river to support the dispersal of native fish species and maintain genetic fitness. The fish lock and construction methodology have been designed to avoid erosion and detrimental impacts to the water body and to ensure the river's natural capacity to manage flood flow is not compromised.

Environmental issues

Constructing the fish lock will allow provisions to restore native fish migration through the Lang Lang River. Re-establishing fish passage will improve the biodiversity of the Lang Lang River catchment, improve aquatic habitat, and rebuild fish populations.

The Project will result in the loss of 0.17 ha of native vegetation from the Project footprint to construct the fish lock. It is possible that fauna species that utilise and depend on aquatic habitats may be temporarily impacted through decreased water quality and habitat removal. As such, it is recommended that post treatment works are implemented which monitors the impacts of the fish lock on native aquatic fauna and includes remediation and monitoring of native vegetation post-construction. Remediation works may include replanting and revegetating the banks of the Lang Lang River. The purpose of the native vegetation removal is not to create defendable space to reduce the risk of bushfire to life and property.

MW has undertaken numerous measures where practicable to avoid and minimise impacts to native vegetation where possible. Site-level avoidance measures are not feasible for this Project as it involves upgrading a highly specific piece of water utility equipment. However, a number of steps have been undertaken to avoid impacts in other areas including:

– Accessing the fish lock from a previously disturbed property on the northern side of the waterway which is currently used for agricultural purposes and contains minimal native vegetation
– Utilising an alternative access track through the adjacent farming property which is larger and will avoid the removal of native vegetation in order to facilitate access to the site by heavy machinery

Design and siting issues

The fish lock will be constructed using materials that are muted in tone and non-reflective to fit with the natural landscape character and will be retrofitted into the existing weir. Furthermore, due to the presence of dense vegetation and mature trees along the river edges, the weir (and by extension the fish lock) cannot be seen from Heads Road or surrounding viewpoints.

The Project is situated within Heath Hill which is a landscape of heritage significance identified by the National Trust of Australia. The fish lock is not expected to detract from the appearance or features of this significant landscape and the surrounding native vegetation provides natural screening from the nearby roads.

4.1.1 Assessment against the SLO3

A response the application requirements of the SLO3 is presented below. There are no decision guidelines specified under the SLO3.

Response to application requirements

The fish lock will be retrofitted into the existing weir which sits within the Lang Lang River, less than 500 m west of the Heads Road bridge. The proposed access track will utilise an existing track within the private property north of the river and the temporary construction laydown area will utilise a small section of land north of the riverbank.

A copy of the development plans have been included as Attachment 2. A map detailing the existing vegetation and proposed vegetation removal is included as Figure 3. Photographs showing the existing vegetation, vegetation to be removed and a description of the vegetation is provided at Section 3.1.1 of the Flora and Fauna Assessment (Attachment 3).

Despite efforts to avoid and minimise impacts where practical, this Project will result in the removal of 0.17 ha of EVC 937 to facilitate the works. The Project will require the removal of some restricted use flora species protected, however a Permit to Take Protected Flora is not required for the incidental take of restricted use protected flora under the FFG Act. No trees are to be removed as part of the Project.

Steps to avoid, minimise, and mitigate impacts to native vegetation have been described in section 2.4.1 of this report and Section 5.2 of the Flora and Fauna Assessment (Attachment 3).

In accordance with the Guidelines and the Procedure, this Project will follow the Intermediate Assessment Pathway and MW will be purchasing offsets equating to 0.053 general habitat units with a strategic biodiversity value of 0.3464 to compensate for the loss of native vegetation. MW has an 'in house' offset bank and are proposing to source offsets for the Project from their own offset bank. The Vegetation Offset Availability Statement is included at Attachment 5.

Further information regarding the ecological values of the Project area can be read within the Flora and Fauna Assessment provided as Attachment 3.

4.2 Assessment against the LSIO

A response to the decision guidelines of the LSIO is provided below. There are no application requirements specific to the LSIO.

Response to the decision guidelines

The Port Phillip and Westernport CMA forms part of MW, who is the floodplain management authority for this area. The Project is being driven by MW to restore fish passage through the river and improve the health of the river catchment.

The fish lock will be retrofitted into the existing weir structure to reinstate fish migration through the river. The fish lock and construction methodology have been designed to avoid erosion and detrimental impacts to the water body and to ensure the river's natural capacity to manage flood flow is not compromised.

The development is not expected to significantly alter the floodwater, stormwater, or flow velocities of the river. The construction activities may result in temporary impacts to water quality and aquatic habitat, however a CEMP will be developed and implemented prior to construction commencing to minimise impacts and protect aquatic species where possible.

There is no floodplain development plan associated with the Project footprint. A Flooding Report has been prepared for the Project that indicated the fish lock would have a very limited impact on Lang Lang Rivers existing condition and its susceptibility to flooding. A copy of the Flooding Report has been provided at Attachment 7.

4.2.1 Assessment against the Schedule to the LSIO

A response to the application requirements outlined under the Schedule to the LSIO is provided below. There are no decision guidelines specified under the Schedule to the LSIO.

Response to the application requirements

Four sets of scaled development plans have been included as Attachment 2 which include (as relevant):

– Site boundaries and dimensions
– Relevant ground levels
– Layout of existing and proposed structures and works
– Floor levels of any existing and proposed buildings

5. Conclusion

GHD has prepared this report on behalf of MW to support an application for a planning permit for the construction of a fish lock in the Lang Lang River under the SLO3 and LSIO and to remove, destroy, or lop any vegetation under the SLO3.

This fish lock will be retrofitted into the existing weir at Heads Road within the Lang Lang River. The Lang Lang River is a regionally important waterway and supports a number of native flora and fauna species. Since European settlement, it has been subject to significant modification that has compromised the health of fish. The Heads Road weir downstream of Heads Road was subsequently identified as a significant barrier to the passage of native fish.

The installation of the fish lock will allow fish passage upstream of the existing concrete drop structure, supporting fish biodiversity and provide a substantial length of excellent habitat for native fish.

The proposal is considered consistent with the provisions of the Cardinia Planning Scheme by:

- Providing significant environmental benefits to the Lang Lang River by promoting biodiversity, re-establishing fish migration, and improving aquatic habitat
- Relying on existing infrastructure (weir and access track) to minimise environmental impacts and vegetation loss
- Designing the Project to avoid and minimise detrimental impacts to the environment, landscape, soil, water, and amenity where possible
- Avoiding long-term impacts to the agricultural productivity of the landscape

Overall, the proposed development is an appropriate and positive development outcome for the local environment and broader river catchment.

We would appreciate Council's prompt assessment of the application to enable a favourable decision to be issued enabling this critical Project to commence with the preferred contractor and to enable benefit of applicable grants.

If you have any queries or require any additional information, please do not hesitate to contact me via the details below.

Regards,

[redacted]

Technical Director – Planning

[redacted]

Attachments

Attachment 1

Registered Search Statements

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09409 FOLIO 317

Security no : 124125896784X
Produced 03/07/2025 11:33 AM

LAND DESCRIPTION

Lot 1 on Title Plan 828779Y (formerly known as part of Crown Allotment 67 Parish of Yannathan).
PARENT TITLE Volume 08032 Folio 469
Created by instrument J238321 18/11/1980

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
MELBOURNE WATER CORPORATION of 990 LA TROBE STREET DOCKLANDS VIC 3008
AC154637A 25/06/2003

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP828779Y FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: HEADS ROAD LANG LANG VIC 3984

ADMINISTRATIVE NOTICES

NIL

eCT Control 13360T MELBOURNE WATER CORPORATION
Effective from 08/12/2015

DOCUMENT END

TITLE PLAN		EDITION 1	TP828779Y

Location of Land

Parish: YANNATHAN
Township:
Section:
Crown Allotment: 67 PART
Crown Portion:

Last Plan Reference:
Derived From: V.9469 F.317
Depth Limitation: NIL

Notations

LOT 1 = PART OF CROWN ALLOTMENT 67

WATERWAY NOTATION: LAND IN THIS PLAN MAY ABUT CROWN LAND THAT MAY BE SUBJECT TO A CROWN LICENCE TO USE

Easement Information

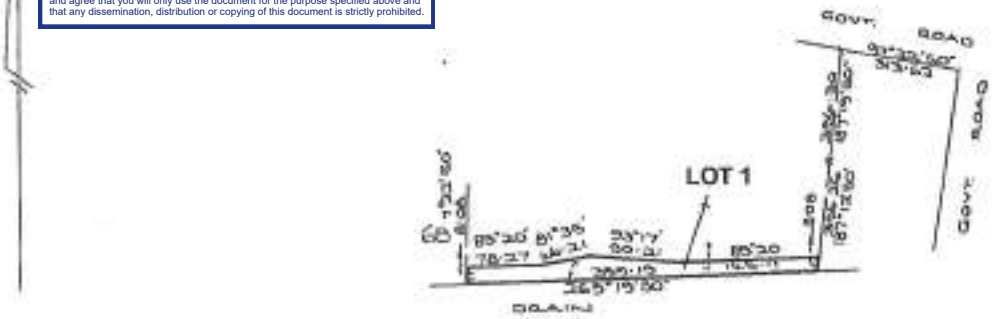
Easement Reference	Purpose/ Authority	Width (Metres)	Origin	Land benefited/ In favour of

THIS PLAN HAS BEEN PREPARED BY LAND REGISTRY, LAND VICTORIA FOR TITLE DIAGRAM PURPOSES

Checked by

20/10/04

Assistant Registrar of Titles



LENGTHS ARE IN METRES		FILE No:
		DEALING CODE No:

LAND VICTORIA	Drawn By: C.A.SPRIGGS	SHEET SIZE A3	Sheet 1 of 1 sheets

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09500 FOLIO 057

Security no : 124125897031E
Produced 03/07/2025 11:37 AM

LAND DESCRIPTION

Lot 1 on Title Plan 084823S (formerly known as part of Crown Allotment 67 Parish of Yannathan).
PARENT TITLE Volume 08032 Folio 468
Created by instrument J857746 17/03/1982

REGISTERED PROPRIETOR

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

[redacted]

Any encumbrances created by Section 42 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION [illegible]

DIAGRAM LOCATION

SEE TP084823S FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 75 HEADS ROAD LANG LANG VIC 3984

ADMINISTRATIVE NOTICES

NIL

[redacted]

DOCUMENT END

TITLE PLAN		EDITION 1	TP 84823S

Location of Land

Parish: YANNATHAN
Township:
Section:
Crown Allotment: 67 (PT)
Crown Portion:

Last Plan Reference:
Derived From: VOL 9509 FOL 057
Depth Limitation: NIL

Notations

WATERWAY NOTATION: LAND IN THIS PLAN MAY ABUT CROWN LAND THAT MAY BE SUBJECT TO A CROWN LICENCE TO USE

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 27/07/1999
VERIFIED: C.LAM

TABLE OF PARCEL IDENTIFIERS
WARNING: Where multiple parcels are referred to or shown on this Title Plan this does not imply separately disposable parcels under Section 8A of the Sale of Land Act 1962
PARCEL 1 = CA 67 (PT)

LENGTHS ARE IN METRES	Metres = 0.3048 x Feet Metres = 0.201168 x Links		Sheet 1 of 1 sheets

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09500 FOLIO 058

Security no : 124125896893E
Produced 03/07/2025 11:34 AM

LAND DESCRIPTION

Lot 1 on Title Plan 808002F.
PARENT TITLE Volume 08032 Folio 469
Created by instrument J857746 17/03/1982

REGISTERED PROPRIETOR

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP808002F FOR FURTHER DETAILS AS TO THE PLAN OF LOT

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 75A HEADS ROAD LANG LANG VIC 3984

ADMINISTRATIVE NOTICES

NIL

eCT Control 18237Q HICKS OAKLEY CHESSELL WILLIAMS
Effective from 23/12/2021

DOCUMENT END

TITLE PLAN

EDITION 1

TP 808002F

Location of Land

Parish : Yannathan
Township :–
Crown Allotment : 67 (Part)
Crown Portion : –
Section : –
Last Plan Reference : –
Title Reference : VOL.9600 FOL. 058
Depth Limitation : NIL

Notations

Note : Lot 1 hereon formerly part of Crown Allotment 67

Easement Information

E – Encumbering Easement R – Encumbering Easement (ROAD) A – Appurtenant Easement

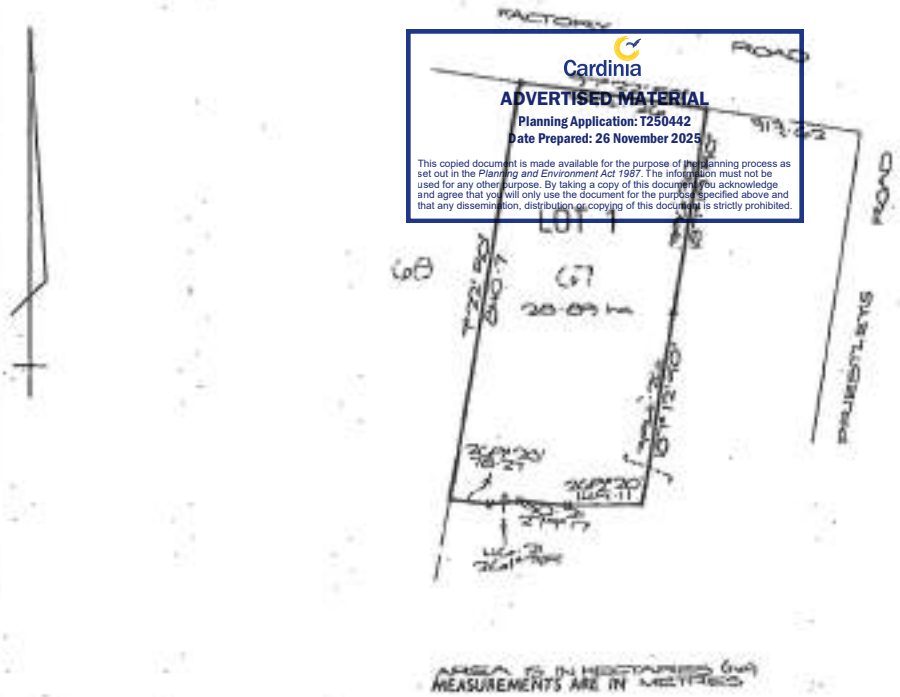
Easement Reference	Purpose / Authority	Width (Metres)	Origin	Land benefited / In favour of

THIS PLAN HAS BEEN PREPARED BY LAND REGISTRY, LAND VICTORIA FOR TITLE DIAGRAM PURPOSES

Checked by :

Assistant Registrar of Titles

Date 21 / 11 / 2003



LENGTHS ARE IN METRES	SCALE	SHEET SIZE A3

CROWN FOLIO STATEMENT

VOLUME 11786 FOLIO 942
No CofT exists

Security no : 1241258966408
Produced 03/07/2025 11:30 AM

CROWN FOLIO

LAND DESCRIPTION

Crown Allotment 2003 Parish of Yannathan.
PARENT TITLE Volume 11786 Folio 953
Created by instrument MI236179E 06/08/2016

CROWN LAND ADMINISTRATOR

SECRETARY TO THE DEPARTMENT OF ENVIRONMENT, LAND, WATER AND PLANNING of 8 NICHOLSON STREET EAST MELBOURNE VIC 3002
MI236179E 06/08/2016

STATUS, ENCUMBRANCES AND NOTICES

RESERVATION MI236181T 06/08/2016
PERMANENT
PUBLIC PURPOSES

WATER FRONTAGE LICENCE as to part MI309827Q 06/08/2016

DIAGRAM LOCATION

SEE CD091008D FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF CROWN FOLIO STATEMENT----------

Additional information: (not part of the Crown Folio Statement)

Street Address: HEADS ROAD LANG LANG VIC 3984

DOCUMENT END

CROWN DIAGRAM

CD091008D

Location of Land

Parish : YANNATHAN
Allotment : 2003

This plan has been created to assist in locating a Crown land parcel

Warning: No warranty is given as to the accuracy or completeness of this plan

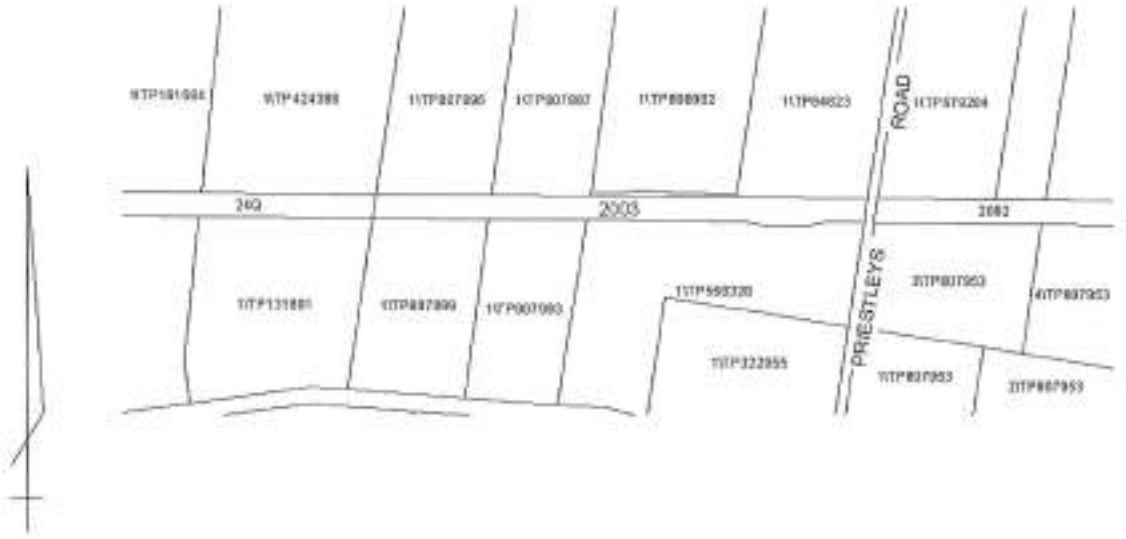
Any derived dimensions are approximate

Standard Parcel Identifier (SPI) 2003\PP3953
Vicmap Parcel PFI : 2039823349

Coordinate Position
MGA : 380220, 5766450 (55)
Vicroads Directory Reference : 96 C5 (ed. 6)

Compiled from VICMAP cadastral mapping data

Date: 22/05/2009



SCALE
0 200 400 600 800 1000
METRES

Sheet 1 of 1 Sheets

Attachment 2

Development Plans

DO NOT SCALE

EXISTING HEADS ROAD WEIR SITE PLAN

SCALE 1 : 1000

0 10 20 30 40 50 m
SCALE 1: 1000AT ORIGINAL SIZE

PRELIMINARY

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APPD	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SID CHANGES	GHD		LP	NB	CT	28.10.24

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GHD DRAWING NUMBER
12637984 - 002

Melbourne Water

TITLE
HEADS ROAD
WEIR FISH LOCK
EXISTING CONDITIONS - SITE PLAN

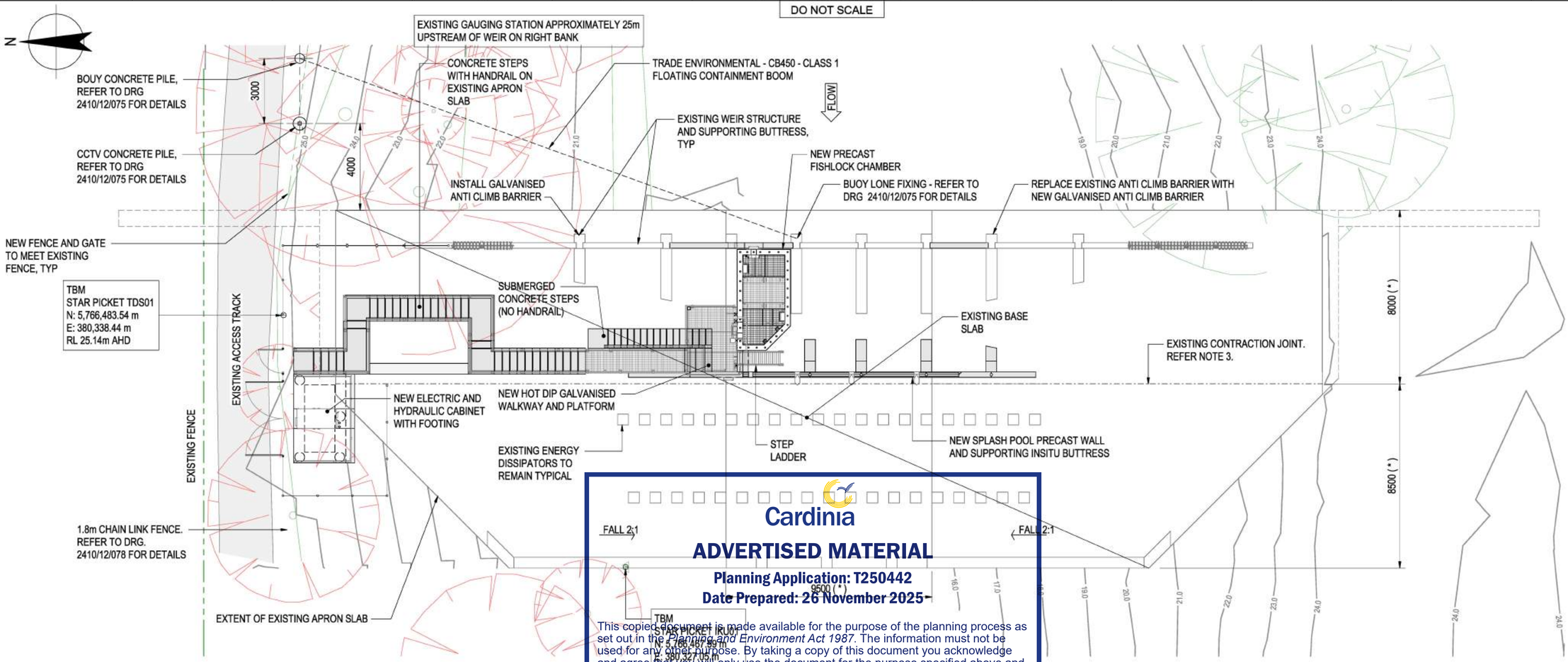
PROJECT DATUM: MGA Z55
SCALE: 1 : 1000
Original Size: A1

MELBOURNE WATER CORPORATION
CODE: C
MWC DRAWING NUMBER: 2410/12/002
REV: B

Plot Date: 22/11/2024 4:09:25 PM

Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

DO NOT SCALE



FISH LOCK GENERAL ARRANGEMENT PLAN

SCALE 1 : 100

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING SURFACE CONTOURS (24.0)
- EXISTING FENCE
- NEW FENCE AND GATE

0 1000 2000 3000 4000 5000mm

SCALE 1:100 AT ORIGINAL SIZE

NOTES:

1. FOR STRUCTURAL GENERAL NOTES REFER TO PROJECT TECHNICAL SPECIFICATION GHD DOCUMENT No. 3135931_SPC_0.
2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH EXISTING WEIR DRAWINGS PREPARED BY STATE RIVERS AND WATER SUPPLY COMMISSION, MWC DRAWING NUMBER 2410_03_001 TO 2410_03_008 DATED 1978, APPENDED TO PROJECT SPECIFICATION .
3. PROTECT EXISTING CONTRACTION JOINTS IN THE EXISTING APRON SLAB. CONTRACTOR TO PROVIDE PROTECTION PLATE TO GO ON TOP OF EXISTING JOINT TO PROTECT THE EXISTING JOINT FROM DAMAGE DURING CONSTRUCTION.
4. DIMENSIONS NOTED WITH (*) TO BE CONFIRMED ON SITE.
5. MEASURE ON SITE PRIOR TO FABRICATION AND CONTACT DESIGN ENGINEER FOR ANY SITE DISCREPANCIES.
6. SURVEY EXISTING WEIR PRECAST PANELS INCLUDING SHEAR KEY ARRANGEMENT PRIOR TO CASTING. PROTECT REMOVED EXISTING WEIR PANELS FROM DAMAGE. MATCH CAST NEW WEIR PANEL SHEAR KEY TO MATCH EXISTING.
7. CONTRACTOR TO PAY ADDITIONAL CARE DURING THE REPLACEMENT OF EXISTING WEIR PANELS AND WHILST LOCATING THE PRECAST FISHLOCK UNITS INTO POSITION. THE CONTRACTOR MUST PREVENT ANY DAMAGE TO INSITU EXISTING BUTTRESS STRUCTURE INCLUDING ITS RECESSES.
8. MATCH CAST FISHLOCK PRECAST UNITS IN THE PRECASTING YARD FOR EVERY CONSECUTIVE UNIT SO THAT THE PRECAST JOINTS ARE CONSISTENT.
9. SCAN EXISTING SLAB USING APPROPRIATE NON DESTRUCTIVE DEVICE TO IDENTIFY EXISTING SLAB REINFORCEMENT ARRANGEMENT. LOCATE DRILLING ANCHORS IN THE EXISTING SLAB TO CLEAR EXISTING REINFORCEMENT.
10. SCABBLE EXISTING CONCRETE AND EXPOSE AGGREGATES TO 5mm AMPLITUDE AND APPLY BONDING AGENT WHEN CASTING AGAINST EXISTING / PRECAST CONCRETE.
11. USE HIGH PRESSURE WATER JET METHOD TO CREATE RECESS IN THE EXISTING SLAB. DO NOT JACKHAMMER EXISTING CONCRETE.
12. LOCATE WATERSTOPS CENTRALLY WITH WALLS UNO. MAINTAIN MINIMUM 100 mm EDGE DISTANCE FOR HYDROPHILIC WATERSTOPS. INSTALL IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION.
13. CONTRACTOR TO OBTAIN PROFESSIONAL SURVEY FOR EXISTING PRECAST PANELS TO BE REPLACED IN THE EXISTING WEIR STRUCTURE AND TO CONFIRM PRECAST FISHLOCK CHAMBER UNIT DIMENSIONS FOR THE ADEQUACY OF THE PROVIDED GAP TOLERANCES (SHOWN ON DRG 021).
14. PROTECT EXISTING ELEMENTS DURING CONSTRUCTION. REPORT IMMEDIATELY ANY DAMAGE TO EXISTING STRUCTURE AT ANY STAGE OF THE PROJECT TO THE SUPERINTENDENT (HOLD POINT AND SEEK ADVICE FROM DESIGN ENGINEER. REPAIR MAY BE COSTLY AND MAY HAVE IMPACT ON STRUCTURAL INTEGRITY AND REMAINING DESIGN LIFE.
15. ALLOW THE FOLLOWING HOLD POINTS IN THE FABRICATION OF
    - THE PRECAST REINFORCED CONCRETE UNITS. APPROVAL OF SHOP DRAWINGS BY DESIGN ENGINEER PRIOR TO COMMENCING FABRICATION.
    - REINFORCEMENT INSPECTION BY DESIGN ENGINEER PRIOR TO POURING CONCRETE.
    - INSPECT PRECAST STRUCTURE IN THE MANUFACTURING YAR FOR ANY DEFECTS AFTER STRIPPING CONCRETE FORMWORK AND PRIOR TO TRANSPORTING TO SITE.
16. PROVIDE ALL STEP LADDER RUNGS WITH N20 (MINIMUM) DEFORMED REINFORCEMENT TO PROVIDE NON SLIP TREAD INTERFACE.
17. THE DESIGN OF THE PRECAST UNITS / WALL THICKNESS WAS DETERMINED ADOPTING RIGID FORMWORK AND INTENSE COMPACTION DURING THE FABRICATION OF THESE UNITS IN THE PRECASTING YARD. IN CASE AN IN-SITU CONSTRUCTION METHOD IS ADOPTED, THE NOMINATED CONCRETE ELEMENT THICKNESS WILL BE REQUIRED TO INCREASE DUE TO INCREASED COVER TO REINFORCEMENT.
18. MINIMISE DELAYS ON SITE BY PREASSEMBLING THE FISHLOCK UNITS IN THE PRECASTING YARD TO ENSURE CONTINUOUS AND CONCENTRIC VOIDS WITHIN THE CORRUGATED DUCTS THROUGHOUT UNITS PR11 TO PR16. CONFIRM ALSO FISHLOCK VERTICALITY AND CONCRETE LEVELS AT TOP OF PR16 UNIT USING TEMPORARY 50x50x10mm THICK BEARING PADS IN BETWEEN THE PRECAST UNITS AS NOTED ON DRG 043.
19. IT IS THE DESIGN ASSUMPTION THAT A COFFER DAM WILL BE FORMED AT UPSTREAM AND DOWNSTREAM ENDS OF THE EXISTING WEIR TO LOWER WATER LEVEL PRIOR THE REMOVAL OF INDICATED EXISTING WEIR PRECAST PANELS.
20. THE HANDRAIL ARRANGEMENTS SHOWN ON THE DRAWINGS ARE INDICATIVE ONLY WITH MINIMUM REQUIREMENTS TO COMPLY WITH AS1657 INCLUDING THEIR FIXINGS.
21. CONTRACTOR TO PROVIDE STANCHIONS AT INDICATED MAXIMUM SPACING AS WELL AS AT EVERY CHANGE IN HANDRAIL DIRECTION.
22. LOCATIONS OF THE DAVIT ARM MOUNT BASES ARE INDICATED ON THE DRAWINGS. CONSULT WITH DESIGN ENGINEER BEFORE ANY CHANGES TO THE LOCATION OF THE DAVIT ARM MOUNT BASES.
23. GEOTECHNICAL ENGINEER TO CONFIRM SOIL AND GROUND SUITABILITY FOR THE PROPOSED PILES LOCATION PRIOR CONSTRUCTION.
24. AVOID CLASHING WITH REINFORCEMENT. THE HD BOLTS AND ANCHORS SHALL NOT BE INSTALLED WITHIN CONCRETE COVER.

