



## Lilydale Waste to Energy Facility

Ecological Impact Assessment

IS0803L4-EP-RP-0039 | C

29 April 2023

Yarra Valley Water

IS0803L4

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 Project Manager: Hendry Young  
 Author: Tao Lee, Briony Mitchell and Liza James  
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Jacobs Australia Pty Limited

Floor 11, 452 Flinders Street  
 Melbourne VIC 3000  
 PO Box 312, Flinders Lane  
 Melbourne VIC 8009 Australia  
 T +61 3 8668 3000  
 F +61 3 8668 3001  
 www.jacobs.com

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Document history and status

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## Executive Summary

Jacobs Ecology have been engaged by Yarra Valley Water (YVW) to undertake an ecological assessment of the activity area (Assessment Area) for the proposed Waste to Energy (WtE) facility to be built on the current Lilydale Sewage Treatment Plant (STP) at 83-85 Nelson Road, Lilydale, Victoria (Lot 1, TP 125400).

Jacobs Ecology has previously been engaged by YVW to undertake a detailed ecological (flora and fauna) assessment of the proposed WtE facility development footprint and Assessment Area in 2017. This included targeted Growling Grass Frog (*Litoria raniformis*) surveys on the Lilydale STP site, resulting in an *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) referral for the species. The referral was deemed to be 'not a controlled action.'

The current Assessment Area includes:

- **WtE Facility Assessment Area** within which is the WtE Facility Development Footprint
- **Access Investigation Area**, which incorporates an area for placement of both the access track and associated drainage and culvert works will occur within 20m either side of the centre of Ingram Road
- **Lilydale WtE Intersection Assessment Area** which incorporates the intersection upgrade at Maroondah Hwy and Ingram Road
- **Lilydale STP facility Assessment Area** includes a kiosk and 22kV powerline with new and restrung sections of cable from the WtE facility to the Lilydale STP, Recycled Water Pump Station and external energy grid and a permeate pipeline (approximately 50mm thick) from the WtE Facility to the sewerage treatment plant to be located under the existing road, with a trenchless bore under the Nelson Road Drain.

A Planning Permit application was submitted 22nd November 2022 to the Department of Environment, Land, Water and Planning Permit Application Number: PA2201903.

On 3rd January 2023 more information was requested (RFI) as required by Clause 52.17-3 (Application requirements) before a response can be provided by DEECA/DELWP in accordance with section 56 of the Act. This report has been updated in response to the RFI and to update the impact assessment associated with the final design and to consolidate past assessments.

Impacts to native vegetation are summarised in **Error! Reference source not found.** below.

Extent of native vegetation mapped within the Investigation Area

Native vegetation type	Extent within the Assessment Area	Extent of native vegetation impact before avoid and minimise measures	Reduced final impacts following avoid and minimise measures
Trees	<ul style="list-style-type: none"> <li>• 17 Large Canopy Trees within patches</li> <li>• 7 Scattered trees (3 Small and 4 Large)</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Large Canopy Trees within patches</li> <li>• 1 Large Scatted Tree</li> </ul>	None
Patches	A total of 1.926 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.004 ha of EVC 653: Aquatic Herbland</li> <li>• 0.602 ha of EVC 821: Tall Marsh</li> <li>• 1.320 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>	A total of 0.883 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.0044 ha of EVC 653: Aquatic Herbland</li> <li>• 0.446 ha of EVC 821: Tall Marsh</li> <li>• 0.432 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>	A total of 0.180 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.0855 ha of EVC 821: Tall Marsh</li> <li>• 0.0944 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>

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A summary of the implications of the Project in relation to relevant ecological legislation and policy is summarised in Table 1.1 below.

Table 1.1: Summary of policy/legislative requirements

Policy/legislation	Project relevance/actions required
<b>Commonwealth</b>	
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	<ul style="list-style-type: none"> <li>The Project will not have a significant impact on any Matters of National Environmental Significance (MNES).</li> <li>Following targeted Growling Grass Frog surveys and an EPBC Act referral with a 'not a controlled action' response, the issue of impact to the species has been closed out. No further action is required. Erosion and sediment fencing will be implemented where required.</li> <li>No action required under this Act.</li> </ul>
<b>State</b>	
<i>Environment Effects Act 1978 (EE Act)</i>	<ul style="list-style-type: none"> <li>Due to the limited impacts to ecological values, a referral under the EE Act is not triggered. No action is required under this Act.</li> </ul>
<i>Flora and Fauna Guarantee Act 1988 (FFG Act)</i>	<ul style="list-style-type: none"> <li>One FFG Act-threatened flora species was identified within the Assessment Area – Yarra Gum (<i>Eucalyptus yarraensis</i>) and is critically endangered under the FFG Act.</li> <li>Following efforts to avoid and minimise impacts as per the arborist impact assessment no Yarra Gum trees will be impacted, in particular Tree ID 104 and Tree ID 106 will be retained with mitigation (Appendix F and Appendix G). Every effort has been made to ensure these trees can be avoided and protected by the proposed construction activities.</li> <li>A Permit to Take application is not required for this Project as no flora protected under the FFG Act will be removed, in particular Yarra Gum (Tree ID 104 and Tree ID 106 and Golden Wattle (<i>Acacia pycnantha</i>)) will be retained.</li> </ul>
<i>Planning and Environment Act 1987 (P&amp;E Act)</i>	<ul style="list-style-type: none"> <li>A permit is required for the removal of 0.180 ha of native vegetation patches (EVCs):               <ul style="list-style-type: none"> <li>- 0.0855 ha of EVC 821: Tall Marsh</li> <li>- 0.0944 ha of EVC 134: Creekline Herb-rich Woodland</li> </ul> </li> <li>The permit triggers DELWP has considered that apply to this application are:               <ul style="list-style-type: none"> <li>- Clause 52.17 Native vegetation</li> <li>- Clause 42.01 (Schedule 1) Environmental Significance Overlay requires a Preliminary Land Management Plan</li> <li>- Clause 42.03 (Schedule 2) Significance Landscape Overlay</li> </ul> </li> </ul> <p>Further detail provided in 5.1.1 below</p>
<i>Guidelines for the removal, destruction or lopping of native vegetation (The Guidelines)</i>	<ul style="list-style-type: none"> <li>Offsets required for the removal of 0.180 ha of native vegetation.</li> <li>Offsets required are 0.054 general habitat units with a minimum strategic biodiversity score of 0.509 in the vicinity of Port Phillip and Westernport Catchment Management Authority (CMA) or Yarra Ranges Shire Council (Appendix I)</li> <li>Yarra Valley Water is to secure these offsets prior to commencing works.</li> <li>Further detail provided in 5.1.1 below.</li> </ul>
<i>Catchment and Land Protection Act 1994 (CaLP Act)</i>	<ul style="list-style-type: none"> <li>The proposed works require the disturbance of soil and the movement of a variety of vehicles and machinery. These activities encourage the spread and establishment of weed species. Some weed species are declared noxious under the CaLP Act and, as such, the responsible party is legally required to prevent the spread and establishment of these species.</li> <li>A Construction Environmental Management Plan (CEMP) will be developed that clearly identifies measures to be undertaken which will prevent the growth, spread and establishment of noxious weed species. Measures should be identified and undertaken to ensure ongoing weed control and eradication procedures are implemented following any works.</li> </ul>
<i>Wildlife Act 1975 (Wildlife Act)</i>	<ul style="list-style-type: none"> <li>All native wildlife is protected in Victoria. It is an offence to kill, take, control or harm wildlife under the Wildlife Act. The Assessment Area is likely to support a variety of native fauna including birds, mammals and reptiles. It is unlikely these animals will be displaced during the removal of vegetation due to the minimal impacts proposed.</li> </ul>

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Policy/legislation	Project relevance/actions required
	<ul style="list-style-type: none"> <li>Any person employed by the Project to handle fauna if required will need to have a permit to do so under the Wildlife Act. A qualified fauna spotter or catcher is recommended to be employed to conduct a pre-clearance survey immediately before the time of vegetation clearing, to minimise the impact to any native fauna.</li> </ul>
<i>Water Act 1989 (Water Act)</i>	<ul style="list-style-type: none"> <li>Project works will likely require impacts to both the Nelson Road Drain and the Lilydale East Drain systems. Impacts however will include only short-term changes to hydrology and some removal of native vegetation. As they are 'named' drainage lines, a Works on Waterways permit from Melbourne Water may be required for this Project, depending on the final construction methods.</li> <li>In the instance construction involving impacts to drainage lines cannot be avoided. Drainage lines should be re-instated following construction.</li> </ul>
<i>Fisheries Act 1995 (Fisheries Act)</i>	<ul style="list-style-type: none"> <li>N/A – Drainage lines are not considered under the Act.</li> </ul>
<i>Environment Protection Act 1970 (EP Act)</i>	<ul style="list-style-type: none"> <li>Construction and operation measures of the Project should address ecological compliance requirements through a CEMP, including sedimentation control measures.</li> <li>Seek advice from the Environmental Management team for further input to CEMP requirements</li> </ul>

Impacts to native vegetation are summarised below.

The recommended mitigation measures to reduce impacts of the Project to ecological values include:

- No-go Zones should be established and exclusion fencing should be placed around the vegetation to remain, incorporating Tree Protection Zones (TPZ), to reduce the extent of vegetation removal. No-go Zones are to be included on all site maps with the CEMP.
- Mitigation measures have been recommended for some trees to be retained particularly for Yarra Gum Tree ID 104 and 106 to ensure trees are isolated from construction impacts; machinery and vehicles which must not drive over the TPZ unless ground protection is in place. Exclusion of machinery and vehicles from the TPZ with temporary fencing is recommended for trees listed in Appendix E.
- A laydown area is proposed near the Ingram Road intersection within the Rosemount Road area near to Tree ID 106 temporary fencing is recommended for this tree and machinery and vehicles must be restricted to the paved road and not drive over the TPZ or impact the canopy of these trees within HZ03a. All lifting of pipes must be done outside of tree canopies.
- Locations where the TPZ of trees are at risk of encroachment due to the installation of the permeate pipeline (Tree ID 139, 140, 143 and 151) non-destructive construction techniques will be used, and mitigation measures will be applied to these trees. The encroachment of trees is minimal and <10% of the TPZ impacted in all instances.
- A Works on Waterways permit from Melbourne Water may be required for this Project depending on the final construction methods. In the instance construction involving impacts to drainage lines cannot be avoided, drainage lines should be re-instated following construction.
- Any person employed by the Project to handle fauna will need to have a permit to do so under the Wildlife Act. A qualified fauna spotter or catcher is recommended to be employed to conduct a pre-clearance survey immediately before the time of vegetation clearing, to minimise the impact to any native fauna.
- The spread of noxious weeds and pest animals must be controlled in accordance with the CaLP Act.

**Next steps:**

The following items are required to progress the Project:

- Offsets required are 0.054 general habitat units with a minimum strategic biodiversity score of 0.509 in the vicinity of Port Phillip and Westernport Catchment Management Authority (CMA) or Yarra Ranges Shire Council. Yarra Valley Water is to secure these offsets prior to commencing works.

- Determine the requirements pertaining to the Preliminary Land Management Plan and finalise as required.
- The contractor to develop a Construction Environmental Management Plan (CEMP) that details necessary management and mitigation measures to minimise potential impacts to the environment for the proposed construction activities, including weed control measures and sediment and spill controls to avoid impacts to Lilydale East Drain and Nelson Road Drain.

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# 1. Introduction

Yarra Valley Water (YVW) is planning to develop a Waste to Energy (WtE) facility on the northern portion of the current Lilydale Sewage Treatment Plant (STP) at 83-85 Nelson Road, Lilydale, Victoria (Lot 1, TP 125400). Access to the proposed WtE site is from the Maroondah Highway near to the Ingram Road intersection through 535-537 Maroondah Highway (Lot 5, PS327190). The access road will be routed near the southern boundary of 535-537 Maroondah Highway and pass over a tributary of the Lilydale East Drain and the Healesville-Lilydale Railway Line Reserve before passing under high voltage power lines into the northern portion of 83-85 Nelson Road (Lilydale STP), the location of WtE facility.

A Planning Permit application was submitted 22nd November 2022 to the Department of Environment, Land, Water and Planning, Permit Application Number: PA2201903.

On 3rd January 2023 more information was requested (RFI) as required by Clause 52.17-3 (Application requirements) before a response can be provided by DEECA/DELWP in accordance with section 56 of the Act. This report has been updated in response to the RFI specifically in response to the following items:

2. A final ecological impact assessment report. This report must include:

- a. An updated Native Vegetation Removal Report (NVRR) which reflects any changes to the extent of native vegetation to be removed based on the final siting and design plans.
- b. An updated offset statement based on any changes to the above.
- c. An updated avoid and minimise statement. This statement must describe:
  - i. How the final siting and design has considered efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation, and
  - ii. How these efforts focussed on areas of native vegetation that have the most value, and
  - iii. Why there are no feasible opportunities to further avoid and minimise impacts on this native vegetation without undermining the key objectives of the proposal.
- d. An updated assessment of potential impacts to threatened flora and fauna based on final siting and design plans.

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### 1.1 Background

Jacobs has previously been engaged by YVW to undertake detailed ecological (flora and fauna) assessments of the proposed WTE facility at the Lilydale STP, the proposed access track and the Lilydale WtE – Intersection upgrade undertaken between 2017 – 2022 (Jacobs 2018b).

Assessment of the proposed WTE facility at the Lilydale STP also included targeted Growling Grass Frog (*Litoria raniformis*) surveys on the Lilydale STP site (Appendix A). It was determined that although Growling Grass Frog were not identified during the surveys (Appendix B), an *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) referral was assessed as required.

An arboricultural assessment was undertaken by Ironbark Environmental Arboriculture in 2022 to assess for tree protection requirements for the access road into the Lilydale Waste to Energy Facility running from Maroondah Highway including a design review of the bridge that forms part of the new access road and an assessment of the Ingram Road Intersection (Ironbark Environmental Arboriculture 2022). The arborist assessment has since been updated (Ironbark Environmental Arboriculture 2023) to addresses the RFI specifically in relation to item 3 which states:



3. An updated arborist assessment report. This report must include:

a. An assessment of opportunities to avoid or minimise impacts to Yarra Gum (*Eucalyptus yarraensis*), particularly Tree ID 104 and 106 based on final siting and design.

## 1.2 Purpose

The information gathered for the above assessments are consolidated into this report to identify the ecological constraints and relevant ecological approvals associated with the Project and to identify the impacts associated with the final design provided (Appendix J). This report also incorporates the findings of the most recent updated arboricultural assessment undertaken for the Project.

## 1.3 Assessment Area

The Assessment Area detailed in this report (Figure 1.1) includes:

- 1) WtE Facility Assessment Area within which is the WtE Facility Development Footprint
- 2) Access Investigation Area, which incorporates an area for placement of both the access track and associated drainage and culvert works.
- 3) Lilydale WtE Intersection Assessment Area which incorporates the intersection upgrade at Maroondah Hwy and Ingram Road
- 4) Lilydale STP facility Assessment Area includes a kiosk and 22kV powerline with new and restrung sections of cable from the WtE facility to the Lilydale STP, Recycled Water Pump Station and external energy grid and a permeate pipeline (approximately 50mm thick) from the WtE Facility to the sewerage treatment plant to be located under the existing road, with a trenchless bore under the Nelson Road Drain.

The proposed site of the WtE facility is located within the northern extent of the Lilydale STP at 83-85 Nelson Road, Lilydale (Lot 1, TP 125400), approximately 4.5 km north-east of Melbourne CBD. The impact/ construction footprint of the WtE facility development is proposed to include up to 3.5 hectares. The northern extent of the Lilydale STP site is heavily disturbed from previous land use of the treatment plant, where biosolid stockpiling occurred between 2000 and 2012. Drainage lines developed as part of the biosolid pools are still present on site and were inundated with water at the time of site assessment.

The access track is proposed along the southern edge of the newly acquired property at to the north, where entry to the track will be from the Maroondah Highway. The investigation area mainly occurs within pastoral land which crosses a western branch of the Lilydale East Drain and the decommissioned historical Coldstream Railway line, which is now a public walking trail. The Maroondah Highway intersection upgrade will involve access and exit turning lanes, associated traffic signalling and proposed line markings to access the track to the proposed WtE facility. Works will potentially impact areas within the Maroondah Hwy and Ingram Road reserves.

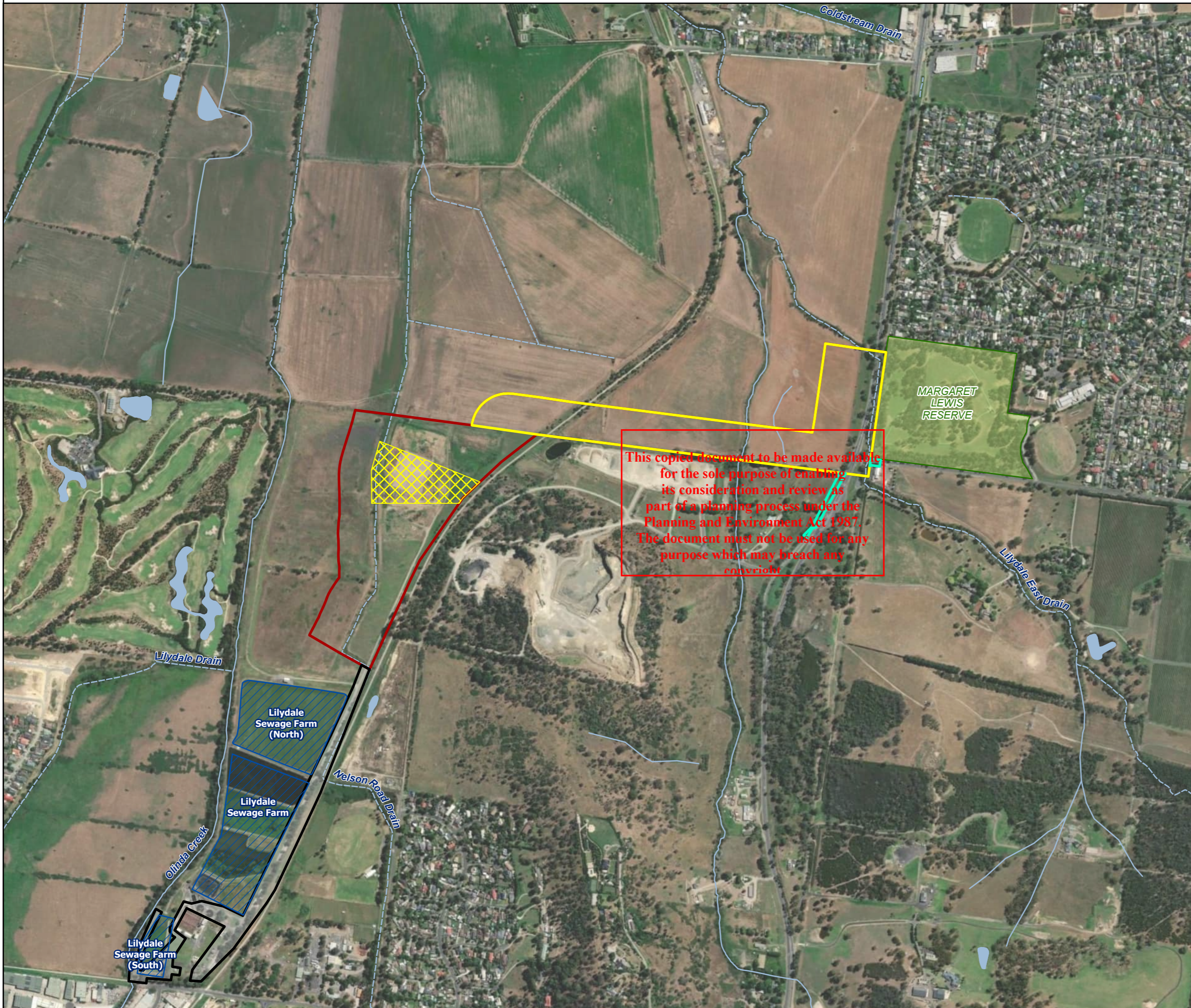
The assessment area for the proposed powerline and permeate pipeline occurs along an alignment from the WtE Facility to the sewerage treatment plant.







The Assessment Area is located within the Yarra Ranges Local Government Area. The Project is within the Highlands Southern Fall bioregion, and the Port Phillip and Westernport Catchment Management Authority (CMA) (DELWP 2020).

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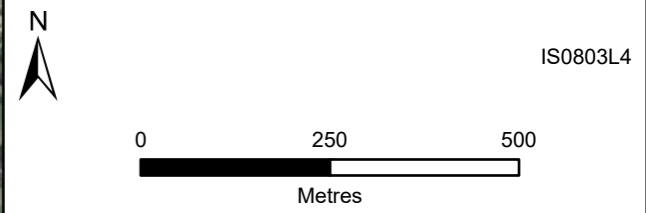
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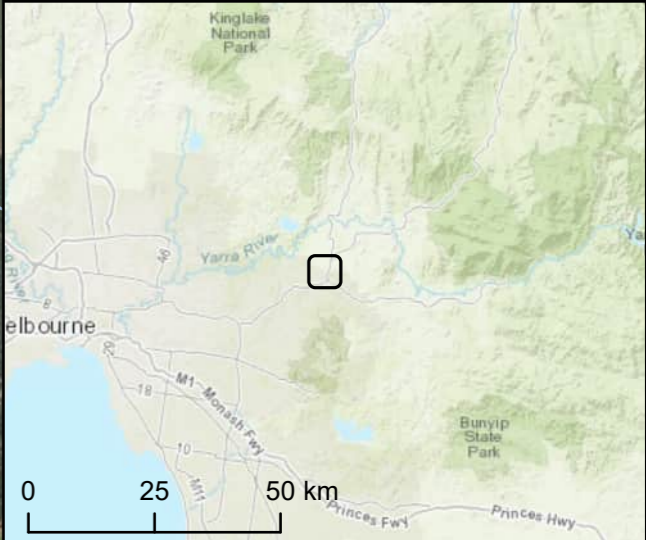
- WtE Assessment Area (totality of areas)
-  WtE Facility Assessment Area
  -  WtE Facility Development Footprint
  -  Access Assessment Area
  -  Lilydale WtE Intersection Assessment Area
  -  Lilydale STP Facility Assessment Area
  -  Current DELWP Wetlands

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## 2. Method

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### 2.1 Desktop assessment

A review was conducted of the following databases in May 2023 to fill any knowledge gaps possibly created since this report was last updated in early 2022. The databases are listed below and are administered by the following government departments.

#### Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW):

- **Protected Matters Search Tool (PMST)** (DCCEEW 2023) – The PMST highlights Matters of National Environmental Significance (MNES) protected under the EPBC Act that are modelled to occur within a nominated area.

#### Victorian Department of Energy, Environment and Climate Action (DEECA).

- **Native Vegetation Mapping – Naturekit** (DEECA 2023a)– This database comprises large-scale modelling and classification of native vegetation across Victoria. Information includes modelled presence of native vegetation, modelled extent of Ecological Vegetation Classes (EVC) as of 2005, Strategic Biodiversity Values (indicative of the contribution of the area to Victoria's biodiversity values), and modelled condition of vegetation present.
- **Victorian Biodiversity Atlas (VBA)** (DEECA 2023b) – This database comprises historical observation records of flora and fauna species from across Victoria. Records are added opportunistically, as flora and fauna surveys are conducted within Victoria for a variety of purposes. The mapping of flora and fauna distribution and determination of species' habitat preferences is an ongoing State Government process.
- **VicPlan** (DTP 2023) – This online database provides property specific planning information, such as details of land zoning and environmental overlays that are used to understand State and Local Government planning priorities and approval requirements.
- **Victorian Wetland Inventory (Current)** (DELWP 2021) – This dataset shows the extent and types of wetlands geographically across Victoria.

A ten-kilometre search area buffer was applied to the biodiversity database queries in order to consider the potential presence of mobile species that may occur in the locality and use the Assessment Area from time to time, but which have not been previously recorded occurring there. From these searches, an assessment of likelihood of presence of threatened flora and fauna species within the Assessment Area was undertaken. Criteria for assessment is presented in Appendix D, Table D.2

Publicly available aerial imagery was appraised to understand habitat conditions and the landscape-scale ecological context.

A review of available literature relevant to the Project was conducted to inform this assessment. Past reports related to the WtE are detailed below in Section 2.2. One other related assessments that occurred within the Lilydale STP is the Wet Weather Flow Strategy Preliminary (Desktop) Assessment (Jacobs reference: IS0803N4-EP-RP-0004) (Jacobs 2018a).

### 2.2 Previous WtE ecological assessments

Reports relating to the original WtE ecological assessment and incorporated into this report include:

- Lilydale Waste to Energy: Ecological Assessment (Jacobs reference: IS0803L4-EP-RP-0005) (Jacobs 2018b).
- Lilydale Waste to Energy - Targeted Survey for Growling Grass Frog (Jacobs reference: IS0803N4-EP-RP-0012) (Jacobs 2018c).
- Referral decision - Lilydale Waste to Energy Project, Lilydale (EPBC 2018/8174). The referral decision can be viewed in Appendix A.

- Lilydale Waste to Energy: Ecological Assessment Rev 1A (Jacobs reference: S0803L4-EP-RP-0039) (Jacobs 2020)
- Lilydale Waste to Energy: Ecological Assessment Rev 1B (Jacobs reference: S0803L4-EP-RP-0039) (Jacobs 2022)

### 2.2.1 Ecological assessment - WtE facility and proposed access

The ecological assessment for the WtE facility included a field survey, conducted by Jacobs' ecologists on 20 September 2017. The WtE facility Assessment Area and a previously proposed access track option through the Boral property were assessed. The findings of those surveys are incorporated into the Results section of this report. The Boral access track option is no longer in scope for the Project and is not discussed in this assessment.

The original field assessment involved walking over the Assessment Area and mapping using a Trimble GPS device any native vegetation patch, scattered native and non-native trees, threatened flora species, threatened ecological communities and likely habitat for threatened fauna. Definitions of these ecological values collected in the field are provided in Section 2.3.

An additional field assessment was undertaken by Jacobs' ecologists on 11 June 2020 for the Access Investigation Area and the WtE Facility Assessment Area. As several years had passed since the field survey undertaken in 2017 the Assessment Area was re-inspected at this time to determine if any ecological changes had occurred during this time. In the associated 2020 report, the assessment was updated to meet the requirements of the *Guidelines for the removal, destruction or lopping of native vegetation* (the *Guidelines*) (DELWP 2017).

All relevant ecological data collected during the above surveys have been consolidated into this current report.

### 2.2.2 Targeted Growling Grass Frog surveys

A habitat suitability assessment for Growling Grass Frog was undertaken on 24th November 2017. Targeted surveys were deemed necessary and executed under suitable weather conditions on the 11th and 12th December 2017. No Growling Grass Frog were observed. Results of the surveys and the survey locations can be viewed in Appendix B.

It was deemed necessary to refer the Project to DAWE under the EPBC Act for the species. The referral (EPBC 2018/8174) decision was a not a controlled action. As the likely presence and impact to the Growling Grass Frog has previously been assessed for the WtE Facility Assessment Area and the extent of the impact remains the same, no further consideration of the species is necessary for that aspect of the Project. The species is considered in the updated Desktop assessment (Section 2.1) and field assessment results (Section 2.2.3) for the new Access Investigation Area.

### 2.2.3 Additional Ecological assessments

An assessment for the intersection upgrade was undertaken by Jacobs' ecologists on 24 February 2022 and an additional assessment was undertaken on 3 May 2023 also by Jacobs' ecologists to assess any impacts associated with the proposed 22kV powerline from the WtE facility to the Lilydale STP, Recycled Water Pump Station and external energy grid and the proposed location of the permeate pipeline from the WtE Facility to the sewerage treatment plant to be located under the existing road, with a trenchless bore under the Nelson Road Drain.

The following tasks were undertaken where applicable:

- Mapping of native vegetation including patches, large trees and scattered trees in accordance with the *Guidelines* (DELWP 2017);
- Undertaking a Habitat Hectare Assessment of any patches of native vegetation in accordance with the *Vegetation Quality Assessment Manual v1.3*;

- Assessing potential habitat for threatened flora and fauna that may occur in the additional Assessment Area;
- Assessing the presence of threatened communities in accordance with the listing advice for those communities; and describing the vegetation and habitat present, including recording the existing conditions observed.

Trimble R1 GNSS Receivers were used to spatially map geographic locations of ecological values observed. The receivers have sub-metre accuracy capabilities.

### 2.3 Definition of native vegetation and fauna habitat

For all field assessments, native vegetation was mapped in accordance with the *Guidelines* as either a patch or scattered tree, as described below (DELWP 2017). The *Guidelines* are described further in Appendix C, Table C.1.

#### Patch:

- An area of vegetation where at least 25 per cent 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; or
- any mapped wetland included in the Current wetlands map, available in DELWP systems and tools.

Patches were further categorised into Ecological Vegetation Classes (EVC) and then into Habitat Zones. These areas were assessed using the Habitat Zoning Method described in the *Vegetation Quality Assessment Manual (VQA) – Guidelines for applying the habitat zoning method* (Version 1.3 (DSE 2004)). Any large trees contained within patches were identified, mapped and their Diameter at Breast Height (DBH) recorded.

#### Scattered tree:

- A native canopy tree that does not form part of a remnant patch. A native canopy tree is a mature tree (i.e. it is able to flower) that is greater than 3m in height and is normally found in the upper layer of the relevant vegetation type.

#### Other vegetation:

- Native vegetation that did not qualify as a remnant patch or scattered tree was incidentally identified such as scattered understorey trees, but these were not mapped as according to *the Guidelines*.
- Noxious weeds and invasive animals identified in accordance with the *Catchment and Land Protection Act 1994* (CaLP Act) were incidentally recorded.

#### Fauna habitat:

- Vegetation providing habitat for wildlife and threatened fauna habitat is identified based on suitability for particular wildlife and evidence of native fauna activity (e.g. nesting, foraging, scats, scratchings, and tracks).

### 2.4 Ecological legislation and policy

The approval requirements of the Project have been determined through assessing ecological values present within the entire Assessment Area against relevant legislation and policies. Relevant legislation and policy are listed below and are summarised in Appendix C, Table C.1.

#### Commonwealth

- *Environment Protection and Biodiversity Conservation Act 1994* (EPBC Act)

#### State

- *Environment Effects Act 1978* (EE Act)

- *Environment Protection Act 1970 (EP Act)*
- *Water Act 1989*
- *Fisheries Act 1995*
- *Flora and Fauna Guarantee Act 1988 (FFG Act)*
- *Guidelines for the removal, destruction or lopping of native vegetation (the Guidelines) (DELWP 2017).*
- *Catchment and Land Protection Act 1994 (CaLP Act)*
- *Wildlife Act 1975*
- *Planning and Environment Act 1987 (P&E Act) – Yarra Ranges Council Planning Scheme*
  - Tree Policy 2016 (Council 2016)
  - Clause 51.03: Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan
  - Clause 52.17: Native vegetation
  - Environmental Significance Overlay – Schedule 1, Zone 6 (ESO1-Z6) and Schedule 1, Site B14 (ESO1-B14).

### 2.5 Quantification of vegetation losses

Offset calculations are based on the arborist assessment impact analysis (Ironbark Environmental Arboriculture 2023) and with regard to impacts associated with the construction footprint based on the plans provided in Appendix J.

### 2.6 Assumptions and limitations

- This report has been prepared by Jacobs for Yara Valley Water and is intended only for the purposes of identifying and informing potential environmental approvals and permits associated with indicative ecological impacts associated with the Waste to Energy 2 Project. Information presented in this report is based on available information at the time of assessment. Changes to legislation, policy or data used to inform the report may alter the results and conclusions of this report. This report also reflects conditions assessed during the dates of the field assessment. Changes to ecological conditions occur over time through natural and human influences. Such changes may alter the conclusions of this report.
- No targeted or night-time assessments were completed in compiling this report, other than the previously completed targeted surveys for the Growling Grass Frog in 2017. Thus, the only recorded species were those that can be easily identified, heard or have distinctive signs, such as tracks, scats, diggings, etc. Many cryptic and nocturnal species would not have been identified during such a survey.
- The timing of the surveys may not have been ideal for detecting some vegetation in that some seasonal species, such as some grasses, orchids and lilies, were not flowering during some of the survey period and some were not able to be detected or identified in detail due to a lack of identifying vegetative and/or reproductive material.
- Notwithstanding the above the ecological field investigations completed are sufficient to inform this impact assessment.
- Calculations and figures are based on design details available at the time of writing where design details change the outcomes of this report may require updating.
- Databases assessed were the most current available at the time of assessment. Any changes to these data may require this report to be updated.

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## 3. Results

### 3.1 Field Assessment

As evident from the field assessment, on a landscape-scale, the Lilydale STP falls within a peri-urbanised environment and is surrounded by historically modified vegetation for agricultural and urbanisation purposes. Native vegetation observed within the Assessment Area, is discussed below

#### 3.1.1 Native vegetation

Three EVCs were mapped across the Assessment Area:

- EVC 164 Creekline Herb-rich Woodland has close affinities to Swampy Riparian Complex (EVC 126) which is modelled by DELWP in the 1750 layer to have previously occurred throughout the Assessment Area. Due to Complex EVC's having no benchmarks assigned, Creekline Herb-rich Woodland EVC was used for the purposes of the VQA assessment and mapping.
- EVC 821 Tall Marsh
- EVC 653 Aquatic Herbland

At the WtE Facility Assessment Area all three EVCs were mapped, whereas within the Access Investigation Area one EVC was observed, Creekline Herb-rich Woodland. Creekline Herb-rich Woodland vegetation was also identified within the Intersection Assessment Area along the Maroondah Highway road reserve. Mapped ecological values can be viewed in Appendix G. The VQA assessment results can be viewed in Appendix F, Table F.1.

##### 3.1.1.1 WtE facility Assessment Area

The flora present within the Lilydale STP, including the proposed WtE facility development footprint was highly disturbed with minimal native vegetation present. The area was predominantly exotic weed species, including Brassica (*\*Brassica sp.*), Plantain (*\*Plantago sp.*), Small-flower Mallow (*\*Malva parviflora*) and Cocksfoot (*\*Dactylis glomerata*) (Figure 3.1). The majority of the WtE Facility Assessment Area is previously disturbed due to past land use, including sludge ponds and is currently regularly mown and contains cows.

Common Reed (*Phragmites australis*) was intermittently observed across the WtE Facility Assessment Area in wet depressions, but most often did not reach constitute 25 % of the perennial vegetation cover. In the 2017 field assessment Nelson Road drain was mostly clear of vegetation (Figure 3.2), in subsequent assessment Common Reed did reach 25 % of the perennial vegetation cover across the length of Nelson Road drain, forming a patch of EVC 821 Tall Marsh (habitat zone 5), in combination with some Juncus (*Juncus sp.*) and Broad-leaf Cumbungi (*Typha orientalis*) (Figure 3.3).

Two patches of EVC 164 Creekline Herb-rich Woodland were mapped, containing Blackwood (*Acacia melanoxylon*) only, these are likely to have regenerated from nearby conservation plantings. One other patch was mapped within the Lilydale STP; EVC 653 Aquatic Herbland. Another drainage line runs into this wetland, which is completely surrounded by exotic species such as Water Couch (*\*Paspalum distichum*) and Toowoomba Canary-grass (*\*Phalaris aquatica*). The patch is formed by Common Duckweed (*Lemna disperma*) on the surface of the water body (habitat zone 6) (Figure 3.4).

One scattered tree was present, Swamp Gum (*Eucalyptus ovata*), along Nelson Road Drain. The tree can be viewed in Figure 3.5. The remainder of the trees within the WtE facility Assessment Area were planted Southern Mahogany (*#Eucalyptus botryoides*).

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Figure 3.1: Representative photo of the WtE facility Assessment Area , dominated by exotic weeds and pasture grasses.



Figure 3.2: Nelson Road Drain clearing in 2017 previously cleared of native vegetation.

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Figure 3.3: Nelson Road Drain, containing Common Reed, during the 2020 field assessment.



Figure 3.4: A sludge pond inundated with water, with Common Duckweed on the surface.

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Figure 3.5: Scattered tree, Swamp Gum, present along the Nelson Road Drain.

### 3.1.1.2 Access investigation area

The majority of the investigation area consisted of farm paddocks containing exotic species, such as Common Nettle (*\*Urtica dioica*), \*Small-flower Mallow, Paspalum (*\*Paspalum dilatatum*) and \*Cocksfoot (Figure 3.6).

Native vegetation patches did however occur across four habitat zones, within the Access investigation area and were consistent with EVC 126 Swampy Riparian Complex, showing some characteristics of Creeklime Herb-rich Woodland (EVC 164), Swampy Riparian Woodland (EVC 83) and Valley Grassy Forest (EVC 47). These habitat zones are mapped and scored as Creeklime Herb-rich Woodland (EVC 164) and discussed below.

Native vegetation patches (habitat zones 1, 3 and 4) mostly surrounded the Lilydale East Drain and its tributaries, including to the east of Maroondah Hwy where the drain passes under the Highway and then continues south parallel to the Highway. The modified drain system is dominated by weeds, including Paspalum, Blackberry (*\*Rubus fruticosus* spp. agg.), \*Brassica and Gorse (*\*Ulex europaeus*).

The majority of patches along the Drain (habitat zone 1) were of low diversity, characterised by Blackwood, an occasional eucalypt tree and some grasses, such as Wallaby Grass (*Rytidosperma* sp.) or Weeping Grass (*Microlaena stipoides* var. *stipoides*) (Figure 3.7). Similarly, patches along the historic railway (habitat zone 2) consisted of Blackwood and Weeping Grass and Silver Wattle (*Acacia dealbata*), likely planted for conservation purposes following the conversion of the railway into a publicly accessible bike path (Figure 3.8).

Patches within the road reserve (habitat zone 3 and 4), east of the Hwy near Margaret Lewis Reserve had increased species diversity due to conservation plantings occurring within the reserve (Figure 3.9) and within the western road reserve, with a range of indigenous and non-indigenous shrubs, such as Cootamundra Wattle (*\*Acacia baileyana*), planted within habitat zone 4 (Figure 3.10). The majority of the remnant vegetation was formed by a canopy of Swamp Gum, Narrow-leaf Peppermint (*Eucalyptus radiata*), Candlebark (*Eucalyptus rubida*) and Yarra Gum (*Eucalyptus yarraensis*), with a mixture of grassland and aquatic species, such as Bracken (*Pteridium esculentum*), Broad-leaf Cumbungi, Weeping Grass, Wallaby Grass and Slender Knotweed (*Persicaria*



*decipiens*) (Figure 3.11). The shrub layer, although sparse, was characterised by Cherry Ballart (*Exocarpos cupressiformis*), Blackwood and Tea-tree (*Leptospermum* sp.).

A number of large canopy trees were also present within the road reserve patches and are detailed in Appendix E. All trees were considered habitat for wildlife, through either hollows or as they could support nests. Additionally, VBA records show Yarra Gum previously mapped within the road reserve. As the Yarra Gum, within the Assessment Area, did not always constitute large canopy trees, the VBA records have been incorporated into this assessment and can be viewed in Appendix F. Mapped canopy trees can also be viewed in Appendix G.



Figure 3.6: Agricultural paddock at southern end of the investigation area adjacent to the Quarry property.

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Figure 3.7: Native vegetation along Lilydale East Drain.

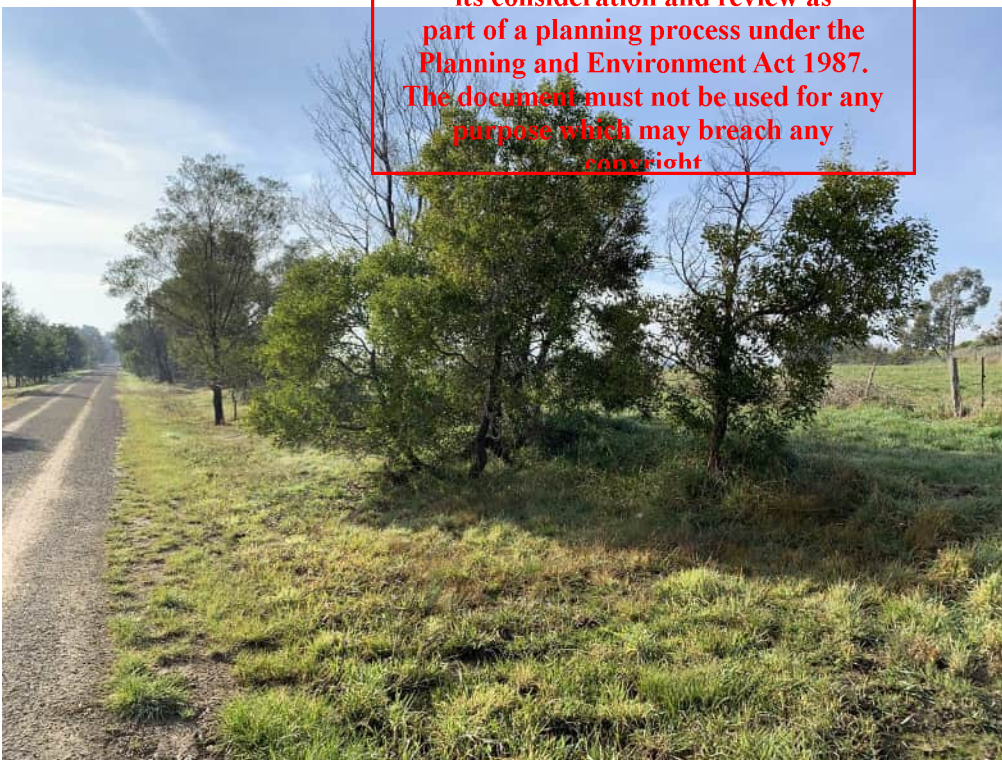


Figure 3.8: Habitat zone 2, consisting of Silver Wattle, Blackwood and Weeping Grass, along the historic railway bike path.