PRELIMINARY

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APPD	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SiD CHANGES	GHD		LP	NB	CT	28.10.24

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GHD Australia Pty Ltd

GHD DRAWING NUMBER 12637984 - 011

Melbourne Water

TITLE HEADS ROAD
WEIR FISH LOCK
GENERAL ARRANGEMENT

PROJECT DATUM MGA Z55

SCALE As indicated

Original Size A1

MELBOURNE WATER CORPORATION

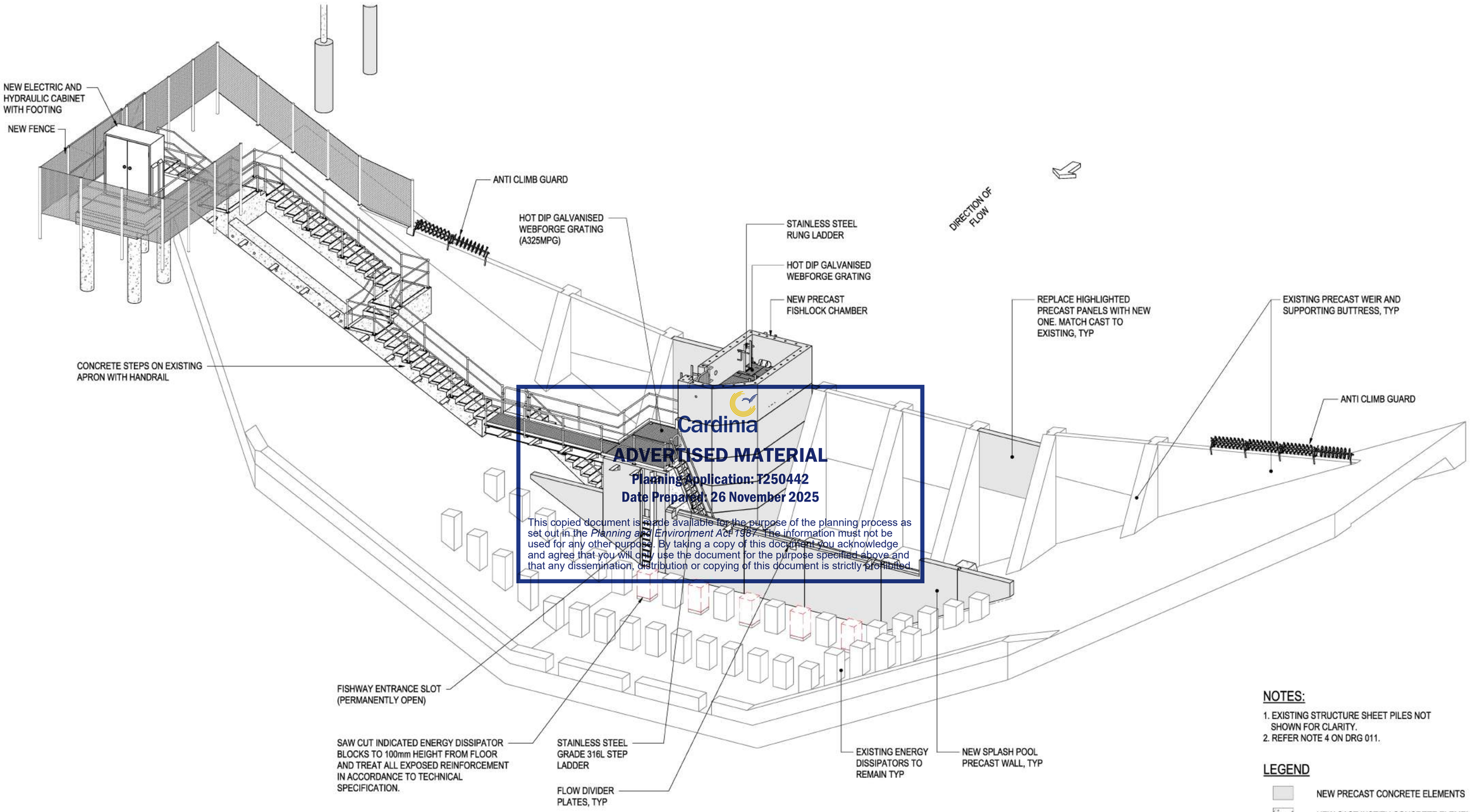
C 2410/12/011 B

CODE MWC DRAWING NUMBER REV

Plot Date: 22/11/2024 10:13:08 AM

Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

DO NOT SCALE



ISOMETRIC VIEW FOR NEW FISHLOCK AND EXISTING WEIR STRUCTURE
(VIEW TAKEN FROM DOWNSTREAM END)
NOT TO SCALE

NOTES:
1. EXISTING STRUCTURE SHEET PILES NOT SHOWN FOR CLARITY.
2. REFER NOTE 4 ON DRG 011.

LEGEND
- NEW PRECAST CONCRETE ELEMENTS
- NEW CAST INSTITU CONCRETE ELEMENTS
- EXISTING ENERGY DISSIPATOR BLOCK TO BE SAW CUT AND REMOVED

PRELIMINARY

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APP'D	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SID CHANGES	GHD		LP	NB	CT	28.10.24

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GHD DRAWING NUMBER 12637984 - 012

Melbourne Water

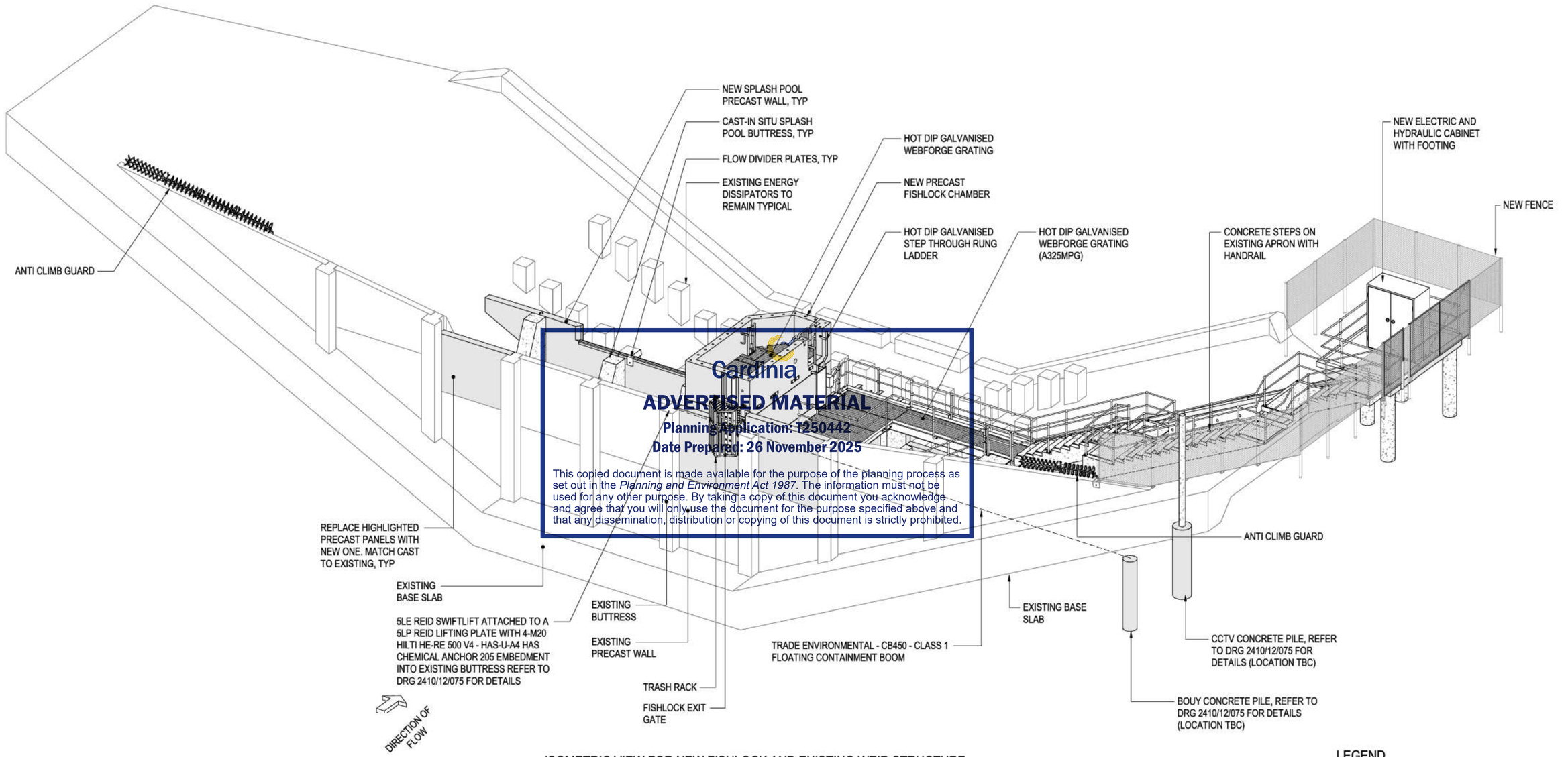
TITLE
HEADS ROAD
WEIR FISH LOCK
GENERAL ARRANGEMENT ISOMETRIC VIEW - SHEET 1 OF 2

PROJECT DATUM MGA Z55
SCALE NOT TO SCALE
Original Size A1

MELBOURNE WATER CORPORATION
C (CODE) 2410/12/012 (MWC DRAWING NUMBER) B (REV)

Plot Date: 22/11/2024 10:51:36 AM
Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

DO NOT SCALE



ISOMETRIC VIEW FOR NEW FISHLOCK AND EXISTING WEIR STRUCTURE (VIEW TAKEN FROM UPSTREAM END)

NOT TO SCALE

LEGEND

- NEW PRECAST CONCRETE ELEMENTS
- NEW CAST INSTITU CONCRETE ELEMENTS

NOTES:

1. EXISTING STRUCTURE SHEET PILES NOT SHOWN FOR CLARITY.
2. REFER NOTE 4 ON DRG 011.

PRELIMINARY

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APP'D	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SID CHANGES	GHD		LP	NB	CT	28.10.24

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Melbourne Water

D. COMBEN | J. BERNARDI

TITLE
HEADS ROAD
WEIR FISH LOCK
GENERAL ARRANGEMENT ISOMETRIC VIEW - SHEET 2 OF 2

PROJECT DATUM MGA Z55
SCALE NOT TO SCALE
Original Size A1

MELBOURNE WATER CORPORATION
C | 2410/12/013 | B
CODE | MWC DRAWING NUMBER | REV

Plot Date: 22/11/2024 10:52:06 AM

Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

DO NOT SCALE

NEW PRECAST FISHLOCK CHAMBER UNITS BEHIND, TYP

FISHLOCK EXIT GATE VERTICAL SLIDING GATE, AUTOMATED TO SUIT 250 WIDE x 1500 HIGH OPENING (BEYOND)

REPLACE HIGHLIGHTED PRECAST PANELS WITH NEW ONE. MATCH CAST TO EXISTING, TYP

STAINLESS STEEL FOLDED PL. REFER DRG 028 FOR DETAIL.

15mm GAP. SEAL BY WEDGING 25 mm BACKING ROD CENTRAL IN THE SPACE

REPLACE HIGHLIGHTED PRECAST PANELS WITH NEW ONE. MATCH CAST TO EXISTING, TYP

TOC 21.600

TOC / TO GRATING 20.600

TO OPENING 20.500

TOC 20.000

PR16

PR15

PR1

PR2

PR3

TO OPENING 19.000

TRASH RACK

TOC EXISTING 15.000

EXISTING BASE SLAB

A 021 SECTION
SCALE 1 : 25

LEGEND

- NEW PRECAST CONCRETE PANELS
- NEW PRECAST FISHLOCK UNITS
- PR8 — NEW PRECAST PANEL NUMBER. REFER DRG 043 AND 044 FOR DETAILS.

NOTE:

1. REFER NOTES ON DRG 011.

PRELIMINARY

0 250 500 750 1000 1250mm
SCALE 1:25 AT ORIGINAL SIZE

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APP'D	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SID CHANGES	GHD		LP	NB	CT	28.10.24

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GHD DRAWING NUMBER 12637984 - 023

Melbourne Water

TITLE HEADS ROAD
WEIR FISH LOCK
FISHLOCK SECTIONS AND DETAILS - SHEET 1 OF 6

PROJECT DATUM MGA Z55
SCALE As indicated
Original Size A1

MELBOURNE WATER CORPORATION
C | 2410/12/023 | B
CODE | MWC DRAWING NUMBER | REV

Plot Date: 22/11/2024 10:13:15 AM

Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

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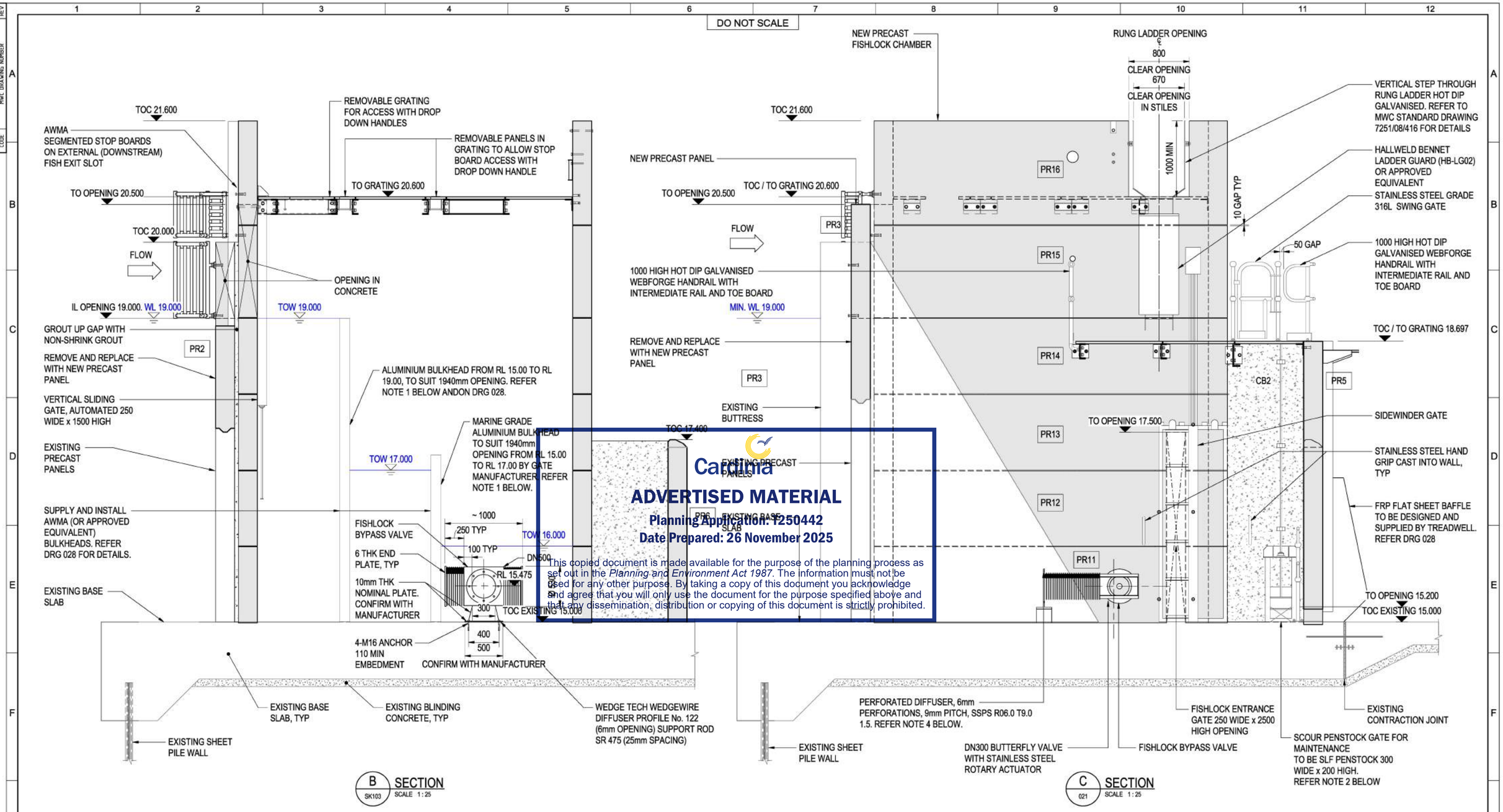

LEGEND

- NEW PRECAST CONCRETE PANELS
- NEW CAST INSITU CONCRETE ELEMENTS
- PR8 — NEW PRECAST PANEL NUMBER. REFER DRG 043 AND 044 FOR DETAILS.

NOTES:

1. MARINE GRADE ALUMINIUM BULKHEAD TO CONTAIN 300 WIDE x 300 HIGH CLEAR OPENING WITH SLF PENSTOCK GATE (OR APPROVED EQUIVALENT) TO BE SET FLUSH WITH INVERT TO ENABLE MAINTENANCE FLUSH THROUGH. DETAILS TO BE PROVIDED BY GATE MANUFACTURER AND APPROVED BY SUPERINTENDENT.
2. MARINE GRADE SLF PENSTOCK SCOUR VALVE 300 WIDE x 200 HIGH CLEAR OPENING WITH NON-RISING SPINDLE EXTENDING TO NEAR TOP OF GRATING RL 18.697m. DETAILS TO BE PROVIDED BY GATE MANUFACTURER AND APPROVED BY SUPERINTENDENT.
3. REFER NOTES ON DRG 011.
4. DIFFUSER TO CONTAIN A REMOVABLE BLANK FLANGE AT THE END FOR INTERNAL CLEANING WHEN REQUIRED.

PRELIMINARY

0 250 500 750 1000 1250mm
SCALE 1:25 AT ORIGINAL SIZE

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APP'D	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SID CHANGES	GHD		LP	NB	CT	28.10.24

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Melbourne Water

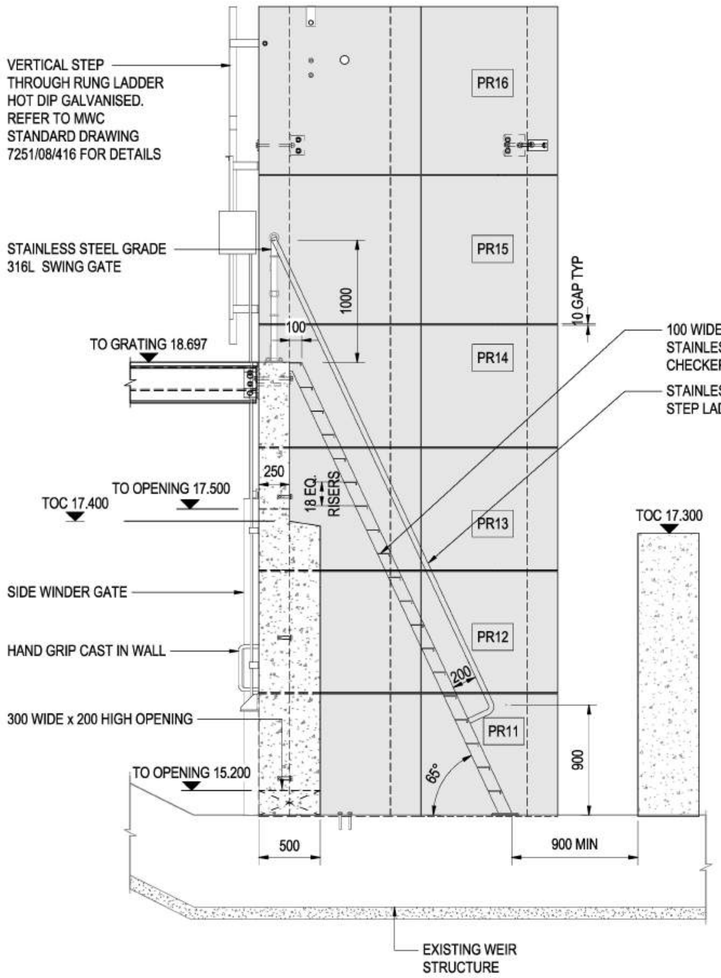
TITLE
HEADS ROAD
WEIR FISH LOCK
FISHLOCK SECTIONS AND DETAILS - SHEET 2 OF 6

PROJECT DATUM MGA Z55
SCALE As indicated
Original Size A1
MELBOURNE WATER CORPORATION
C 2410/12/024 B
CODE MWC DRAWING NUMBER REV

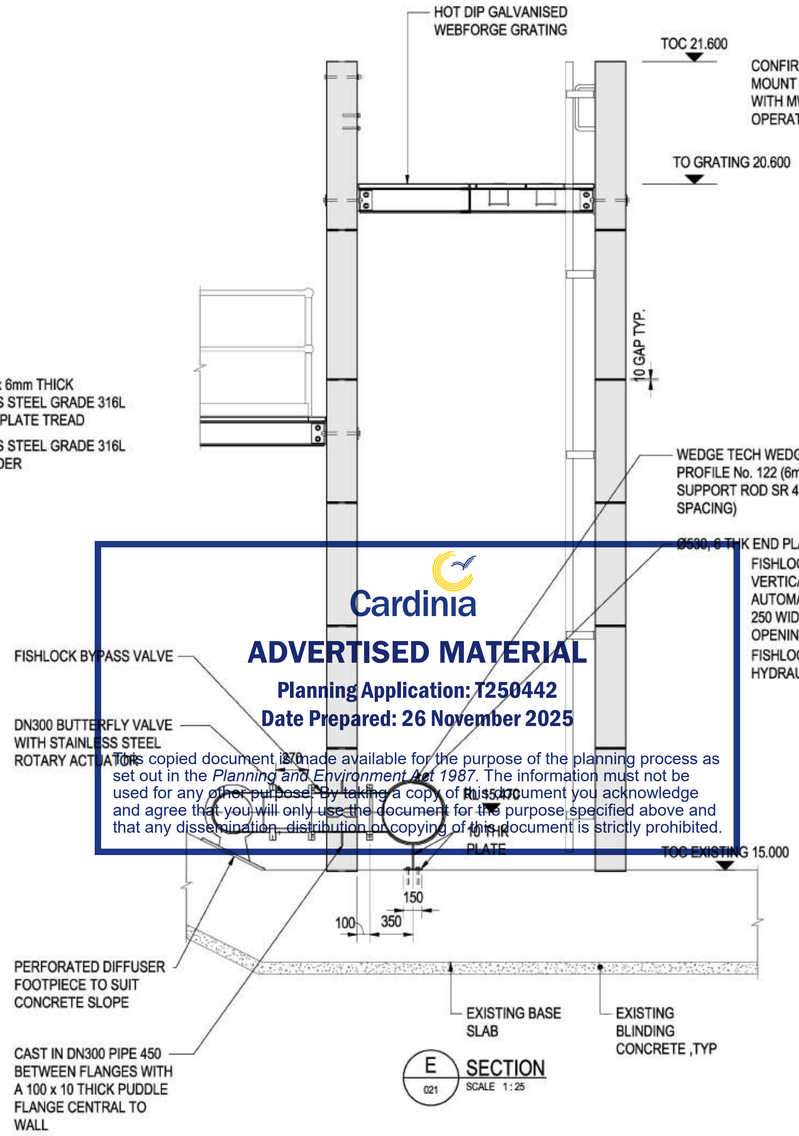
Plot Date: 23/11/2024 10:13:19 AM
Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

DO NOT SCALE

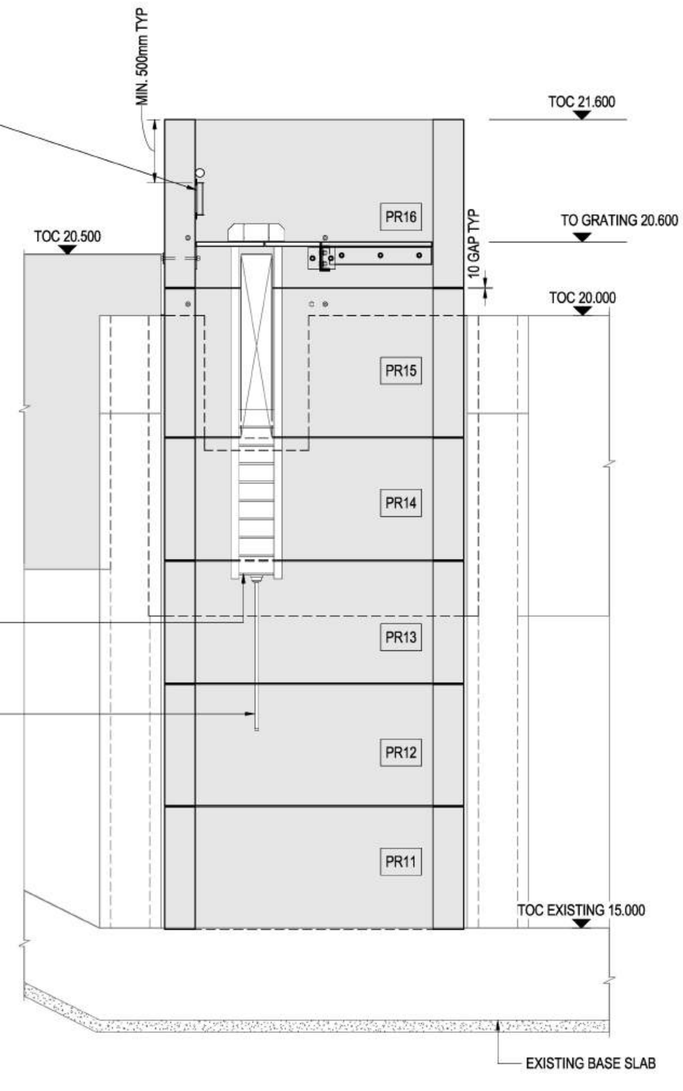
C 2410/12/025 B
CODE MWC DRAWING NUMBER REV



D 021 SECTION SCALE 1 : 25



E 021 SECTION SCALE 1 : 25



F 021 SECTION SCALE 1 : 25

NOTE:
1. REFER NOTES ON DRG 011.

LEGEND
- NEW PRECAST CONCRETE PANELS
- NEW CAST INSITU CONCRETE ELEMENTS
- PR8 — NEW PRECAST PANEL NUMBER. REFER DRG 043 AND 044 FOR DETAILS.