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Figure 3.9: Characteristic native vegetation present along Lilydale East Drain, within the road reserve to the east of the Maroondah Hwy.

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Figure 3.10: Habitat zone 4, where conservation plantings have occurred. Weeping Grass is present in the foreground.

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Figure 3.11: Native vegetation patch (Habitat zone 3) along Lilydale East Drain on the western side of Maroondah Hwy.

**3.1.1.3 Lilydale WtE – Intersection Assessment Area**

One patch (habitat zone 7) of Creepling Herb-rich Woodland (EVC 164) was identified within the Maroondah Highway road reserve comprising large Swamp Gums and Blackwoods dominated by \*Blackberry within the understorey (Figure 3.12: Native vegetation patch (Habitat zone 7) within the Maroondah Hwy road reserve. A Large Narrow-leaf Peppermint was identified within the Ingram road reserve (Figure 3.13).



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Figure 3.12: Native vegetation patch (Habitat zone 7) within the Maroondah Hwy road reserve.





Figure 3.13: Large Scattered Tree (Narrow-leaf Peppermint) within Ingram road reserve

#### 3.1.1.4 Lilydale STP facility Assessment Area

The assessment area comprises mostly a mix of native and indigenous planted species with revegetation areas along the southern and eastern fence line that borders the site. The area also intersects an artificial DEWLP mapped wetland: Lilydale Sewage Farm (South) (ID 71749) and borders a series of additional artificial DEWLP mapped wetlands associated with the Lilydale Sewage Farm.

Vegetation with the artificial DEWLP mapped wetland: Lilydale Sewage Farm (South) (ID 71749) comprised exotic weed species dominated by Kikuyu (*Cenchrus clandestinus*) and Drain Sedge (*Cyperus eragrostis*) with some Slender Knotweed (*Persicaria decipiens*) scattered throughout (Figure 3.14). All areas surrounding the artificial Lilydale Sewage Farm ponds are dominated by Kikuyu.

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Figure 3.14: Artificial DEWLP mapped wetland: Lilydale Sewage Farm (South) (ID 71749) where the proposed powerline will be strung.

A mix of native and indigenous planted species within revegetation areas comprised a canopy of Manna Gum (*Eucalyptus viminalis* subsp. *viminalis*), Swamp Gum (*Eucalyptus ovata* subsp. *ovata*), River Red Gum (*Eucalyptus camaldulensis*), Blue Gum (*Eucalyptus globulus*), Narrow-leaved peppermint (*Eucalyptus radiata* subsp. *radiata*) and Grey Box (*Eucalyptus microcarpa*). Planted sub-canopy trees were Black Sheoak (*Allocasuarina littoralis*), Blackwood (*Acacia melanoxylon*) and Silver Wattle (*Acacia dealbata* subsp. *dealbata*). The midstorey contained scattered shrubs of several species including Swamp Paperbark (*Melaleuca ericifolia*) and Prickly Moses (*Acacia verticillata*). These revegetated areas were not attributable to any particular EVC.

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Figure 3.15: A mix of native and indigenous planted species within vegetation areas

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### 3.1.2 Trees

A total of 25 indigenous and native trees were recorded within the Assessment Area assessed by Jacobs and Ironbark Environmental Arboriculture in 2022 and 2023. All relevant trees and shrubs that require consideration in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017) and in some instances includes planted species if native and indigenous to the area are consolidated in Appendix E. Details of trees and shrubs include: scientific name, diameter at Breast Height (DBH; at 1.3m above ground level), information associated with Tree Protection Zones (TPZs) and expected impacts on trees from proposed works as well as a unique tree identifier that is consistent with the Arborist report and this report. A breakdown of trees is provided below.

#### 3.1.2.1 Trees within Habitat Zones

A total of 17 Large Trees occur across Habitat Zones of native vegetation, including:

- 4 Yarra Gum (*Eucalyptus yarraensis*)
- 12 Swamp Gum (*Eucalyptus ovata*)
- One Narrow-leaf Peppermint (*Eucalyptus radiata*)

Large Trees within Habitat Zones with a corresponding unique tree identifier are depicted in Appendix G and detailed in the tree assessment tables Appendix E.

#### 3.1.2.2 Scattered Trees

A total of seven scattered trees (three small and four large) were identified within the Assessment Area. Species comprise those listed above including Messmate (*Eucalyptus obliqua*). All scattered trees with a corresponding unique tree identifier are depicted in in Appendix G and detailed in the tree assessment tables Appendix E.

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### 3.1.2.3 Native and indigenous planted trees

Native and indigenous planted tree species within revegetation areas were taken into consideration and assessed for impacts associated with the pipeline and the powerline. The DBH of trees were measured and Tree TPZ's were applied to ensure trees can be avoided and to determine which trees may be at risk of impact. These trees with a corresponding unique tree identifier are depicted in Appendix G and detailed in the tree assessment tables in Appendix E.

### 3.1.3 FFG Act protected flora

One FFG protected flora species was observed within the Assessment Area: Golden Wattle (*Acacia pycnantha*). Tree ID 34 occurs in Habitat Zone 4b and will be avoided.

### 3.1.4 Threatened Flora

A total of 73 threatened flora species have previously been recorded or are modelled to occur within 10km of the Assessment Area based on the VBA database and PMST search. Following the field assessment, the likelihood of occurrence of each of the 73 threatened flora species within the Assessment Area was assessed and is provided in Appendix D

One threatened flora species was observed within the Assessment Area. Yarra Gum is listed as critically endangered under the FFG Act, and was observed within the Maroondah Hwy road reserve. The locations of the trees can be observed in Appendix G. Impacts to these trees have now been avoided following review of the design and the revised Arborist assessment. Mitigation measures for these trees have been recommended by the arborist and are noted in Appendix E and discussed throughout this report in section 5 and section 6.

Given that the remainder of Assessment Area has been previously disturbed, and the majority of vegetation is non-native, the likelihood of other threatened flora species being present is low and no threatened flora are considered likely to be dependent on the poor-quality habitat available within the WtE facility Assessment Area. Similarly, although of a higher quality with increased species diversity, the road reserve is not expected to support any further threatened flora species given the level of ground disturbance within road reserve.

### 3.1.5 Threatened Fauna

A total of 85 threatened fauna species (11 additional migratory fauna species), have previously been recorded or are modelled to occur within 10km of the Assessment Area based on the VBA database and PMST search. Following the field assessment, the likelihood of occurrence of each of the 85 threatened fauna species within the Assessment Area was assessed and is shown in Appendix G.

An assessment of fauna habitat was conducted with an emphasis on potential habitat that may provide shelter, food or resources for significant fauna species. It was determined that the Assessment Area has a limited ability to support wildlife.

Nelson Road drain is highly disturbed, though may still provide marginal habitat for amphibian species, such as Common Eastern Froglet (*Crinia signifera*) heard during the recent field assessment. As detailed in section 2.2.2 Appendix A, and Appendix B, the EPBC Act-listed Growling Grass Frog are not considered likely to be present following targeted surveys. Results of the targeted surveys can be viewed in Appendix B.

The Common Reed and weed cover within the Drain, surrounding wet depressions may also provide habitat for wetland bird species. The treatment ponds also provide good quality habitat for wetland bird species where several previous records occur.

In addition, Lilydale East Drain at the time of assessment did not contain water and water movement is blocked at several locations across the private property north of the STP. As such, it is not expected to support any threatened aquatic amphibian or bird species.

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The EPBC Act-listed Swift Parrot has the potential to utilise the eucalypt trees within the Maroondah Hwy road reserve whilst on migration.

In summary of the 85 threatened fauna species previously recorded or modelled to occur, 17 species are considered to have a moderate or higher likelihood of occurrence within the Assessment Area (Table 3.1).

Table 3.1: Threatened fauna species with a moderate or higher likelihood of occurring within the Assessment Area

Scientific name	Common Name	Conservation status		Likelihood of occurrence and potential impacts
		EPBC	FFG	
<i>Accipiter novaehollandiae</i>	Grey Goshawk		en	Medium - may fly-over Assessment Area whilst foraging and use roadside trees for roosting. The Project is unlikely to have any significant impacts on this species.
<i>Ardea intermedia plumifera</i>	Plumed Egret		cr	Medium - may reside within treatment ponds. The Project is unlikely to have any significant impacts on this species.
<i>Aythya australis</i>	Hardhead		vu	Medium - may reside within treatment ponds. The Project is unlikely to have any significant impacts on this species.
<i>Biziura lobata</i>	Musk Duck		vu	Medium - may reside within treatment ponds. The Project is unlikely to have any significant impacts on this species.
<i>Collocephalon fimbriatum</i>	Gang Gang	EN	en	Medium - may fly-over Assessment Area whilst foraging and use roadside trees for roosting. The Project is unlikely to have any significant impacts on this species.
<i>Calamanthus pyrrhopygius</i>	Chestnut-rumped Heathwren		vu	Medium - habitat available along Maroondah Hwy. Species may reside in wider landscape within more forested areas. The Project is unlikely to have any significant impacts on this species.
<i>Egretta garzetta</i>	Little Egret		en	Medium - may reside within treatment ponds. The Project is unlikely to have any significant impacts on this species.
<i>Hirundapus caudacutus</i>	White-throated Needletail	VU, Migratory	vu	Medium - primarily an aerial species, which may fly-over Assessment Area. The Project is unlikely to have any significant impacts on this species.
<i>Lathamus discolor</i>	Swift Parrot	CR, Migratory	CR	Medium - Species now mainly restricted to northern VIC in winter. May stop intermittently to forage in Assessment Area whilst migrating. Project is unlikely to have any significant impacts on this species
<i>Ninox strenua</i>	Powerful Owl		vu	Medium - species may forage over Assessment Area but are dependent on hollow-bearing trees for roosting. Evidence of suitable hollows were not present in trees along Maroondah Hwy or other scattered trees in Assessment Area. The Project is unlikely to have any significant impacts on this species.
<i>Spatula rhynchotis</i>	Australasian Shoveler		vu	Medium- species may reside around treatment ponds and wet depression in Assessment Area. The Project is unlikely to have any significant impacts on this species.
<i>Stictonetta naevosa</i>	Freckled Duck		en	Medium- species may reside around treatment ponds and wet depression in Assessment Area. The Project is unlikely to have any significant impacts on this species.

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Scientific name	Common Name	Conservation status		Likelihood of occurrence and potential impacts
		EPBC	FFG	
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale		vu	Medium - species may occur within the roadside fragments along Maroondah Hwy. However, species tends to avoid smaller fragmented areas, and will likely occur in larger woodland areas surrounding the Assessment Area.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	vu	Medium - species may be observed foraging over Assessment Area at night. Closest roosting colony at Yarra Bend Park. The Project is unlikely to have any significant impacts on this species.
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink		en	Medium - suitable habitat present within WtE facility Assessment Area. The Project is unlikely to have any significant impacts on this species.
<i>Plectrotarsus gravenhorstii</i>	Caddisfly		en	Medium - historical records only, but suitable habitat present within Assessment Area. The Project is unlikely to have any significant impacts on this species.
<i>Temognatha sanguinipennis</i>	Jewel Beetle		en	Medium - historical records only, but suitable habitat present within Assessment Area. The Project is unlikely to have any significant impacts on this species.

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### 3.1.6 Threatened ecological communities

No threatened ecological communities were identified during the field assessment, with none of the mapped patches of native vegetation constituting these communities (Table 3.2).

Table 3.2: Results of threatened ecological communities predicted to occur within 10 km of the Assessment Area.

EPBC Act and FFG Act ecological community	Conservation status	Occurrence within Assessment Area
Natural Damp Grassland of the Victorian Coastal Plains	EPBC Act – Critically endangered	Not present
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	EPBC Act – Critically endangered	Not present
Sedge-rich <i>Eucalyptus camphora</i> Swamp	FFG Act - Listed	Not present

### 3.1.7 CaLP Act weeds and invasive wildlife

Declared noxious weeds observed within the Assessment Area include the following species:

- Spear Thistle (\**Cirsium vulgare*)
- Blackberry (\**Rubus fruticosus* spp. agg.)
- Gorse (\**Ulex europaeus*)
- Fennel (\**Foeniculum vulgare*)
- Watsonia (\**Watsonia meriana*).

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European Rabbit (*Oryctolagus cuniculus*) scats were observed within the WtE facility Assessment Area. Given the highly modified landscape in which the Assessment Area falls, it is highly likely that the following invasive species would frequent the Assessment Area:

- European Red Fox (*Vulpes vulpes*)
- House Cat (*Felis catus*)
- European Hare (*Lepus europaeus*)
- Common House Mouse (*Mus musculus*).

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## 4. Impact Assessment and Mitigation Measures

### 4.1 Proposed works and impacts

This Project consists of construction areas depicted in plans provided in Appendix J and described below:

The design for the WtE facility will include a combination of:

- waste receipt and sorting;
- pre-treatment trains to de-package and prepare wastes;
- waste blending tank(s);
- anaerobic digestion system similar to the existing YVW Aurora WtE facility;
- capture and processing of biogas from the digestors, including emergency flaring;
- a kiosk and 22kV powerline with new and re-strung sections of cable from the WtE facility to the Lilydale STP, Recycled Water Pump Station and external energy grid
- a permeate pipeline (approximately 50mm thick) from the WtE Facility to the sewerage treatment plant to be located under the existing road, with a trenchless bore under the Nelson Road Drain
- processing of the liquid digestate for offsite reuse, most likely as a soil conditioner.
- drainage and culvert works will occur within 20m either side of the centre of Ingram Road

Access to the proposed WtE site is from the Maroondah Highway near to the Ingram Road intersection through 535-537 Maroondah Highway. The access road will be routed near the southern boundary of 535-537 Maroondah Highway and pass over a tributary of the Lilydale East Drain and the Healesville-Lilydale Railway Line Reserve before passing under high voltage power lines into the northern portion of 83-85 Nelson Road (Lilydale STP), the location of WtE facility. A description of the proposed access is further detailed below:

- The access road will run parallel to the boundary of 535-537 Maroondah Highway and the quarry. The construction area will extend 5m and 50m north of the boundary between the Quarry and 535-537 Maroondah Highway.
- The impact area across the drain will be 5m and 30m north of the boundary for 20m either side of the drain
- The impact area across the rail crossing will be 5m and 50m north of the boundary between the Quarry and 535-537 Maroondah Highway.

Lilydale WtE – Intersection upgrade incorporates the intersection at Maroondah Hwy and Ingram Road. The intersection upgrade will involve access and exit turning lanes, associated traffic signalling and proposed line markings to access the track to the proposed WtE facility site. Works will impact areas within the Maroondah Hwy and Ingram Road reserves.

The kiosk and 22kV powerline cable from the WtE facility to the Lilydale STP, Recycled Water Pump Station and external energy grid will use existing pole locations within some areas and new poles will be installed where required, and the alignment is shown in Appendix G. Discussions have been had with the Project engineer to ensure impacts have been minimised to avoid native vegetation. Within the area close to the southern boundary of the Lilydale STP Near Nelson Road the powerline will be re-strung using existing poles. Minor tree trimming of a Black Sheoak (*Allocasuarina littoralis*) will be required and some smaller Black Sheoak recruits may be driven over during installation. It is expected that these impacts are to be minor as shown in the figure below.

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Figure 4.1: Left: Black Sheoak (*Allocasuarina littoralis*) to be trimmed for power line. Right: smaller Black Sheoak recruits may be driven over during powerline installation.

The area that spans the existing DEWLP mapped wetland: Lilydale Sewage Farm (South) (ID 71749) will need to be driven over during installation of the powerline cable. This DEWLP mapped wetland is an artificial waterbody sewerage treatment pond and therefore if any impacts are to occur these can be exempt by seeking written agreement for the Secretary to DELWP as per the *Native Vegetation Newsletter 5* Table 1. Process for excluding a Mapped Wetland from the assessment process; item 3. Artificial waterbodies or permanently inundated wetlands (DELWP 2021). The vegetation within this area is mostly dominated by exotic weed species and wetland birds that occur within the vicinity will not be impacted by the installation.

The permeate pipeline (approximately 50mm thick) from the WtE Facility to the sewerage treatment plant will be located under the existing road and within the existing mown areas supporting exotic grass species. Discussions have been had with the Project engineer to ensure no impacts will occur to native vegetation. Following the recent site assessment the alignment has been altered to ensure all native and indigenous planted species within revegetation areas will be avoided. At locations where the TPZ of trees are at risk of encroachment (Tree ID 139, 140, 143 and 151) non-destructive construction techniques will be used, and mitigation measures will be applied to these trees. The encroachment of trees is minimal and potential impacts <10% of the TPZ in all instances (Appendix E). A trenchless bore will occur under the Nelson Road Drain.

## 4.2 Avoid and minimise

In accordance with the Guidelines, all applications to remove native vegetation must provide a statement as to what steps have been taken to ensure that impacts on biodiversity from native vegetation removal have been avoided or minimised.

Initial steps have been undertaken to avoid and minimise the impact of the Project on biodiversity through the removal of native vegetation. A flora and fauna assessment was completed. This included mapping of any vegetation, where removal of that vegetation would require planning permission. Ecologists identified and

mapped ecological constraints within the Assessment Area. Ecological constraints mapped across the Assessment Area included:

- The presence of large trees with significant habitat value.
- Scattered Trees and patches of native vegetation (including locations of large trees) as defined by the Guidelines.
- Consideration of the likelihood of occurrence of any threatened flora or fauna that may potentially be impacted by the Project including targeted surveys for Growling Grass Frog and the occurrence of Yarra Gum.

Further to the above and specifically in response to the RFI final siting and design has been completed and has considered efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation. All large trees with hollows that provide important habitat for fauna and connectivity within the broader landscape have now been avoided and the extent of native vegetation patches impacted has been reduced.

Efforts focussed on areas of native vegetation that have the most value and all FFG Act threatened species will now be protected. The main focus was to avoid impacts to Yarra Gum (*Eucalyptus yarraensis*), particularly Tree ID 104 and 106 and now based on final siting and design have been avoided. Furthermore Golden Wattle (*Acacia pycnantha*) Tree ID 34 will also be avoided which is protected under the FFG Act. Mitigation measures have been recommended for these trees to ensure that more than 90% of the TPZ of trees is isolated from construction impacts; machinery and vehicles must not drive over the TPZ unless ground protection is in place. Exclusion of machinery and vehicles from the TPZ with temporary fencing is recommended.

Where a laydown area is proposed near the Ingdon Road intersection within the Rosemount Road area temporary fencing will be installed for Tree ID 106 and machinery and vehicles will only be restricted to the paved road and will not drive over the TPZ of trees within HZ03a will not be impacted where branches overhang over the road. The contractor has advised that all tree canopies will be impacted, and all lifting of pipes will be done outside the TPZ of trees within HZ03a. All other laydown areas are within cleared areas with no impacts to any native vegetation.

Impacts to native vegetation are based on the most recently updated arborist impact assessment based on the plans provided within Appendix J. Further details with regards to trees losses and recommendations are outlined in the Tree Assessment tables in Appendix E. Losses with regards to habitat zones and patches are depicted in Appendix G.

There are no feasible opportunities to further avoid and minimise impacts on this native vegetation without undermining the key objectives of the proposal as there is no option to safely install the access or facility without impacting some vegetation.

Impacts to native vegetation have been determined and the quantum of vegetation that is to be cleared is summarised in Table 4.1. Avoid and minimise impacts to native vegetation is described below.

Table 4.1: Extent of native vegetation mapped within the Investigation Area

Native vegetation type	Extent within the Assessment Area	Extent of native vegetation before Avoid and minimise	Reduced final impacts following Avoid and minimise
Trees	<ul style="list-style-type: none"> <li>• 17 Large Canopy Trees within patches</li> <li>• 7 Scattered trees (3 Small and 4 Large)</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Large Canopy Trees within patches</li> <li>• 1 Large Scatted Tree</li> </ul>	None



Native vegetation type	Extent within the Assessment Area	Extent of native vegetation before Avoid and minimise	Reduced final impacts following Avoid and minimise
Patches	A total of 1.926 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.004 ha of EVC 653: Aquatic Herbland</li> <li>• 0.602 ha of EVC 821: Tall Marsh</li> <li>• 1.320 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>	A total of 0.883 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.0044 ha of EVC 653: Aquatic Herbland</li> <li>• 0.446 ha of EVC 821: Tall Marsh</li> <li>• 0.432 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>	A total of 0.180 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.0855 ha of EVC 821: Tall Marsh</li> <li>• 0.0944 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>

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## 5. Legislation and policy implications

Impacts to ecological values have been assessed against relevant policy and legislation. The specific legislation/policy and their environmental requirements as relevant to the Project are summarised in Table 5.1. Where required, policy and legislation implications are expanded upon in the Sections below.

Table 5.1: Summary of policy/legislative requirements

Policy/legislation	Project relevance/actions required
<b>Commonwealth</b>	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	<ul style="list-style-type: none"> <li>The Project will not have a significant impact on any Matters of National Environmental Significance (MNES).</li> <li>Following targeted Growling Grass Frog surveys and an EPBC Act referral with a 'not a controlled action' response, the issue of impact to the species has been closed out. No further action is required. Erosion and sediment fencing will be implemented where required.</li> <li>No action required under this Act.</li> </ul>
<b>State</b>	
<i>Environment Effects Act 1978</i> (EE Act)	<ul style="list-style-type: none"> <li>Due to the limited impacts to ecological values, a referral under the EE Act is not triggered. No action is required under this Act.</li> </ul>
<i>Flora and Fauna Guarantee Act 1988</i> (FFG Act)	<ul style="list-style-type: none"> <li>One FFG Act-threatened flora species was identified within the Assessment Area – Yarra Gum (<i>Eucalyptus yarraensis</i>) and is critically endangered under the FFG Act.</li> <li>Following efforts to avoid and minimise impacts as per the arborist impact assessment no Yarra Gum trees will be impacted, in particular Tree ID 104 and Tree ID 106 will be retained with mitigation (Appendix E and Appendix G). Every effort has been made to ensure these trees can be avoided and protected by the proposed construction activities.</li> <li>A 'Permit to Take' application is not required for this Project as no flora protected under the FFG Act will be removed, in particular Yarra Gum trees Tree ID 104 and Tree ID 106 and Golden Wattle (<i>Acacia pycnantha</i>) Tree ID 34 will be retained.</li> </ul>
<i>Planning and Environment Act 1987</i> (P&E Act)	<ul style="list-style-type: none"> <li>A permit is required for the removal of 0.180 ha of native vegetation patches (EVCs):                             <ul style="list-style-type: none"> <li>- 0.0855 ha of EVC 821: Tall Marsh</li> <li>- 0.0944 ha of EVC 134: Creekline Herb-rich Woodland</li> </ul> </li> <li>The permit triggers DELWP has considered that apply to this application are:                             <ul style="list-style-type: none"> <li>- Clause 52.17 Native vegetation</li> <li>- Clause 42.01 (Schedule 1) Environmental Significance Overlay requires a Preliminary Land Management Plan</li> <li>- Clause 42.03 (Schedule 2) Significance Landscape Overlay</li> </ul> </li> </ul> <p>Further detail provided in 5.1.1 below</p>
<i>Guidelines for the removal, destruction or lopping of native vegetation</i> (The Guidelines)	<ul style="list-style-type: none"> <li>Offsets required for the removal of 0.180 ha of native vegetation.</li> <li>Offsets required are 0.054 general habitat units with a minimum strategic biodiversity score of 0.509 in the vicinity of Port Phillip and Westernport Catchment Management Authority (CMA) or Yarra Ranges Shire Council (Appendix I)</li> <li>Yarra Valley Water is to secure these offsets prior to commencing works.</li> <li>Further detail provided in 5.1.1 below.</li> </ul>
<i>Catchment and Land Protection Act 1994</i> (CaLP Act)	<ul style="list-style-type: none"> <li>The proposed works require the disturbance of soil and the movement of a variety of vehicles and machinery. These activities encourage the spread and establishment of weed species. Some weed species are declared noxious under the CaLP Act and, as such, the responsible party is legally required to prevent the spread and establishment of these species.</li> <li>A Construction Environmental Management Plan (CEMP) will be developed that clearly identifies measures to be undertaken which will prevent the growth, spread and establishment of noxious weed species. Measures should be identified and undertaken to ensure ongoing weed control and eradication procedures are implemented following any works.</li> </ul>

Policy/legislation	Project relevance/actions required
<i>Wildlife Act 1975 (Wildlife Act)</i>	<ul style="list-style-type: none"> <li>All native wildlife is protected in Victoria. It is an offence to kill, take, control or harm wildlife under the Wildlife Act. The Assessment Area is likely to support a variety of native fauna including birds, mammals and reptiles. It is unlikely these animals will be displaced during the removal of vegetation due to the minimal impacts proposed.</li> <li>Any person employed by the Project to handle fauna if required will need to have a permit to do so under the Wildlife Act. A qualified fauna spotter or catcher is recommended to be employed to conduct a pre-clearance survey immediately before the time of vegetation clearing, to minimise the impact to any native fauna.</li> </ul>
<i>Water Act 1989 (Water Act)</i>	<ul style="list-style-type: none"> <li>Project works will likely require impacts to both the Nelson Road Drain and the Lilydale East Drain systems. Impacts however will include only short-term changes to hydrology and some removal of native vegetation. As they are 'named' drainage lines, a Works on Waterways permit from Melbourne Water may be required for this Project, depending on the final construction methods.</li> <li>In the instance construction involving impacts to drainage lines cannot be avoided. Drainage lines should be re-instated following construction.</li> </ul>
<i>Fisheries Act 1995 (Fisheries Act)</i>	<ul style="list-style-type: none"> <li>N/A – Drainage lines are not considered under the Act.</li> </ul>
<i>Environment Protection Act 1970 (EP Act)</i>	<ul style="list-style-type: none"> <li>Construction and operation measures of the Project should address ecological compliance requirements through a CEMP, including sedimentation control measures.</li> <li>Seek advice from the Environmental Management team for further input to CEMP requirements</li> </ul>

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**5.1 Planning and Environment Act 1987**  
**5.1.1 Guidelines for the removal, destruction or lopping of native vegetation**

Areas of native vegetation that are to be removed or impacted due to the Project require approval and offsetting under the *Guidelines for the removal, destruction or lopping of native vegetation* (The Guidelines), pursuant to Clause 52.17 of the Yarra Ranges Planning Scheme.

The Guidelines provide a risk-based level of assessment for approval to remove native vegetation. Based on the potential for biodiversity loss, the risk-based level of assessment identifies the level of risk posed by the Project to Victoria’s biodiversity and requires an appropriately detailed level of assessment to be conducted to inform determining authorities in making approval decisions.

The application requirements are outlined in the Guidelines. They have been addressed in this report along with mitigation measures provided in Section 6.

The risk-based level of assessment (basic, intermediate or detailed) is determined by considering the Location Category, Extent and number of Large Trees within the proposed native vegetation clearing. The assessment pathway for the Project is **Intermediate Assessment Pathway**.

**5.1.1.1 Extent of vegetation loss**

A total of 0.180 ha of native vegetation assessable under the Guidelines will be lost as determined with the preliminary plans, comprising of:

- 0.0855 ha of EVC 821: Tall Marsh
- 0.0944 ha of EVC 164: Creekline Herb-rich Woodland

The extent of removal for the vegetation combined above equates to 0.180 ha (Appendix H)

Further details with regards to trees losses and recommendations are outlined in the Tree Assessment tables in Appendix E.

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In consideration of the Location Category 2 and Extent details for the Project construction impacts, the **Intermediate Assessment Pathway** is applicable and offset requirements are prepared by DELWP in the form of a Native Vegetation Removal Report (Appendix H).

### 5.1.1.2 Offset requirements

Based on the native vegetation mapped within the preliminary design an offset of 0.054 general habitat units (GHUs) is required to offset the loss of the native vegetation in accordance with the Guidelines. The offset must be in place prior to the removal of any native vegetation.

The required offsets have been determined by DELWP through the Native Vegetation Removal (NVR) report. The NVR report for this assessment is included in Appendix H and summarised below in Table 5.2.

Table 5.2: Native vegetation removal and offsets summary

Summary of native vegetation removal		
Extent of proposed vegetation removal		0.180 ha
Extent of past removal		0.000 ha
Number of Large Trees to be removed		0
Location Category		Location 2
Offset requirements		
General offset	General offset amount	0.054 general habitat units
	Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Yarra Ranges Shire Council
	Minimum strategic biodiversity value score	0.509
	Large trees	0

### 5.1.1.3 Obtaining Native Vegetation Offsets

The offsets that are required to account for vegetation loss on site are to be achieved by purchasing offsets from an existing credit holder. The required offsets are available from multiple brokers and an offset availability report is provided in Appendix I.

### 5.1.2 Clause 52.17-3 (Application requirements)

As discussed, a Planning Permit application was submitted 22nd November 2022 to the Department of Environment, Land, Water and Planning, (Permit Application Number: PA2201903).

On 3rd January 2023 more information was requested (RFI) as required by Clause 52.17-3 (Application requirements) before a response can be provided by DEECA/DELWP in accordance with section 56 of the Act. This report has been updated in response to the RFI and to update the impact assessment associated with the final design and to consolidate past assessments.

This report had been updated and specifically addresses Item 2 of the RFI. By incorporating the information provided by the arborist it also addresses Item 3 of the RFI and a copy of all final siting and design plans provided by the Project engineer addresses Item 1. Item 4 is addressed below in Section 5.1.3

### 5.1.3 Planning scheme overlays

#### Clause 42.03-2 Significant Landscape Overlay (Schedule 2)

DELWP has assessed this application and have stated that:

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*Until the aforementioned further information is provided DELWP is unable to provide any recommendations on whether the proposal has reasonably addressed the landscape character objectives of this clause, particularly in relation to the retention of established indigenous trees and patches, and whether any proposed landscaping will complement the ecological values on the land or on any adjacent public land.*

Adequate steps to avoid and minimise the proposed removal of native vegetation has been incorporated into the final siting and design and mitigation measures included in this impact assessment and the arborist report (refer to Section 4.2 ). Two Yarra Gum (*Eucalyptus yarraensis*) trees initially proposed to be impacted as part of the intersection upgrade are now nominated for retention and will be protected during construction by implementing mitigation measures recommended by the arborist.

There are no feasible opportunities to further avoid and minimise impacts on this native vegetation without undermining the key objectives of the proposal as there is no option to safely install the access or facility without impacting some vegetation.

Planting of vegetation between Yarra Valley Rail Trail and Maroondah Highway with species to be agreed in consultation with Yarra Ranges Shire Council as suggested in the Preliminary Land Management Plan (Appendix K).

#### Clause 42.01-1 Environmental Significance Overlay (Schedule 1)

Planning Scheme Schedule 1 to ~~Clause 42.01 Environmental Significance Overlay~~ states that indigenous vegetation within habitat corridors has been fragmented and degraded by past land management practices. The policy seeks to improve the network of flora and fauna habitats through the rehabilitation of these degraded areas especially along watercourses.

Sub-clause 4.0 states:

*A preliminary land management plan (may be required as a condition of permit) that identifies the important environmental values of the site and describes the land management actions, such as revegetation and fencing, that are proposed to be undertaken in conjunction with the proposed development or vegetation removal.*

The environmental objectives of this clause, particularly in relation to this application:

- a) Whether the proposal will contribute to the achievement of the environmental objectives of this schedule to the overlay.
- b) Where removal of vegetation is unavoidable, whether vegetation loss is minimised and appropriate actions taken to offset the loss.
- c) Whether the proposed development or vegetation removal minimises adverse environmental effects including impacts on rare or threatened species, during and after the construction phase
- d) Whether the proposal has any adverse effect on faunal movement within habitat corridors and waterways and within and between highest biodiversity habitat areas.

A concept Preliminary Land Management Plan has been prepared at the request of Department of Environment, Land, Water and Planning to address the above items (Appendix K).

#### 5.1.4 Tree Policy

The Yarra Ranges Council Tree Policy is only applicable to land that council directly controls and does not apply to other reserves or private property (Council 2016). In the case of roads controlled by VicRoads, Council has no responsibility for the control or management of the roadside vegetation (including trees) adjacent to these

roads. Major roads, such as Highways, often fall under the jurisdiction of VicRoads as is the case with Maroondah Hwy. Council is responsible for Ingram Road and Rosemont Road

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## 6. Conclusion

The current Assessment Area includes:

- **WtE Facility Assessment Area** within which is the WtE Facility Development Footprint
- **Access Investigation Area**, which incorporates an area for placement of both the access track and associated drainage and culvert works will occur within 20m either side of the centre of Ingram Road
- **Lilydale WtE Intersection Assessment Area** which incorporates the intersection upgrade at Maroondah Hwy and Ingram Road
- **Lilydale STP facility Assessment Area** includes a kiosk and 22kV powerline with new and restrung sections of cable from the WtE facility to the Lilydale STP, Recycled Water Pump Station and external energy grid and a permeate pipeline (approximately 50mm thick) from the WtE Facility to the sewerage treatment plant to be located under the existing road, with a trenchless bore under the Nelson Road Drain.

A Planning Permit application was submitted 22nd November 2022 to the Department of Environment, Land, Water and Planning Permit Application Number: PA2201903.

On 3rd January 2023 more information was requested (RFI) as required by Clause 52.17-3 (Application requirements) before a response can be provided by DEECA/DELWP in accordance with section 56 of the Act. This report has been updated in response to the RFI and to update the impact assessment associated with the final design and to consolidate past assessments.

Impacts to native vegetation are summarised in Error! Reference source not found. below.

Extent of native vegetation mapped within the Investigation Area

Native vegetation type	Extent within Assessment Area	Extent of native vegetation impact before any minimise measures	Reduced final impacts following avoid and minimise measures
Trees	<ul style="list-style-type: none"> <li>• 17 Large Canopy Trees within patches</li> <li>• 7 Scattered trees (3 Small and 4 Large)</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Large Canopy Trees within patches</li> <li>• 1 Large Scatted Tree</li> </ul>	None
Patches	A total of 1.926 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.004 ha of EVC 653: Aquatic Herbland</li> <li>• 0.602 ha of EVC 821: Tall Marsh</li> <li>• 1.320 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>	A total of 0.883 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.0044 ha of EVC 653: Aquatic Herbland</li> <li>• 0.446 ha of EVC 821: Tall Marsh</li> <li>• 0.432 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>	A total of 0.180 ha of Native Vegetation: <ul style="list-style-type: none"> <li>• 0.0855 ha of EVC 821: Tall Marsh</li> <li>• 0.0944 ha of EVC 164: Creekline Herb-rich Woodland</li> </ul>

A summary of the implications of the Project in relation to relevant ecological legislation and policy is summarised in Table 1.1 below.

Table 6.1: Summary of policy/legislative requirements

Policy/legislation	Project relevance/actions required
<b>Commonwealth</b>	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	<ul style="list-style-type: none"> <li>▪ The Project will not have a significant impact on any Matters of National Environmental Significance (MNES).</li> </ul>

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Policy/legislation	Project relevance/actions required
	<ul style="list-style-type: none"> <li>Following targeted Growling Grass Frog surveys and an EPBC Act referral with a 'not a controlled action' response, the issue of impact to the species has been closed out. No further action is required. Erosion and sediment fencing will be implemented where required.</li> <li>No action required under this Act.</li> </ul>
<b>State</b>	
<i>Environment Effects Act 1978 (EE Act)</i>	<ul style="list-style-type: none"> <li>Due to the limited impacts to ecological values, a referral under the EE Act is not triggered. No action is required under this Act.</li> </ul>
<i>Flora and Fauna Guarantee Act 1988 (FFG Act)</i>	<ul style="list-style-type: none"> <li>One FFG Act-threatened flora species was identified within the Assessment Area – Yarra Gum (<i>Eucalyptus yarraensis</i>) and is critically endangered under the FFG Act.</li> <li>Following efforts to avoid and minimise impacts as per the arborist impact assessment no Yarra Gum trees will be impacted, in particular Tree ID 104 and Tree ID 106 will be retained with mitigation (Appendix E and Appendix G). Every effort has been made to ensure these trees can be avoided and protected by the proposed construction activities.</li> <li>A 'Permit to Take' application is not required for this Project as no flora protected under the FFG Act will be removed, in particular Yarra Gum trees Tree ID 104 and Tree ID 106 and Golden Wattle (<i>Acacia pycnantha</i>) Tree ID 34 will be retained.</li> </ul>
<i>Planning and Environment Act 1987 (P&amp;E Act)</i>	<ul style="list-style-type: none"> <li>A permit is required for the removal of 0.180 ha of native vegetation patches (EVCs):               <ul style="list-style-type: none"> <li>0.0855 ha of EVC 821: Tall Marsh</li> <li>0.0944 ha of EVC 134: Creekline Herb-rich Woodland</li> </ul> </li> <li>The permit triggers DELWP has considered that apply to this application are:               <ul style="list-style-type: none"> <li>Clause 5.2.1 (Native Vegetation)</li> <li>Clause 42.01 (Schedule 1) Environmental Significance Overlay requires a Preliminary Land Management Plan</li> <li>Clause 42.03 (Schedule 2) Significance Landscape Overlay</li> </ul> </li> </ul> <p>Further detail provided in 5.1.1 below.</p>
<i>Guidelines for the removal, destruction or lopping of native vegetation (The Guidelines)</i>	<ul style="list-style-type: none"> <li>Offsets required for the removal of 0.180 ha of native vegetation.</li> <li>Offsets required are 0.054 general habitat units with a minimum strategic biodiversity score of 0.509 in the vicinity of Port Phillip and Westernport Catchment Management Authority (CMA) or Yarra Ranges Shire Council (Appendix I)</li> <li>Yarra Valley Water is to secure these offsets prior to commencing works.</li> <li>Further detail provided in 5.1.1 below.</li> </ul>
<i>Catchment and Land Protection Act 1994 (CaLP Act)</i>	<ul style="list-style-type: none"> <li>The proposed works require the disturbance of soil and the movement of a variety of vehicles and machinery. These activities encourage the spread and establishment of weed species. Some weed species are declared noxious under the CaLP Act and, as such, the responsible party is legally required to prevent the spread and establishment of these species.</li> <li>A Construction Environmental Management Plan (CEMP) will be developed that clearly identifies measures to be undertaken which will prevent the growth, spread and establishment of noxious weed species. Measures should be identified and undertaken to ensure ongoing weed control and eradication procedures are implemented following any works.</li> </ul>
<i>Wildlife Act 1975 (Wildlife Act)</i>	<ul style="list-style-type: none"> <li>All native wildlife is protected in Victoria. It is an offence to kill, take, control or harm wildlife under the Wildlife Act. The Assessment Area is likely to support a variety of native fauna including birds, mammals and reptiles. It is unlikely these animals will be displaced during the removal of vegetation due to the minimal impacts proposed.</li> <li>Any person employed by the Project to handle fauna if required will need to have a permit to do so under the Wildlife Act. A qualified fauna spotter or catcher is recommended to be employed to conduct a pre-clearance survey immediately before the time of vegetation clearing, to minimise the impact to any native fauna.</li> </ul>
<i>Water Act 1989 (Water Act)</i>	<ul style="list-style-type: none"> <li>Project works will likely require impacts to both the Nelson Road Drain and the Lilydale East Drain systems. Impacts however will include only short-term changes to hydrology and some removal of</li> </ul>

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Policy/legislation	Project relevance/actions required
	<p>native vegetation. As they are 'named' drainage lines, a Works on Waterways permit from Melbourne Water may be required for this Project, depending on the final construction methods.</p> <ul style="list-style-type: none"> <li>In the instance construction involving impacts to drainage lines cannot be avoided. Drainage lines should be re-instated following construction.</li> </ul>
<i>Fisheries Act 1995 (Fisheries Act)</i>	<ul style="list-style-type: none"> <li>N/A – Drainage lines are not considered under the Act.</li> </ul>
<i>Environment Protection Act 1970 (EP Act)</i>	<ul style="list-style-type: none"> <li>Construction and operation measures of the Project should address ecological compliance requirements through a CEMP, including sedimentation control measures.</li> <li>Seek advice from the Environmental Management team for further input to CEMP requirements</li> </ul>

Impacts to native vegetation are summarised below.