PRELIMINARY

0 250 500 750 1000 1250mm
SCALE 1:25 AT ORIGINAL SIZE

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APPD	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SiD CHANGES	GHD		LP	NB	CT	28.10.24

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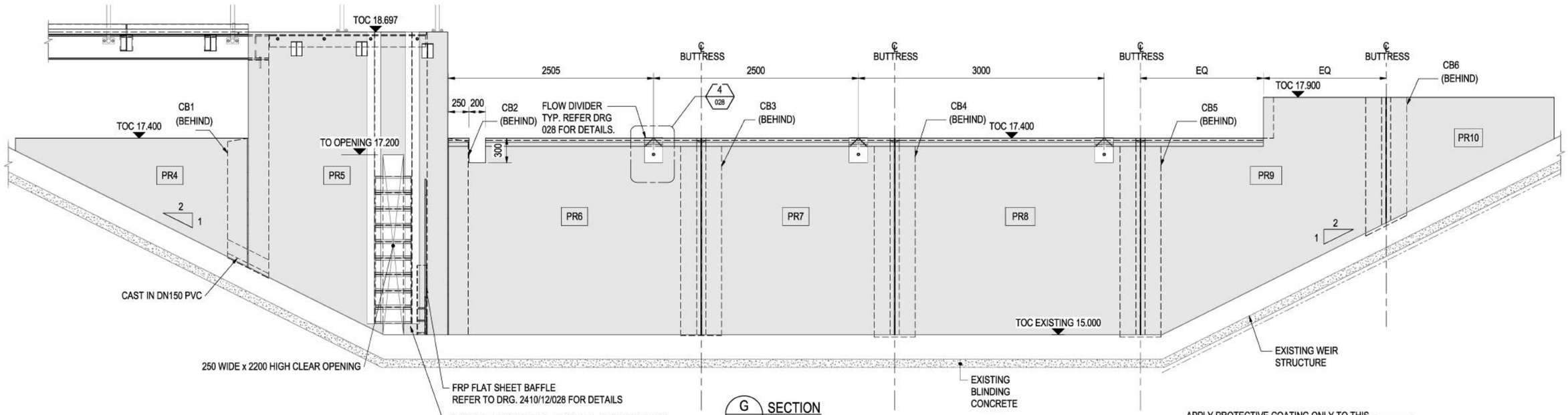
Melbourne Water

TITLE HEADS ROAD
WEIR FISH LOCK
FISHLOCK SECTIONS AND DETAILS - SHEET 3 OF 6

PROJECT DATUM MGA Z55
SCALE As indicated
Original Size A1
MELBOURNE WATER CORPORATION
C 2410/12/025 B
CODE MWC DRAWING NUMBER REV

Plot Date: 22/11/2024 10:13:21 AM
Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

DO NOT SCALE



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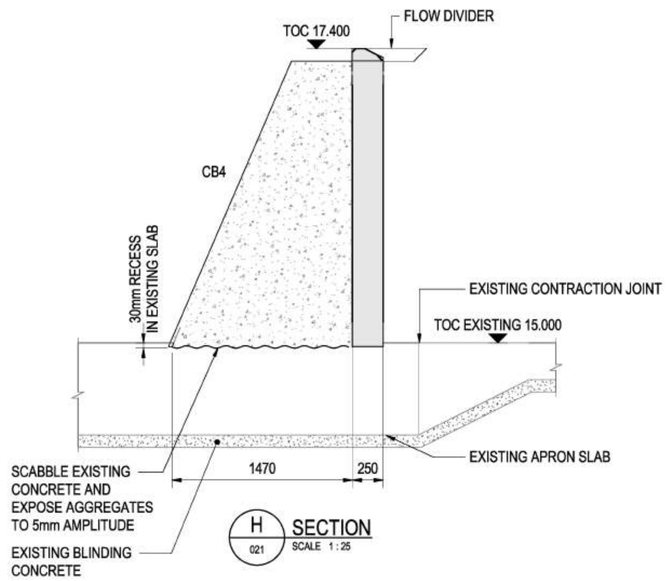

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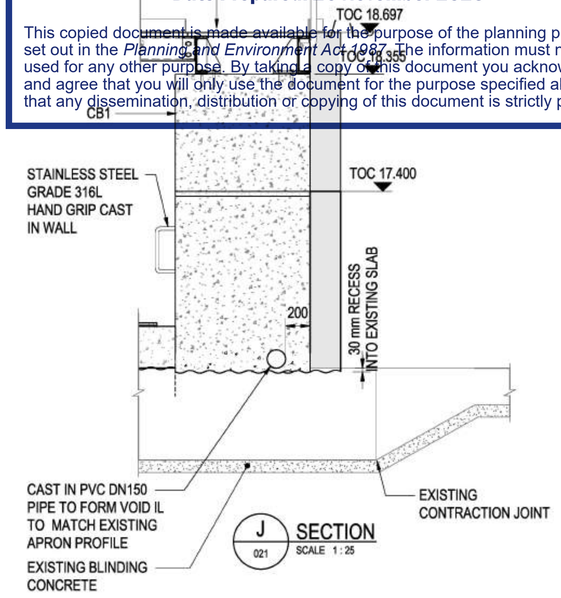
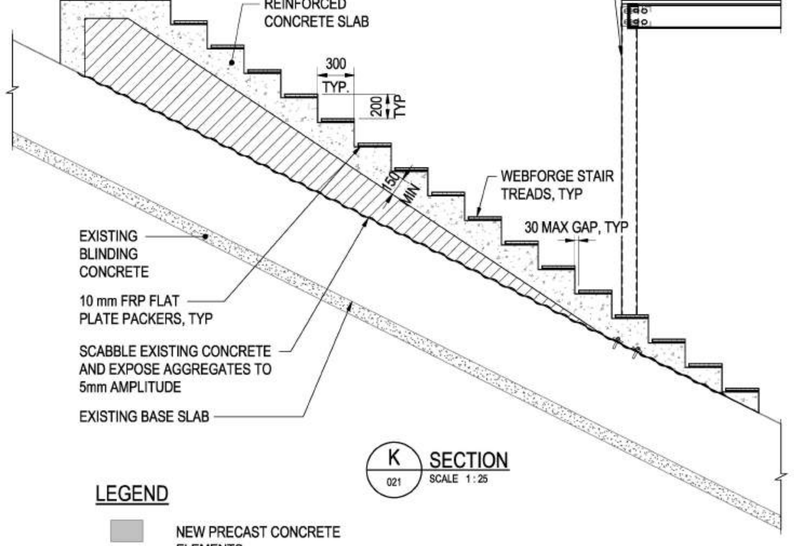


J 021 SECTION SCALE 1:25

APPLY PROTECTIVE COATING ONLY TO THIS SUBMERGED COLUMN AS PER AS2312.2 TABLE 7.1 SYSTEM NUMBER 5I PRIOR TO INSTALLATION. CARRY ON WITH TOUCH UPS ON SITE AFTER INSTALLATION AS REQUIRED.



K 021 SECTION SCALE 1:25

0 250 500 750 1000 1250mm
SCALE 1:25 AT ORIGINAL SIZE

LEGEND

- NEW PRECAST CONCRETE ELEMENTS
- NEW CAST INSITU CONCRETE ELEMENTS
- VOID FORMER
- PR8 — NEW PRECAST PANEL NUMBER. REFER DRG 043 AND 044 FOR DETAILS.
- CB1 — DENOTES INSITU CONCRETE BUTTRESS. REFER TO DRGS. 068 TO 070

NOTE:

1. REFER NOTES ON DRG 011.

PRELIMINARY

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APP'D	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SID CHANGES	GHD		LP	NB	CT	28.10.24

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GHD DRAWING NUMBER 12637984 - 026

Melbourne Water

TITLE
HEADS ROAD
WEIR FISH LOCK
FISHLOCK SECTIONS AND DETAILS - SHEET 4 OF 6

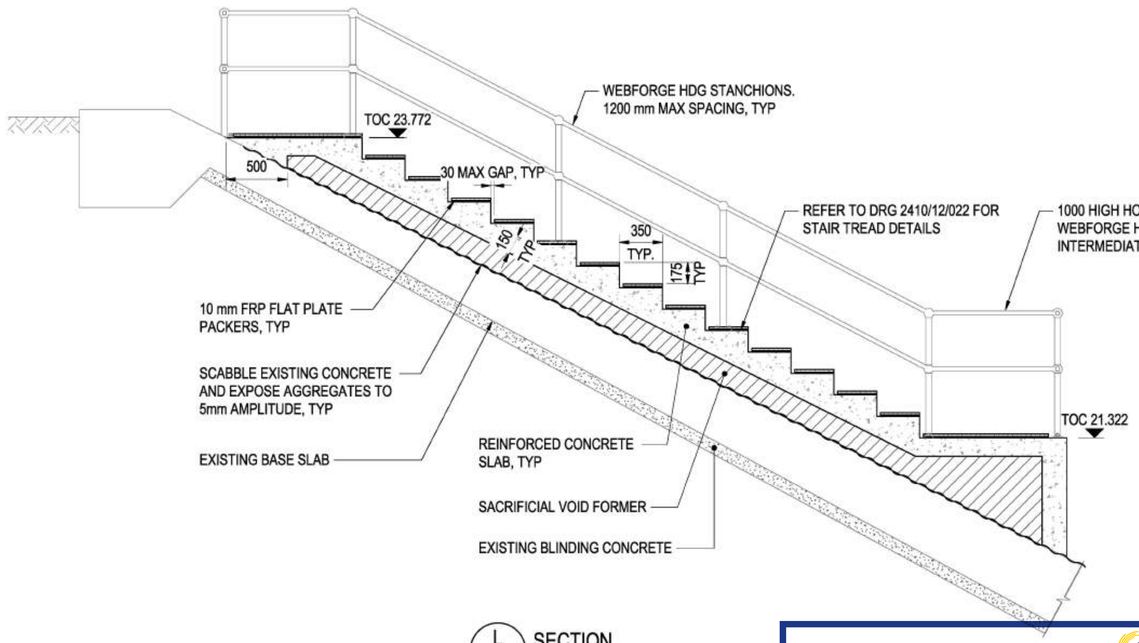
PROJECT DATUM MGA Z55
SCALE As indicated
Original Size A1

MELBOURNE WATER CORPORATION
CODE C | MWC DRAWING NUMBER 2410/12/026 | REV B

Plot Date: 22/11/2024 10:52:33 AM

Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

DO NOT SCALE



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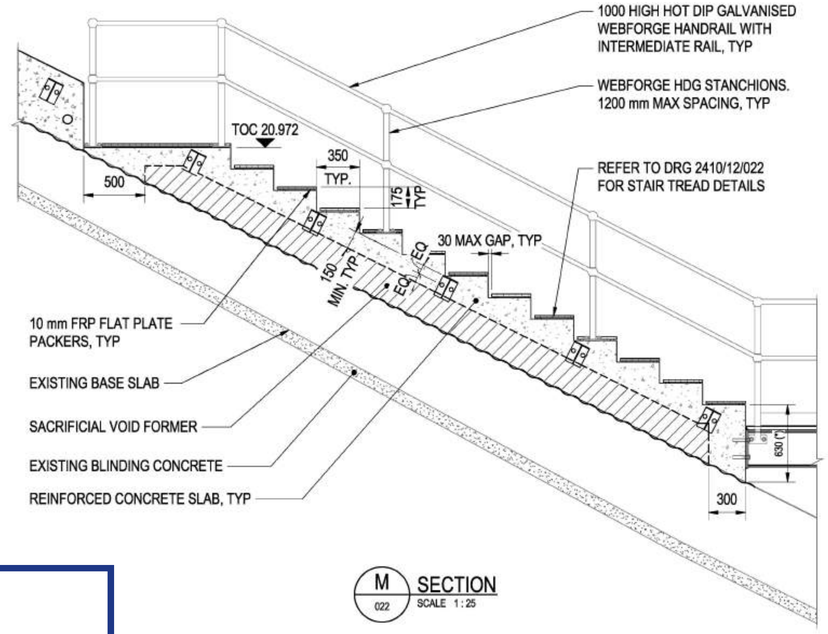

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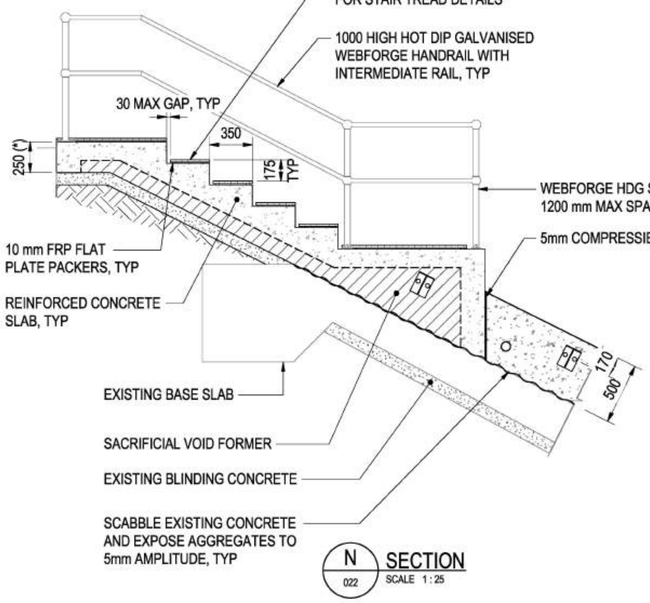

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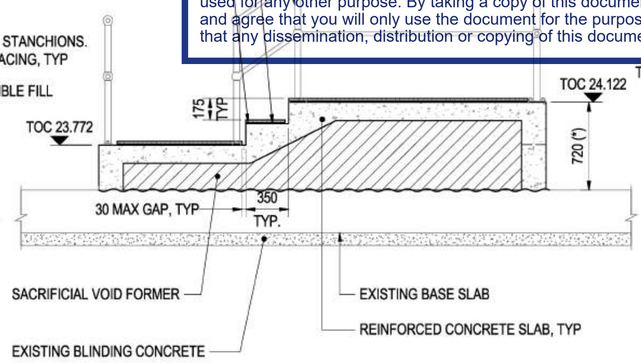

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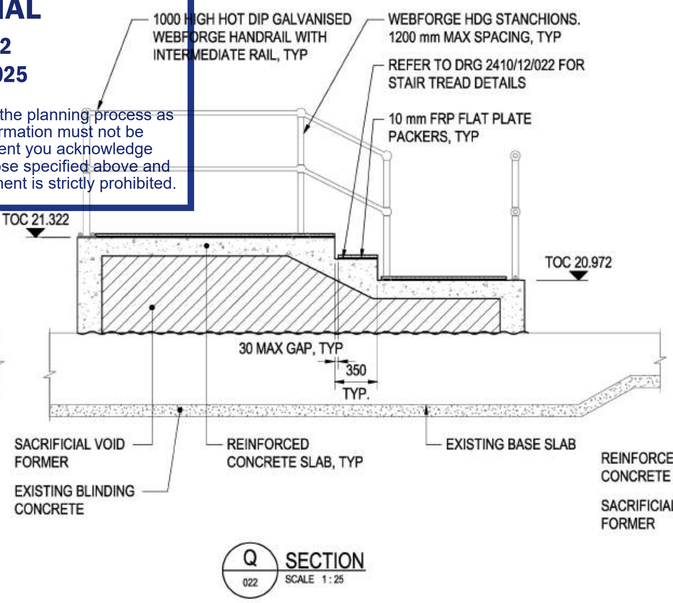

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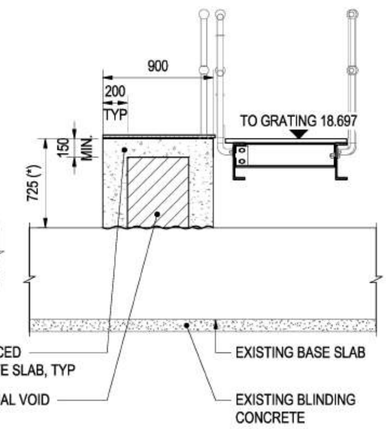


R 022 SECTION SCALE 1:25

NOTES:

1. INSTALL STARTER BARS INTO EXISTING BASE SLAB PRIOR TO FORMING CONCRETE STEPS. REFER DRGS 071 TO 073.
2. DIMENSIONS PROVIDED WITH (*) TO BE CONFIRMED ON SITE.

PRELIMINARY

0 250 500 750 1000 1250mm
SCALE 1:25 AT ORIGINAL SIZE

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APPD	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SiD CHANGES	GHD		LP	NB	CT	28.10.24

GHD
Level 9, 180 Lonsdale Street,
Melbourne VIC 3000 Australia
T 61 3 8687 8000 F 61 3 8687 8111
E melmail@ghd.com.au W www.ghd.com
GHD Australia Pty Ltd

GHD DRAWING NUMBER 12637984 - 027

Melbourne Water

[redacted]

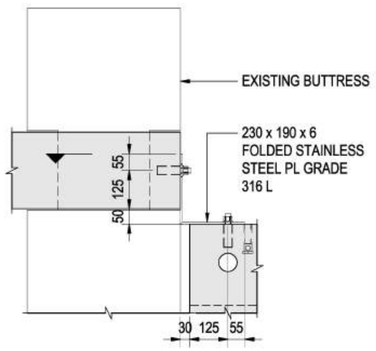
TITLE HEADS ROAD
WEIR FISH LOCK
FISHLOCK SECTIONS AND DETAILS - SHEET 5 OF 6

PROJECT DATUM MGA Z55
SCALE 1 : 25
Original Size A1

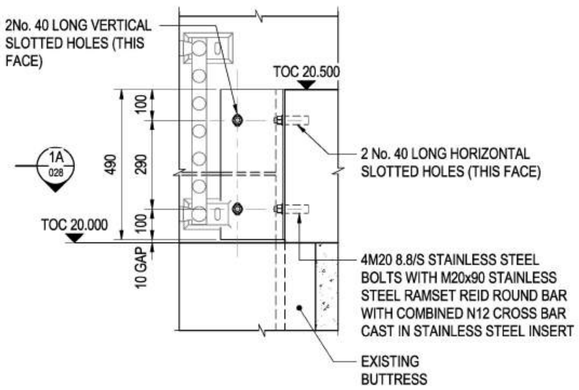
MELBOURNE WATER CORPORATION
C CODE | 2410/12/027 MWC DRAWING NUMBER | B REV

Plot Date: 22/11/2024 10:13:23 AM
Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

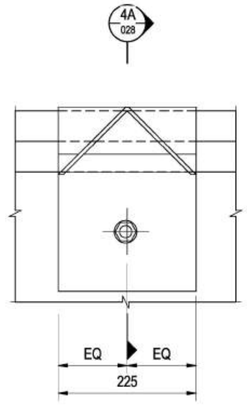
DO NOT SCALE



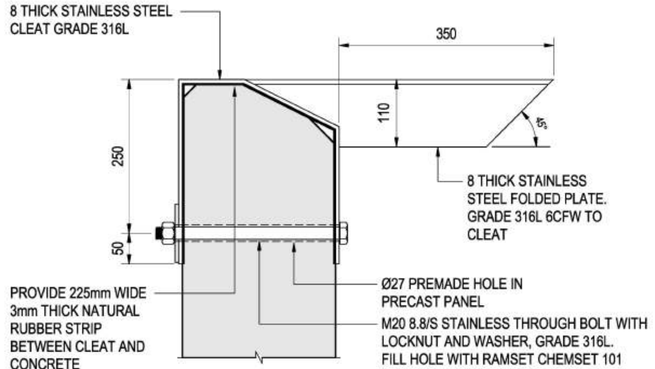
1 DETAIL 021 SCALE 1 : 10



1A 028 SECTION SCALE 1 : 10



4 026 DETAIL SCALE 1 : 5



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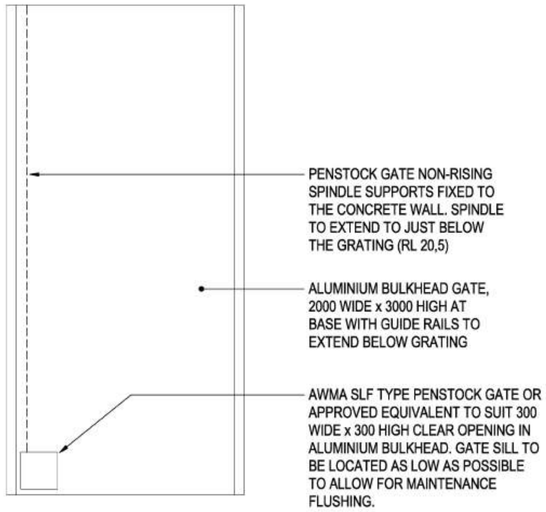
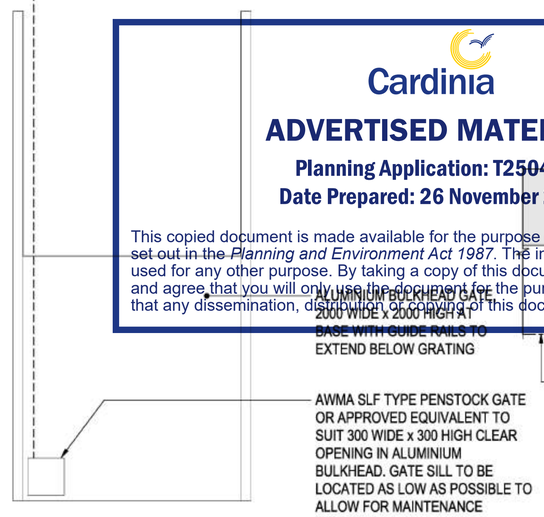


NOTE: EXACT GATING ARRANGEMENT TO BE DESIGNED BY THE GATE MANUFACTURER AND APPROVED BY THE SUPERINTENDENT

DETAIL 2 - THREE IN ONE GATE - ALUMINIUM BULKHEAD GATE WITH SEGMENTED STOPBOARDS AND FLUSH THROUGH LOWER GATES

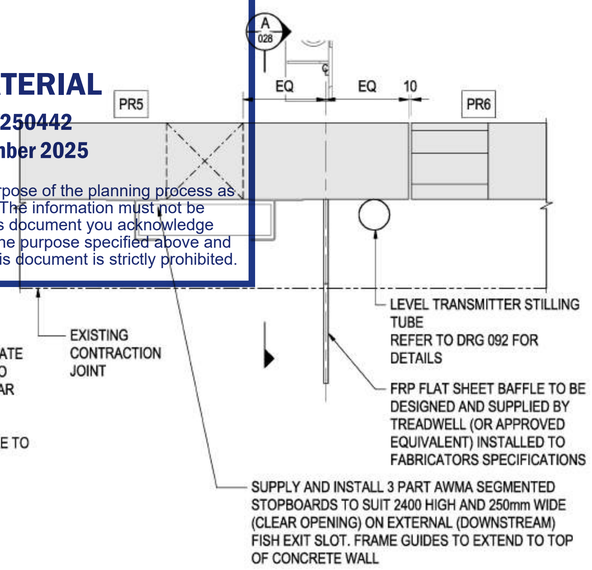
SCALE 1 : 25



NOTE: EXACT GATING ARRANGEMENT TO BE DESIGNED BY THE GATE MANUFACTURER AND APPROVED BY THE SUPERINTENDENT

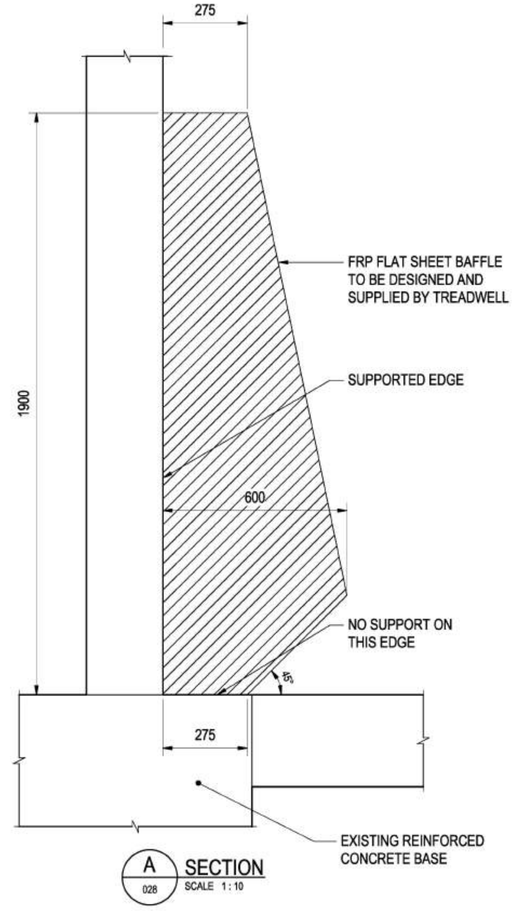
DETAIL 3 - TWO IN ONE GATE - ALUMNINIUM BULKHEAD GATE WITH FLUSH THROUGH LOWER GATES

SCALE 1 : 25



BAFFLE PLAN VIEW

SCALE 1 : 10



A 028 SECTION SCALE 1 : 10

LEGEND

NEW PRECAST CONCRETE ELEMENTS

NEW CAST INSTITU CONCRETE ELEMENTS

NOTE:

1. REFER NOTES ON DRG 011.

PRELIMINARY

0 100 200 300 400 500 mm SCALE 1:10 AT ORIGINAL SIZE
0 250 500 750 1000 1250mm SCALE 1:25 AT ORIGINAL SIZE
0 50 100 150 200 250 mm SCALE 1:5 AT ORIGINAL SIZE

REV	DESCRIPTION	COMPANY	PROJECT OR WO NUMBER	DRAWN	ENG. CHECK	PR. MAN. APP'D	DATE
B	ISSUED FOR TENDER	GHD		LP	JB	CT	22.11.24
A	AMENDED WITH SID CHANGES	GHD		LP	NB	CT	28.10.24

GHD
Level 9, 180 Lonsdale Street, Melbourne VIC 3000 Australia
T 61 3 8687 8000 F 61 3 8687 8111
E melmail@ghd.com.au W www.ghd.com
GHD Australia Pty Ltd

GHD DRAWING NUMBER 12637984 - 028

Melbourne Water

[redacted]

D. COMBEN J. BERNARDI

TITLE HEADS ROAD
WEIR FISH LOCK
FISHLOCK SECTIONS AND DETAILS - SHEET 6 OF 6

PROJECT DATUM MGA Z55
SCALE As indicated
Original Size A1

MELBOURNE WATER CORPORATION
C 2410/12/028 B
CODE MWC DRAWING NUMBER REV

2410/12/028 C
MWC DRAWING NUMBER CODE

Plot Date: 22/11/2024 10:13:24 AM

Cad File No: Autodesk Docs://12637984-Lang Lang Creek Fishway/12637984 Lang Lang Fish Lock.rvt

180 Lonsdale Street, Level 9
Melbourne, Victoria 3000
Australia
ghd.com

Your ref: T50442 PA
Our ref: 12637984

24 September 2025

[redacted]
Principal Statutory Planner
Cardinia Shire Council
PO Box 7
Pakenham VIC 3810

Response to Request for Further Information (RFI) regarding planning permit application T50442 PA to facilitate the Lang Lang Fishway Project (the Project) at Heads Road, Lang Lang, VIC 3984.

Dear [redacted]

Thank you for your letter dated 2 September 2025 requesting further information regarding permit application number T50442PA, submitted on behalf of Melbourne Water (MW) pursuant to Section 54 of the *Planning and Environment Act 1987*.

GHD Pty Ltd (GHD) continues to act on behalf of the applicant, MW. It is understood that Cardinia Shire Council (Council) requires clarification on items identified in the RFI. We look forward to engaging closely with Council to satisfy the requests for further information as soon as possible.

The following attachments are included in this letter:

- Attachment 1 – Updated Site Plan
- Attachment 2 – DEECA Endorsement to rely on Utility Installations Exemption

Response to the RFI

A response to each of the items raised within the RFI has been provided below.