The recommended mitigation measures to reduce impacts of the Project to ecological values include:

- No-go Zones should be established and exclusion fencing should be placed around the vegetation to remain, incorporating Tree Protection Zones (TPZ), to reduce the extent of vegetation removal. No-go Zones are to be included on all site maps within the CEMP.
- Mitigation measures have been recommended for some trees to be retained particularly for Yarra Gum Tree ID 104 and 106 to ensure trees are isolated from construction impacts; machinery and vehicles which must not drive over the TPZ unless ground protection is in place. Exclusion of machinery and vehicles from the TPZ with temporary fencing is recommended for trees listed in Appendix E.
- A laydown area is proposed near the Ingram Road intersection within the Rosemount Road area near to Tree ID 106 temporary fencing is recommended for this tree and machinery and vehicles must be restricted to the paved road and not drive over the TPZ or impact the canopy of these trees within HZ03a. All lifting of pipes must be done outside of tree canopies.
- Locations where the TPZ of trees are at risk of encroachment due to the installation of the permeate pipeline (Tree ID 139, 140, 143 and 151) non-destructive construction techniques will be used, and mitigation measures will be applied to these trees. The encroachment of trees is minimal and <10% of the TPZ impacted in all instances.
- A Works on Waterways permit from Melbourne Water may be required for this Project depending on the final construction methods. In the instance construction involving impacts to drainage lines cannot be avoided, drainage lines should be re-instated following construction.
- Any person employed by the Project to handle fauna will need to have a permit to do so under the Wildlife Act. A qualified fauna spotter or catcher is recommended to be employed to conduct a pre-clearance survey immediately before the time of vegetation clearing, to minimise the impact to any native fauna.
- The spread of noxious weeds and pest animals must be controlled in accordance with the CaLP Act.

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**Next steps:**

The following items are required to progress the Project:

- Offsets required are 0.054 general habitat units with a minimum strategic biodiversity score of 0.509 in the vicinity of Port Phillip and Westernport Catchment Management Authority (CMA) or Yarra Ranges Shire Council. Yarra Valley Water is to secure these offsets prior to commencing works.
- Determine the requirements pertaining to the Preliminary Land Management Plan and finalise as required.
- The contractor to develop a Construction Environmental Management Plan (CEMP) that details necessary management and mitigation measures to minimise potential impacts to the environment for the proposed construction activities, including weed control measures and sediment and spill controls to avoid impacts to Lilydale East Drain and Nelson Road Drain.



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## Appendix A. Growling Grass Frog Referral decision (EPBC 2018/8174)



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**Notification of**

**REFERRAL DECISION – not controlled action**  
**Lilydale Waste to Energy Project, Lilydale, Victoria (EPBC 2018/8174)**

This decision is made under Section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

**Proposed action**

<b>Person proposing to take the action</b>	Yarra Valley Water Corporation ABN: 93066902501
<b>proposed action</b>	To construct and operate a Waste to Energy Facility at Lilydale, Victoria. [See EPBC Act referral 2018/8174]

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**Referral decision: Not a controlled action**

<b>status of proposed action</b>	The proposed action is not a controlled action.
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**Person authorised to make decision**

<b>Name and position</b>	Nathan Hanna Acting Assistant Secretary Assessments and Governance Branch
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<b>signature</b>	
<b>date of decision</b>	26 April 2018



## Appendix B. Growling Grass Frog targeted survey locations and survey results

Table B.1: Results of targeted Growling Grass Frog surveys in 2017 at the WtE facility Project location.

Site	Date	Survey duration	Frog species observed or heard
1	11 December 2017	30 minutes	<ul style="list-style-type: none"> <li>▪ Southern Brown Tree Frog (<i>Litoria ewingii</i>)</li> <li>▪ Eastern Common Froglet (<i>Crinia signifera</i>)</li> <li>▪ Peron's Tree Frog (<i>Litoria peronii</i>)</li> <li>▪ Spotted Marsh Frog (<i>Limnodynastes tasmaniensis</i>)</li> <li>▪ Whistling Tree Frog (<i>Litoria verreauxii</i>)</li> </ul>
	12 November 2017	30 minutes	<ul style="list-style-type: none"> <li>▪ Southern Brown Tree Frog</li> <li>▪ Eastern Common Froglet</li> <li>▪ Spotted Marsh Frog</li> <li>▪ Striped Marsh Frog (<i>Limnodynastes peronii</i>)</li> </ul>
2	11 December 2017	15 minutes	<ul style="list-style-type: none"> <li>▪ Southern Brown Tree Frog</li> <li>▪ Eastern Common Froglet</li> <li>▪ Striped Marsh Frog</li> <li>▪ Whistling Tree Frog</li> </ul>
	12 November 2017	30 minutes	<ul style="list-style-type: none"> <li>▪ Southern Brown Tree Frog</li> <li>▪ Eastern Common Froglet</li> <li>▪ Striped Marsh Frog</li> </ul>
3	11 December 2017	30 minutes	<ul style="list-style-type: none"> <li>▪ Southern Brown Tree Frog</li> <li>▪ Eastern Common Froglet</li> <li>▪ Spotted Marsh Frog</li> <li>▪ Striped Marsh Frog</li> </ul>
	12 November 2017	30 minutes	<ul style="list-style-type: none"> <li>▪ Southern Brown Tree Frog</li> <li>▪ Eastern Common Froglet</li> <li>▪ Spotted Marsh Frog</li> <li>▪ Striped Marsh Frog</li> <li>▪ Peron's Tree Frog</li> </ul>
4	11 December 2017	15 minutes	None
	12 November 2017	15 minutes	None

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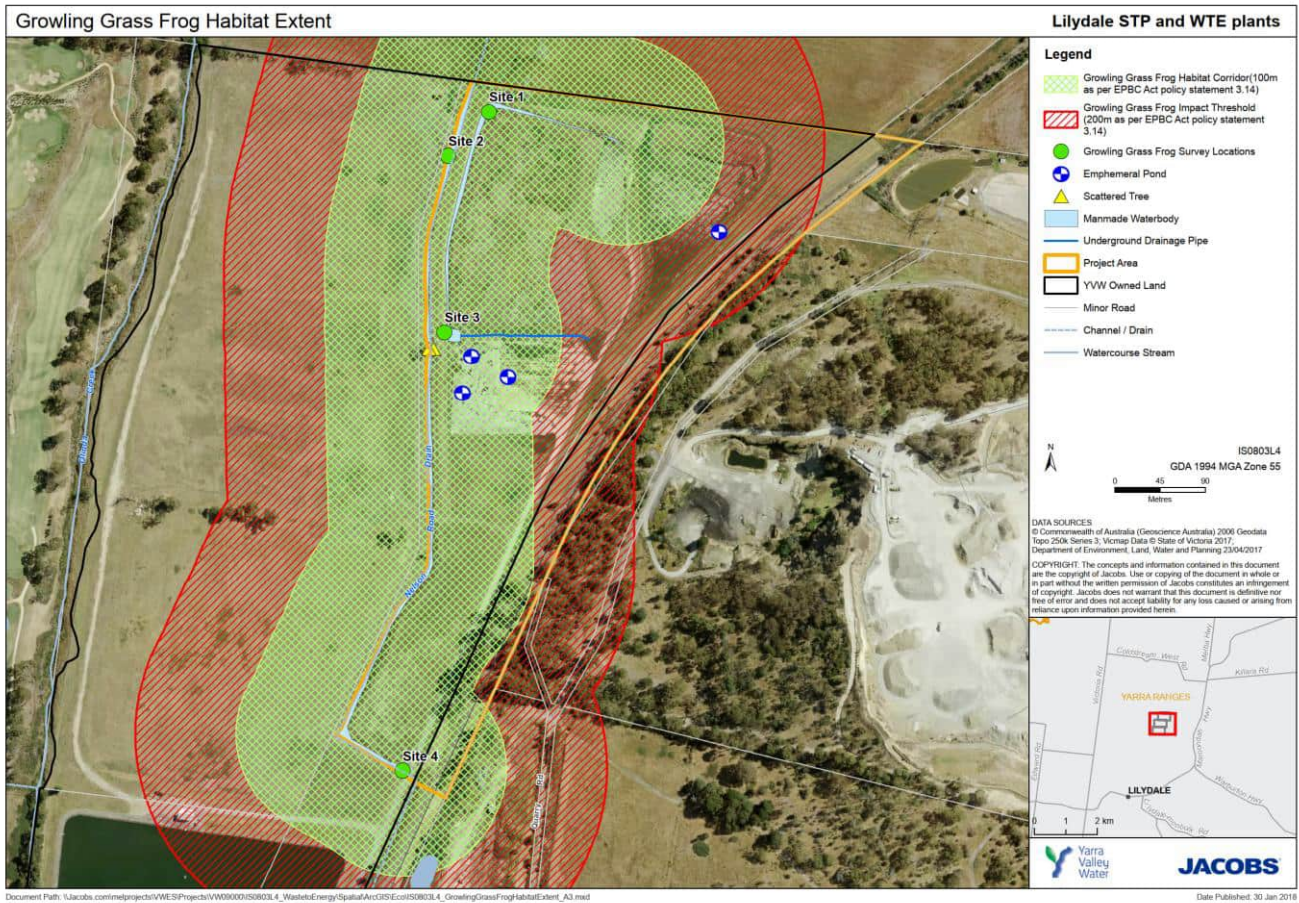


Figure B.1: Growing Grass Frog habitat extent and survey locations

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## Appendix C. Legislation and policy summary

Table C.1: Description of relevant ecological legislation and policy

Legislation/policy	Description
<b>Commonwealth</b>	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	<p>The EPBC Act provides for the listing of nationally threatened species, threatened ecological communities and key threatening processes; and provides the legal framework to protect and manage nine matters of national environmental significance (MNES): world heritage properties; national heritage places; wetlands of international importance (Ramsar); listed threatened species and communities; listed migratory species; Commonwealth marine areas; the Great Barrier Reef Marine Park; nuclear actions; and water resources, in relation to coal seam gas and large coal mining development.</p> <p>Any Project, not covered by an approved strategic assessment, that is likely to have a significant impact on MNES, is required to be referred to the Commonwealth Minister for Environment via the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for a decision on whether the Project is a 'controlled action' requiring assessment and approval under the EPBC Act. The Project does not fall within the Melbourne Strategic Assessment (MSA); a strategic assessment approved under the EPBC Act.</p>
<b>State</b>	
<i>Environment Effects Act 1978</i> (EE Act)	<p>The EE Act provides for the assessment of actions that are capable of having a significant effect on the environment. A Project is required to be referred to the Victorian Minister for Planning for a decision on whether an Environmental Effects Statement (EES) is required, if the Project triggers the referral criteria specified in the 'Ministerial guidelines for a planning process under the Environment Effects Act 1978' (DSE Planning and Environment) of 1987. Referral criteria include potential clearing of 10% or more of vegetation in a particular year, impacts on nationally or internationally threatened species, and potentially significant impacts on the ecological character of internationally or nationally important wetlands.</p> <p>The EE Act also allows an applicant to write to the Secretary of the DTP to confirm no EES is required. The assessment process under this Act is not an approval process itself, rather it enables statutory decision-makers to make decisions about whether a Project with potentially significant environmental effects should proceed. If an EES is required, statutory approval decisions (e.g. planning permit, FFG Act permit) are put on hold until the EES process is complete.</p>
<i>Flora and Fauna Guarantee Act 1988</i> (FFG Act)	<p>The FFG Act provides a framework for biodiversity conservation in Victoria, including providing for the listing of threatened species and communities of flora and fauna, as well as threatening processes. A number of non-threatened flora species are also listed as protected under the FFG Act. A permit to take is required to remove protected flora, including listed threatened and non-threatened flora, from public land.</p> <p>There are two categories of protected flora regulated under the FFG Act, including: 'restricted use protected flora' and 'generally protected flora'. Restricted use protected flora are exclusively threatened by take for commercial/personal use, and the taking of these species incidental to clearing for development works, will not require a permit to take. Generally protected flora are threatened by take for reasons other than or additional to commercial/personal use (e.g. development clearing) and will require a permit to take for any purpose. The protected flora list is currently being reviewed, but for now, all protected flora are classified as generally protected flora.</p> <p>Under the FFG Act, public authorities have a duty of care to consider potential biodiversity impacts when exercising their functions, including giving proper attention to the objectives of the FFG Act.</p>

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Legislation/policy	Description
<p><i>Planning and Environment Act 1987 (P&amp;E Act)</i></p>	<p>The P&amp;E Act regulates the use and development (including works involving vegetation removal) of land in Victoria, and provides the framework and procedures for preparing and amending planning schemes, obtaining planning permits and enforcing compliance with planning schemes.</p> <p>The planning permit assessment process and offset requirements for impacts to native vegetation associated with Clause 52.17 (Native vegetation) of the planning scheme are undertaken in accordance with the <i>Guidelines for the removal, destruction or lopping of native vegetation</i> (DELWP 2017). The Guidelines guide how impacts on biodiversity should be considered, including whether a permit should be granted when assessing a planning permit application.</p> <p>The primary objective of the Guidelines is to achieve no net loss of native vegetation, through a three-step approach of avoid and minimise impacts, and offset unavoidable losses through the protection and ongoing management of an area proportional to their importance in Victoria’s biodiversity. Depending on the location and scale of native vegetation removal, the planning permit application may require statutory referral to DEECA.</p>
<p><i>Catchment and Land Protection Act 1994 (CaLP Act)</i></p>	<p>The CaLP Act defines requirements to:</p> <ul style="list-style-type: none"> <li>Avoid land degradation;</li> <li>Conserve soil;</li> <li>Protect water resources; and</li> <li>Eradicate and prevent the spread and establishment of noxious weed and pest animal species.</li> </ul> <p>The CaLP Act defines four categories of noxious weeds: State Prohibited Weeds, Regionally Prohibited Weeds, Regionally Controlled Weeds and Restricted Weeds. Noxious weed species and the category they are placed in is specific to individual CMA regions.</p>
<p><i>Wildlife Act 1975 (Wildlife Act)</i></p>	<p>The Wildlife Act establishes procedures to protect and conserve Victoria’s wildlife. It is an offence under the Wildlife Act to kill, take, control or harm wildlife or to damage, disturb or destroy wildlife habitat unless authorised to do so under the Act or associated Wildlife Regulations 2013.</p> <p>Approval to damage, disturb or destroy wildlife habitat is not required under this Act where authorised under another Act (e.g. permit to remove native vegetation under the P&amp;E Act). Section 28A of the Act empowers the Secretary of DEECA (or delegate) to provide an individual written authorisation to take wildlife for a range of purposes, including for protection and enabling the care of sick, injured or orphaned wildlife. Such authorisation generally comes with strict terms and conditions which the individual must comply with.</p>
<p><i>Water Act 1989 (Water Act)</i></p>	<p>The Water Act provides a framework for managing Victoria’s water resources to promote the orderly, equitable and efficient use of water resources to make sure that water resources are conserved and properly managed for sustainable use for the benefit of present and future Victorians. The Water Act regulates impacts to surface water and groundwater resources.</p> <p>Works in, on, under or above a designated waterway requires either a licence under section 67 or a works on waterways permit under section 188, administered by the relevant waterway management authority (CMA or Melbourne Water) under a by-law established under the Water Act. A licence under section 51 of the Water Act is required to take and use water, including surface and groundwater.</p>

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## Appendix D. Likelihood of occurrence assessment

Table D.1: Key to listing status of threatened species

Key	
Status under the EPBC Act	
CR	Critically Endangered
EN	Endangered
VU	Vulnerable
M	Migratory or Marine species
Status under the FFG Act	
cr	Critically Endangered
e	Endangered
v	Vulnerable

Table D.2: Key to likelihood of presence of threatened species

Key to species likelihood of presence	
<p>C – Confirmed presence Species recorded within the Assessment Area by the present study.</p>	<p>H – High likelihood Recent records of the species in the vicinity, and/or The Assessment Area contains areas of high-quality habitat for the species</p>
<p>M – Medium likelihood Limited or historic records of the species in the vicinity, and/or The study area contains habitat.</p>	<p>L – Low likelihood No previous records of the species in the vicinity, and/or The Assessment Area contains limited or no suitable habitat for the species, and/or The species was not observed during targeted surveys for the species, and/or The Assessment Area lies outside the geographic range of the species.</p>
<p>Nil Conditions within the Assessment Area are incongruous with requirements of the species (e.g. marine pelagic species could not occur in a terrestrial Assessment Area ), and/or The species has been deemed absent after sufficient survey effort (criterion generally reserved for particularly conspicuous species).</p>	<p>N/A Legislation protecting threatened species does not apply to the species within the Assessment Area, as: The Assessment Area is outside the natural range of the species, and The species is present for non-conservation purposes (e.g., planted for amenity, or has become naturalised in the area).</p>

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Table D.3: Threatened fauna previously observed within 10 km of the Assessment Area and identified in the PMST report.

Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Accipiter novaehollandiae</i>	Grey Goshawk		en	Rainforests, forests; forest gullies and valleys; taller woodlands, timber on watercourses, open country in Autumn dispersal. (Pizzey and Knight 2012)	2021	44	Medium - may fly-over Assessment Area whilst foraging and use roadside trees for roosting.
<i>Acrodipsas myrmecophila</i>	Small Ant Blue Butterfly		en	The Small Ant-blue is rare and localised throughout its range. The only recent Victorian record is from near Broadford. The species has been recorded previously from Ringwood, Heathmont, Glen Waverley, Lilydale, Wandin, Ocean Grove and another site near Broadford, but is believed to be extinct in these areas as a result of habitat disturbances (DSE 2003a).	1760	1	Nil - species in Broadford only.
<i>Actitis hypoleucos</i>	Common Sandpiper	Mig	vu	Shallow, pebbly, muddy or sandy edges of rivers and streams, coastal to far inland; dams, lakes, sewage ponds; margins of tidal rivers; waterways in mangroves or saltmarsh; mudflats; rocky or sandy beaches; causeways, riverside lawns, drains, street gutters (Pizzey and Knight 2012)	PMST		Low - primarily a coastal species. Suitable habitat not available within Assessment Area.
<i>Antechinus minimus maritimus</i>	Swamp Antechinus	VU	vu	Dense wet heathlands, tussock grassland and sedge wetlands, gullies, swamps and some shrubby woodlands (DAWE 2020)	PMST		Nil - species not known in the region. Suitable habitat not available.
<i>Anthochaera phrygia</i>	Regent Honeyeater	CR	cr	Dry open forest, woodlands, or red ironbark, yellow box, white and yellow gum mistletoe on river she-oaks, trees in farmlands, streets, gardens. (Pizzey and Knight 2012)	2019 & PMST	17	Low - populations mainly restricted to northern Victoria, near Chiltern.
<i>Apus pacificus</i>	Fork-tailed Swift	Mig, mar		Aerial, over open country, from semi deserts to coasts, islands, sometimes over forests or cities. (Pizzey and Knight 2012)	PMST		Low - may intermittently fly-over Assessment Area. Primarily an aerial species
<i>Ardea alba modesta</i>	Eastern Great Egret		Vu	Shallows of rivers, estuaries, tidal mudflats, freshwater wetlands; sewage ponds, irrigation areas, larger dams etc (Pizzey and Knight 2012).	2019	67	Medium - may reside within treatment ponds.
<i>Ardea intermedia plumifera</i>	Plumed Egret		cr	Freshwater wetlands, pastures and croplands, tidal mudflats, floodplains (Pizzey and Knight 2012).	2021	19	Medium - may reside within treatment ponds.
<i>Austrogammarus australis</i>	Dandenong Freshwater Amphipod		cr	Known to occur within the upper reaches of the Olinda, Sassafra, Emerald, Dandenong and Monbulk Creeks (Doeg 1996, Papas 2000).	2011	4	Low - species may occur at Olinda Creek, which runs to the west of the Assessment Area . However, species not likely to occur in permanent water bodies or in the Assessment Area .
<i>Aythya australis</i>	Hardhead		vu	Deep, permanent wetlands, large open waters, brackish coastal swamps, farm dams, ornamental lakes , sewage ponds. (Pizzey and Knight 2012)	2019	214	Medium - may reside within treatment ponds.