1. Site Plan

Council request

Council has requested the following information: *Updated development plans to include specifications of the temporary hardstand area and details of the duration that the hardstand will be erected on-site.*

GHD response

An updated development plan, which illustrates the specifications of the temporary hardstand area and details of the duration that the hardstand area will be erected on site is provided at Attachment 1.

2. Clause 52.17 – Native Vegetation

Council request

Council has requested the following information: *Written consent from the Secretary of DEECA granting endorsement for the project to rely on an exemption under Clause 52.17-7.*

GHD response

DEECA has provided endorsement to rely on the exemption for Utility Installations, as per Clause 52.17-7 of the Planning Scheme. Written approval to rely on this exemption is provided at Attachment 2.

Response to the Preliminary Assessment Comments

A response to the Preliminary Assessment Comments is provided below.

Clause 52.17

Council comments

Council has commented the following: *In the absence of written consent from DEECA referenced at further information item 2, an application must be made for the removal of Native Vegetation pursuant Clause 52.17-2 and an assessment provided against the Guidelines for Removal, Destruction and Lopping of Native Vegetation. In order for Council to consider Native Vegetation removal, the application must be updated under Section 50 of the Planning and Environment Act 1987.*

It is recommended that the application be revised to address these comments, and/or include a written response to them. Revising the application at this stage is likely to result in the application process being more efficient and may mitigate future concerns from relevant parties.

If the application is not revised accordingly, it will be processed in its current form and may be subject to future changes through conditions of any planning permit, or may be recommended for refusal.

GHD response

As discussed under RFI item 2 *Clause 52.17 – Native Vegetation*, the Project has obtained written approval from DEECA to rely on this exemption. This is provided at Attachment 2.

As we have obtained endorsement from DEECA to use this exemption, the planning permit application does not require updates to incorporate an assessment against Clause 52.17.

Conclusion

We trust this response will satisfy all requests for further information and look forward to receiving your endorsement of the utility exemption. Should you have any further queries in relation to the matters raised in this letter, please do not hesitate to contact me via the details provided below.

[redacted]

Attachments:
Attachment 1: Updated Site Plan
Attachment 2: DEECA Endorsement to rely on Utility Installations Exemption

Department of Energy, Environment and Climate Action

8 Nicholson Street
East Melbourne, Victoria 3001
Email: *pe.assessment@deeca.vic.gov.au*
deeca.vic.gov.au

[redacted]

Ref: CMS 00010140

Senior Urban Planner
Planning & Environment Approvals
GHD
Level 8, 180 Lonsdale Street
MELBOURNE VIC 3000

[redacted]

CLAUSE 52.17 NATIVE VEGETATION REMOVAL EXEMPTION-ENDORSEMENT TO RELY ON THE UTILITY EXEMPTION – LANG LANG FISHWAY PROJECT, HEADS ROAD, LANG LANG

Thank you for your request for endorsement on 24/7/2025 to use the *Procedure to rely on the utility installations exemption in planning schemes - Water service providers* (DELWP 2020) related to Melbourne Water's Lang Lang Fishway Project.

The works requiring the native vegetation removal identified in the Department of Energy, Environment and Climate Action (DEECA) Native Vegetation Removal Report (NVRR) ID# 311_20250704_DR9, meet the requirements of the *utility* exemption procedure. The native vegetation removal must comply with the area mapped in NVRR ID:311_20250704_DR9 and the amounts specified below. Additional consent is required to remove or impact any native vegetation not included in this endorsement.

Assessment Pathway	Intermediate		
Location Category	Location 2 The native vegetation extent map indicates that this area is typically characterised as supporting native vegetation. Additionally, it is modelled as encompassing an endangered Ecological Vegetation Class, sensitive wetland or sensitive coastal area. The removal of less than 0.5 hectares of native vegetation in this area will not require a Species Offset.		
Total extent of native vegetation removal including past and proposed removal	0.017 hectares	Extent of past removal	0 hectares
		Extent of proposed removal –Patches	0.017 hectares
		Extent of proposed removal – Scattered Trees (ha)	0 hectares
Large Trees proposed to be removed	0	Large Patch Trees	0
		Large Scattered Trees	0
Small Scattered Trees	0		

To ensure no net loss to Victoria's biodiversity, please provide DEECA with evidence of a secured native vegetation offset in accordance with the table below.

Offset type	General habitat units (GHU)

Offset amount required	0.053 GHU
Vicinity of offset	Located within the Melbourne Water Catchment Management Authority boundary or Cardinia Shire municipal district
Minimum Strategic Biodiversity value of offset	0.3464
Large trees required	0

Evidence of the secured offsets (allocated credit extracts or executed first party offset agreements) for all endorsed projects for the financial year must be provided to the relevant DEECA region annually by 31 August. Accordingly, please email the evidence to ppr.nep@deeca.vic.gov.au before 31 August 2026. The secured offsets must be secured in accordance with the *Guidelines for the removal, destruction, or lopping of native vegetation* (DELWP 2017).

Comments

DEECA is satisfied that Melbourne Water have avoided and minimised native vegetation removal as per the *utility* exemption procedure and that all requirements of the procedure have been met.

Mitigations are required to ensure adverse impacts to retained native vegetation and threatened species and habitat are avoided and minimised. This includes the need to ensure retained native vegetation is protected during construction, instream works are timed to avoid key lifecycle periods for Platypus, Dwarf Galaxias and Australian Grayling, and habitat for Southern Brown Bandicoot is reinstated in all temporary disturbance areas along the riparian corridor following construction completion.

Endorsement Conditions

1. Before works start, a site-specific Construction Environment Management Plan (CEMP) must be prepared to the satisfaction of DEECA. This plan should incorporate the measures to avoid and minimise impacts specified in Section 5 of the GHD (2025) Lang Lang Fishway Flora and Fauna Assessment, and must specify measures to:

    a) Protect all native vegetation to be retained from any impacts resulting from construction activities

    b) Prevent impacts on aquatic ecosystems and threatened species within Lang Lang River due to erosion, sedimentation, pollution, and changes to water flows

    c) Use a qualified ecologist to conduct pre-clearance surveys to ensure any wildlife identified, including threatened species, is relocated to an appropriate location away from the construction footprint

    d) Control the spread of noxious weeds

    e) Reinstate native vegetation and habitat in all temporary disturbance areas

2. Before works start, all persons undertaking the vegetation removal or works onsite must be advised of all relevant conditions.

Endorsement Notes

1. The granting of this endorsement does not exempt the holder of a permit from the requirements of other Commonwealth and State legislation or policy.

2. Landowner Consent will be required from DEECA's regional Land and Built Environment team. To apply for Landowner Consent or for further information, please contact enviroplan.portphillip@deeca.vic.gov.au.

If you have any further questions in relation to this matter, I can be contacted directly at pe.assessment@deeca.vic.gov.au.

Yours sincerely

[redacted]

Senior Planning Officer, Planning Services (Central-East)

24/09/2025

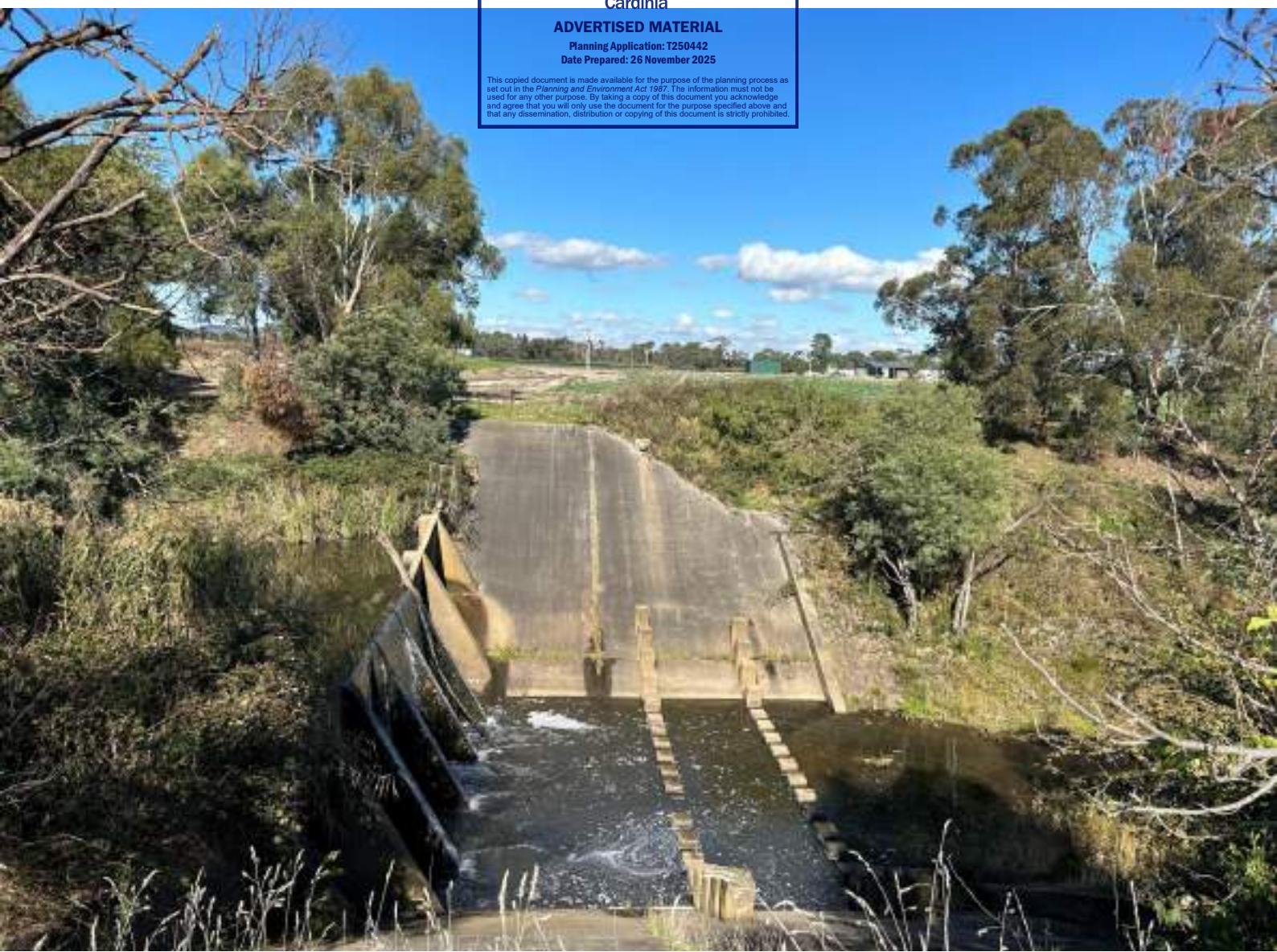
Lang Lang Fishway

Flora and Fauna Assessment

Melbourne Water Corporation

07 November 2025

→ The Power of Commitment



Project name	Lang Lang River Fishway - Design Review and Tender Assistance
Document title	Lang Lang Fishway | Flora and Fauna Assessment
Project number	12637984
File name	12637984_REP_Lang Lang Fishway_Flora Fauna Assessment.docx

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0						12/07/2024
S4	1						28/08/2024
S4	2						30/06/2025
S4	3						07/07/2025
S4	4						23/07/2025
S4	5						7/11/25

GHD Pty Ltd | ABN 39 008 488 373
180 Lonsdale Street, Level 9
Melbourne, Victoria 3000, Australia
T +61 3 8687 8000 | **F** +61 3 8732 7046 | **E** melmail@ghd.com | **ghd.com**

Executive summary

Melbourne Water Corporation (Melbourne Water) is proposing to retrofit the Lang Lang Weir with a Fish Lock, to allow fish passage along Lang Lang River, upstream of the weir.

GHD was originally engaged by Melbourne Water in 2018 to create the detailed design plans of the Fish Lock, however it was not able to be built at the time. In 2024, GHD was again engaged to update the design plans to meet current requirements and standards.

The purpose of this report is to update Melbourne Water on the current ecological values and potential impacts associated with the project, as well as providing advice to avoid and minimise impacts on native vegetation.

Summary of findings

- The study site is comprised of remnant patches of Swampy Woodland (EVC 937) of varying quality. 0.17 hectares of native vegetation across one habitat zone is proposed to be impacted by the works. This is comprised of 0.123 hectares of impacted native vegetation and 0.047 hectares of potentially impacted native vegetation.
- The retention of potentially impacted native vegetation will be determined by the successful contractor post-award. Therefore, both impacted and potentially impacted native vegetation have been considered in the Native Vegetation Removal Report and offset calculations. If potentially impacted native vegetation can be retained, this should be reconciled post-works by an accredited native vegetation assessor.
- No communities listed under the EPBC Act or FFG Act were identified within the study site.
- No flora species listed as threatened under the EPBC Act or the FFG Act were observed during the site assessment.
- Three protected flora species were recorded within the study site, one within the proposed footprint. These three species are listed as restricted use. A FFG permit is not required for incidental take of protected flora listed as restricted use (RU) as long as reasonable care is taken to not impact the taxon.
- Five weed species listed under the CaLP Act were recorded within the study site and will require management during and after construction.
- Five fauna species listed as threatened under the EPBC Act may occur within or near the study site.
- Four fauna species listed as migratory under the EPBC Act are considered likely to be rare visitors to the study site.
- One FFG Act-listed fauna species, Platypus (*Ornithorhynchus anatinus*), is known to occur within the study site.
- Four additional FFG Act-listed fauna species are considered as possibly occurring within or near the study site.

The following next steps are recommended for this project:

- Consider the two application pathways outlined in this report for the removal of native vegetation. Melbourne Water may either:
  - Seek endorsement for the removal of 0.17 hectares of native vegetation from DEECA under the *Conservation Works Exemption;* **OR**
  - Seek endorsement for the removal of 0.17 hectares of native vegetation from DEECA under the Procedure to rely on the utility installation exemption in planning schemes – Water service Providers (DELWP 2019). A total of 0.053 general habitat units (GHU) are triggered for this project with a minimum strategic biodiversity value score of 0.3464. These offsets must be sourced from within Port Phillip and Westernport (Melbourne Water) CMA or Cardinia Shire Council.
- Confirmation from Port Phillip and Western Port CMA of the requirement for a Works on Waterway (WoW) permit.

– Prior to the works commencing, it is recommended that a Construction Environmental Management Plan (CEMP) is developed and implemented, by the successful contractor, for the project to document measures required to avoid and minimise impacts on ecological values.
– Include revegetation plans within the CEMP to restore vegetation and Southern Brown Bandicoot habitat along the northern bank of Lang Lang River.

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Appendices

Appendix G Evaluation of Fish Lock Construction and Operation with Respect to Significant Impact Criteria for Australian Grayling and Dwarf Galaxias

1. Introduction

1.1 Background

Melbourne Water Corporation (Melbourne Water) is proposing to retrofit the Lang Lang Weir with a Fish Lock, to allow fish passage along Lang Lang River upstream of the weir.

GHD was originally engaged by Melbourne Water in 2018 to create the detailed design plans of the Fish Lock, although it was not built at the time. In 2024, GHD was again engaged to update the design plans to meet current requirements and standards.

1.2 Purpose

The purpose of this report is to provide Melbourne Water with an updated understanding of the ecological values and potential impacts associated with the project, as well as providing advice to avoid and minimise impacts on native vegetation.

1.3 Scope

The scope of the ecological assessment involved a desktop assessment and a site assessment.

The desktop assessment involved reviewing the following databases and spatial resources:

- The Victorian Biodiversity Atlas (VBA) for flora and fauna recorded within a 10 km buffer of the site (VBA, curated by Department of Energy, Environment and Climate Action, DEECA)
- The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool (PMST), which predicts the occurrence of Matters of National Environmental Significance (10 km buffer of the site)
- NatureKit Maps – which provide modelled mapping of extant and pre-1750 Ecological Vegetation Classes (EVCs) (maintained by DEECA)
- NVIM Maps – which provide Location mapping, the Current Wetland Layer, the Strategic Biodiversity Score and the Native Vegetation Condition Score for the project area (maintained by DEECA)
- Aerial imagery of the study area and study site to identify ecological values and land use history

The site assessment was undertaken to:

- Map the extent and condition of native vegetation present
- Undertake a Vegetation Quality Assessment (VQA) using the Habitat-hectare (Habha) assessment method
- Map and measure all Patch Trees that meet the benchmark for Large Trees
- Map and measure all native Scattered Trees and assign size class (small or large)
- Identify the presence of significant weed species including those declared under relevant State and national legislation, policy or strategy, e.g. *Catchment and Land Protection Act 1994* (CALP Act) and National Weeds Strategy
- Record the location of any threatened or protected species or communities
- Collect an inventory of incidental observations of native and non-native flora and fauna species encountered during the field assessment
- Collect general site data and photographs

1.4 Study site and study area

The **study site** refers to the area that would be impacted by the proposed works (see Section 5.1) and includes the area immediately surrounding and within the existing Lang Lang Weir (Figure 1) superstructure, and river banks.

The study site is located within Lang Lang River, approximately 76 kilometres south-east of Melbourne CBD.

The study site is located on the land of the Bunurong people of the Kulin Nation, as well as within the Cardinia Shire Council area, Port Phillip and Westernport Catchment Management Authority (PPWCMA) area and the Gippsland Plain Bioregion.

The term **study area** refers to a broader region surrounding the study site which includes areas that are outside the proposed impact area. The study area for this assessment includes all land and waterways within 10 km of the study site. This description covers a much broader area than the area identified for assessment, and the additional information captured has been used to provide context to assess the significance of ecological features identified within the study site (for example, whether they are part of a larger area, or whether there could be potential impacts on ecological features outside the study site). The broader study area was only assessed at a desktop level.

Paper Size ISO A4
0 50 100 150
Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Melbourne Water Corporation
Lang Lang Creek Fishway -
Design Review and Tender Assistance

Study site

Project No. 12637984
Revision No. 0
Date 7/11/2025

FIGURE 1

1.5 Limitations

This report has been prepared by GHD Pty Ltd (GHD) for Melbourne Water Corporation (Melbourne Water) and may only be used and relied on by Melbourne Water for the purpose agreed between GHD and Melbourne Water as set out in Section 1.3 of this report.

GHD otherwise disclaims responsibility to any person other than Melbourne Water arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report:

- *Were limited to those specifically detailed in the report and are subject to the scope limitations stated in this section and also set out in the report.*
- *The field assessment was limited to vascular plant species (ferns, conifers and flowering plants) and terrestrial vertebrate fauna. The field assessment did not consider aquatic or marine fauna (including marine mammals, birds, reptiles or invertebrates). Aquatic fauna were considered at a desktop level only.*
- *The field assessment was undertaken in May, which is not the optimal survey period for many species (e.g. grasses, ephemeral wetland plants). However, given the degraded nature of the vegetation within the study site, this limitation did not impact the results of the ecological assessment.*
- *The field assessment did not include any non-vascular flora (e.g. mosses, liverworts, lichens), fungi, or terrestrial invertebrates, except where listed threatened species are known or are suspected to occur or where bryophytes comprise part of the EVC benchmark used for the habitat hectare assessment (e.g. cover of Bryophytes).*
- *Did not involve detailed assessments (including VQA or mapping large canopy trees) along existing access tracks or in other locations where impacts to native vegetation have not been proposed.*
- *For the purposes of a planning permit to remove native vegetation, the site assessment report must be current. This generally means the site assessment must have been completed within the last three years for grassy, heathland, shrubland ecosystems including grassy woodlands, and five years for forest ecosystems. If the assessment is older than this, an accredited native vegetation assessor must verify the condition, and if the score is no longer accurate, complete a new assessment (DELWP 2018).*
- *Involved the use of Collector, an ArcGIS mapping application, to record site information. This mapping tool was accurate to within ten metres on site.*
- *Did not involve any targeted surveys for threatened flora or fauna, although did include identification of flora that were fertile and/or flowering at the time of the field investigations. It was beyond the scope of this assessment to employ more detailed flora and fauna survey techniques.*
- *Did not include a detailed assessment of planning implications with relation to legislation outside of those considered from an ecological perspective. A detailed assessment of planning overlays (and other sources of legislative information) has not been undertaken as part of this project unless otherwise discussed.*

The opinions, conclusions and any recommendations in this report are based on conditions encountered, observations and information reviewed up to the date of preparation of the report. As GHD was only present on specific dates and certain time periods, this report is only indicative (and not definitive) of flora and fauna present on the site. Flora and fauna (whether in type or quantity) can also change and fluctuate at different times throughout the year (due to factors including seasonal changes, external events or third-party intervention), and it is generally not possible to observe such changes or fluctuations where only a discrete site visit has taken place. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

GHD has prepared this report on the basis of information provided by Melbourne Water and others (including Government authorities). GHD has not independently verified or checked this information beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD and described within this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Methods

2.1 Desktop review and data sources

A desktop assessment of ecological values known or predicted to be present within the study area (10 km buffer around the study site) was undertaken and included a review of the following government databases and spatial datasets:

- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (PMST) (maintained by the Department of Climate Change, Energy, the Environment and Water; DCCEEW)
- The Victorian Biodiversity Atlas (VBA), maintained by the Department of Energy, Environment and Climate Action (DEECA)
- NatureKit – maintained by DEECA
- Extant and pre-1750 Ecological Vegetation Classes (EVCs) mapped by DEECA
- Aerial imagery of the study site

2.2 Site assessment

An ecological site assessment of the study site was undertaken by a GHD botanist Rohan Khot and zoologist Zahlia Payne on 2 May 2024.

All flora fieldwork was undertaken in accordance with GHD's Permit to take Protected Flora under the *Flora and Fauna Guarantee Act 1988* (FFG Act; permit no. 10011043) and fauna fieldwork in accordance with scientific procedures fieldwork licence (SPFL20067 GHD Pty Ltd).

2.2.1 Flora and vegetation

The flora assessment involved the evaluation of remnant patches of native vegetation, non-native vegetation, and scattered trees in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017). The assessment included mapping the extent and condition of native vegetation within the study site, including:

- Defining and mapping the relevant EVCs
- Mapping and measuring all patch trees that meet the benchmark to be considered large trees
- Recording the location of threatened and/or protected flora
- Recording the location of any listed ecological communities
- Compiling an inventory of native and non-native flora, together with their conservation status and origin
- Identifying significant weed species including those declared under relevant state and national legislation, policy or strategy, e.g. *Catchment and Land Protection Act 1994* (CaLP Act) and the national weeds strategy

2.2.2 Fauna

The fauna site assessment involved:

- An appraisal of the main terrestrial fauna habitat types and their condition
- A preliminary assessment of the likelihood of conservation significant fauna species occurring within the study site
- Consideration of potential project impacts on conservation significant fauna species and other native fauna

2.3 Nomenclature and conservation status

2.3.1 Flora

Common and scientific names for plants follow the Victorian Biodiversity Atlas (VBA) (Version 3.2.8).

Conservation status was determined in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act).

2.3.2 Native vegetation

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'. For the purpose of the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017), native vegetation is classified into two categories, a **Patch** of vegetation or a **Scattered tree**:

- A **Patch** of native vegetation is either:
  - An area of native vegetation where at least 25% of the total perennial understorey plant cover is native
  - Any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy
  - Any mapped wetland included in the Current wetlands map (available on DEECA online mapping tools)
- A **Scattered tree** is a native canopy tree that does not form part of a patch

Other forms of vegetation include:

- **Planted native vegetation**, i.e. includes non-indigenous native species and areas of revegetation
- **Scattered native plants**, i.e. patches of vegetation dominated by introduced species where less than 25% of the total perennial understorey plant cover is native
- **Non-native vegetation**, i.e. vegetation that comprises entirely introduced flora

2.3.3 Vegetation communities

Native vegetation in Victoria is mapped in units known as ecological vegetation classes (EVCs). EVCs are described according to a combination of floristic, life form, and ecological characteristics, and through an inferred fidelity to particular environmental attributes.

Each EVC occurs under a common regime of ecological processes within a given biogeographic range and may contain multiple floristic communities.

Other vegetation types that may occur in Victoria include vegetation communities listed as threatened under the EPBC Act and/or the FFG Act. These have separate vegetation classification systems, each of which is also separate to the EVC classification system. As such, any single patch of native vegetation occurring within the subject site (or anywhere in Victoria) will be classifiable as a particular EVC and may also be separately classified as a different threatened ecological community under the EPBC Act, and/or as another vegetation community under the FFG Act.

2.3.4 FFG Act – Protected flora

Protected flora under the *FFG Act 1988* include:

1. Plant taxa (species, subspecies or varieties) listed as threatened under the FFG Act
2. Plant taxa belonging to communities listed as threatened under the FFG Act
3. Plant taxa that are declared protected by the Minister. These are taxa which are not threatened but require protection for other reasons.

There are two different categories for declared protected flora: generally protected flora (GP) and restricted use protected flora (RU; DEECA 2024b).

'Generally protected flora' refers to all other protected flora that are impacted by take for all other reasons (e.g., development, infrastructure maintenance works, etc.) and can include those species at risk of both commercial/personal take and incidental take.

'Restricted use protected flora' are those flora that are exclusively impacted by take for commercial or personal use (e.g., not at risk from other activities). Take for other reasons (e.g., incidental take for track maintenance etc.) is not restricted as long as reasonable care is taken not to impact the taxon.

Incidental take is where plants are taken to make space for something else – for example, clearing for the construction or maintenance of a building, road, or pipeline; clearing for grazing or cropping; or clearing to construct bushfire fuel break. Any take where the intent is not to obtain a specimen of the plant, but to simply remove it, is incidental take. Incidental take would apply to this Project.

Table 1 specifies when a permit is required or not required for removal of protected flora.

Table 1 Scenarios when a permit is required to remove protected flora

	Generally protected	Restricted use protected flora
Incidental take	Permit required	No permit required
Take for sale	Permit required	Permit required
Take for personal use	Permit required	Permit required

2.3.5 Fauna and fauna communities

Unless otherwise noted, common and scientific names for fauna follow the VBA database (Version 3.2.8).

The conservation significance of fauna was determined in accordance with the EPBC Act (threatened, migratory and marine species) and the Victorian FFG Act (threatened species).

The EPBC Act and the FFG Act list a number of threatened fauna communities, at a national or state level, respectively. Fauna communities known or potentially occurring within the study area are only considered if they are listed under either of these Acts.

2.3.6 Weeds

The loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants is a listed key threatening process under the EPBC Act. In addition, *Invasion of native vegetation by 'environmental weeds'*, is a listed potentially threatening process under the FFG Act.

During the field survey, a list of all flora species observed within the study site was generated. This list includes environmental weeds, noxious weeds listed under the *Catchment and Land Protection Act 1994* (CaLP Act), and Weeds of National Significance (WoNS). All such weed species are listed in Appendix A.

3. Ecological values – flora

3.1 Vegetation communities and condition

3.1.1 Ecological Vegetation Classes

Remnant native vegetation in the study area has been mapped by DEECA at a scale of 1:25,000. The 2005 EVC mapping indicates one EVC is modelled to potentially occur within the study site: Swampy Woodland (EVC 937).

During the field assessment, one EVC was identified in the study site:

1. **Swampy Woodland (EVC 937), listed as Endangered in the Gippsland Plain Bioregion**. Within this bioregion, this EVC usually consists of a grassy understory in association with an open *Eucalyptus* woodland with a maximum height of approximately 15 m (DEECA 2024). Multiple patches of varying quality, comprising two Habitat zones of this EVC were observed within the study site.

Habitat zones and EVCs are described in Table 2.