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Biziura lobata</i>	Musk Duck		vu	Well-vegetated swamps, wetlands, both brackish and fresh, lakes, reservoirs, shallow bays, inlets; occasionally at sea. (Pizzey and Knight 2012).	2019	17	Medium - may reside within treatment ponds.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	cr	Narrow habitat preferences, preferring shallow, vegetated freshwater or brackish swamps. (Pizzey and Knight 2012)	1988 & PMST	3	Low - species prefers high percentage cover of aquatic vegetation and low disturbance. Suitable habitat limited in Assessment Area.
<i>Calamanthus pyrrhopygius</i>	Chestnut-rumped Heathwren		vu	Heathy woodlands/shrublands and Box/Ironbark forests. (Pizzey and Knight 2012)	2020	7	Medium - habitat available along Maroondah Hwy. Species may reside in wider landscape within more forested areas.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Mig, mar		Tidal mudflats, saltmarshes, mangroves; shallow fresh, brackish or saline inland wetlands; floodwaters, irrigated pasture and crops; sewage ponds and saltfields. (Pizzey and Knight 2012)	PMST		Low - primarily a coastal species. May reside intermittently within treatment ponds.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR, mig, mar	cr	Tidal mudflats; saltmarsh, saltfields; fresh, brackish or saline wetlands; sewage ponds. (Pizzey and Knight 2012)	1980 & PMST	1	Low - primarily a coastal species. May reside intermittently within treatment ponds.
<i>Calidris melanotos</i>	Pectoral Sandpiper	Mig, mar		Prefers shallow fresh water sites with low grass on the banks of swamy margins, flooded pastures, sewage ponds and occasionally brackish saltmarshes. (Pizzey and Knight 2012)	PMST Migratory Wetlands Bird		Low - primarily a coastal species. May reside intermittently within treatment ponds.
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	EN		During summer months, Gang-gang Cockatoos primarily inhabit mature, wet sclerophyll forests, but also may occur across a broad range of forests and woodlands. During winter months, Gang-gang Cockatoos tend to range beyond montane forests to inhabit open eucalypt assemblages at lower, drier altitudes, including suburban areas of cities and coastal heathlands and thickets, including ornamental trees, shrubs, and hedges. Breeding requires stands of suitable hollow-bearing trees (DAWE 2022).	2021 + PMST	328	Medium - may reside within trees surrounding the Assessment Area.
<i>Chelodina expansa</i>	Broad-shelled Turtle		en	Found in Murray/Darling River systems in SA, Vic, NSW and Qld. Inhabits permanent streams and waterholes throughout its range, but essentially a river tortoise. Lies concealed in debris on the bottom or among root mats in silty rivers, streams and waterholes (Wilson and Swan 2008).	2001	1	Low - limited suitable habitat within Assessment Area but has the potential to be present within inundated drainage lines within the WtE facility Assessment Area ..
<i>Climacteris picumnus</i>	Brown Treecreeper	VU		Drier forests/woodlands/scrubs, with fallen branches; particularly River Red Gum lined water courses (Pizzey and Knight 2012).	2018 + PMST	12	Low – not adequate habitat within the Project area.

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Dasyurus maculatus maculatus</i>	Spot-tailed Quoll	EN	en	Has a wide range of habitats, including rainforest, open forest, woodland, coastal heathland and inland riparian forest (Van Dyck and Strahan 2008).	1974 + PMST	1	Nil - species not known in the region. Suitable habitat not available.
<i>Dasyurus viverrinus</i>	Eastern Quoll	EN	en	A range of open forests, woodlands and grasslands, where they would build a den amongst fallen logs or rock piles (Van Dyck and Strahan 2008).	1880	1	Nil - species not known in the region. Suitable habitat not available.
<i>Delma impar</i>	Striped Legless Lizard	VU	en	A grassland specialist, potential habitat for the Striped Legless Lizard includes all areas which have, or once had, native grasslands or grassy woodlands (including derived grasslands) across the historical range of the species, provided that area retains suitable tussock structure, the soil is of appropriate type and structure, and the site has not had major disturbance such as ploughing (DAWE 2020).	PMST	N/A	Nil - suitable habitat not present within the Assessment Area .
<i>Egretta garzetta</i>	Little Egret		en	Tidal mudflats, saltmarshes, mangroves, freshwater wetlands, sewage ponds. (Pizzey and Knight 2012)	2019	8	Medium - may reside within treatment ponds.
<i>Engaeus tuberculatus</i>	Tubercle Burrowing Crayfish		en	Engaeus spp. inhabit a variety of permanent and ephemeral lotic and lentic waters including creeks, streams, rivers, small tributaries, drainage channels, roadside gutters and seepages, swamps, pools, lagoons, ponds and billabongs (Hawking et al. 2009).	1963	5	Low - limited suitable habitat available in Assessment Area .
<i>Engaeus urostrictus</i>	Dandenong Burrowing Crayfish		cr	Engaeus spp. inhabit a variety of permanent and ephemeral lotic and lentic waters including creeks, streams, rivers, small tributaries, drainage channels, roadside gutters and seepages, swamps, pools, lagoons, ponds and billabongs (Hawking et al. 2009).	1962	1	Low - species may occur at Olinda Creek, which runs to the west of the Assessment Area . However, species not likely to occur in permanent water bodies or in the Assessment Area .
<i>Engaeus victoriensis</i>	Foothill Burrowing Crayfish		en	Engaeus spp. inhabit a variety of permanent and ephemeral lotic and lentic waters including creeks, streams, rivers, small tributaries, drainage channels, roadside gutters and seepages, swamps, pools, lagoons, ponds and billabongs (Hawking et al. 2009).	2011	5	Low - limited suitable habitat available in Assessment Area .
<i>Falco hypoleucos</i>	Grey Falcon		vu	Lightly treed inland plains, gibber deserts, sandridges, pastoral lands, timber watercourses; seldom in driest deserts (Pizzey and Knight 2012).	PMST	N/A	Low – not adequate habitat within the Project area.
<i>Falco subniger</i>	Black Falcon		cr	Plains, grasslands, foothills, timbered watercourses, wetland environs; crops; occasionally over towns and cities. (Pizzey and Knight 2012)	2018	3	Low – no suitable habitat limited within Assessment Area.

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<i>Galaxias brevipinnis</i>	Climbing Galaxias	CR		Clear, flowing water of shaded streams with rocky substrates. Occasionally in lakes. Swims near the bottom, usually around the cover of rocks and logs. More common in uplands (Allen et al. 2002).	2006	1	Low – not adequate habitat within the Project area.
<i>Galaxiella pusilla</i>	Dwarf Galaxias	VU	en	In streams, burrow in moist soil, in yabby burrows, ground water and underground streams (Hawking et al. 2009).	PMST	N/A	Nil - species not known to occur in the region. Olinda creek is highly degraded and outside of the Assessment Area .
<i>Gallinago hardwickii</i>	Latham's Snipe	Mig, mar		Freshwater or brackish wetlands, preferring to be close to protective vegetation cover. (Pizzey and Knight 2012)	PMST	N/A	Low - species not known to reside within Lilydale area.
<i>Grantiella picta</i>	Painted Honeyeater	VU	vu	Mistletoes in eucalypt forests/woodlands; black box on watercourses; box-ironbark-yellow gum woodlands; paperbarks, Casuarinas; mulga, other acacias; trees on farmland; gardens. (Pizzey and Knight 2012)	PMST	N/A	Low - limited suitable habitat available.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Mar	en	Coasts, inlands, estuaries, inlets, large rivers, inland lakes, reservoirs. (Pizzey and Knight 2012)	2019	39	Low - primarily a coastal species. May forage over Assessment Area from time to time.
<i>Hemiphysalis mirabilis</i>	Ancient Greenling Damsel		En	Has been recorded from small streams in King Island and in Mount William, Tasmania; Wilsons Promontory National Park and near Yea, Victoria; and in Piccaninnie Ponds Conservation Park in south-eastern South Australia. Its recorded habitat includes permanent freshwater ponds, riverine lagoons and swamps that may dry out seasonally (DSE 2003b).	1954	2	Low - species not known to occur in the region.
<i>Hieraaetus morphnoides</i>	Little Eagle		vu	Plains, foothills, open forests, woodlands and scrublands; river red gums on watercourses and lakes (Pizzey and Knight 2012).	2008	37	Low – not adequate habitat within the Project area.
<i>Hirundapus caudacutus</i>	White-throated Needletail	VU, mig, mar	vu	Airspace over forests, woodlands, farmlands, plains, lakes, coasts, towns, feeding companies frequency patrol back and forward along favoured hilltops and timbered ranges. (Pizzey and Knight 2012)	2021 & PMST	158	Medium - primarily an aerial species, which may fly-over Assessment Area.
<i>Hydroprogne caspia</i>	Caspian Tern		vu	Coastal, offshore waters, beaches, mudflats, estuaries, larger rivers, reservoirs and lakes. (Pizzey and Knight 2012)	2018	7	Low - primarily a coastal species. Suitable habitat not present.
<i>Hyridella (Hyridella) depressa</i>	Depressed Mussel		en	Rivers and streams throughout Victoria.	1994	1	Low – not adequate habitat within the Project area.
<i>Hyridella narracanensis</i>	Narracan Corrugated Mussel		en	Rivers and streams throughout Victoria.	2015	9	Low – not adequate habitat within the Project area.

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<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot	EN	en	Prefers sandy soil with scrubby vegetation and / or areas with low ground cover that are burnt out from time to time (Van Dyck and Strahan 2008).	1969	6	Low- suitable habitat limited within Assessment Area . Species not known in local area.
<i>Lathamus discolor</i>	Swift Parrot	CR, mar	cr	Open grassy woodland, with dead trees, near permanent water and forested hills, coastal heaths, pastures with exotic grasses, weeds, roadsides, orchards. (Pizzey and Knight 2012)	2019 & PMST	23	Medium - Species now mainly restricted to northern VIC in winter. May stop intermittently to forage in Assessment Area whilst migrating.
<i>Lewinia pectoralis</i>	Lewin's Rail		vu	Swamp woodlands, rushes, reeds, rank grass in swamps, creeks, paddocks; wet heaths. (Pizzey and Knight 2012)	2018	25	Low - highly disturbed, urbanised locality. Limited suitable habitat available.
<i>Lichenostomus melanops cassidix</i>	Helmeted Honeyeater	CR	cr	Streamside/swamp woodlands of Mountain Swamp Gum; with scented Paperbark, Woolly and Prickly Tea-tree understorey and sedges. (Pizzey and Knight 2012)	1884	2	Low - species populations restricted to Yellingbo Nature Conservation Reserve, Woori Yallock.
<i>Liopholis montana</i>	Mountain Skink	EN		Widely but patchily distributed in the mountainous areas of the Great Dividing Range and occurs in the cool and cold temperature zones, usually at elevations above 900m, extending as far westwards as the upper Yarra Valley. It utilises more open habitats in Alpine, Wet Sclerophyll Forest, and Damp Sclerophyll Forest ecosystems (Robertson and Coventry 2019).	PMST	N/A	Low – not adequate habitat within the Project area.
<i>Lissolepis coventryi</i>	Swamp Skink	EN	en	Low lying marshes and lagoon margins, in paperbark swamps, sedges and Melaleuca thickets (Cogger 2014).	2001	2	Low – not adequate habitat within the Project area.
<i>Litoria raniformis</i>	Growling Grass Frog	VU	vu	A largely aquatic species found among vegetation within or at the edges of permanent water – streams, swamps, lagoons, farm dams and ornamental ponds. Often found under debris on low, often flooded river flats. Frequently active by day (Cogger 2014).	2019	26	Nil - species not observed during targeted surveys and not known recently to occur in wider region.
<i>Lophoictinia isura</i>	Square-tailed Kite		vu	Heathlands, woodlands, forests, rainforest, timbered water courses, hills and gorges. (Pizzey and Knight 2012)	2008	1	Low - species may fly-over Assessment Area to forage bt unlikely to reside permanently.
<i>Maccullochella macquariensis</i>	Trout Cod	EN	en	Rapidly flowing streams, around the cover of logs and debris, over rocky or gravel bottoms. Larger fish occur in deeper sections (Allen et al. 2002).	1970	1	Low – not adequate habitat within the Project area.
<i>Maccullochella peelii</i>	Murray Cod	VU	en	Slow flowing turbid water of rivers and streams at low elevations. Also fast-moving clear, rocky upland streams. Favours deeper water around boulders, longs, undercut banks and overhanging vegetation (Allen et al. 2002).	2020	6	Nil - species not known to occur in the region. Olinda creek is highly degraded and outside of the Assessment Area . Suitable habitat not available.

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## Lilydale Waste to Energy - Ecological Impact Assessment

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<i>Macquaria australasica</i>	Macquarie Perch	EN	en	The Macquarie Perch was once widespread through the cooler upper reaches of the southern tributaries of the Murray-Darling river system in Victoria and New South Wales. Although it was considered rare downstream in the Murray River, in Victoria the Macquarie Perch occurred in the Barmah Lakes area and tributaries such as Broken Creek. In New South Wales, the species occurred in the upper reaches of the Macquarie River system. However, currently in Victoria only small discrete populations remain in the upper reaches of the Mitta Mitta, Ovens, Broken, Campaspe and Goulburn Rivers in northern Victoria. A larger, apparently self-sustaining translocated population exists in the Yarra River, around Warrandyte and is potentially the most secure in the country. It is also known to persist in Lake Eildon in the Goulburn River catchment (DAWE 2020).	2020	72	Low - suitable habitat not present within Assessment Area .
<i>Mastacomys fuscus mordicus</i>	Broad-toothed Rat	VU	vu	In Victoria, distributed from sea level to >2200 m in elevation, and is climatically characterised by areas with a mean annual rainfall above 1000mm. They prefer a moderate-to-dense ground cover of grasses or sedges, with shrubs usually present and exist in a broad range of habitats for coastal environments to alpine regions (SWIFFT 2020).	1989	11	Nil - species occur in alpine and sub-alpine regions only.
<i>Melanodryas cucullata</i>	Hooded Robin		vu	Drier Eucalypt forests, woodlands, scrubs with fallen logs, debris, mallee, Casuarina, cypress pine, mulga, cleared paddocks, Banksia dominated coastal scrubs. (Pizzey and Knight 2012)	1986	4	Low - historic records only. Limited habitat in Assessment Area.
<i>Monarcha melanopsis</i>	Black-faced Monarch	Mar, mig		In Victoria, it is largely confined to east Gippsland, where it is widespread south of 37 °S, and west to around the Mitchell River National Park (Emison et al. 1987). It is vagrant farther west, with recent records sparsely scattered in Tarra Bulga National Park, Noojee, Powelltown, Mt Eliza, Kinglake, Aireys Inlet and Echuca (Emison et al. 1987; Drummond 1985; Peake 1991).	PMST		Low - species not known to occur within local area. No VBA records within 5 km of Assessment Area.
<i>Motacilla flava</i>	Yellow Wagtail	Mar, mig	#N /A	Migrates to Australia and south-east Asia during the non-breeding season. Mainly stays within northern Australia, but records present in VIC and TAS.	PMST		Low - species not known to occur within local area. No VBA records within 5 km of Assessment Area.
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Mar, mig		Inhabit heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, and on migration, occur in coastal forests, woodlands, mangroves and drier woodlands and open forests (Blakers et al. 1984; Emison et al. 1987; Officer 1969). In Victoria, the species is widespread in the south and east, in the area south of a line joining Numurkah, Maldon, the northern Grampians, Balmoral and Nelson (Blakers et al. 1984; Emison et al. 1987).	PMST		Low - species not known to occur within local area. No VBA records within 5 km of Assessment Area.

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<i>Nannoperca obscura</i>	Yarra Pygmy Perch	VU	vu	Recorded from 42 locations, extending from Dandenong Creek in Victoria west through to Lake Alexandrina near the mouth of the Murray River in South Australia. The Yarra Pygmy Perch prefers slow-moving or still waters, such as pools in rivers and streams or in lakes in fresh and brackish water. They prefer sites which have abundant submerged and emergent aquatic vegetation, sometimes with wood debris. These characteristics are essential in providing shelter, protection, feeding and breeding habitat (SWIFFT 2020).	PMST	N/A	Low – not adequate habitat within the Project area.
<i>Neophema chrysostoma</i>	Blue-winged Parrot	VU		The Blue-winged Parrot inhabits a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Throughout their range they favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones. Blue-winged Parrots can also be seen in altered environments such as airfields, golf courses and paddocks (BirdLife Australia 2021).	PMST	N/A	Low – not adequate habitat within the Project area.
<i>Ninox connivens</i>	Barking Owl		cr	Open forests, woodlands, dense scrub, plantings, riparian woodlands, large trees near water courses, penetrating into open environments (Pizzey and Knight 2012).	2022	11	Low - species known more so in woodlands area. May fly-over when foraging but would not permanently reside within the Assessment Area. Historical records only.
<i>Ninox strenua</i>	Powerful Owl		vu	Pairs occupy a large, probably permanent, home range in mountain forests, gullies and forest margins, sparser hilly woodlands, coastal forests, woodlands, scrubs, exotic pine plantations, large trees in private/public gardens, some in cities. (Pizzey and Knight 2012)	2022	432	Medium - species may forage over Assessment Area, but are dependent on hollow-bearing trees for roosting. Evidence of suitable hollows were not present in trees along Maroondah Hwy or other scattered trees in Assessment Area.
<i>Numenius madagascariensis</i>	Eastern Curlew	CR, mig, mar	cr	Estuaries, tidal mudflats, sandspits, saltmarshes, mangroves; occasionally fresh or brackish lakes; bare grasslands near water. (Pizzey and Knight 2012)	PMST		Nil - species not known to occur within the region.
<i>Ornithorhynchus anatinus</i>	Platypus		vu	Creeks and rivers along Australia's eastern seaboard. Formerly at various locations along the Murray River. Burrows in banks of waterways, with an identifiably horizontally oval cross-section. Generally breeds in September.	2021	11	Low – not adequate habitat within the Project area.
<i>Oxyura australis</i>	Blue-billed Duck		vu	Found on temperate, fresh to saline, terrestrial wetlands including sewerage ponds, rivers, salt lakes and salt pans. Preferring deep, permanent open water within or near dense vegetation. (Pizzey and Knight 2012)	2019	12	Medium - may reside within treatment ponds.

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<i>Pandion haliaetus</i>	Osprey	Mig, mar	#N /A	Mainly breed on offshore islands within Australia, with one breeding population off the coast of SA. Records become scarcer towards the south, and into Victoria and Tasmania, where the species is a rare vagrant (Barrett et al. 2003; Blakers et al. 1984; Johnstone & Storr 1998; Marchant & Higgins 1993; Morris et al. 1981)	PMST		Nil - species not known to occur within the region.
<i>Paralucia pyrodiscus lucida</i>	Eltham Copper Butterfly	EN	cr	The Eltham Copper Butterfly prefers woodland habitat with an understorey containing the shrub Sweet Bursaria and a ground layer of native grasses, mosses and leaf litter.	N/A	N/A	Low – not adequate habitat within the Project area.
<i>Pasma tasmanica</i>	Two-spotted Grass-skipper Butterfly		en	Wet eucalypt tall open forests, open forests, sub-alpine woodlands, sometimes seen along roadsides. Food plants are Gahnia, Poa and Lomandra. Butterflies fly when sunny, close to the ground in open grassy areas, and stop frequently to visit flowers. Males are territorial on patches of low vegetation to make territories. On the mainland adults normally fly from the seaboard westward (Aplin 1987)	1941	7	Low – not adequate habitat within the Project area.
<i>Petauroides volans</i>	Southern Greater Glider	EN	vu	A variety of eucalypt-dominated habitats, ranging from low, open forests on the coast to tall forests on in the ranges and low woodland westward of the Dividing Range	2022	21	Nil - species occur within Yarra Ranges National Park. No record within urban regions as species dependent on large, hollow bearing trees. No suitable habitat within Assessment Area .
<i>Petaurus australis</i>	Yellow-bellied Glider	VU		A variety of eucalypt-dominated habitats, ranging from low, open forests on the coast to tall forests on in the ranges and low woodland westward of the Dividing Range	2021	6	Low – not adequate habitat within the Project area.
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale		vu	Well developed dry forest and woodland areas, with stringybarks and trees with hollows (Van Dyck and Strahan 2008).	2020	207	Medium - species may occur within the roadside fragments along Maroondha Hwy. However, species tends to avoid smaller fragmented areas, and will likely occur in larger woodland areas surrounding the Assessment Area .
<i>Plectrotarsus gravenhorstii</i>	Caddisfly		en	The aquatic stage of this species is known to inhabit shallow densely vegetated waterways and swamplands.	1954	3	Medium - historical records only, but suitable habitat present within Assessment Area .
<i>Polytelis swainsonii</i>	Superb Parrot	VU	en	River red gums, black box, yellow box, river oak, mostly near rivers; mallee, stubbles, pastures, gardens. (Pizzey and Knight 2012)	2005	1	Low - Species known restricted to northern VIC.