Table 2 Habitat zones identified during the field assessment

Vegetation type	Description	Characteristic Photograph
Habitat Zone 1 **Swampy Woodland (EVC 937)** Bioregional Conservation Status: **Endangered** in the Gippsland Plain Bioregion.	This habitat zone is located on the banks of the waterway running through the site. It is significantly modified, with planted individuals interspersed through the remnant vegetation. The habitat zone contains a sub-canopy of *Acacia dealbata* (Silver Wattle). The midstory is dominated by native shrubs such as *Coprosma quadrifida* (Prickly Currant-bush), *Cassinia aculeata* (Common Cassinia), *Olearia argophylla* (Musk Daisy-bush), and *Goodenia ovata* (Hop Goodenia). The ground layer included scattered native grasses, such as *Microlaena stipoides* (Weeping Grass). Also present as an epiphyte in a large proportion of canopy trees is *Amyema pendula* (Drooping Mistletoe). Weed cover in this habitat zone is moderate (30 – 40%) and includes species such as the CaLP Listed *Crataegus monogyna* (Hawthorn) and *Cirsium vulgare* (Spear Thistle), as well as the CaLP and WoNS listed *Lycium ferocissimum* (African Boxthorn) and *Rubus anglocandicans* (Blackberry). Grassy weeds include *Dactylis glomerata* (Cocksfoot) and *Paspalum dilatatum* (Paspalum). Planted vegetation was generally 10-15m in height, and included a number of tree species such as *Eucalyptus sideroxylon* subsp. *sideroxylon* (Mugga, NFG Endangered), *Eucalyptus consideniana* (Yertchuk), *Eucalyptus camaldulensis* (River Red-Gum), and *Acacia melanoxylon* (Blackwood).	

Vegetation type	Description	Characteristic Photograph
Habitat Zone 2 **Swampy Woodland (EVC 937)** Bioregional Conservation Status: **Endangered** in the Gippsland Plain Bioregion.	This habitat zone is a small treeless patch of EVC 937 Swampy Woodland located along a drainage line through the paddock adjacent to the waterway. It is highly degraded and was not holding water at the time of the site assessment, so additional indigenous flora species may be observed at a more optimal survey time. Dominant indigenous flora species in this habitat zone include *Euchiton involucratus* (Star Cudweed), *Juncus* spp. (Rush, species level identification was limited by stock grazing), *Lythrum hyssopifolia* (Loosestrife), and *Rumex brownii* (Slender Dock). The cover of weeds is high (50 – 60% cover) throughout the habitat zone. The dominant introduced species include *Cirsium vulgare* (Spear Thistle), *Cynodon dactylon* (Couch), *Plantago lanceolata* (Ribwort Plantain), and *Erigeron bonariensis* (Flaxleaf Fleabane).	

Table 3 Results of vegetation quality assessment

VQA		HZ1	HZ2
Bioregion		Gippsland Plain	Gippsland Plain
EVC #		937	937
EVC Name		Swampy Woodland	Swampy Woodland
Bioregional Conservation Status		Endangered	Endangered
		Score	
Site condition	Large Trees	0	0
	Tree Canopy Cover	2	0
	Lack of Weeds	4	4
	Understory	15	5
	Recruitment	3	4
	Organic Litter	3	0
	Logs	0	NA
	Standardiser	1.0	1.36
	Total Site Score	27	9
Landscape value	Patch Size	2	1
	Neighbourhood	0	0
	Distance to Core	0	0
Habitat Score		**29**	**10**
Habitat points = #/100		**0.29**	**0.10**

3.1.2 Threatened communities

The PMST predicted that the following two EPBC Act-listed threatened ecological communities may or are likely to occur within the study area:

– *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (Critically Endangered)

– *Natural Damp Grassland of the Victorian Coastal Plains* (Critically Endangered)

Neither of these EPBC Act-listed communities, or any associated FFG Act-listed communities, were identified during the study site. No other threatened flora communities are considered as having the potential to be present or impacted by the proposed works.

Paper Size ISO A4

0 20 40 60 80 100 120

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

Melbourne Water Corporation
Lang Lang Creek Fishway -
Design Review and Tender Assistance

Project No. 12637984
Revision No. 0
Date 7/11/2025

Ecological values

FIGURE 2

Data source: VicMap: DEECA 2024; MW 2024; EcologyData, GHD 2024. Nearmap NMS Server. Created by: fgarden

3.2 Flora species

The VBA and PMST have records of 793 flora species from within the study area (10 km radius of the study site). These records include 569 native species, 198 introduced species, and 26 native but non-indigenous to the area. During the field assessment, 51 flora species were identified, including 24 native species, and 27 introduced species (Appendix A).

3.2.1 Threatened flora

The VBA and PMST searches undertaken by GHD identified 23 threatened flora species previously recorded or predicted to occur within 10 km of the study site. Of the threatened flora species known or predicted to occur within 10 km of the study site, nine species are listed under the FFG Act, 15 species are listed under the EPBC Act, with one species listed under both the FFG and EPBC acts. The likelihood of occurrence was assessed for all the listed threatened flora species recorded in the desktop assessment Appendix B.

One native flora species listed as endangered under the FFG Act (*Eucalyptus sideroxylon* subsp. *sideroxylon*) was identified during the site assessment. This species was planted in this location by the landowners of the adjacent property and is non-indigenous to the area and the EVC 937 Swampy Woodland. As a result, it is not considered protected in this context. No other threatened flora species were identified during the site assessment.

It is outside the scope of this assessment to conduct targeted surveys for threatened flora species within the study site. It is considered unlikely that other threatened species may be present within the study site (Appendix B).

3.2.2 Protected flora (FFG Act)

Three protected flora species were recorded within the study site (see Appendix A). These three species are listed as restricted use. A FFG permit is not required for incidental take of protected flora listed as restricted use (RU) as long as reasonable care is taken to not impact the taxon (Table 1).

3.2.3 Noxious weeds

Five species listed as noxious weeds under the *Catchment and Land Protection Act 1994* (CaLP Act) in the port Philip and Westernport (Melbourne Water) CMA region was recorded in the study site. Of these species, *Lycium ferocissimum* (African Boxthorn) and *Rubus anglocandicans* (Blackberry) are also listed as a weed of national significance (WoNS).

Table 4 Noxious weeds observed at the study site

Scientific Name	Common Name	Listing
Cirsium vulgare	Spear Thistle	Regionally Controlled (C)
Crataegus monogyna	Hawthorn	Regionally Controlled (C)
Lycium ferocissimum	African Boxthorn	Regionally Controlled (C), WoNS
Oxalis pes-caprae	Soursob	Restricted (R)
Rubus anglocandicans	Blackberry	Regionally Controlled (C), WoNS

4. Ecological values – fauna

A total of 354 terrestrial fauna species (328 native and 26 non-native) have been recorded or are predicted to occur within the study area (i.e., a 10 km radius of the study site) (VBA and PMST). Of these native species, 53 are considered to be threatened and are listed under one or both of the EPBC Act (42) and/or the FFG Act (48), and 16 species are categorised as migratory under the EPBC Act.

In addition, 37 species of aquatic fauna (28 native and nine introduced) have been recorded or are predicted to occur within the study area (i.e., a 10 km radius of the study site) (VBA). Of these native species, three are threatened and are listed under one or both of the EPBC Act and/or the FFG Act.

Only some of these species are expected to occur within the study site. Fauna habitat and fauna species and communities are discussed further in sections below.

4.1 Fauna habitat

The study site comprises the waterway and banks of Lang Lang River, a tributary of Lang Lang River, located within a highly disturbed agricultural landscape.

The northern creek bank and access road has been revegetated with both indigenous and non-indigenous native plants over the 40 years.

Fauna habitat present within the study site includes the creek, and riparian vegetation and woodland habitat on the banks of the creek. Limited fauna habitat is also present as grassland within the highly disturbed paddock adjacent to the creek.

These habitat types are discussed further below.

Woodland

Areas of woodland habitat are present along the banks of Lang Lang River (Figure 2). This habitat is characterised by predominantly planted canopy trees (Plate 1). Most areas were characterised by a sparse shrub mid-storey of Acacia species and disturbed understorey of both native and non-native shrubs and grasses. Large infestations of Blackberry were common throughout the study site.

Stags of various sizes were also present along the northern bank of Lang Lang River (Plate 2).

Woodland habitat is expected to provide habitat for common and adaptable birds and mammals. When flowering, the trees and shrubs likely provide foraging habitat for common bird species, such as Rainbow Lorikeet (*Trichoglossus haematodus*) and New Holland Honeyeater (*Phylidonyris novaehollandiae).* Threatened fauna, including Grey-headed Flying-fox (*Pteropus poliocephalus)* and Gang-gang Cockatoo (*Callocephalon fimbriatum)*, may also occasionally forage within the study site.

Plate 1 Woodland habitat north of Lang Lang River

Plate 2 Woodland habitat north of Lang Lang River

Waterbodies (Creek, drainage line)

The Lang Lang River weir is located on the Lang Lang River and under current conditions the weir creates an impassable barrier for fish. The existing weir is fixed crest concrete weir, constructed in 1976 with no gating or operational needs. Water fills behind the weir and then cascades down the weir face. The weir has led to the creation of a large, deep (>5 m) weir pool upstream from the barrier that has led to relatively stable hydraulic conditions upstream from the weir. The lower reaches of the Lang Lang River, where the weir is located, has been historically modified to decrease the risk of flooding and as such it is now contained within steep banks of approximately 10 m height. Downstream of the weir, fast flow conditions are created as the weir over-tops but at the time of the site visit low flow conditions were occurring (Plate 4). The weir pool is fringed by emergent aquatic rushes and reeds (*Juncus sp*. and *Phragmites australis*) but its depth prevents the growth of macrophytes in the main channel (Plate 3).

The waterway may support some Dwarf Galaxias (*Galaxiella pusilla*) along banks where habitat is suitable and Australian Grayling (*Prototroctes maraena*) are recorded downstream of the weir. The steep profile of the banks may be suitable habitat for Platypus (*Ornithorhynchus anatinus*) as this is favourable for establishing burrows.

Some shallow water occurred along the northern margins of creek, which may provide foraging habitat for common waterbirds, such as the White-faced Heron (*Egretta novaehollandiae*).

In the paddock north of Lang Lang River, a drainage line courses from a wetland area to the west, outside of the study site. The drainage line was dry at the time of assessment, however, may provide suitable habitat for fauna during periods of inundation. Species that may forage within this area include common bird species, such as Straw-necked Ibis (*Threskiornis spinicollis*) and threatened bird species, such as Latham's Snipe (*Gallinago hardwickii*).

Plate 3 Lang Lang River, east of weir

Plate 4 Lang Lang River, west of weir

Grassland

Areas of grassland are present within the study site along the access track (Plate 5) and within the paddock north of Lang Lang River (Plate 6).

The dense grass along the fence, south of the paddock, may provide some dispersal habitat for small mammals, including the threatened Southern Brown Bandicoot (*Isoodon obesulus obesulus*), within the predominantly cleared and disturbed surrounding area.

The paddock and access track were mostly comprised of non-native grass species and were highly disturbed from regular slashing in the access track and grazing by horses and livestock. Crayfish burrows were present throughout the study site area within the paddock (Plate 7 and Plate 8). Common (i.e., non-threatened) burrowing crayfish species, including Granular Burrowing Crayfish (*Engaeus cunicularius*) and Richard's Burrowing Crayfish (*Engaeus laevis*), have been recorded in the VBA within the study area.

Plate 5 Dense grassland habitat along fence line

Plate 6 Grazed grassland within paddock

Plate 7 Crayfish burrow within paddock

Plate 8 Crayfish burrow within paddock

4.2 Threatened fauna

The desktop assessment identified 53 species that are listed as threatened under state and/or federal legislation and that could potentially occur within the study site. Of those, 42 are listed as threatened under the EPBC Act and 48 are listed as threatened under the FFG Act.

An account of all threatened species, with a likelihood of occurrence evaluation, is provided in Appendix C. Ten species are considered more likely than the others to use habitats within the study site at least occasionally and are presented within Table 5.

Table 5 Threatened fauna species that may occur within the study area

Common name	Scientific Name	EPBC	FFG	Areas of Potential habitat
Mammals				
Grey-headed Flying-fox	*Pteropus poliocephalus*	VU	vu	Foraging habitat within woodland and planted vegetation
Platypus	*Ornithorhynchus anatinus*		vu	Lang Lang River
Southern Brown Bandicoot	*Isoodon obesulus obesulus*	EN	en	Woodland vegetation with dense ground and shrub cover
Birds				
Eastern Great Egret	*Ardea alba modesta*		vu	Limited foraging habitat along creek margins and within paddock when inundated
Gang-gang Cockatoo	*Callocephalon fimbriatum*	EN	en	Foraging habitat within woodland and planted vegetation
Hardhead	*Aythya australis*		vu	May forage within Lang Lang River and roost on adjacent banks
Latham's Snipe	*Gallinago hardwickii*	VU		Limited foraging habitat along creek margins and within paddock when inundated
Little Egret	*Egretta garzetta nigripes*		en	Limited foraging habitat along creek margins and within paddock when inundated
Musk Duck	*Biziura lobata*		vu	May occasionally forage within Lang Lang River and roost on adjacent banks
White-throated Needletail	*Hirundapus caudacutus*	VU	vu	May occasionally occur within the airspace above the study site

4.3 Migratory species

Of the fauna identified for the project, 16 species of native birds are listed as migratory under the EPBC Act. Four of the species (Latham's Snipe; Satin Flycatcher, *Myiagra cyanoleuca*; Rufous Fantail, *Rhipidura rufifrons*) are considered more likely than the others to occur within the study site. Latham's Snipe was considered above in Section 4.2, and is not discussed further.

Both Satin Flycatcher and Rufous Fantail may rarely visit the study site, however, are not expected to regularly visit the habitat within the study site.

The remaining 13 migratory listed species are predominantly shorebird species and there is no suitable habitat for them due to the generally steep creek banks and higher water levels of Lang Lang River. Most of the species considered favour shallow waters for foraging, which are limited to areas downstream of the weir, outside of the study site. Shorebird species are regularly recorded within coastal areas of Western Port Bay.

Therefore, the study site is unlikely to support important habitat or an ecologically significant proportion of a migratory species population.

4.4 Fauna communities

There are no threatened fauna communities predicted to occur within the study site.

4.5 Wetlands

4.5.1 Wetlands of International Significance

The PMST identified one wetland of international significance (Ramsar sites) in the vicinity of the study site: Western Port (Table 6).

Table 6 Ramsar wetlands identified by PMST

Ramsar Site Name	Proximity
Western Port	Within 10 km of the study site

According to the Significant Impact Guidelines (DoE 2013), an action is likely to have a significant impact on the ecological character of a declared Ramsar wetland if there is a real chance or possibility that it will result in:

– Areas of the wetland being destroyed or substantially modified
– A substantial and measurable change in the hydrological regime of the wetland, for example, a substantial change to the volume, timing, duration and frequency of ground and surface water flows to and within the wetland
– The habitat or lifecycle of native species, including invertebrate fauna and fish species, dependent upon the wetland being seriously affected
– A substantial and measurable change in the water quality of the wetland – for example, a substantial change in the level of salinity, pollutants, or nutrients in the wetland, or water temperature which may adversely impact on biodiversity, ecological integrity, social amenity or human health, or
– An invasive species that is harmful to the ecological character of the wetland being established (or an existing
– Invasive species being spread) in the wetland

The proposed upgrade works to the existing regulator are unlikely to impact upon the wider Western Port Ramsar site, as the study site is already highly modified, and water levels have been regulated since the construction of the weir.

Additionally, the upgrade to the existing weir will likely contribute to the ongoing ecological restoration of Lang Lang River, particularly with allowing the dispersal of fish species.

4.5.2 Current Wetlands

There are no wetlands mapped under the Current Wetlands layer in or adjacent to the study site. Therefore, the proposed works are not expected to directly or indirectly impact any areas mapped as a current wetland by DEECA.

5. Measures to avoid and minimise impacts to native vegetation

5.1 Proposed works

Melbourne water proposes to upgrade the existing Lang Lang River weir to allow for the dispersal of fish species migrating upstream (Plate 9). These works will involve upgrading three panels in the pre-existing weir. One panel will be replaced with a new notched panel, behind which the new fish lock will be situated. The second and third panels will be replaced with a minor changed height arrangement, which will divert water into an overflow area rather than into the Fish Entrance Area, preserving the function of the fish lock and providing adjustment for minor afflux compensation. The fish lock itself will be contained within the existing downstream apron of the weir, although the electrical control panel and access infrastructure extend up to the top of banks of the creek but are contained within the crown land parcel (refer to image).

In order to complete these works Melbourne Water will need to access the existing weir and areas for vehicle turnaround and laydown. As a temporary arrangement, the adjacent paddock is likely to be converted for a site laydown area, in part only.

Plate 9 Existing regulator at time of assessment, May 2024

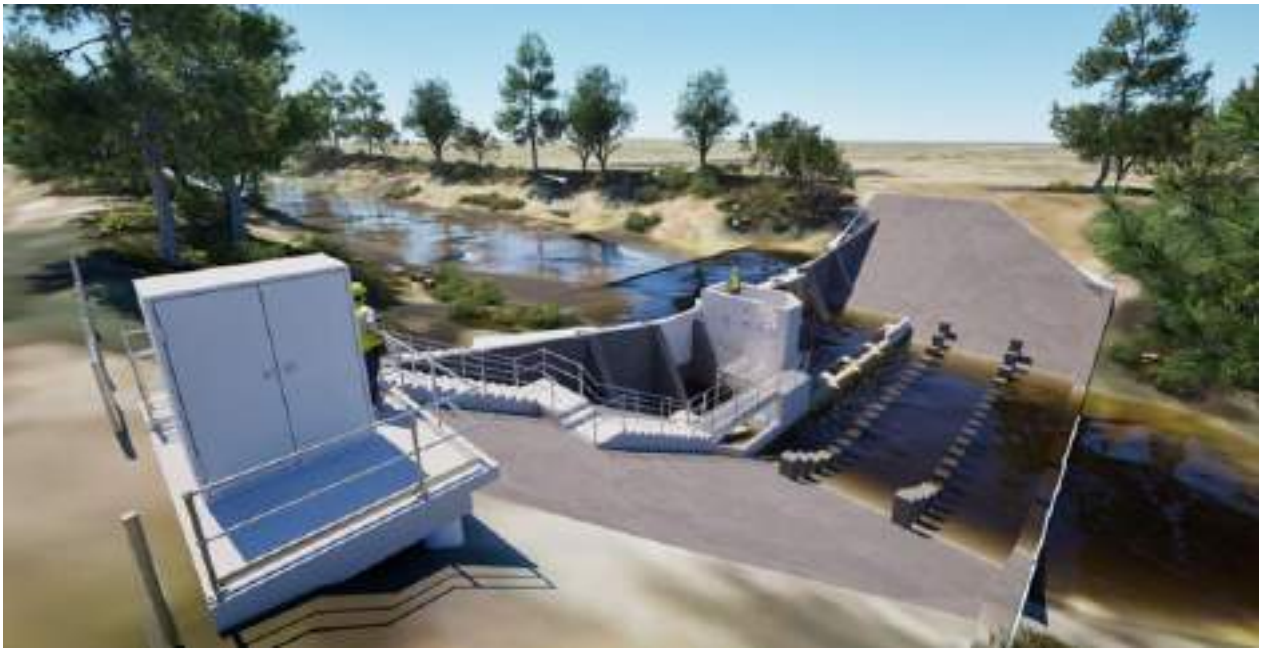

Figure 3 Visualisation of the proposed Lang Lang Fish Lock

5.2 Avoidance and minimisation of impacts

5.2.1 Avoidance

Melbourne Water has taken a number of measures to avoid impacts on native vegetation where practicable. Due to the nature of the works (upgrading a specific piece of water utility equipment), site level avoidance measures are not possible for this project. However, within the site a number of steps have been taken to avoid impacts where practicable. These steps include:

– Accessing the fish lock through the previously disturbed property on the northern side of the waterway. This area is currently used for agricultural purposes (stock and horse grazing) and as a result does not contain much native vegetation.
– The access road immediately adjacent to the waterway will be used for day-to-day use which may require tree trimming, which Melbourne Water currently perform as part of track maintenance. An access route through the farm property will also be used for larger plant and materials. This access track is larger but will require the removal/lopping of native vegetation in order to facilitate access by heavy machinery.
– GHD has worked with Melbourne Water to refine the works footprint. These alterations included removing the coffers from the weir design and incorporating construability advice which reduced impacts on native vegetation from 0.425 hectares to 0.17 hectares.
– Of the 0.17 hectares of impacted native vegetation, 0.047 hectares will potentially be retained which is to be determined by the successful contractor post-award.

5.2.2 Mitigation and minimisation

Prior to the works commencing, it is recommended that a Construction Environmental Management Plan (CEMP) is developed and implemented for the project to further avoid and minimise impacts on ecological values. The CEMP should include provisions relevant to protecting the ecological values identified within the study site. Measures to avoid or minimise impacts on ecological values that are recommended for inclusion in the CEMP are listed below:

– Implement measures, such as temporary 'No Go Zones' to protect native vegetation to be retained. No Go Zones should be clearly delineated so that construction workers are able to avoid any accidental damage to native vegetation during construction, beyond the approved project footprint.
– Implement the use of sediment control devices such as silt traps and sediment fencing during the construction period. Measures to prevent contaminants (e.g. oils, chemicals) from entering aquatic habitat or waterways as the results of accidental spills should also be included.
– Based on our understanding of the proposed works, dewatering will be conducted across approximately three weeks during summer, avoiding works during Platypus breeding season (August to September).
– Works during Platypus nesting season (September to February) will avoid disturbing river banks as heavy machinery can impact platypus burrows if they are present.
– It is understood that the water level would be drawn down for approximately three weeks in summer during which precast panels will be installed. Ensuring water levels aren't completely depleted in the weir pool during this period is necessary to secure access to habitat for Platypus and reduce the possibility of bank erosion.
– Water levels do not usually drop below one metre during summer in this section of the Lang Lang River and should ideally be kept at this level. Water quality monitoring with a focus on dissolved oxygen (the parameters of which are to be determined by a suitably qualified ecologist) is recommended to observe if lowering the water level is having an impact on macroinvertebrate fauna which Platypus prey on.
– Any in-water works that can impact water quality, flow levels or aquatic habitat conducted during Dwarf Galaxias spawning season (May to September) should be avoided if possible.
– Incorporate weed, disease, and pest control measures to prevent the spread of existing and/or the introduction of new weeds, diseases, or pests to the site, discussed further in Section 5.2.3.

5.2.3 Controlling the spread of noxious weeds

Five noxious weeds were identified within the study site, including two Weeds of National Significance (see section 3.1.2), which have the potential to spread during the construction stage impacting native vegetation and fauna habitat. There is also the potential for new noxious weeds to be introduced to the study site during the works. To avoid such impacts, the CEMP should include weed management strategies that will prevent the spread and introduction of noxious weeds and thus minimise impacts on ecological values. Under the *Catchment and Land Protection Act 1994*, concerted efforts must be taken to avoid spreading or introducing weeds into or out of the study site.

Works should be undertaken by an appropriately qualified person with the ability to accurately distinguish the relevant weed species from indigenous flora, in order to avoid impacting native species during control works.

Additionally, consideration for fauna species, i.e. frogs and/or other aquatic species, for any weed control in or near aquatic habitat, or areas of poor drainage. Manual removal is preferable, otherwise low-toxicity non-residual herbicides registered as suitable in watercourses (e.g. Roundup Bioactive®) may be appropriate for use in a targeted manner such as spot spraying.

Other measures to maintain weed control include washing down and inspecting vehicles, machinery, and boots before entering/leaving working areas to avoid transporting viable plant materials or large clods of soil.

5.3 Residual impacts on ecological values

5.3.1 Impacts on native vegetation

Despite the avoidance and minimisation measures discussed in Section 5.2, 0.123 hectares of native vegetation will be impacted by the proposed works (which includes, access routes, laydown areas, and the weir site). An additional 0.047 hectares of native vegetation may potentially be impacted by the proposed works. The retention of this vegetation will be determined by the successful contractor post-award.

All of these impacts will occur in EVC 937 Swampy Woodland. Offsets are calculated within the Native Vegetation Removal Report (NVRR) (Appendix E). Both impacted and potentially impacted native vegetation have been considered for the Native Vegetation Removal Report and offset calculations. If potentially impacted native vegetation can be retained, the offset obligations should be reconciled post-works by an accredited native vegetation assessor.

Melbourne Water have an 'in house' offset bank and are proposing to source offsets for the project from their own offset bank. The Vegetation Offset Availability Statement is included at Appendix F.

5.3.2 Impacts on threatened fauna

Threatened fauna species that utilise and depend on aquatic habitats may be impacted upon through decreased water quality and removal of habitat. The potential of impacts on these species and their habitats is discussed in further detail below.

As the study site primarily encompasses Lang Lang River and highly modified habitats, it is unlikely that threatened fauna species that are highly mobile (i.e. waterbirds and volant mammals) will be impacted upon by the proposed works. Therefore, these species are not considered further.

Platypus *Ornithorhynchus anatinus*

The Platypus lives in rivers, streams and lakes of eastern Australia. It constructs burrows into the banks of the waterways, generally with well-hidden entrances above water level.

This species has been recorded three times in the VBA database in the study area, most recently in 1998. Within the Atlas of Living Australia database, a record from 2022 is located within the study site (ALA 2024). This species likely occurs upstream of the existing weir, where the deeper water is more reliable and where suitable burrowing habitat is present along the creek banks.

Potential impacts on the Platypus include destruction of sections of the creek banks, decreased water quality from turbidity and sedimentation and removal of shelter and nesting habitat if the creek banks upstream of the weir are disturbed.

Southern Brown Bandicoot (*Isoodon obesulus obesulus*)

The Southern Brown Bandicoot is found along the coastal regions from New South Wales to South Australia. Within Victoria, the species has a disjunct distribution, with clustered records in several bioregions (TSSC 2016). The Southern Brown Bandicoot inhabits dense vegetation and is also known to occur within areas of exotic shrubby species, such as blackberry (*Rubus* spp.) (TSSC 2016). No critical habitat or important populations have been identified for this species.

The species has been recorded 153 times within the study area, with the last record in 2021.

The woodland habitat and dense grassland along the fence line within the study site may provide suitable habitat for this species. The species utilises dense, ground and mid-storey cover for shelter and to disperse to surrounding habitats (TSSC 2016). High vegetation cover and connectivity also reduces predation of the Southern Brown Bandicoot by pest vertebrate species, included Red Fox (*Vulpes vulpes*) (TSSC 2016).

Removal of habitat within the study site may reduce the dispersal ability of Southern Brown Bandicoot, however the small size of the construction footprint within suitable habitat (146 meters in length). This local fragmentation of habitat is expected to be temporary during construction of the fish lock. Revegetating the northern bank with plant species known to be habitat for Southern Brown Bandicoot is recommended post-construction to restore habitat connectivity along Lang Lang River.

Any impacts to this species are expected to be very minor - they are not expected to be important, notable, or of consequence, having regard to their context or intensity.

Australian Grayling *Prototroctes maraena*

The Australian Grayling is an amphidromous fish that migrates between fresh and salt water. Most of its life is spent in freshwater but adults undertake annual migrations downstream towards the upper limit of estuaries to spawn during autumn (April to June), before moving back upstream. Spawning is initiated by increased river flow and decreased water temperatures (DELWP 2015a). The Lang Lang River is not listed as an important population in the DELWP Action Statement (DELWP 2015a) but is listed as an important population under the Recovery Plan for the species (Backhouse et. al. 2008).

Within the Lang Lang River Australian Grayling are likely to have been historically abundant but the presence of the Lang Lang River weir has restricted passage for the species. Australian Grayling still inhabit the lower reaches of the river; recent records exist 1 km downstream from Lang Lang River weir. The construction and operation of the Lang Lang River fish lock will benefit this species by opening up the Lang Lang River for fish passage and thus provide significantly greater dispersal opportunities into the catchment. Under current conditions, it is unlikely that Australian Grayling inhabit the Lang Lang River upstream from the weir. The only way that fish can currently move upstream would be during significant (bankfull) flooding.

An EPBC Significant Impact assessment has been completed (Appendix G). The assessment indicates that the Project is unlikely to lead to significant adverse impacts to Australian Grayling, with the ultimate outcome being a positive impact, due to increased connectivity. See Appendix G for the significant impact criteria evaluation.

Dwarf Galaxias *Galaxiella pusilla*

Dwarf Galaxias are a mid-water, free swimming species with its entire life spent in freshwater (Saddlier et. al., 2010). Typically, they occur in slow flowing and still, shallow, permanent and temporary, freshwater habitats including swamps, drains and backwaters that often contain dense stands of aquatic macrophytes and emergent plants (Cadwallader & Backhouse, 1983).

Dwarf Galaxias are a short-lived species that probably has poor dispersal abilities (Saddlier et. al., 2010), reach sexual maturity in their first year, and likely die soon after spawning (Bray, 2016). Spawning occurs in late winter-spring with eggs usually attached on the underside of aquatic vegetation or on hard surfaces such as rock or timber (Saddlier et. al., 2010). However, Bray (2016) suggests that they can spawn all year round in suitable conditions. Larvae hatch after about two to three weeks and are around 4.5 mm long (Saddlier et. al., 2010).

The Lang Lang River population is considered an ‘important population’ (DELWP 2015b). Dwarf Galaxias have been found throughout the Lang Lang catchment - with a 2008 record approximately 2 km upstream from the Lang Lang River weir.

The weir pool itself does not provide preferred conditions for the species. The deep open-water pool, fringed by limited emergent aquatic vegetation, could temporarily support low abundances of the species (e.g. during flood conditions when the species may undertake longer movements), but Dwarf Galaxias prefer dense stands of aquatic macrophytes which the weir pool does not support.

Habitat directly downstream of the weir is unlikely to support the species, with a deep plunge pool that contains no suitable aquatic vegetation and turbulent conditions (when the weir is over-topping) that Dwarf Galaxias would be unable to tolerate. The farm dam and swampy pasture land adjacent to the Lang Lang River also has the potential to support this species but the likelihood is considered low. The dam contains minimal aquatic vegetation and is subject to detrimental impacts due to cattle access. The drainage channel running to and from the dam is likely to only contain water during wet periods. Its shallow profile, dominated by pasture grass, would not provide habitat for aquatic fauna. The drainage channels do not provide suitable passage to and from the Lang Lang River other than through bankfull flood events and as such, the farm dam is unlikely to support Dwarf Galaxias under current conditions. Therefore, any works conducted in this area are unlikely to have an impact on Dwarf Galaxias populations.

An EPBC Significant Impact assessment has been completed (Appendix G). The assessment indicates that the Project is unlikely to lead to significant adverse impacts to Dwarf Galaxias. See Appendix G for the significant impact criteria evaluation.

Paper Size ISO A4

0 20 40 60 80 100 120

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Melbourne Water Corporation
Lang Lang Creek Fishway -
Design Review and Tender Assistance

Project No. 12637984
Revision No. 0
Date 7/11/2025

Native vegetation impacts

FIGURE 4

Data source: VicMap, DEECA, DCA, NW 2024, EcologyData, GHD 2024. Basemap NAIS Server. . Created by: rgarden

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6. Native vegetation removal

6.1 Planning and Environment Act 1987

The *Planning and Environment Act 1987* provides for local planning schemes which set out the way land may be used or developed. Local planning schemes contain state and local planning policies, zones and overlays and other provisions.

Clause 52.17 (Native Vegetation) of local planning schemes is a statewide provision which requires a permit to remove, destroy or lop native vegetation, including dead native vegetation, unless an exemption applies which removes the permit requirement.

A permit may not be required when:

– The removal of native vegetation is the result of the continuation of a lawful existing use for the purposes of Section 6(3) of the *Planning and Environment Act 1987*
– There is an exemption to the requirement for a permit for the purposes of Clause 52.16 or 52.17 of the planning schemes
– The native vegetation is listed in a schedule to Clause 52.17 within the relevant planning scheme

6.2 Exemptions from requiring a permit relevant to this project

There are two exemptions to permit requirements that are relevant to this project. The details of each exemption, and the application procedures for each are described in Sections 6.2.1 and 6.2.2.

The Conservation Works Exemption (section 6.2.1) allows for the removal of native vegetation for the purpose of achieving conservation outcomes, without the requirement to obtain a planning permit or secure native vegetation offsets. To satisfy the criteria for this exemption, the project must demonstrate that associated losses to biodiversity from the removal of native vegetation are outweighed by the expected gains or improvements to biodiversity.

The *Utility installations* exemption (Water Services Providers) (section 6.2.2) states that a permit is not required for the lopping, removal, or destruction of native vegetation to the minimum extent required:

– To maintain the safe and efficient function of a Minor utility installation
– By or on behalf of a utility service provider to maintain or construct a utility installation in accordance with the written agreement of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the Conservation, Forests, and Lands Act 1987)

6.2.1 Conservation Works Exemption

The purpose of the upgrades to the Lang Lang River Fish Lock, as outlined in Section 5.1, is to allow for the passage of fish upstream of the weir, improving dispersal and breeding outcomes for threatened fish species such as the Australian Grayling. These positive impacts are discussed further in Section 5.3.2. These outcomes align with the stated objectives of the Conservation Works Exemption (DEECA 2021), specifically:

– Facilitating the dispersal and recolonisation of populations
– Restoration of wildlife habitat or populations

To utilise the Conservation Works Exemption, approval must be granted by the relevant DEECA office in the form of a written agreement to rely on the exemption. It should be noted that this exemption only applies to Clauses 52.16 and 52.17 of local planning schemes, and as a result the following may still apply:

– Permit requirements under planning scheme overlays
– Obligations under other pieces of legislation e.g. the *Flora and Fauna Guarantee Act 1988*

6.2.1.1 Application procedure and requirements

If Melbourne Water choose to pursue the Conservation Works Exemption for this project, the following steps must be undertaken before the project can proceed further. Applicants must:

1. Consult with the Gippsland Natural Environment Program (NEP) team and obtain principal support for the project.
2. Prepare an application to rely on the conservation works exemption and submit to the Native Vegetation Regulation team, outlining how the project meets the following criteria:

Table 7 Application criteria for the Conservation Works Exemption

Number	Criterion	Relation to the project
1	The primary objective of the removal of native vegetation must be for an overall improvement to biodiversity.	As outlined in Section 5.1, the primary function of the proposed works is to improve the dispersal of fish species along the Lang Lang River. The works will result in positive outcomes for aquatic fauna, including threatened species such as the Australian Grayling, which is known to be present near the site.
2	Native vegetation removal must be to the minimum extent necessary to achieve the proposed conservation objective(s). All feasible steps must be taken to avoid and minimise impacts to non-target vegetation when executing works	The avoidance and minimisation measures described in Section 5.2 outline how site-specific measures have been taken to avoid potential impacts to native vegetation. A CEMP plan that includes weed mitigation measures and delineated no-go will be developed to minimise additional damage to native vegetation.
3	A clear overall improvement in biodiversity must be demonstrated through a comparison assessment.	If Melbourne Water elects to pursue the CWE, a comparison assessment will be required. This assessment must include the following: – The size of the area being treated – A description of the vegetation within which the proposed works will occur (Section 3 of this report) – Species of native vegetation that will be impacted as well as their conservation status or classification as an environmental weed (Section 3.2) – Extent of native vegetation removal. In addition to the NVRR contained within Appendix E, the assessment will require a detailed description of native species being removed as well as their percentage cover or stems per hectare. – The total number of all large or hollow bearing trees that will be lost. As per the NVRR and Section 4.1 the proposed works will not impact any large or hollow-bearing trees. – Negative impacts to wildlife. These impacts are discussed in detail in Section 5.3.2.
4	A work plan must be provided which clearly outlines the proposed methodologies for removing native vegetation, which are based on sound ecological principles and/or standard treatment prescriptions. The work plan must cover the initial proposed action and any follow-up treatments required to maintain the conservation objective(s).	Mitigation measures, and the whole avoid and minimise approach, are expected to be written up in a Construction Environmental Management Plan (CEMP), to be implemented during the project. The contents of the CEMP are discussed further in Section 5.2.
5	If relevant, post treatment works must be described, including any monitoring activities aimed at evaluating project objectives and identifying any unintentional impacts on biodiversity values. Where required, a post-treatment plan must outline the triggers and scope of any follow-up actions involving native vegetation removal.	A post works plan will be required for the project. Such a plan should include: – Monitoring of the impacts of the fish lock on native aquatic fauna – Remediation and subsequent monitoring of native vegetation after construction, such as replanting and revegetation of the banks of Lang Lang River

6.2.2 Utility installations exemption

Melbourne Water has advised that the project would constitute low impact construction works, because the proposed removal of native vegetation is less than 0.5 hectares for the purpose of upgrading the existing Lang Lang Fishway. The Lang Lang Fishway is part of the weir at the Lang Lang River, and forms part of an existing utility installation. Melbourne Water may seek to rely on the *Procedure to rely on the utility installation exemption in planning schemes for water service providers* (DELWP 2020) for this project. Melbourne Water must obtain written agreement from the Secretary of DEECA to rely on the utility installations exemption. The following section describes the procedure and how it relates to this project.

6.2.2.1 Purpose of the procedure

The utility exemption procedure outlines the requirements that water service providers must comply with if they have written agreement from the Secretary to DEECA to access the agreement. The utility exemption procedure applies only to utility installations under the direct management of the water service provider with written agreement from the Secretary to access the utility exemption. It exempts the requirement for a planning permit to remove native vegetation when removal is to the minimum extent necessary, and in accordance with the utility exemption procedure.

6.2.2.2 Low impact construction works

Native vegetation removal for low impact construction must be to the minimum extent necessary. The requirements of the utility installations exemption must be complied with. Native vegetation offsets are required when native vegetation is removed.

Low impact construction works are defined as works that require the removal of less than 0.5 hectares of native vegetation carried out for:

– New builds
– Augmentation, improvement or upgrade works resulting in an expanded footprint of utility installations
– Removal of Large trees

Construction works that require native vegetation removal of 0.5 hectares or more are not covered by the utility installations exemption. These works require a planning permit.

The project involves the removal of a small extent of native vegetation and falls under the definition of low impact construction works as it involves augmentation, improvement, or upgrade works resulting an expanded footprint of a utility installation (the Lang Lang Weir).

A planning permit for the removal of 0.17 hectares of native vegetation is not required provided procedures outlined in the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines, Section 6.3) are followed and the Procedure is implemented. The Procedure to rely on the utility exemption requires an Exempt Project Endorsement Form to be submitted and approved by DEECA. A Guidelines assessment is provided below to include in the Endorsement Application Form.

6.3 The Guidelines for removal, destruction or lopping of native vegetation

The *Guidelines for the removal, destruction, or lopping of native vegetation* (the Guidelines) were incorporated into the Victorian Planning Provisions and all planning schemes in Victoria in December 2017 (DELWP 2017).

The purpose of the Guidelines is to guide how impacts on biodiversity should be considered when assessing an application for a permit to remove, destroy, or lop native vegetation. The Guidelines set out the rules and tools for how the responsible authority (DEECA) should consider biodiversity when assessing an application.

When native vegetation removal is permitted, an offset must be secured that achieves a no net loss outcome for biodiversity. To achieve this, the offset needs to contribute to Victoria's biodiversity so that it is equivalent to the contribution made by the native vegetation that was removed. Therefore, the type and amount of offset required depends on the native vegetation being removed and the contribution it makes to Victoria's biodiversity.

An offset statement that explains that an offset has been identified (and how it will be secured) will need to be included in the endorsement form for the removal of native vegetation for this project.

6.3.1 Assessment pathway

Applications to remove native vegetation are categorised into one of three assessment pathways with corresponding application requirements and decision guidelines. The assessment pathway for an application to remove native vegetation reflects its potential impact on biodiversity and is determined from the location and extent of the native vegetation to be removed (DELWP 2017a) [now DEECA].

The three assessment pathways recognised by DEECA are:

– *Basic:* limited impacts on biodiversity
– *Intermediate:* could impact on large trees, endangered EVCs, and sensitive wetlands and coastal areas
– *Detailed:* could impact on large trees, endangered EVCs, sensitive wetlands and coastal areas, and could significantly impact on habitat for rare or threatened species

The assessment pathway determines the information that is required to accompany an application to remove, lop, or destroy native vegetation. There are three location categories (Location 1, 2, and 3) that indicate the potential risk to biodiversity from removing a small amount of native vegetation and play a role in determining the assessment pathway. The higher category is used if the native vegetation proposed to be removed includes more than one location category. The process for determining the assessment pathway is demonstrated in Table 8. The project will follow the “intermediate assessment pathway” as the vegetation impact is <0.5 hectares and the study site falls within a Location Category 2.

An updated *native vegetation removal report* (NVRR) was generated by DEECA for the project on 10 June 2025 (Appendix E). The extent of impacts for the project calculated by DEECA included the clearance of 0.17 hectares of native vegetation. The NVRR confirmed the project would be assessed under the ‘intermediate’ assessment pathway as shown in Table 8.

Table 8 Risk matrix for determining the assessment pathway that an application to remove native vegetation will take

Extent of native vegetation	Location Category		
	Location 1	Location 2	Location 3
< 0.5 hectares (ha) and not including any large trees	Basic	**Intermediate**	Detailed
< 0.5 hectares (ha) and including one or more large trees	Intermediate	Intermediate	Detailed
0.5 hectares (ha) or more	Detailed	Detailed	Detailed

Note: the assessment pathway that any works would follow is dependent on the extent of native vegetation to be removed.

6.3.2 Unavoidable losses of native vegetation

It has not been possible to avoid all impacts to native vegetation. The unavoidable impacts associated with the project include the removal of 0.123 hectares of EVC 937 Swampy Woodland. An additional 0.047 hectares of EVC 937 Swampy Woodland may also be impacted which will be determined by the successful contractor post-award.

The vegetation proposed for removal also supports Restricted Use FFG Act protected flora species. However, an FFG Act Permit to take Protected Flora will **not** be required for incidental take of restricted use protected flora.

6.3.3 Offset requirements and availability

Offsets must be secured that meet specific criteria as outlined in the native vegetation removal report (NVRR) in Appendix E. The NVR report states that the following general habitat unit offsets are required for the combined native vegetation impact of 0.17 ha for the Project.

A total of 0.053 general habitat units (GHU) with a minimum strategic biodiversity value of 0.3464 (including no large trees) must be secured from the Port Phillip and Westernport Shire (Melbourne Water) Catchment Management Authority area or the Cardinia Shire Council area. No species-specific offsets are required.

Melbourne Water have an ‘in house’ offset bank and are proposing to source offsets for the project from their own offset bank. An offset availability statement is included in the planning permit application. This statement confirms that offset sites are available to meet the project requirements as of 10 July 2025 (Appendix F).

Under the Utility installations exemption procedure, offsets for this project must be secured **prior** to August 31 at the conclusion of the financial year in which the project has been endorsed.

7. Environmental policy and legislative implications

A summary of the likely legislative requirements, with regard to potential impacts on ecological values protected under State and/or Commonwealth legislation, is provided in Table 9. If any changes to the construction footprint are proposed, then this table should be reviewed and updated to confirm the requirement for any additional ecological permits and approvals.

Table 9 Summary of legislative implications and requirements

	Relevance to study site	Outcomes
Federal		
Environment Protection and Biodiversity Conservation Act 1999	Two Matters of National Environmental Significance (MNES) are potentially relevant to the study site: Threatened Species and a Ramsar Site ***Threatened flora and ecological communities*** No EPBC Act-listed threatened ecological communities are considered likely to be present. No EPBC Act-listed threatened flora species are likely to occur within the study site. ***Threatened and Migratory Fauna*** Five species of terrestrial fauna listed as threatened, and three species of fauna listed as migratory are considered possible to occur in the study site. Two listed fish species are considered possible to occur in the study site. ***Ramsar Site*** The study site is located within 10 kilometres of Western Port, a Wetland of International Importance (Ramsar site).	A referral to the Australian Government Minister for the Environment is required for any action/s that has, will have, or is likely to significantly impact an MNES. Based on this assessment, the project is not expected to have a significant impact on any MNES provided recommended mitigation measures are implemented. Of the five threatened terrestrial fauna species considered to have potential to occur in the study site, most are highly mobile and wide ranging, and the project is not expected to have serious or long-term impacts on populations or habitat. Southern Brown Bandicoot are not expected to be significantly impacted by the small area of habitat proposed to be removed. The removal of habitat is likely to be temporary and revegetation with native grasses and shrubs along the northern bank will aid in restoring Southern Brown Bandicoot habitat in the long term. Two threatened fish species are likely to benefit from increased connectivity that the fish lock will provide. It is unlikely that significant impacts would occur to either species during project construction if recommended mitigation measures are adopted. No migratory bird species are expected to regularly utilise the study site, therefore, no impacts on migratory listed species are expected to occur. No significant impacts on the Ramsar Site are expected to occur, as the works are expected to occur within the current modified area of the existing weir.
State		
Flora and Fauna Guarantee Act 1988	No flora species or communities listed as threatened under the FFG Act were identified during the site assessment. One Restricted Use Protected Flora species was identified within the works footprint. In addition to fauna considered under the EPBC Act, five FFG Act threatened fauna species have the potential to occur within the study area.	No permit is required under the FFG Act for incidental take of Restricted Use Protected flora, provided efforts are taken to minimise impacts on FFG Act listed species. No permit is required under the FFG Act for fauna, provided efforts are taken to minimise impacts on FFG Act listed species, such as reducing impacts on creek banks and avoid disturbances during Platypus breeding period and Dwarf Galaxias spawning from August to February.

	Relevance to study site	Outcomes
Environment Effects (EE) Act 1978	The Ministerial guidelines for assessment of environmental effects under the *Environment Effects Act 1978* (*EE Act*) provide a range of criteria that determine whether an Environment Effects Statement (EES) would be required for a project (DSE 2006). Many of the listed potential effects that may warrant a referral are related to flora and fauna. There are also other social, economic and other environmental factors that may require approval for the project. There are two types of referral criteria: 1) individual potential environmental effects, where any one of the criteria would warrant an EE referral; and 2) a combination of potential environmental effects, where two or more criteria in concert would warrant an EE referral. The ecological criteria most relevant to the project are those relating to impacts on native vegetation and threatened species. Most relevant individual criterion: – Potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria The project is unlikely to trigger a referral under the combination criterion as native vegetation impacts are not expected to exceed 10 ha.	Based on the impacts outlined in Section 5.3.2, it is considered unlikely that any criteria under the EE Act will be triggered by the works. As such, a referral to the Minister for Planning would not be required for this project. However, avoid and minimise measures should be followed to reduce impacts to the impacted threatened species
Planning and Environment Act 1987 (P&E Act)	The *Planning and Environment Act* is addressed through Clause 52.17 of the Victorian Planning Provisions (VPP), which stipulates that a permit is required for the removal of native vegetation unless an exemption applies. Vegetation Removal is also addressed through Local Government Planning Scheme Overlays.	A planning permit would be required under Clause 52.17 of the *P & E* Act for the removal of any native vegetation unless an exemption applies. If Melbourne Water choose to seek approval to apply the Conservation Works Exemption, they will require written endorsement from the DEECA Secretary before works can proceed. Otherwise, Melbourne Water propose to undertake the works under the exemption for utility installation (see below). A planning permit would be required under the Significant Landscape Overlay (SLO3) to remove, destroy or lop any vegetation. This overlay relates to biodiversity within Cardinia Shire Council Planning Scheme and relates to vegetation removal within the study site.
Procedure to rely on the utility exemption in planning schemes – Water service providers	Low impact construction works are defined as works that require the removal of less than 0.5 hectares of native vegetation carried out for: Construction works that require native vegetation removal of 0.5 hectares or more are not covered by the utility installations exemption. These works require a planning permit.	Offsets to the value of 0.053 GHU with a minimum SBV of 0.3464 must be secured prior to August 31 at the conclusion of the financial year in which the project was endorsed. This project requires the completion of the Exempt Project Endorsement Form to be submitted to DEECA prior to undertaking works.

	Relevance to study site	Outcomes
Conservation Works Exemption	The Conservation Works Exemption allows for the removal of native vegetation for the purpose of achieving conservation outcomes without the requirement to obtain a planning permit or secure native vegetation offsets.	If Melbourne Water choose to apply to utilise the exemption, they will need to: 1. Contact the Gippsland Natural Environment Program (NEP) team and gain approval to proceed with the application. 2. Prepare the application request as per the requirements outlined in Section 6.2.1. 3. Seek written approval from the Secretary to proceed with the works under the exemption.
Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017) – the Guidelines	The location mapping for the study site identifies that the study site is classified as Location 2. If this pathway is chosen by Melbourne Water, the project will follow the intermediate assessment pathway when being assessed under the Guidelines.	These works will follow the **intermediate** assessment pathway. Offsets would be required and need to be secured from the Cardinia Shire Council or the Port Phillip and Westernport (Melbourne Water) Catchment Management Authority.
Catchment and Land Protection Act 1994	Five species listed under the CaLP Act were recorded within the study site. Mitigation measures to prevent the introduction and spread of CaLP Act listed weed species (and any weed species) must be incorporated into the CEMP for any proposed works.	Under this Act, concerted efforts must be taken to avoid spreading or introducing weeds into or out of the study site.
Water Act 1989	A Works on Waterway (WoW) permit may be required for the removal of vegetation and stabilisation works such as bank protection, battering and retaining structures.	Confirmation from Melbourne Water as to whether a WoW permit is required is recommended.
Wildlife Act 1975	All native wildlife is protected in Victoria. It is an offence to kill, take, control or harm wildlife under the Act.	A Management Authorisation under the Act would be required whenever native terrestrial fauna need to be relocated during works (e.g. if fauna need to be removed from access areas during works). It is expected any fauna present within the impact footprint would move out on their own accord. However, if large trees/tree limbs with hollows and native vegetation outside of provided project area are expected to be removed, it is recommended that an ecologist inspects the habitat for wildlife immediately prior to construction.
Fisheries Act 1995	Potential for stranding of fish and other aquatic fauna during construction.	Should fish salvage be required during the construction phase a Fisheries Act 1995 permit to 'take' fish may be required.

8. Conclusions and recommendations

The study site encompasses Lang Lang River, the existing weir, and adjacent areas of both intact and modified native vegetation. As part of the project, vegetation and habitat were assessed in areas with the potential to be impacted by the proposed works, and two different habitat zones comprising patches of EVC 937 (Swampy Woodland) and EVC 125 Plains Grassy Wetland were identified. EVC 125 Plains Grassy Wetland was not identified in the initial 2018 assessment. This change reflects the differing conditions at the site in 2024, and the natural change in vegetation cover across this time period.

Despite efforts undertaken to avoid and minimise impacts on native vegetation during the project such as utilising the existing access track and turn around area for construction and ancillary areas (i.e. laydown areas), the required maintenance works will impact 0.123 hectares of native vegetation. An additional 0.047 hectares of native vegetation may be impacted upon. Post construction the offset obligations may be reconciled when the final extent of native vegetation impacts are confirmed by an accredited native vegetation assessor.

The proposed works may also impact upon five threatened fauna species, with three of these species listed under the EPBC Act and all five species listed under the FFG Act. Impacts on the habitat for these species can be largely avoided following the mitigation measures outlined in Section 5.

8.1 Recommendations

The following next steps are recommended for this project:

– Consider the two potential application pathways outlined in this report for the removal of native vegetation. MW may either:
  - Seek endorsement for the removal of 0.17 hectares of native vegetation from DEECA under the *Conservation Works Exemption;* OR
  - Seek endorsement for the removal of 0.17 hectares of native vegetation from DEECA under the Procedure to rely on the utility installation exemption in planning schemes – Water service Providers (DELWP 2019). A total of 0.053 general habitat units (GHU) are triggered for this project with a minimum strategic biodiversity value score of 0.3464. These offsets must be sourced from within Port Phillip and Westernport (Melbourne Water) CMA or Cardinia Shire Council.
– Obtain confirmation from Port Phillip and Western Port CMA of the requirement for a Works on Waterway (WoW) permit.
– Prior to the works commencing, it is recommended that a Construction Environmental Management Plan (CEMP) is developed and implemented, by the successful contractor, for the project to document measures required to avoid and minimise impacts on ecological values.
– Include revegetation plan within the CEMP to restore vegetation and Southern Brown Bandicoot habitat along the northern bank of Lang Lang River.

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Appendices

Appendix A

List of flora identified in the study site

Key to Table:

en – Endangered under the FFG Act

GP Generally protected under the FFG Act 1988

RU Restricted use under the FFG Act – Listed as Regionally Controlled under the CALP Act

R – Listed as Restricted weed under the CALP Act

WONS – Weed of National Significance

Table A1 List of flora species identified in the study site

Scientific Name	Common Name	Status
Native Flora		
Acacia dealbata	Silver Wattle	
Acacia melanoxylon	Blackwood	Planted
Acacia verniciflua	Varnish Wattle	RU
Amyema pendula	Drooping Mistletoe	
Cassinia aculeata subsp. *aculeata*	Common Cassinia	
Coprosma quadrifida	Prickly Currant-bush	
Eucalyptus consideniana	Yertchuk	Planted
Eucalyptus radiata subsp. radiata	Narrow-leaf Peppermint	Planted
Eucalyptus globulus	Southern Blue-gum	Planted
Eucalyptus leucoxylon	Yellow Gum	Planted
Eucalyptus polyanthemos	Red Box	Planted
Eucalyptus sideroxylon subsp. *sideroxylon*	Mugga	Planted, en
Eucalyptus spp.	Eucalypt	Planted
Eucalyptus viminalis subsp. viminalis	Manna Gum	Planted
Euchiton involucratus s.l.	Common Cudweed	
Juncus spp.	Rush	
Leptospermum continentale	Prickly Tea-tree	
Lythrum hyssopifolia	Small Loosestrife	
Melaleuca ericifolia	Swamp Paperbark	Planted
Microlaena stipoides var. *stipoides*	Weeping Grass	
Olearia argophylla	Musk Daisy-bush	RU
Olearia lirata	Snowy Daisy-bush	RU
Persicaria decipiens	Slender Knotweed	
Phragmites australis	Common Reed	
Rumex brownii	Slender Dock	
Introduced Flora		
Bromus catharticus	Soft Brome	
Cirsium vulgare	Spear Thistle	C
Crataegus monogyna	Hawthorn	C
Cynodon dactylon var. *dactylon*	Couch	

Scientific Name	Common Name	Status
Cyperus eragrostis	Drain Flat-sedge	
Dactylis glomerata	Cocksfoot	
Daucus carota	Wild Carrot	
Ehrharta longiflora	Annual Veldt-grass	
Ehrharta erecta	Panic Veldt-grass	
Erigeron bonariensis	Flaxleaf Fleabane	
Fumaria spp.	Fumitory	
Galium aparine	Cleavers	
Hypochaeris radicata	Flatweed	
Leontodon saxatilis subsp. *saxatilis*	Hairy Hawkbit	
Lycium ferocissimum	African Boxthorn	C, WoNS
Malva spp.	Mallow	
Oxalis pes-caprae	Oxalis	R
Paspalum dilatatum	Paspalum	
Plantago lanceolata	Ribwort	
Rubus anglocandicans	Blackberry	C, WoNS
Rumex crispus	Curled Dock	
Solanum nigrum	Blackberry Nightshade	
Sonchus oleraceus	Milk Thistle	
Sisymbrium officinale	Hedge Mustard	
Stellaria pungens	Chickweed	
Symphyotrichum subulatum	Wild Aster	
Vinca major	Blue periwinkle	
Trifolium spp.	Clover	

Appendix B

Likelihood of occurrence – threatened flora

Key to table:

EPBC: Environment Protection and Biodiversity Conservation Act

VU Vulnerable

EN Endangered

CR Critically Endangered

FFG: Flora and Fauna Guarantee Act

vu Listed as Vulnerable

en Listed as Endangered

cr Listed as Critically Endangered

: Non-indigenous native species outside its natural range

Source:

VBA Victorian Biodiversity Atlas

PMST Protected Matters Search Tool

Likelihood of occurrence:

Not all threatened species identified during this assessment are equally likely to occur in the project site, due to the geographic location or context of the site, or the habitat type and condition. For each species, the likelihood of occurrence was evaluated using the following rationale:

PRESENT – Species known to occur within the study site or detected during the site visit.