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<i>Pomatostomus temporalis</i>	Grey-crowned Babbler		vu	Live in open forest and woodland, acacia shrubland and adjoining farmland. (Pizzey and Knight 2012)	1931	4	Nil - species known in northern VIC.
<i>Potorous tridactylus trisulcatus</i>	Long-nosed Potoroo	VU	vu	Inhabits coastal heath and dry and wet sclerophyll forests. Prefers relatively thick ground cover and is concentrated in areas where soil is light and sandy. Generally restricted to areas where rainfall > 760mm (Van Dyck and Strahan 2008).	PMST	N/A	Low - suitable habitat not present. Species not known in wider region.
<i>Prototroctes maraena</i>	Australian Grayling	VU	en	Predominately a freshwater fish but is considered diadromous because the fry have a marine phase. The majority of its life is spent in freshwater, inhabiting rivers and streams, usually in cool (5-26°C), clear waters with a gravel substrate and alternating pool and riffle zones but it has also been recorded to occur in turbid water with muddy-bottomed, heavily silted habitat as well. Grayling can penetrate well inland, and have been reported to migrate upstream from the sea, provided there are no barriers to movement (SWHE 2020).	2018 + PMST	6	Low - suitable habitat not present within Assessment Area .
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink		en	Confined to humid microhabitats such as marshlands and the margins of creeks, swamps and lakes (Cogger 2014).	2015	3	Medium - suitable habitat present within WtE facility Assessment Area .
<i>Pseudomys fumeus</i>	Smoky Mouse	EN	en	Ridgetop sclerophyll forest with a diverse understorey of heath dominated by legumes (Van Dyck and Strahan 2008). Population highly disjunct, with isolated groupings occurring in a variety of habitats, but rare. Local populations occur in areas of heathy understorey (Van Dyck and Strahan 2008). Likely to now be extinct in the Otway Ranges, coastal East Gippsland and ACT (Menkhorst and Broome 2008).	PMST	N/A	Low - suitable habitat not present. Species not known in wider region, as mainly known at Wilson's Promontory.
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	VU	en	Found in dry heath and open forest localities in coastal locations. It has a marked preference for soft substrates (Van Dyck and Strahan 2008).	PMST	N/A	Low – not adequate habitat within the Project area.
<i>Pseudophryne bibronii</i>	Brown Toadlet		en	Found below rocks in logs in wet and dry sclerophyll forest, in proximity to seasonally inundated areas (Cogger 2014).	2019	4	Low - species not observed during frog call-back surveys. Assessment Area too disturbed to support the species.
<i>Pseudophryne semimarmorata</i>	Southern Toadlet		en	In Victoria, the Southern Toadlet is mainly found on and south of the Great Dividing Range although there are records as far north as the Little Desert. It is generally found at lower elevations in damp areas usually under leaf litter, logs or rocks. It is recorded from forests, woodlands, heaths and grasslands in a variety of damp situations, but not necessarily near permanent water. It shelters under leaf litter, logs and rocks and lives in small tunnels that fill with water during the breeding season (March-May). It can live for at least 10 years and has a very small	2019	30	Low - species not observed during frog call-back surveys. Assessment Area too disturbed to support the species.

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				home range of about 5 metres from the breeding site (Cogger 2014, SWIFFT 2020).			
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	vu	Camps of this species are found in gullies, typically not far from water and usually in vegetation with a dense canopy (Van Dyck and Strahan 2008).	2021 + PMST	10	Medium - species may be observed foraging over Assessment Area at night. Closest roosting colony at Yarra Bend Park.
<i>Pycnoptilus floccosus</i>	Pilotbird	VU		The pilotbird is found from the Wollemi National Park and Blue Mountains National Park in New South Wales through to the Dandenong Ranges, near Melbourne in Victoria. Its natural habitat is temperate wet sclerophyll forests and occasionally temperate rainforest, where there is dense undergrowth with abundant debris. It is sedentary and common. (ALA 2022)	1984 + PMST	9	Low – not adequate habitat within the Project area.
<i>Pyrholaemus sagittatus</i>	Speckled Warbler		en	Drier woodlands with tussocks, branches and rocks. (Pizzey and Knight 2012)	2000	20	Low - historical records only. May intermittently use small woodland fragments along Maroondah Hwy.
<i>Rhipidura rufifrons</i>	Rufous Fantail	Mig, mar		Mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts such as Tallow-wood ( <i>Eucalyptus microcars</i> ), Mountain Grey Gum ( <i>E. cypellocarpa</i> ), Narrow-leaved Peppermint ( <i>E. radiata</i> ) etc.; usually with a dense shrubby understorey often including ferns. Breeding populations occurring from about the South Australia-Victoria border, through south and central Victoria	PMST		Low - species not known in the region, but habitat is suitable. Within the Assessment Area suitable habitat is limited.
<i>Rostratula australis</i>	Australian Painted-snipe	EN	cr	Well-vegetated shallows and margins of wetlands, dams, sewage ponds; wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, open timber (Pizzey and Knight 2012).	PMST		Low - suitable habitat available. However, species not known to occur in the region
<i>Sminthopsis murina murina</i>	Common Dunnart		vu	Mid-successional complex vegetation (woodland/open forest/heathland) particularly common 2-4 years following burning (Van Dyck and Strahan 2008).	2014	14	Low - suitable habitat not present within Assessment Area due to level of disturbance
<i>Spatula rhynchotis</i>	Australasian Shoveler		vu	Larger waters, fresh and saline lakes, well-vegetated freshwater wetlands, coastal inlets, sewage ponds, floodwaters. (Pizzey and Knight 2012)	2019	62	Medium- species may reside around treatment ponds and wet depression in Assessment Area .
<i>Stagonopleura guttata</i>	Diamond Firetail		vu	Open Eucalypt forests/woodlands; River Red Gum, Mallee, Buloke, Cypress Pine. (Pizzey and Knight 2012)	1999	1	Low - species may reside in wider region, but suitable habitat limited within Assessment Area .

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Stictonetta naevosa</i>	Freckled Duck		en	Large, well vegetated swamps; in dry periods moves to open lakes. (Pizzey and Knight 2012)	2019	9	Medium- species may reside around treatment ponds and wet depression in Assessment Area .
<i>Synemon plana</i>	Golden Sun Moth	VU	vu	Native temperate grassland and open grassy woodlands, may also be found in degraded grasslands dominated by exotic Chilean Needlegrass (DAWE 2020).	PMST	N/A	Nil - suitable habitat not present within the Assessment Area .
<i>Synoicus chinensis</i>	King Quail		en	Swampy heaths, dense grassland; growth on the edge of wetlands; weedy pastures and remnants, Lucerne crops, tall tropical grasslands; dry sedge plains, rice stubbles. (Pizzey and Knight 2012)	1913	1	Low- species not known to occur in the region. Historical records only.
<i>Tandanus tandanus</i>	Freshwater Catfish		en	Swims close to sand or gravel bottoms in slow moving streams, lakes and ponds with fringing vegetation. More abundant in lakes than in flowing water (Allen et al. 2002).	1990	1	Low - suitable habitat not present within Assessment Area .
<i>Temognatha sanguinipennis</i>	Jewel Beetle		en	Species specific habitat has limited literature. The genus however, is known to occur in forests, heathlands and woodlands. They are known to feed on flowers in heaths and woodlands. The larvae live in wood, more rarely, softer plant stems with some species feeding on dry leaves (Australian Museum 2020).	1984	1	Medium - historical records only, but suitable habitat present within Assessment Area .
<i>Tringa nebularia</i>	Common Greenshank	Mig, mar	en	Mudflats, estuaries, saltmarsh margins, lakes, wetlands, fresh and saline; commercial saltfields and sewage ponds (Pizzey and Knight 2012)	PMST		Low - mainly a coastal species. No recent records.
<i>Tyto novaehollandiae</i>	Masked Owl		cr	Forests, open woodlands, farmlands with large trees, partly forested coastal plains, paperbark woodlands, caves. (Pizzey and Knight 2012)	1983	1	Low - species known more so in woodlands area. May fly-over when foraging but would not permanently reside within the Assessment Area . Historical records only.
<i>Tyto tenebricosa</i>	Sooty Owl		en	Tall, wet forests in sheltered east and south east facing mountain gullies with dense understorey layer. (Pizzey and Knight 2012)	2019	64	Low - species known more so in woodlands area. May fly-over when foraging but would not permanently reside within the Assessment Area . Historical records only.
<i>Varanus varius</i>	Lace Monitor		en	Coast, ranges, slopes and adjacent plains of eastern and south-eastern Australia, where it occurs in occur in well-timbered areas from dry woodlands to cool temperate forests. It feeds on insects, reptiles and small mammals, but is a major predator of nestling birds. Often forages on the ground, and in trees (Cogger 2014).	2022	16	Low - species may undertake movements through Assessment Area but most likely to reside in woodland areas surrounding the site, such as the Yarra Ranges National Park

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Table D.4: Threatened flora species observed within 10 km of the Assessment Area and identified within the PMST report.

Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Acacia howittii</i>	Sticky Wattle		vu	Confined to eastern Victoria from the upper Macalister River area near Mt Howitt south to near Yarram and east to near Tabberabbera. Grows in moist forest. Widely cultivated and naturalising in some areas (e.g. Daylesford, Greater Melbourne, Dandenong Ranges etc.) (RBGV 2018).	2016	13	N/A- species outside of natural range. If present, likely planted individuals.
<i>Acacia leprosa var. uninervia</i>	Large-leaf Cinnamon-wattle		en	Scattered from near Buxton to Orbost East. Also, the Grampians. Flowers Aug-Oct. (Walsh and Entwisle 1996).	2011	5	Low - species not observed within the Assessment Area .
<i>Acacia rupicola</i>	Rock Wattle		en	Restricted in Victoria to rocky areas around Mt Arapiles and apparently the northern parts of the Grampians (RBGV 2019).	1992	1	Low - species not known within the region.
<i>Acacia sporadica</i>	Pale Hickory-wattle		cr	Endemic to Victoria where it is known from 3 disjunct locations (Taradale, Howqua, and Carboor). At each of these sites plants occur in grassy, dry Eucalyptus woodland or forest on shallow soils (RBGV 2016).	2003	1	Low – not adequate habitat within the Project area.
<i>Acacia stictophylla</i>	Dandenong Wattle		en	Restricted to the Dandenong Ranges where it is often locally common in the riparian zone on hillsides in tall forest and open woodland. (RBGV 2019)	2019	29	Nil - species not observed within the Assessment Area .
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	VU		Largely confined to permanent swamps, principally along the Murray River between Wodonga and Echuca, uncommon to rare in the south (e.g. Casterton, Moe, Yarram), probably due to historic drainage of wetlands (RBGV 2016). Largely restricted in greater Melbourne to seasonal wetlands and mudflats of River Red Gum swamps of the Lower Yarra and Plenty/Merri volcanic plains north of Melbourne (Cam Beardsell pers. comm.).	2005 & PMST	2	Low - outside of known range.
<i>Asterolasia asteriscophora subsp. albiflora</i>	White Star-bush	CR	cr	Damp and valley sclerophyll forests (Gray and Knight 2001).	PMST		Low – not adequate habitat within the Project area.ow
<i>Austrostipa rudis subsp. australis</i>	Veined Spear-grass		en	Uncommon, mostly in cool areas of southern Victoria. Usually at moderate altitude, in open-forest on sandy or sandstone-derived soils (RBGV 2020).	2016	4	Low -suitable habitat not present in Assessment Area . Not observed during field assessment.
<i>Beyeria lanceolata</i>	Pinkwood		en	Apart from an isolated occurrence in the Dandenong Ranges, confined in Victoria to East Gippsland where usually found in gullies, often in rocky situations. (RBGV 2018)	1914	2	Nil - species not observed within the Assessment Area . Species also not known to naturally occur within Assessment Area .

Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Billardiera scandens</i> s.s.	Velvet Apple-berry		en	Apparently uncommon in Victoria, occurring chiefly in dry open-forests and woodlands in the north-east (Beechworth, Whitfield etc.), with isolated occurrences near Mt Macedon, Eltham-Hurstbridge area, Eildon and Orbost (RBGV 2019).	2015	11	Low - highly disturbed urbanised landscape. Suitable habitat not present. Species not known within 5 km of Assessment Area since 1916.
<i>Botrychium australe</i>	Austral Moonwort		cr	Moist depressions in plains grassland, requires cool, acidic moist well drained soil, rich in humus. (Walsh and Entwisle 1994)	1909	3	Low - historic records only. Assessment Area highly disturbed and therefore unlikely to provide exact conditions required for species presence.
<i>Caladenia flavovirens</i>	Christmas Spider-orchid		cr	Dry and valley sclerophyll forests with grassy understorey. (Gray and Knight 2001)	1770	2	Low - historic records only. Assessment Area highly disturbed and therefore unlikely to provide exact conditions required for species presence.
<i>Caladenia oenochila</i>	Wine-lipped Spider-orchid		cr	Damp and valley sclerophyll forests. (Gray and Knight 2001)	2021	17	Low - Assessment Area highly disturbed and not likely to support this species.
<i>Caladenia rosella</i>	Little Pink Spider-orchid	EN	cr	Gentle westerly slopes in box-Stringybark woodland with a rather open understorey, in brown clay-loam over siltstone. (Gray and Knight 2001)	PMST		Low - historic records only. Assessment Area highly disturbed and therefore unlikely to provide exact conditions required for species presence.
<i>Caladenia sp. aff. venusta (Kilsyth South)</i>	Kilsyth South Spider-orchid	CR	cr	It grows in montane forest with a grassy understorey on a gentle slope. (Walsh and Entwisle 1994)	2004	3	Nil - species not known to occur naturally within Assessment Area
<i>Caladenia venusta</i>	Large White Spider-orchid		en	In woodlands and heathy woodland west of Port Phillip Bay, usually coastal or subcoastal but also in the Grampians, on well-drained or moisture-retentive soils (RBGV 2018)..	1996	1	Low – not adequate habitat within the Project area.
<i>Caladenia vulgaris</i>	Slender Pink-fingers		vu	Confirmed from Portland area, Anglesea, Upper Beaconsfield and near the Genoa River, but probably more widespread. Flowers after late Spring. (Walsh and Entwisle 1994)	2015	3	Low - may occur within roadside verge along Maroondah Hwy, but area highly disturbed. Records likely from Yarra Ranges

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
							National Park and surrounding reserves.
<i>Calochilus imberbis</i>	Naked Beard-orchid		cr	Mainly in dryish open woodlands and heaths. Flowers Sep.-Dec. Coextensive with <i>Calochilus robertsonii</i> (Walsh and Entwisle 1994)	2015	2	Low - may occur within roadside verge along Maroondah Hwy, but area highly disturbed. Records likely from Yarra Ranges National Park and surrounding reserves.
<i>Cardamine papillata</i>	Forest Bitter-cress		en	Grows in hilly forest areas across Victoria. Flowers late winter-spring. (Walsh and Entwisle 1996)	2003	8	Low - records likely from Yarra Ranges National Park and surrounding reserves. Not likely to occur in Assessment Area .
<i>Carex alsophila</i>	Forest Sedge		en	Occurs in mountain gullies and swamps (Walsh and Entwisle 1994).	2010	2	Low – not adequate habitat within the Project area.
<i>Chiloglottis jeanesii</i>	Mountain Bird-orchid		vu	Growing in damp shaded forest, particularly with Myrtle Beech present. (Jeanes and Barkhouse 2006)	2004	6	Low- records likely from Yarra Ranges National Park and surrounding reserves. Not likely to occur in Assessment Area .
<i>Chiloglottis X pescottiana</i>	Bronze Bird-orchid		en	Species Hybrid. Likely to occur wherever two parent species grow together. In overlapping areas of moist forests of cooler areas of the state and dryish open-forest. Flowers Oct-Nov. (Walsh and Entwisle 1994)	2009	2	Low - records likely from Yarra Ranges National Park and surrounding reserves. Not likely to occur in Assessment Area .
<i>Coronidium gunnianum</i>	Pale Swamp Everlasting		cr	Widespread throughout the state except for the north-west and the alpine and adjacent mountainous areas, and usually at low elevations (under c. 100 m) where mostly in grasslands and riverine <i>Eucalyptus camaldulensis</i> woodland on soils that are prone to inundation. Flowers (Nov.-) Feb.-Apr.(-Jun.). (RBGV 2018)	2001	2	Low - suitable habitat not present within Assessment Area .
<i>Correa reflexa var. lobata</i>	Powelltown Correa		en	Locally common on moist, often heathy open-forest from the Dandenong Ranges to near Powelltown, with an isolated occurrence at Cranbourne. (Walsh and Entwisle 1999)	2016	6	Low - records likely from Yarra Ranges National Park and surrounding reserves. Not likely to occur in Assessment Area .