POSSIBLE – Potentially suitable habitat occurs within study site and species' known range encompasses the study site. Species recorded historically within the study area (but not the actual study site, and not identified during field surveys), generally within the last 30 years.

UNLIKELY – Species' known range encompasses the study site, but suitable habitat is not present or is not likely to be present. Species may or may not have been recorded historically within the study area but generally not within the last 30 years, and not within the actual study site.

HIGHLY UNLIKELY – No historical records of the species within 10 km of the study site and/or no suitable habitat within the study site.

Table B1 Likelihood of occurrence – Threatened flora

Scientific Name	Common Name	EPBC	FFG	Source	Count of Sightings	Last Record	Habitat	Likelihood of occurrence
Acacia leprosa var. *uninervia*	Large-leaf Cinnamon-wattle		en	VBA	1	2005	Locally common *Eucalyptus* forest in ranges north-east of Melbourne (Healesville, Powelltown, Buxton) and near Mt Buffalo, with scattered occurrences west towards Ballarat.	**Highly Unlikely**. Few recent records and areas of suitable habitat are highly degraded. Was not observed during the site assessment.
Amphibromus fluitans	River Swamp Wallaby-grass	VU		PMST			Grows mostly in permanent swamps and lagoons, billabongs, dams, and roadside ditches. The species requires moderately fertile soils with some bare ground; conditions that are caused by seasonally fluctuating water levels.	**Unlikely**. No recent records and areas of suitable habitat are highly degraded. Was not observed during the site assessment.
Billardiera scandens s.s.	Velvet Apple-berry		en	VBA	1	1976	Apparently uncommon in Victoria, occurring chiefly in dry open-forests and woodlands in the north-east, with isolated occurrences near Eltham, Mt. Macedon, Hurstbridge, Eildon and Orbost (Walsh & Entwisle 1996).	**Unlikely**. No recent records and areas of suitable habitat are highly degraded. Was not observed during the site assessment.
Caladenia aurantiaca	Orange-tip Finger-orchid		en	VBA	1	2019	Grows in damp coastal to near-coastal heaths or open woodlands east of Melbourne (Walsh & Entwisle 1996).	**Unlikely.** Very few recent records and suitable habitat is not present within the study site.
Caladenia oenochila	Wine-lipped Spider-orchid		cr	VBA	1	1932	Currently recorded mainly from the foothills of the ranges to the north and east of Melbourne, with isolated occurrences in western parts of the state. Grows in shaded situations in more mesic heathy woodlands and open forests on sand and clay loams that are fairly well drained (Backhouse and Jeanes, 1995).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.

Scientific Name	Common Name	EPBC	FFG	Source	Count of Sightings	Last Record	Habitat	Likelihood of occurrence
Caladenia orientalis	Eastern Spider Orchid	EN		PMST			Endemic to Victoria where found in coastal heathlands and heathy woodlands between the Mornington Peninsula and Yarram, on well-drained sandy soil.	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Caladenia tessellata	Thick-lipped Spider-orchid	VU		PMST			Occurs in coastal areas east from Port Phillip Bay, growing in heath, heathy woodland and lowland forest. There is some doubt over the identity of this species (Jeanes and Backhouse 2006).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Corybas aconitiflorus	Spurred Helmet-orchid		en	VBA	2	2007	Localised and uncommon in Victoria (Healesville and Tonimbuk areas, Corner Inlet, Gippsland Lakes area, Marlo). Colonies grow in sheltered positions, often on damp sand under ferns or shrubs (Walsh & Entwisle 1994).	**Unlikely**. Few recent records and areas of suitable habitat are highly degraded. Was not observed during the site assessment.
Dianella amoena	Matted Flax-lily	EN		PMST			Grasslands and grassy woodlands (Walsh & Entwisle 1994).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Eucalyptus strzeleckii	Strzelecki Gum	VU		PMST			Apparently endemic, confined to across the western section of Strzelecki Range, from Neerim South in the north, south to Foster, Favours ridges, slopes and streambanks and deep fertile soils (Walsh & Entwisle 1996).	**Highly unlikely.** No recent records and was not observed during the site assessment
Glycine latrobeana	Clover Glycine	VU		PMST			Widespread but of sporadic occurrence and rarely encountered. Grows mainly in grasslands and grassy woodlands. (Walsh and Entwisle 1996).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.

Scientific Name	Common Name	EPBC	FFG	Source	Count of Sightings	Last Record	Habitat	Likelihood of occurrence
Lepidium aschersonii	Spiny Peppercress	VU		PMST			Mostly on heavy clay soil near salt lakes on volcanic plain, but with outlying records from near lake Omeo (Walsh & Entwisle 1996).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Microtis orbicularis	Swamp Onion-orchid		en	VBA	1	1915	This semi-aquatic species often flowers in shallow water around the margins of swamps. It occurs in south-west Victoria (e.g. Portland, Grampians, Little Desert) and east of Melbourne on French Island, Wonthaggi area (where possibly now extinct) and Wilsons Promontory.	**Highly unlikely.** No recent records and species is considered to be likely extinct in the areas around the study site.
Prasophyllum spicatum	Dense Leek-orchid	VU		PMST			Localised across southern Victoria in coastal heathland and near-coastal heathy forest on sandy soils.	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Pterostylis chlorogramma	Green-striped Greenhood	VU	en	VBA, PMST	5	2009	Occurs across southern Victoria, growing in heathy Woodland. Recorded for few locations, but probably more widespread than current records suggest (Jeanes and Backhouse 2006).	**Unlikely**. Few recent records and areas of suitable habitat are highly degraded. Was not observed during the site assessment.
Pterostylis cucullata	Leafy Greenhood	VU		PMST			Widespread across southern Victoria, and extending into montane areas of the Eastern Highlands and East Gippsland. Grows in closed scrublands on the landward slopes, swales and tops of coastal sand dunes. Also grows in open forests on moist slopes, on seasonally inundated inland river flats, and in other riparian habitats. On the coast it grows in deep, well-drained sandy loams while inland it favours heavier sandy loams (Backhouse & Jeanes 1995).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.

Scientific Name	Common Name	EPBC	FFG	Source	Count of Sightings	Last Record	Habitat	Likelihood of occurrence
Pterostylis grandiflora	Cobra Greenhood		en	VBA	1	1994	Grows in shaded situations in open forests, often among small shrubs, grasses and bracken. Substrates are generally well-drained sand and clay loams (Backhouse & Jeanes 1995).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Senecio psilocarpus	Swamp Fireweed	VU		PMST			Rare in Victoria, restricted to a herb-rich few winter-wet swamps south and west from c. Ballarat, growing on volcanic clays or peat soils (Walsh and Entwisle 1999).	**Highly Unlikely**. No recent records and areas of suitable habitat are highly degraded. Was not observed during the site assessment.
Thelymitra epipactoides	Metallic Sun-orchid	EN		PMST			Usually found in coastal and hinterland areas west from Bairnsdale, but extending well inland in the far-western part of the state. Grows primarily in mesic coastal heathlands, grasslands and woodlands, but is also found in drier inland heathlands, open forests and woodlands. Substrates may be moist or dry sandy loams (Backhouse & Jeanes 1995).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Thelymitra malvina	Mauve-tuft Sun-orchid		en	VBA	1	1995	Apparently favours tall open forests that have a heathy understorey, and also found in heathy woodlands. Soils are well-drained sand and clay loams (Backhouse & Jeanes 1995).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Thelymitra orientalis	Hoary Sun-orchid	CR		PMST			Grows in damp heathy flats and seepage areas usually in peaty white sands (Jeanes 2014).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.
Thesium australe	Austral Toadflax	VU		PMST			Apparently confined to the drier north-west of the State where it grows along seasonal watercourses, floodplains and depressions. (Walsh & Entwisle 1996).	**Highly unlikely.** No recent records and suitable habitat is not present within the study site.

Scientific Name	Common Name	EPBC	FFG	Source	Count of Sightings	Last Record	Habitat	Likelihood of occurrence
Xerochrysum palustre	Swamp Everlasting	VU		PMST			Occurs in lowland swamps, usually on black cracking clay soils (Walsh and Entwisle 1999).	**Unlikely**. No recent records and areas of suitable habitat are highly degraded. Was not observed during the site assessment.

Appendix C

Likelihood of occurrence – threatened fauna

Key to Table:

EPBC Act Codes: VU (Vulnerable), EN (Endangered), CR (Critically Endangered)

FFG Act Codes: vu (Vulnerable in Victoria), en (Endangered in Victoria), cr (Critically Endangered in Victoria), thr (threatened in Victoria)

Source

VBA	Victorian Biodiversity Atlas
PMST	Protected Matters Search Tool
VBA recs:	Number of records within 10 km of the study site
VBA last:	Year of last record within 10 km of the study site

Likelihood of occurrence:

PRESENT – Species known to occur within the site or detected during the site visit.

POSSIBLE – Potentially suitable habitat occurs within study site and species' known range encompasses the study site. Species recorded historically within 10 km of the study site, and generally within the last 30 years

UNLIKELY – Species' known range encompasses the study site, but suitable habitat does not occur within study site, or occurs within study site but with generally low quality and quantity.

HIGHLY UNLIKELY – No historical records of the species within 10 km of the study site and/or no suitable habitat within the study site.

Table C1 Likelihood of occurrence – Threatened fauna

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Mammals									
Broad-toothed Rat	*Mastacomys fuscus mordicus*	EN	vu	0		PMST	Wet sedges and grasslands in forested areas, from alpine areas to sea level.	Highly Unlikely	No records in study area and no suitable habitat.
Southern Greater Glider	*Petauroides volans*	EN	vu	0		PMST	Eucalypt-dominated low open forests on coast, tall forests and low woodland.	Highly Unlikely	No records in study area and no suitable habitat.
Grey-headed Flying-fox	*Pteropus poliocephalus*	VU	vu	0		PMST	Densely vegetated flowering and fruiting trees, mainly east of Melbourne. Roosts in dense gullies. Uses a wide range of habitats in Victoria, from lowland rainforest and coastal Stringybark forests to agricultural land and suburban gardens. Established colonies known in Melbourne, Geelong, Bendigo and Mallacoota.	Possible	No records within the study area, however under-reported species that may occasionally forage within flowering eucalypts within the study site.
Long-nosed Potoroo	*Potorous tridactylus trisulcatus*	VU	vu	0		PMST	Uses a range of habitats from dense heathy woodland and coastal woodland to open forests, typically dominated by eucalypts. Six populations occur in certain parts of Victoria.	Highly Unlikely	No records and no suitable habitat. Species range is restricted to discrete areas within Victoria.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
New Holland Mouse	*Pseudomys novaehollandiae*	VU	en	0		PMST	Fire dependent. Inhabits a variety of habitats along the coast of south-eastern Australia, including coastal heath, sclerophyll forest, heathy woodland and coastal scrub habitats, usually with a high density of leguminous ground plants.	Highly Unlikely	No records in study area and no suitable habitat.
Platypus	*Ornithorhynchus anatinus*		vu	3	1998	VBA	Creeks, streams and rivers.	Possible	Species recorded within study site (ALA 2024). VBA record within Lang Lang River, approximately 13km east of study site.
Smoky Mouse	*Pseudomys fumeus*	EN	en	0		PMST	Dry heathy forest on ridges. Coastal and sub-alpine heath.	Highly Unlikely	No records in study area and no suitable habitat.
Southern Brown Bandicoot	*Isoodon obesulus obesulus*	EN	en	153	2021	VBA, PMST	Typically occurs in heathland, shrubland, heathy forest and woodland, and coastal scrub habitat across southern Victoria. Survival with foxes requires dense understorey vegetation.	Possible	Species recorded in within creekline vegetation approximately 2 km south-west of study site. Habitat connectivity between record and study site.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	EN	en	0		PMST	Preference for mature wet forest habitat that has been less disturbed by logging. Also occurs in wet sclerophyll forests, lowland forests, open and closed eucalypt woodlands, inland riparian and River Red-gum forests Woodlands, subalpine woodlands and coastal heathlands.	Highly Unlikely	No records in study area and no suitable habitat.
Swamp Antechinus	*Antechinus minimus maritimus*	VU	vu	0		PMST	Wet areas with dense closed ground cover. Typically in wet heath, heathy woodland, sedgeland and dense tussock grassland, usually at low elevation.	Highly Unlikely	No records in study area and no suitable habitat.
White-footed Dunnart	*Sminthopsis leucopus*		vu	1	2012	VBA	Heathy woodlands and forest, coastal scrub and dune grassland.	Unlikely	Species records occur within large areas of contiguous forest. Limited suitable habitat and connectivity to study site from surrounding areas of suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Yellow-bellied Glider	*Petaurus australis*	VU	en	0		PMST	Tall forest, coastal gullies, creek flats and forest mixed with woodland.	Highly Unlikely	No records in study area and no suitable habitat.
Birds									
Australasian Bittern	*Botaurus poiciloptilus*	EN	cr	0		PMST	Wetlands with tall, dense vegetation in permanent freshwater habitats, particularly when dominated by sedges, rushes and reeds. Also uses rice paddocks in north.	Highly Unlikely	No records in study area and no suitable habitat.
Australian Painted Snipe	*Rostratula australis*	EN	cr	0		PMST	Generally in shallow, terrestrial freshwater wetlands with rank, emergent tussocks of grass, sedges and rushes. Occurs in well vegetated lakes, swamps, inundated pasture, saltmarsh and dams. Fresh to saline water. May use riverine forest.	Highly Unlikely	No records and limited suitable habitat along edges of Lang Lang River.
Bar-tailed Godwit	*Limosa lapponica*	VU	vu	0		PMST	Non-breeding migrant to Australia during the austral summer. Mudflats, sandflats, estuaries, large wetlands. Coastal, but occasionally inland.	Highly Unlikely	No records in study area and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Blue-winged Parrot	*Neophema chrysostoma*	VU		9	1986	VBA, PMST	Inhabits a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. Tends to favour grasslands and grassy woodlands and often found near wetlands both near the coast and in semi-arid zones. Breeds in Tasmania, coastal south-eastern South Australia and southern Victoria.	Unlikely	No recent records and no suitable habitat.
Brown Treecreeper	*Climacteris picumnus picumnus*	VU		0		PMST	Forests and woodlands, mainly in drier areas. Occurs mainly on southern watershed of Great Dividing Range, and along a narrow intergrade on the northern and western slopes, in a rough line from the Grampians, through Maryborough and to Albury.	Highly Unlikely	No records in study area and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Caspian Tern	*Hydroprogne caspia*		vu	1	1979	VBA	Coastal areas and large inland wetlands and rivers. Exposed ocean beaches, sheltered coastal bays, harbours, lagoons, inlets, estuaries, usually with sandy or muddy margins. Breeds in a variety of coastal habitats including banks, ridges and beaches of sand and shell, often in open or among low or sparse vegetation.	Unlikely	No recent records and no suitable habitat.
Common Greenshank	*Tringa nebularia*	EN	en	0		PMST	Non-breeding migrant to Australia during the austral summer. Coastal mudflats, estuaries, salt marshes, mangroves, lakes and swamps.	Highly Unlikely	No records in study area and no suitable habitat.
Common Sandpiper	*Actitis hypoleucos*		vu	0		PMST	Non-breeding migrant to Australia during the austral summer. Uses a wide variety of coastal and inland wetlands with muddy margins, including lakes, rivers, sewage ponds.	Highly Unlikely	No records in study area and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Curlew Sandpiper	*Calidris ferruginea*	CR	cr	1	1979	VBA, PMST	Non-breeding migrant to Australia during the austral summer. Regular visitor to Victoria. Occurs in a variety of wetland habitats with fringing mudflats including bays, coastal lagoons, lakes, swamps, creeks, inundated grasslands, saltmarshes and artificial wetlands.	Unlikely	Species more commonly recorded in coastal environments. No recent records and no suitable habitat.
Diamond Firetail	*Stagonopleura guttata*	VU	vu	0		PMST	Occurs in eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats, including farmland and grassland with scattered trees. Prefers areas with relatively low tree density (including few large logs and litter cover) but a high grass cover. Generally absent from very wet and very dry areas.	Highly Unlikely	No records in study area, with species not recorded within central Gippsland region.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Eastern Curlew	*Numenius madagascariensis*	CR	cr	2	1979	VBA, PMST	Non-breeding migrant to Australia during the austral summer. Coastal. Sheltered coastal habitats, usually with large sand flats or intertidal mudflats with seagrass, estuaries, open sandy beaches. Occasionally on coastal rock platforms.	Unlikely	Species more commonly recorded in coastal environments. No recent records and no suitable habitat.
Eastern Great Egret	*Ardea alba modesta*		vu	2	2018	VBA	Saltwater and freshwater wetlands, lakes, dams, river margins, estuaries and mudflats.	Possible	Species frequently recorded within study area within creeks and drainage lines. Limited suitable habitat present within creek margins.
Fairy Tern	*Sternula nereis*	VU	cr	0		PMST	Coastal areas. Inhabits coastal environments including intertidal mudflats, sand flats and beaches. Nests above high-water mark on sandy shell-grit beaches.	Highly Unlikely	No records in study area and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Gang-gang Cockatoo	*Callocephalon fimbriatum*	EN	en	7	1981	VBA, PMST	Tends to frequent tall forests and woodlands with dense shrubby understoreys in the mountains during the summer breeding period. In winter, tends to move to lower altitudes into drier, more open forests and woodlands. Often seen by roadsides and in parks and gardens of urban areas. Requires tall trees for nest hollows.	Possible	Species recorded within study area in 2023 (BirdLife Australia 2024). Species may forage within eucalypts and acacias within study site.
Greater Sand Plover	*Charadrius leschenaultii*	VU	vu	0		PMST	Non-breeding migrant to Australia during the austral summer. Coastal. Exposed sandflats and mudflats, estuaries, open sandy beaches. High tide roost sites are often located on beaches.	Highly Unlikely	No records in study area and no suitable habitat.
Grey Falcon	*Falco hypoleucos*	VU	vu	0		PMST	Inland wooded watercourses and woodland. Generally rare.	Highly Unlikely	No records and no suitable habitat. Species more likely to occur within semi-arid and arid environments.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Hardhead	*Aythya australis*		vu	2	2017	VBA	Diving duck. Deep permanent wetlands, dams, lakes and slow-flowing rivers. Also occurs in brackish wetlands and water storage ponds. Occasionally in estuarine and littoral habitats such as saltpans, coastal lagoons and sheltered inshore waters.	Possible	Species may utilise Lang Lang River and adjacent banks for foraging or roosting.
Hooded Robin	*Melanodryas cucullata*	EN (south-eastern subspecies)	vu	0		PMST	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey.	Highly Unlikely	No records and no suitable habitat.
King Quail	*Synoicus chinensis*		en	3	1901	VBA	Dense heaths and grasslands.	Highly Unlikely	Species known to occur only on French Island, Victoria.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Latham's Snipe	*Gallinago hardwickii*	VU		2	2006	VBA, PMST	Non-breeding migrant to Australia during the austral summer. Uses a wide variety of permanent and ephemeral wetlands, generally freshwater wetlands with cover. Also recorded along creeks, rivers and floodplains. Forages in soft mud at edge of wetlands and roosts in a variety of vegetation around wetlands including tussock grasslands, reeds and rushes, tea-tree scrub, woodlands and forests.	Possible	Limited suitable habitat present along creek bank margins, within and adjacent to study site.
Little Egret	*Egretta garzetta nigripes*		en	3	1998	VBA	Uses wide range of wetlands, mudflats, estuaries. Typically prefers shallows of wetlands for foraging. Occasionally in small waterways or wet grassland areas.	Possible	Recent records within coastal areas, approximately 15 km south-west of study site. Limited suitable habitat present along creek bank margins.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Musk Duck	*Biziura lobata*		vu	2	1981	VBA	Diving duck. Deep open water in wetlands, dams, lakes and slow-flowing rivers.	Possible	Recent records within coastal areas, approximately 15 km south-west of study site. Species may occur within slow flowing section of creek, upstream of study site.
Orange-bellied Parrot	*Neophema chrysogaster*	CR	cr	1	1890	VBA, PMST	Winter migrant to coastal Victoria and South Australia from breeding areas in south-west Tasmania. Forages in coastal or near-coastal areas such as saltmarshes, coastal dunes, pastures, shrublands, estuaries, islands and beaches.	Highly Unlikely	No recent records and no suitable habitat.
Painted Honeyeater	*Grantiella picta*	VU	vu	0		PMST	Dry open forests and woodlands, strongly associated with mistletoe (including mistletoe in Acacia).	Highly Unlikely	No records and no suitable habitat.
Pilotbird	*Pycnoptilus floccosus*	VU	vu	0		PMST	Wet eucalypt and temperate rainforest, alpine and coastal woodland in dense undergrowth with abundant debris.	Highly Unlikely	No records and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Plains-wanderer	*Pedionomus torquatus*	CR	cr	1	1930	VBA, PMST	Inhabit sparse native grasslands and are often absent from areas where grass becomes too dense or too sparse. They nest amongst native grasses and herbs, or sometimes amongst crops, feeding on a mixture of seeds, invertebrates and leaves.	Highly Unlikely	No records and no suitable habitat.
Red Knot	*Calidris canutus*	VU	en	0		PMST	Non-breeding migrant to Australia during the austral summer. Coastal. Typically occurs on intertidal mudflats, sandflats and sandy beaches of sheltered coasts, and a range of other coastal and near-coastal environments such as lakes, lagoons, pools and pans, sewage ponds and saltworks. Inland lakes and swamps less commonly used.	Highly Unlikely	No records and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Regent Honeyeater	*Anthochaera phrygia*	CR	cr	0		PMST	Open forests and woodlands. Generally absent from very wet and very dry areas. Dry woodlands and forests dominated by Box Ironbark eucalypts. May be restricted to the Chiltern-Mt Pilot National Park (NE Victoria) following population decline and range contraction.	Highly Unlikely	No records and no suitable habitat.
Sharp-tailed Sandpiper	*Calidris acuminata*	VU		0		PMST	Non-breeding migrant to Australia during the austral summer. Regular visitor to Victoria. Prefers muddy edges of shallow fresh or brackish wetlands with inundated or emergent low vegetation.	Highly Unlikely	No records and no suitable habitat.
Southern Whiteface	*Aphelocephala leucopsis*	VU		0		PMST	Inhabits a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains.	Highly Unlikely	No records and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Swift Parrot	*Lathamus discolor*	CR	cr	0		PMST	Winter migrant to Victoria (and other parts of SE Australia) from breeding areas in Tasmania. In Victoria, prefers dry, open eucalypt forests and woodlands, especially Box Ironbark Forest in north-central Victoria. Occasionally recorded in urban parks, gardens, street trees and golf courses with flowering ornamental trees and shrubs.	Unlikely	No records in the study area. Limited suitable habitat within planted vegetation.
White-throated Needletail	*Hirundapus caudacutus*	VU	vu	1	1981	VBA, PMST	Almost exclusively aerial within Australia, occurring over most types of habitat, particularly wooded areas. Less often seen over open farm paddocks but has been recorded in vineyards flying between the rows of trees.	Possible	Recent records in the study area, with latest record in 2020 (eBird 2024).

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Reptiles									
Lace Monitor	*Varanus varius*		en	10	2019	VBA	Partly arboreal. Occurs in well-timbered areas, from dry woodland to southern temperate forests. Lays eggs in hollows.	Unlikely	Records concentrated within Adams Creek Nature Conservation Reserve, south of the study site. No habitat connectivity between study site and records.
Swamp Skink	*Lissolepis coventryi*	EN	en	0		PMST	Swamp scrub habitat in cool, temperate, low-lying areas, including wetlands, river margins, lakes, swamp margins and estuarine areas with a dense shrub layer, particularly in near-coastal areas across southern Victoria. Often associated with stands of paperbark and tea-tree, usually in heathy or scrubby areas.	Highly Unlikely	No records and no suitable habitat.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Frogs									
Growling Grass Frog	*Litoria raniformis*	VU	vu	11	2009	VBA, PMST	Requires a matrix of well-connected permanent and semi-permanent waterbodies, including open vegetated wetlands, flooded paddocks, drains, farm dams and river pools, generally containing abundant submerged and emergent vegetation with little shade. Within lowland grasslands, woodlands and open forests.	Unlikely	No records within Lang Lang River tributaries and waterbodies. Study site does not provide suitable aquatic habitat.
Southern Toadlet	*Pseudophryne semimarmorata*		en	6	2023	VBA	Moist soaks, depressions, dams and watercourses in woodland and open forest and heathlands, with sufficient litter or other ground cover. Adults shelter beneath leaf litter and other debris. Eggs and tadpoles develop in depressions that flood following autumn rains.	Unlikely	Recent records in Adams Creek Nature Conservation Reserve. No suitable habitat present within study site.

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Fish									
Australian Grayling	*Prototroctes maraena*	VU	en	12	2023	VBA, PMST	A diadromous species which spends most of its life in freshwater habitats, typically rivers and streams with cool, clear waters and gravel substrates, but occasionally also in turbid waters. Juveniles inhabit estuaries and coastal seas.	Present	The Lang Lang River weir has restricted passage for the species upstream. Present downstream of the weir.
Dwarf Galaxias	*Galaxiella pusilla*	EN	en	29	2020	VBA, PMST	Relatively shallow, still or slow-flowing waterbodies, including streams, wetlands, drains, that often are ephemeral and partially dry up over summer. Typically requires abundant marginal and aquatic vegetation.	Possible	Galaxias have been found throughout the Lang Lang catchment - with a 2008 record approximately 2 km upstream from the Lang Lang River weir.
Yarra Pygmy Perch	*Nannoperca obscura*	EN	vu	0		PMST	Typically occurs in lakes, ponds and slow-flowing rivers (Saddlier & Hammer 2010), but prefers small-medium sized, relatively shallow (1-2 m) freshwater streams with moderate to high flow.	Unlikely	Based on habitat requirements and lack of observations. (No records in VBA)

Common name	Scientific Name	EPBC	FFG	VBA recs	VBA last	Source	Preferred habitat in Victoria	Likelihood of Occurrence	Justification
Invertebrates									
Giant Gippsland Earthworm	*Megascolides australis*	VU	en	3	2003	VBA	Generally found in the deep blue-grey clay-like soils over cretaceous rocks in the western Strzelecki Ranges and in the alluvial soils in depositional zones to the north and south-west.	Unlikely	Study site is outside of species known range and is largely restricted to the western Strzelecki Ranges, within the Southern Uplands region.
Golden Sun Moth	*Synemon plana*	VU	vu	0		PMST	Native grasslands and grassy woodlands, particularly where *Austrodanthonia (Rytidosperma)* dominant. Now recognised to occur also in exotic grasslands dominated by Chilean Needle Grass.	Highly Unlikely	No records and no suitable habitat.

Appendix D

Migratory fauna

Table D1 Migratory fauna identified by the VBA and PMST within 10 km of the study site

Scientific Name	Common name	VBA Records	Last Record	Source	Likelihood of Occurrence
Bar-tailed Godwit	*Limosa lapponica*	0		PMST	Highly Unlikely
Black-faced Monarch	*Monarcha melanopsis*	0		PMST	Highly Unlikely
Common Greenshank	*Tringa nebularia*	0		PMST	Highly Unlikely
Common Sandpiper	*Actitis hypoleucos*	0		PMST	Highly Unlikely
Curlew Sandpiper	*Calidris ferruginea*	1	1979	VBA, PMST	Unlikely
Eastern Curlew	*Numenius madagascariensis*	2	1979	VBA, PMST	Unlikely
Fork-tailed Swift	*Apus pacificus*	0		PMST	Unlikely
Greater Sand Plover	*Charadrius leschenaultii*	0		PMST	Highly Unlikely
Latham's Snipe	*Gallinago hardwickii*	2	2006	VBA, PMST	Possible
Pectoral Sandpiper	*Calidris melanotos*	0		PMST	Highly Unlikely
Red Knot	*Calidris canutus*	0		PMST	Highly Unlikely
Rufous Fantail	*Rhipidura rufifrons*	4	1981	VBA, PMST	Possible
Satin Flycatcher	*Myiagra cyanoleuca*	3	2007	VBA, PMST	Possible
Sharp-tailed Sandpiper	*Calidris acuminata*	0		PMST	Unlikely
White-throated Needletail	*Hirundapus caudacutus*	1	1981	VBA, PMST	Possible
Yellow Wagtail	*Motacilla flava*	0		PMST	Highly Unlikely

Appendix E

Native vegetation removal report (NVRR)

Native Vegetation Removal Report

NVRR ID: 311_20250704_DR9

This report provides information to support an application to remove, destroy or lop native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines). This report is **not an assessment by DEECA** of the proposed native vegetation removal. Native vegetation information and offset requirements have been determined using spatial data provided by the applicant or their consultant.

Report details

Date created: 04/07/2025

Local Government Area: CARDINIA SHIRE

Shapefile name: NVR_patch_12637984_20250703.shp

Site assessor name: Rohan Khot

Registered Aboriginal Party: Bunurong

Coordinates: 145.63283, -38.24180

Address: HEADS ROAD LANG LANG 3984

Regulator Notes

Removal polygons are located:

- Within a DEECA Mapped Wetland area
- On Crown Land

Summary of native vegetation to be removed

Assessment pathway	**Intermediate Assessment Pathway**		
Location category	Location 2 The native vegetation extent map indicates that this area is typically characterised as supporting native vegetation. Additionally, it is modelled as encompassing an endangered Ecological Vegetation Class, sensitive wetland or sensitive coastal area. The removal of less than 0.5 hectares of native vegetation in this area will not require a Species Offset.		
Total extent including past and proposed removal (ha) *Includes endangered EVCs (ha): 0.17*	**0.17**	*Extent of past removal (ha)*	*0*
		Extent of proposed removal - Patches (ha)	*0.170*
		Extent of proposed removal - Scattered Trees (ha)	*0.000*
No. Large Trees proposed to be removed	**0**	*No. Large Patch Trees*	*0*
		No. Large Scattered Trees	*0*
No. Small Scattered Trees	0		

Offset requirements if approval is granted

Any approval granted will include a condition to secure an offset, before the removal of native vegetation, that meets the following requirements:

General Offset amount [1]	**0.053 General Habitat Units**
Minimum strategic biodiversity value score [2]	0.3464
Large Trees	0
Vicinity	Melbourne Water CMA or CARDINIA SHIRE LGA

NB: values within tables in this document may not add to the totals shown above due to rounding

The availability of third-party offset credits can be checked using the Native Vegetation Credit Register (NVCR) Search Tool - https://nvcr.delwp.vic.gov.au

1. The General Offset amount required is the sum of all General Habitat Units in Appendix 1.
2. Minimum strategic biodiversity value score is 80 per cent of the weighted average score across habitat zones where a General Offset is required.
3. The Species Offset amount(s) required is the sum of all Species Habitat Units in Appendix 1.

Application requirements

Applications to remove, destroy or lop native vegetation must include all the below information. If an appropriate response has not been provided the application is not complete.

Application Requirement 1 - Native vegetation removal information

If the native vegetation removal is mapped correctly, the information presented in this Native Vegetation Removal Report addresses Application Requirement 1.

Application Requirement 2 - Topographical and land information

This statement describes the topographical and land features in the vicinity of the proposed works, including the location and extent of any ridges, hilltops, wetlands and waterways, slopes of more than 20% gradient, low-lying areas, saline discharge areas or areas of erosion.

Application Requirement 3 - Photographs of the native vegetation to be removed

Application Requirement 3 is not addressed in this Native Vegetation Removal Report. All applications must include recent, timestamped photos of each Patch, Large Patch Tree and Scattered Tree which has been mapped in this report.

Application Requirement 4 - Past removal

If past removal has been considered correctly, the information presented in this Native Vegetation Removal Report addresses Application Requirement 4.

Application Requirement 5 - Avoid and minimise statement

This statement describes what has been done to avoid and minimise impacts on native vegetation and associated biodiversity values.

Application Requirement 6 - Property Vegetation Plan

This requirement only applies if an approved Property Vegetation Plan (PVP) applies to the property
Does a PVP apply to the proposal?

Application Requirement 7 - Defendable space statement

Where the removal of native vegetation is to create defendable space, this statement:

- Describes the bushfire threat; and

- Describes how other bushfire risk mitigation measures were considered to reduce the amount of native vegetation proposed for removal (this can also be part of the avoid and minimise statement).

This statement is not required if, If the proposed defendable space is within the Bushfire Management Overlay (BMO), and in accordance with the 'Exemption to create defendable space for a dwelling under Clause 44.06 of local planning schemes' in Clause 52.12-5.

Application Requirement 8 - Native Vegetation Precinct Plan

This requirement is only applicable if you are removing native vegetation from within an area covered by Native Vegetation Precinct Plan (NVPP), and the proposed removal is not identified as 'to be removed' within the NVPP.
Does an NVPP apply to the proposal?

Application Requirement 9 - Offset statement

This statement demonstrates that an offset is available and describes how the required offset will be secured. The Applicant's Guide provides information relating to this requirement.

Next steps

Applications to remove, destroy or lop native vegetation must address all the application requirements specified in the Guidelines. If you wish to remove the mapped native vegetation you are required to apply for approval from the responsible authority (e.g. local Council). This Native vegetation removal report must be submitted with your application and meets most of the application requirements. The following requirements need to be addressed, as applicable.

Application Requirement 3 - Photographs of the native vegetation to be removed

Recent, dated photographs of the native vegetation to be removed **must be provided** with the application. All photographs must be clear, show whether the vegetation is a Patch of native vegetation, Patch Tree or Scattered Tree, and identify any Large Trees. If the area of native vegetation to be removed is large, provide photos that are indicative of the native vegetation.

Ensure photographs are attached to the application. If appropriate photographs have not been provided the application is not complete.

Application Requirement 6 - Property Vegetation Plan

If a PVP is applicable, it must be provided with the application.

Appendix 1: Description of native vegetation to be removed

General Habitat Units for each zone (Patch, Scattered Tree or Patch Tree) are calculated by the following equation in accordance with the Guidelines

General Habitat Units = extent without overlap x condition score x general landscape factor x 1.5, where the general landscape factor = 0.5 + (strategic biodiversity value score/2)

The General Offset amount required is the sum of all General Habitat Units per zone.

Native vegetation to be removed

Information provided by or on behalf of the applicant							Information calculated by NVR Map				
Zone	**Type**	**DBH (cm)**	**EVC code**	**Bioregional conservation status**	**Partial Removal**	**Condition score**	**Large Tree(s)**	**Polygon extent (ha)**	**Extent without overlap (ha)**	**SBV score**	**General Habitat Units**
1-A	Patch	-	GipP0937	Endangered	no	0.290	-	0.013	0.013	0.410	0.004
2-A	Patch	-	GipP0937	Endangered	no	0.290	-	0.015	0.015	0.450	0.005
3-A	Patch	-	GipP0937	Endangered	no	0.290	-	0.054	0.054	0.450	0.017
4-A	Patch	-	GipP0937	Endangered	no	0.290	-	0.020	0.020	0.410	0.006
5-A	Patch	-	GipP0937	Endangered	no	0.290	-	0.061	0.061	0.429	0.019
6-A	Patch	-	GipP0937	Endangered	no	0.290	-	0.007	0.007	0.410	0.002

Appendix 2: Images of mapped native vegetation

1. Property in context

Proposed Removal
Past Removal
Partial Removal
Property Boundaries

N

200 m

2. Aerial photograph showing mapped native vegetation

Proposed Removal

Past Removal

Partial Removal

N

50 m

3. Location Risk Map

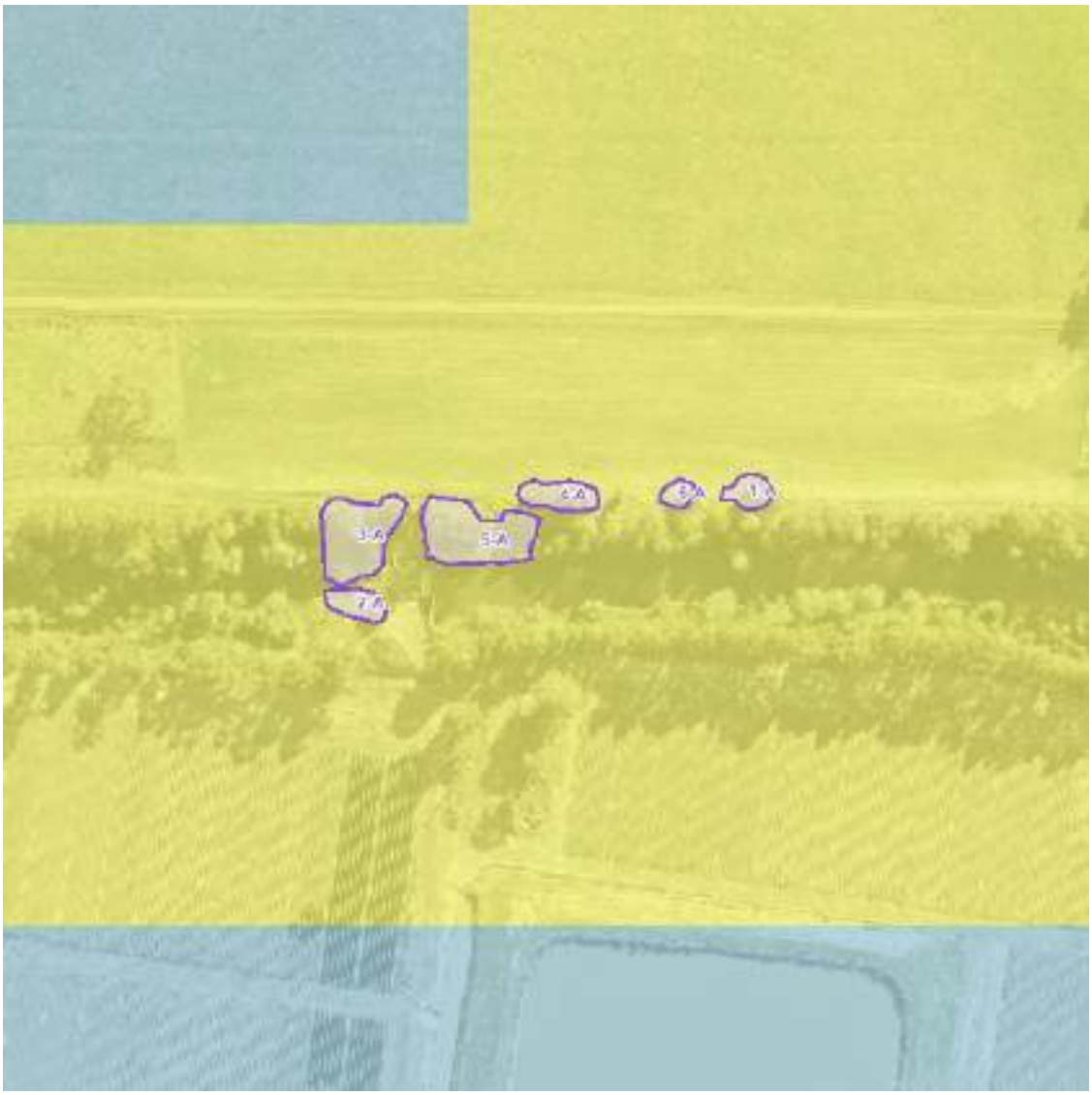
Proposed Removal
Past Removal
Partial Removal

Location 1
Location 2
Location 3

N

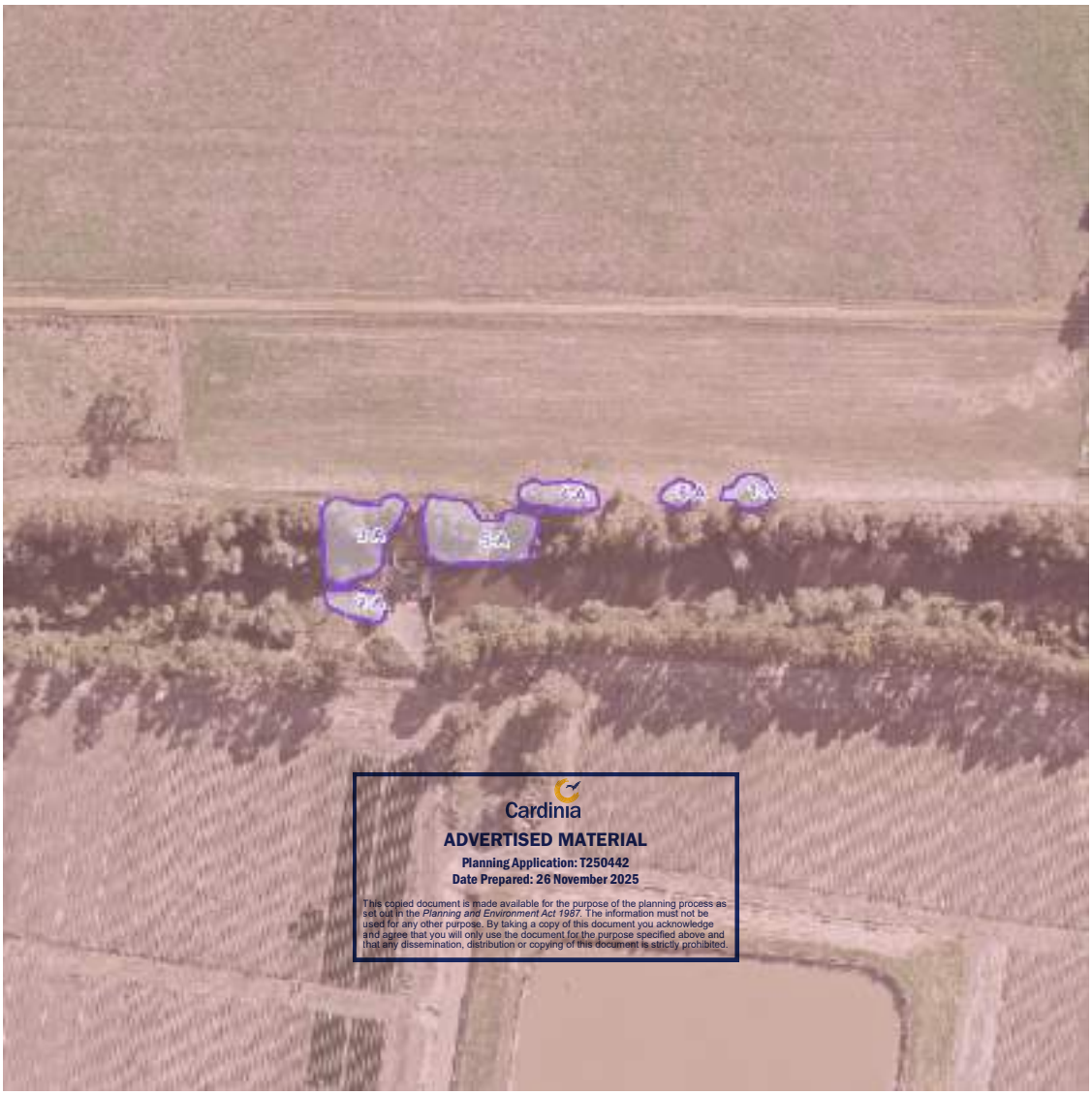
50 m

4. Strategic Biodiversity Value Score Map



5. Condition Score Map

6. Endangered EVCs



Proposed Removal

Past Removal

Partial Removal

Endangered 1750 Ecological Vegetation Classes

N

50 m

Appendix F

Offset availability statement

Vegetation Offset Availability Statement

Project: Lang Lang Fish Lock Project

Native Vegetation Removal Report ID: 311_20250704_DR9

General Offset Amount: 0.053

Vicinity: Melbourne Water CMA

Minimum Strategic Biodiversity Value Score: 0.346

Large Trees: 0

Melbourne Water is the owner of sufficient offsets meeting the above requirements and can request that these offsets be allocated for this project when needed. The following is taken from our current credit statement.

Credit Owner	Property Id	Zone	General (GHU)	Strategic Biodiversity Value (SBV)	Large Trees (LT)
Melbourne Water Corporation	BBA-0670	BBA-0670-9-A	0.010	0.751	2
Melbourne Water Corporation	BBA-0670	BBA-0670-10-A	0.019	0.756	9
Melbourne Water Corporation	BBA-0670	BBA-0670-6-A	0.072	0.774	3
Melbourne Water Corporation	BBA-0670	BBA-0670-2-A	0.066	0.796	3
Melbourne Water Corporation	BBA-0670	BBA-0670-5-C	0.189	0.809	4
Melbourne Water Corporation	BBA-0670	BBA-0670-6-B	0.719	0.823	4
Melbourne Water Corporation	BBA-0670	BBA-0670-5-A	0.041	0.859	2
Melbourne Water Corporation	BBA-0670	BBA-0670-8-A	11.367	0.894	38
Melbourne Water Corporation	BBA-0670	BBA-0670-13-A	0.006	0.896	1
Melbourne Water Corporation	BBA-0670	BBA-0670-4-A	0.910	0.900	0

[redacted]

Senior Property Officer

10 July, 2025

Appendix G

Evaluation of Fish Lock Construction and Operation with Respect to Significant Impact Criteria for Australian Grayling and Dwarf Galaxias

Criterion	Response Australian Grayling	Response Dwarf Galaxias
Lead to a long-term decrease in the size of an important population	**The works required on the Lang Lang River are not likely to lead to a long-term decrease the size of the population present.** Under current conditions the population is likely to be restricted to locations downstream from the Lang Lang River weir. Ultimately the construction of the Lang Lang River fish lock has the potential to increase the size of the Lang Lang River Australian Grayling population. Australian Grayling have a widespread distribution across Victoria. In the local region (Port Phillip and Westernport and West Gippsland) there are important populations in the Bunyip and Yarra Rivers and Agnes River, Albert River, Avon River, Franklin River, Rainbow Creek-Thomson River, Tarwin River and the Thomson River (DELWP 2015a) and as such the Lang Lang River is not the only location within the region that support the species. It is understood that construction of the fish lock (and associated dewatering of the weir pool upstream from the weir) would be completed between February and May to coincide with the Lang Lang River's low flow period. Given that the weir already acts as a barrier during this time, it is unlikely that lowering the water level will inhibit migratory paths than what is already occurring.	**The works required on the Lang Lang River are not likely to lead to a long-term decrease the size of the population present.** The species is likely to inhabit the Lang Lang River and adjacent wetlands throughout the catchment along with waterways throughout the Port Phillip and West Gippsland regions. It is understood that construction of the fish lock (and potential dewatering of the weir pool upstream from the weir) would be completed between February and May to coincide with the Lang Lang River's low flow period. During this time Dwarf Galaxias have the potential to inhabit the waterway upstream from the Lang Lang River weir and as such there is the potential for short-term, localised impacts to the population upstream from the weir but no long-term decrease in size of the population, due to the limited extent and short-term duration of instream works.
Reduce the area of occupancy of an important population	**The waterway works are not likely to reduce the area of occupancy for Australian Grayling** given that this species is currently unlikely to inhabit the Lang Lang River upstream from Lang Lang River weir. Ultimately the construction of the Lang Lang River fish lock has the potential to significantly increase the area of occupancy of the Lang Lang River Australian Grayling population.	To allow for construction of the fish lock it is assumed that an area upstream from the weir will require partial dewatering. Any fish that currently inhabit the reach that will be dewatered may lose access to aquatic vegetation and become trapped in the pool that remains. The weir pool does not provide optimum conditions for Dwarf Galaxias – which prefer swampy slow-flowing wetland habitat with good connectivity to waterways to allow for passage when wetland habitat dries. However, there exists the possibility that the fish may be present in small numbers in the weir pool. The waterway works therefore have the potential to temporarily reduce the area of occupancy for Dwarf Galaxias if they are present. However, any impact is likely to be short-term and, in the context of the Lang Lang River population, the area impacted (potentially 20-50 m - to allow access to the weir) is considered minor.
Fragment an existing important population into two or more populations	**The works required on the Lang Lang River are not likely to fragment the population present** as the species is currently restricted to the area downstream from the Lang Lang River weir.	**The works required on the Lang Lang River are not likely to fragment the population present.** The construction period is short (four months) and localised in nature. The works will not lead to fragmentation of the current population into two populations.

Criterion	Response Australian Grayling	Response Dwarf Galaxias
Adversely affect habitat critical to the survival of the species	No critical habitat is listed for this species under the EPBC Act. The species is currently known from waterways of south-eastern Australia, including southern NSW, Victoria and Tasmania. Given the wide distribution and range of habitats used by the species throughout its life, it is not practical to specify habitat that is critical to survival. However, some habitats such as spawning, refuge and juvenile habitats are likely to be limited in distribution, yet crucial to the Australian Grayling life cycle. The waterway works are not likely to significantly affect habitat that this species may use. Any physical impacts to the Lang Lang River will be temporary in nature (approximately four months) and are concentrated on the area upstream from the Lang Lang River weir, where this species does no currently reside. The lowering of water levels will essentially replicate current conditions (i.e. weir acting as a barrier for fish passage) and will therefore not impact the species. **The fish lock construction is therefore unlikely to adversely affect habitat critical to the survival of the species.**	No critical habitat is listed for this species under the EPBC Act. The species is likely to inhabit the Lang Lang River and adjacent wetlands throughout the catchment along with waterways throughout the Port Phillip and West Gippsland regions. **The waterway works are not likely to adversely affect habitat that is critical to the survival of the species.** Any physical impacts to the Lang Lang River will be temporary in nature (approximately four months) and are concentrated on the area upstream from the Lang Lang River weir.
Disrupt the breeding cycle of an important population	Under current conditions juvenile Australian Grayling are likely to migrate up the Lang Lang River between approximately October and December and travel until they reach the Lang Lang River weir, where passage into the upper reaches of the Lang Lang River ceases. Under conditions of unrestricted fish passage (i.e. in other waterways) Australian Grayling also have a downstream migration period from freshwater reaches to estuarine areas to spawn. In the Lang Lang River this component of the Australian Grayling life cycle is currently restricted. The construction of the Lang Lang River fish lock will increase the possibility of Australian Grayling will be able to complete the freshwater period of its life cycle in the Lang Lang River. **Construction of the fish lock is not likely to disrupt the breeding cycle**, as this species can currently only use the Lang Lang River downstream from Lang Lang River weir.	The breeding period of this species is between late winter and spring (DELWP 2015b). Construction is likely to be completed between February and May, which is outside the breeding period for this species. **As such, the construction of the Lang Lang River fish lock is unlikely to disrupt the breeding cycle of an important population.**
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**The construction of the fish lock will not directly decrease the quality of habitat available for the Australian Grayling to the extent that the species is likely to decline**. Any impacts to the aquatic habitat in the Lang Lang River during the construction period will be temporary in nature and, in terms of fish passage, essentially replicate current conditions. Fish lock construction will increase the availability and quality of habitat for this species.	**The development is unlikely to directly decrease the quality of habitat available for the Dwarf Galaxias to the extent that the species is likely to decline.** Any impacts to the aquatic habitat in the Lang Lang River during the construction period will be temporary in nature and impact a relatively short reach of the river (approximately 50 metres) and as such the impacts would not be to the extent that the population as a whole would decline.

Criterion	Response Australian Grayling	Response Dwarf Galaxias
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	It is unlikely that invasive species (such as introduced fish) that are harmful to the Australian Grayling would become further established as a result of the proposed development.	It is unlikely that invasive species (such as introduced fish) that are harmful to the Dwarf Galaxias would become further established as a result of the proposed development.
Introduce disease that may cause the species to decline	Fish lock construction is unlikely to lead to the introduction or spread of disease that may cause the species to decline.	Fish lock construction is unlikely to lead to the introduction or spread of disease that may cause the species to decline.
Interfere substantially with the recovery of the species	The fish lock construction is unlikely to result in the threatening processes identified in the Australian Grayling National Recovery Plan (Backhouse et. al. 2008) or include activities with the potential to have detrimental impact on the Australian Grayling. Thus, the construction of the fish lock will not interfere substantially with the recovery of Australian Grayling. Ultimately the fish lock's operation will aid in the recovery of the species.	The fish lock construction is unlikely to result in the threatening processes identified in the Dwarf Galaxias National Recovery Plan (Saddlier et. al. 2010). The fish lock is designed to create lasting benefit for diadromous (migratory) fish. Although Dwarf Galaxias do not migrate the fish lock will provide increased opportunity for movement within the catchment. Thus the construction of the fish lock will not interfere substantially with the recovery of Dwarf Galaxias.
Conclusion	**The likelihood of this project having a significant impact upon Australian Grayling or interfering with its recovery is very low.** **Ultimately, the project has the potential to lead to a significantly positive impact on the population.**	**The key identified threat to the Dwarf Galaxias population is the possible temporary loss of an area of localised habitat for this species. The likelihood of the development having a significant impact upon Dwarf Galaxias or interfering with its recovery is very low. Ultimately, operation of the fish lock has the potential to lead to a significantly positive impact on the population.**

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The Power of Commitment

Thank you for your queries regarding the vegetation impacts under the SLO and the temporary hardstand, and for the discussion last week. We have provided a response to these items, please see below.

Vegetation within SLO
The total area of impacted native vegetation remains at 0.17 ha with 0.047 ha of this potentially retained as specified in the report. As requested in our meeting last week, we have updated Figure 4 to reflect all "potentially impacted vegetation" as "impacted vegetation". Please see revised Figure 4 attached, and further detail below.

Impacted planted vegetation
The orange polygon, located along the private property access way, contains the following planted native species:

- Yertchuk (*Eucalyptus consideniana*)
- Narrow-leaf Peppermint (*Eucalyptus radiata subsp. radiata*)
- Southern Blue-gum (*Eucalyptus globulus*)
- Yellow Gum (*Eucalyptus leucoxylon*)
- Red Box (*Eucalyptus polyanthemos*)
- Mugga (*Eucalyptus sideroxylon subsp. sideroxylon*)
- Eucalypt (*Eucalyptus spp.*)
- Manna Gum (*Eucalyptus viminalis subsp. viminalis*)
- Swamp Paperbark (*Melaleuca ericifolia*)

As discussed, these trees will be impacted through trimming as a tree management practice, to provide access to the works and hardstand location. This has been updated from 'potentially impacted planted vegetation' to 'impacted planted vegetation' as requested. Photos were taken of this vegetation during the site visit, which is provided as an attachment.

Please note that our Flora and Fauna Report has been updated to reflect these items and has been provided as an attachment.

Temporary hardstand
The Site Plan figure has also been updated to include the land parcels, dimensions of both the hardstand area and no-go zone and relevant setbacks. Please note as discussed that we have provided a hardstand area which is the maximum amount required, and the temporary hardstand will be within this area. The updated Site Plan is attached to this email.

We trust that this will assist you with closing out your queries and progressing to public notice, please reach out to us should you have any queries on the above.

Kind regards,

[redacted]

Paper Size ISO A4

0 20 40 60 80

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

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Melbourne Water Corporation
Lang Lang Creek Fishway -
Design Review and Tender Assistance

Project No. 12637984
Revision No. F
Date 7/11/2025

Heads Road Weir Site Plan

FIGURE 1

Data source: VicMap, DEECA_ESH_HWI 2024, GHD 2025, Nearmap NWS Server. Created by: rgarden

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0 20 40 60 80 100 120

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

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Melbourne Water Corporation
Lang Lang Creek Fishway -
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Project No. 12637984
Revision No. 0
Date 7/11/2025

Native vegetation impacts

FIGURE 4

Data source: VicMap (DEECA) 2024, NW 2024, EcologyData, GHD 2024. Basemap NAIP Server. . Created by: kgarden