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Corybas aconitiflorus</i>	Spurred Helmet-orchid		en	Colonies grow in sheltered positions, often on damp sand under ferns or shrubs (Walsh and Entwisle 1994)	2006	7	Nil - habitat to support the species not present in Assessment Area .
<i>Corymbia maculata</i>	Spotted Gum		vu	Grows naturally only in far east Gippsland within Victoria - Commonly planted street tree. Flowers Jul.–Sep. (RBGV 2018)	2017	15	N/A - species outside of its natural range. If it occurs in Assessment Area it is likely to be planted.
<i>Cyathea cunninghamii</i>	Slender Tree-fern		cr	Wet sclerophyll forests (Gray and Knight 2001).	1880	2	Low – not adequate habitat within the Project area.
<i>Dianella amoena</i>	Matted Flax-lily	EN	cr	Largely confined to drier grassy woodland and grassland communities south of the Dividing Range and now much depleted through its range (RBGV 2017).	2021 & PMST	30	Low - highly disturbed urbanised landscape. Suitable habitat not available. Species not observed during field assessment.
<i>Deyeuxia talariata</i>	Skirted Bent-grass		en	Rare, known in Victoria from only a few sites in and near the Coberras and the nearby Nunniong Plateau, where it occurs in damp, peaty, Sphagnum-rich heath (Walsh and Entwisle 1994).	2003	1	Low – not adequate habitat within the Project area.
<i>Dianella longifolia</i> var. <i>grandis</i> s.l.	Glaucous Flax-lily		cr	Occurs in lowland plains grassland and grassy woodlands (e.g. Volcanic Plain and Riverina) as well as around rocky outcrops at higher altitudes than the var. <i>longifolia</i> . Flowers Nov.–Dec. (RBGV 2018)	2002	5	Low - highly disturbed urbanised landscape. Suitable habitat not available. Species not observed during field assessment.
<i>Dianella</i> sp. aff. <i>longifolia</i> (Benambra)	Arching Flax-lily		th	Occurs in lowland plains grassland and grassy woodlands (e.g. Volcanic Plain and Riverina) as well as around rocky outcrops at higher altitudes than the var. <i>longifolia</i> (e.g. between Swifts Creek and Omeo, Benambra-Corryong district, Don River near Launching Place). Flowers Nov-Dec (RBGV 2021)	2014	5	Low – not adequate habitat within the Project area.
<i>Diuris behrii</i>	Golden Cowslips		en	Locally common in grassland and open woodland mostly in western Victoria; Flowers Sep.–Nov. (RBGV 2018).	1901	1	Low – not adequate habitat within the Project area.
<i>Diuris X palachila</i>	Broad-lip Diuris		en	Occurring in heathlands or drier open-forests. (Gray and Knight 2001)	1985	1	Low- suitable habitat not present in Assessment Area . Historic records only.
<i>Eucalyptus crenulata</i>	Buxton Gum	EN	en	Swampy sites in foothills just north and south of Great Dividing Range, near Buxton, Narbethong and Yarra Glen. (Walsh and Entwisle 1994)	2011 & PMST	15	N/A - species outside of its natural range. If it occurs in

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
							Assessment Area it is likely to be planted.
<i>Eucalyptus fulgens</i>	Green Scentbark		en	Occurs east from Healesville and Woori Yallock to the Latrobe Valley near Driffield (Walsh and Entwisle 1996). Open forest often with moist conditions (Bull 2014).	2015	13	Nil - species natural ranges occurs outside of Assessment Area .
<i>Eucalyptus sideroxylon subsp. sideroxylon</i>	Mugga		en	In Victoria confined to the Chiltern area, northern Warby Range and south of Winton, while the other ironbark, <i>Eucalyptus tricarpa</i> , with its 3-budded inflorescences and larger fruit is widespread (RBGV 2018).	2016	3	Nil - species not observed during field assessment.
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	VU	cr	Favours ridges, slopes and streambanks, and deep fertile soils. Flowers Spring. (Walsh and Entwisle 1996)	PMST		Nil - species natural ranges occurs outside of Assessment Area .
<i>Eucalyptus yarraensis</i>	Yarra Gum		cr	Extending west from Glenelg (see paragraph 5.6.1) and north-west to Daylesford and Ararat. Collections of 3-budded and fruitless swamp gums from east of Cavendish may be this species. Very rarely, some of the species occur in remnant stands in the eastern Melbourne metropolitan area, Melbourne suburbs (e.g. Scoresby, Wantirna, Yarraville).	2020	135	Present - species observed within road reserve of Maroondah Hwy within Assessment Area. Not to be impacted
<i>Euphrasia collina subsp. muelleri</i>	Purple Eyebright	EN	en	Endemic in Victoria. Formerly widespread in lowland to montane central and western Victoria, but now exceedingly rare through habitat destruction, surviving in heathland and heathy woodland on the Mornington Peninsula and near Jamieson. (Walsh and Entwisle 1999)	1905	4	Low - suitable habitat not present within Assessment Area .
<i>Gentianella polysperes</i>	Early Forest-gentian		en	Scattered through the State, usually in hilly country, e.g. Dandenong Ranges and foothills, Mt Sugarloaf, Mt Macedon (but apparently now rare at these localities), ascending to subalpine areas (e.g. Snowy Range, Mt Benambra, Mt Delusion) in the eastern ranges (RBGV 2020)	2003	5	Low - suitable habitat limited within Assessment Area due to level of disturbance. Species records likely from Yarra Ranges National Park surrounding Dandenong Ranges reserves.
<i>Geranium solanderi var. solanderi s.s.</i>	Austral Crane's-bill		en	An uncommon species occurring in damp to dryish, sheltered sites of grassy woodlands, often along drainage lines or seepage areas. (Walsh and Entwisle 1999)	2001	4	Low - limited suitable habitat available within Assessment Area . Species not observed during field assessment.
<i>Geranium sp. 3</i>	Pale-flower Crane's-bill		en	Found in open, grassy areas of dry woodland forest. Flowers Sep.-Jan. (Walsh and Entwisle 1999)	2014	3	Low - limited suitable habitat available within Assessment

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
							Area . Species not observed during field assessment.
<i>Glycine latrobeana</i>	Clover Glycine	VU	vu	Widespread but of sporadic occurrence and rarely encountered. Grows mainly in grasslands and grassy woodlands (Walsh and Entwisle 1996).	PMST		Low - limited suitable habitat available within Assessment Area . Species not observed during field assessment.
<i>Grevillea barklyana</i>	Gully Grevillea		cr	Endemic in Western Gippsland, on tributaries of the Bunyip River, north of Labertouche. A recent collection from Ashbourne (near Woodend) from dry open forest, where known from a single plant close to the road, most likely represents an introduction. Grows on slopes of moist shaded gullies as a tall understory species, in gravelly clay-loam soil (RBGV, 2022)	2017	1	Low – not adequate habitat within the Project area.
<i>Isolepis wakefieldiana</i>	Tufted Club-sedge		en	Scattered in cooler parts of the state (e.g. Halls Gap, Cape Otway, Healesville, Gelantipy, Marlo, Cann River, and Genoa areas). (Walsh and Entwisle 1994)	2008	3	Low - Not known to occur in Lilydale area and not observed during field assessment
<i>Lepidium aschersonii</i>	Spiny Peppercress	VU	en	Sprouts annually from perennial tubers and lives under ground rootstock at periodically wet sites such as gullies, depressions and the margins of freshwater and saline marshes and shallow lakes usually on heavy clay soils. Its population numbers can fluctuate greatly from year to year (and may be absent for several seasons following flooding), presumably due to the amount of bare soil available for seed germination. Flowering occurs from spring to autumn (Carter 2010). In Victoria, mostly occurs on the volcanic plain, but with outlying populations from near Lake Omeo and the Barwon River floodplain in Geelong and pre-1900 records from the Grampians, Port Fairy and Williamstown (AVH 2020).	PMST		Low – not adequate habitat within the Project area.
<i>Levenhookia sonderi</i>	Slender Stylewort		en	Wet depressions in valley sclerophyll forest, grassy wetlands, tea-tree heath. (Walsh and Entwisle 1994)	2003	3	Low - suitable habitat not present in Assessment Area . Not observed during field survey.
<i>Melaleuca armillaris subsp. armillaris</i>	Giant Honey-myrtle		en	Mainly confined to near-coastal sandy heaths, scrubs slightly raised above saltmarsh, riparian scrubs, rocky coastlines and foothill outcrops eastwards from about Marlo. Occurrences to the west are naturalized from cultivated stock. Commonly grown for ornament across Victoria, as a windbreak or street tree and sometimes giving rise to seedlings, particularly after fire (RBGV 2019).	2018	12	N/A- species outside of its natural range. If it occurs in Assessment Area it is likely to be planted.
<i>Orthrosanthus multiflorus</i>	Morning Flag		en	Very rare in Victoria where known only from heathland communities near Cape Nelson and Port Campbell (Walsh and Entwisle 1994).	2007	2	Nil - suitable habitat not present within Assessment Area .

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Pimelea pauciflora</i>	Poison Rice-flower		en	Growing along mountain streams in a few isolated areas. Flowers Sep.-Nov. (Walsh and Entwisle 1996)	1992	6	Nil - suitable habitat not present within Assessment Area .
<i>Platylobium infecundum</i>	Famine Flat-pea		cr	Only known from a few locations in ranges east of Melbourne, growing in heathy forest and woodland (RBGV 2020).	2019	2	Low- suitable habitat limited within Assessment Area . Species not observed during field assessment.
<i>Pomaderris vacciniifolia</i>	Round-leaf Pomaderris	CR	cr	Endemic in moist forest and scrubs in upper catchment of the Yarra, Plenty and Yea Rivers. (Walsh and Entwisle 1999)	2014 & PMST	3	Low- suitable habitat limited within Assessment Area . Species not observed during field assessment.
<i>Prasophyllum colemaniarum</i>	Lilac Leek-orchid	VU		Known with certainty only by the type collection (1922) from grassy woodland near Bayswater, probably now extinct. (RBGV 2023)	PSMT		Low – not adequate habitat within the Project area.
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	EN	en	Widespread across southern Victoria, but rare. Occurs in grassland, heathland and open forest on well-drained soils and in dry heathlands (RBGV 2018).	1990 & PMST	3	Low - suitable habitat limited in Assessment Area . Historic record only.
<i>Prasophyllum lindleyanum</i>	Green Leek-orchid		en	Widespread, but generally uncommon in near-coastal scrub, dry woodlands further inland and sub-alpine herbfield. Flowers Sep.-Jan. (RBGV 2015)	2007	1	Nil - suitable habitat not present in Assessment Area . Historic record only.
<i>Prasophyllum spicatum</i>	Dense Leek-orchid	VU	cr	Localised across southern Victoria in coastal heathland and near-coastal heathy forest on sandy soils (RBGV 2015).	PMST		Low – not adequate habitat within the Project area.
<i>Prostanthera saxicola var. bracteolata</i>	Slender Mint-bush		en	Scattered in heathland, dry sclerophyll forests and woodlands from the Grampians to Ensay area, often on rocky soils. Flowers Sep.–Dec. (RBGV 2018)	2008	1	Low- suitable habitat limited within Assessment Area .
<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	VU	en	Apparently localized in Victoria, but exact range uncertain due to confusion with closely allied species. Grows in moist areas of heathy and shrubby forest, on well-drained soils (RBGV 2018).	PMST		Low- suitable habitat limited within Assessment Area . No records within 10 km of Assessment Area .
<i>Pterostylis clivosa</i>	Red-tip Greenhood		en	Widespread across southern Victoria on slopes and ridges in drier open forests and woodlands on well-drained soils (RBGV 2020).	2015	3	Low- suitable habitat limited within Assessment Area .
<i>Pterostylis smaragdina</i>	Emerald-lip Greenhood		en	Apparently localized in Victoria (e.g. outer north-eastern suburbs of Melbourne, Brisbane Ranges, Ararat), but exact range uncertain due to confusion with allied species. Grows in drier forests and woodlands on well-drained shallow clay loam (Walsh and Entwisle 1994).	2015	1	Low - limited suitable habitat present in Assessment Area .

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
<i>Pultenaea weindorferi</i>	Swamp Bush-pea		en	Confined to swamps and drainage lines in scattered localities including Tonimbuk area and near Daylesford and Kinglake. Often associated with Eucalyptus cephalocarpa. (RBGV 2020)	2013	25	Low -suitable habitat not present in Assessment Area . Not observed during field assessment. Species not known to occur in Lilydale.
<i>Rhagodia parabolica</i>	Fragrant Saltbush		vu	Confined to rocky slopes and broad ridges between Sunbury and Geelong - but locally common where present; and in mallee at a few scattered locations in the northwest. Flowers, not foliage are fragrant. Flowers mostly Sep-Jan (RBGV 2019).	2016	1	Low – not adequate habitat within the Project area.
<i>Ripogonum album</i>	White Supplejack		en	Rare in Victoria, confined to the lower catchments of the Snowy, Brodribb, Bemm, Cann and Wingan Rivers and the Howe Range. Typically associated with rainforest dominated by <i>Acmena smithii</i> or <i>Tristaniopsis laurina</i> (Walsh and Entwisle 1994).	2003	1	Low – not adequate habitat within the Project area.
<i>Senecio campylocarpus</i>	Floodplain Fireweed		en	In Victoria mostly throughout central Victoria and in the north-east in loam to clay soils in forest and woodland, usually in seasonally inundated areas (RBGV 2018).	2015	7	Low - limited suitable habitat within the Assessment Area due to high disturbance levels.
<i>Senecio diaschides</i>	Shingle Fireweed		en	In Victoria apparently confined to the lower reaches of the records from along the Avon, Macalister, Murrindal, Buchanan and Snowy Rivers, commonly occurring in sand or amongst rocks near the watercourse (Walsh and Entwisle 1999).	2007	1	Low -suitable habitat not present in Assessment Area . Not observed during field assessment.
<i>Senecio macrocarpus</i>	Large-headed Fireweed	VU	cr	In Victoria largely confined to remnant Themeda grasslands on loamy clay soils derived from basalt from near Melbourne west to Skipton area. Also known from auriferous ground near Stawell. Formerly recorded from near Horsham and Casterton, but apparently long extinct from these areas (Walsh and Entwisle 1999).	PMST		Low – not adequate habitat within the Project area.
<i>Senecio psilocarpus</i>	Swamp Fireweed	VU		Rare, restricted in Victoria to a few herb-rich winter-wet swamps throughout the south of the state, west from Sale, growing on volcanic clays or peaty soils (RBGV 2017).	PMST		Low - suitable habitat limited within Assessment Area due to high disturbance levels.
<i>Thesium australe</i>	Austral Toad-flax	VU	en	Although once widespread, only currently known from highland areas where associated with grasslands (Walsh and Entwisle 1999).	PMST		Low – not adequate habitat within the Project area.
<i>Thryptomene calycina</i>	Grampians Thryptomene		en	Occurs in heathlands and heathy woodlands, mostly on sandy soils. Flowers Jul.-Nov. (Walsh and Entwisle 1996)	2003	2	Nil - Suitable habitat not present in Assessment Area . Not

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Scientific name	Common Name	EPBC	FFG	Suitable habitat description	Latest record	No. recs	Likelihood of occurrence
							observed during field assessment.
<i>Tmesipteris ovata</i>	Oval Fork-fern		en	Not common in Victoria. Localised in Wet Forest near Gembrook and Emerald, Morwell N.P., Wilsons Prom and East Gippsland. Intermediates with <i>T. parva</i> exist. (Walsh and Entwisle 1994)	1853	2	Nil - species not known to naturally occur in Assessment Area . Not observed during field assessment.
<i>Tmesipteris parva</i>	Small Fork-fern		en	Grow on tree-ferns, occurring between Gembrook and Warburton and in east and south Gippsland (Walsh and Entwisle 1994).	1947	1	Nil - species not known to naturally occur in Assessment Area . Not observed during field assessment.
<i>Viola betonicifolia subsp. novaguineensis</i>	Floodplain Violet		en	Confined largely to forests fringing the Murray River and its major tributaries, particularly between Wodonga and Echuca, but with scattered occurrences in the south. (RBGV 2016)	1949	1	Nil - species not known to naturally occur in Assessment Area .
<i>Xerochrysum palustre</i>	Swamp Everlasting	VU	cr	Lowland swamps, usually on black cracking clay soils. (Walsh and Entwisle 1999)	2015 & PMST	2	Nil- suitable habitat not present and species not observed during field assessment.

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## Appendix E. Tree Assessment and Impacts

Table E.1: Trees recorded within the Assessment Area assessed by Jacobs and Ironbark Environmental Arboriculture in 2022

Tree ID	Species	DBH (cm)	Tree Type	TPZ	Origin	Impact
1	<i>Eucalyptus ovata</i>	60	Small Scattered Tree	7.2	Indigenous	Retain
2	<i>Eucalyptus obliqua</i>	20, 30, 35	Small Scattered Tree	6	Indigenous	Retain
3	<i>Acacia melanoxylon</i>	40, 14	Large Shrub	5.1	Indigenous	Retain
4	<i>Eucalyptus viminalis</i>	100, 30, 55	Large Scattered Tree	14.2	Planted	Retain It is important the TPZ of tree #4 is isolated from construction impacts; machinery and vehicles must not be driven over the TPZ unless ground protection is in place. • Exclusion of machinery and vehicles from the TPZ with temporary fencing is recommended.
6	<i>Eucalyptus viminalis</i>	80	Large Scattered Tree	9.6	Planted	Retain
9	<i>Acacia melanoxylon</i>	45	Large Shrub	5.4	Indigenous	Retain
10	<i>Acacia melanoxylon</i>	10	Large Shrub	2	Indigenous	Retain
11	<i>Eucalyptus ovata</i>	55	Immature Canopy Tree	6.6	Indigenous	Retain
13	<i>Eucalyptus sp.</i>	40	Small Scattered Tree	4.8	Indigenous	Retain
15	<i>Acacia sp.</i>	40	Large Shrub	8	Indigenous	Remove Within area of proposed road
16	<i>Acacia melanoxylon</i>	14	Large Shrub	2	Indigenous	Remove Within area of proposed road
17	<i>Acacia sp.</i>	50	Large Shrub	6	Indigenous	Remove Within area of proposed road
18	<i>Eucalyptus ovata</i>	18	Immature Canopy Tree	2.2	Indigenous	Retain
19	<i>Eucalyptus ovata</i>	25, 20	Immature Canopy Tree	3.8	Indigenous	Retain
20	<i>Eucalyptus ovata</i>	55	Immature Canopy Tree	6.6	Indigenous	Retain
21	<i>Eucalyptus ovata</i>	8, 10, 11, 4, 8, 10, 12, 5, 8, 6, 8, 4	Immature Canopy Tree	2.6	Indigenous	Retain
22	<i>Eucalyptus ovata</i>	40	Immature Canopy Tree	4.8	Indigenous	Remove Within area of proposed road
23	<i>Eucalyptus sp.</i>	35	Immature Canopy Tree	4.2	Indigenous	Remove Within area of proposed road
32	<i>Leptospermum sp.</i>	16	Large Shrub	2	Planted	Retain
33	<i>Eucalyptus spathulata</i>	50	Immature Canopy Tree	6	Planted	Retain It is important the TPZ of tree #33 is isolated from construction impacts; machinery and vehicles must not be driven over the TPZ unless ground protection is in place. • Exclusion of machinery and vehicles from the TPZ with temporary fencing is recommended.
34	<i>Acacia pycnantha</i>	30	Large Shrub	3.6	Indigenous	Retain

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Tree ID	Species	DBH (cm)	Tree Type	TPZ	Origin	Impact
35	<i>Melaleuca linariifolia</i>	10, 10, 6, 4, 8, 4	Large Shrub	2.1	Planted	Retain
36	<i>Acacia sp.</i>	36	Large Shrub	4.3	Indigenous	Remove Within area of proposed road
39	<i>Acacia sp.</i>	22	Large Shrub	2.6	Indigenous	Remove Within area of proposed road
40	<i>Melaleuca styphelioides</i>	26	Large Shrub	3.1	Planted	Remove Within area of proposed road
45	<i>Acacia dealbata</i>	6	Large Shrub	2	Indigenous	Remove Within area of proposed road
46	<i>Acacia dealbata</i>	8	Large Shrub	2	Indigenous	Remove Within area of proposed road
47	<i>Acacia dealbata</i>	2	Large Shrub	2	Indigenous	Remove Within area of proposed road
48	<i>Acacia dealbata</i>	6	Large Shrub	2	Indigenous	Remove The Site Layout Plan shows proposed perimeter fencing running through SRZ
49	<i>Acacia dealbata</i>	10, 6	Large Shrub	1.4	Indigenous	Remove Within area of proposed road
50	<i>Acacia dealbata</i>	6	Large Shrub	2	Indigenous	Remove Within area of proposed road
51	<i>Acacia dealbata</i>	14, 5, 11	Large Shrub	2.2	Indigenous	Remove Within area of proposed road
53	<i>Melaleuca styphelioides</i>	26, 28	Large Shrub	4.6	Planted	Remove Within area of proposed road
57	<i>Allocasuarina littoralis</i>	4, 3, 3, 2, 2	Large Shrub	0.7	Indigenous	Remove Within area of proposed road
58	<i>Allocasuarina littoralis</i>	12, 10, 5, 15, 18, 15, 10, 12	Large Shrub	3.6	Indigenous	Remove Within area of proposed road
60	<i>Acacia melanoxylon</i>	n/a	Large Shrub	n/a	Indigenous	Remove Within area of proposed road
61	<i>Acacia melanoxylon</i>	n/a	Large Shrub	n/a	Indigenous	Remove Within area of proposed road
65	<i>Allocasuarina littoralis</i>	5	Large Shrub	2	Indigenous	Remove Within area of proposed road
67	<i>Melaleuca styphelioides</i>	1, 1, 1, 1	Large Shrub	0.2	Planted	Retain
68	<i>Melaleuca styphelioides</i>	16, 8	Large Shrub	2.1	Planted	Retain
73	<i>Melaleuca linariifolia</i>	12, 15	Large Shrub	2.3	Planted	Retain
75	<i>Melaleuca linariifolia</i>	10, 8	Large Shrub	1.5	Planted	Retain
77	<i>Acacia sp.</i>	55	Large Shrub	6.6	Indigenous	Retain
79	<i>Eucalyptus radiata</i>	52	Immature Canopy Tree	6.2	Indigenous	Retain
80	<i>Eucalyptus radiata</i>	22	Immature Canopy Tree	2.6	Indigenous	Retain
81	<i>Eucalyptus radiata</i>	80, 60, 60	Large Canopy Tree	14	Indigenous	Retain
82	<i>Eucalyptus radiata</i>	36	Immature Canopy Tree	4.3	Indigenous	Retain
83	<i>Acacia melanoxylon</i>	10	Large Shrub	2	Indigenous	Retain
85	<i>Acacia melanoxylon</i>	50, 24	Large Shrub	6.7	Indigenous	Retain
86	<i>Acacia melanoxylon</i>	40, 35,	Large Shrub	8.2	Indigenous	Retain

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Tree ID	Species	DBH (cm)	Tree Type	TPZ	Origin	Impact
		40, 15, 10				
87	<i>Acacia melanoxylon</i>	22, 7	Large Shrub	2.8	Indigenous	Retain
88	<i>Acacia melanoxylon</i>	4, 1, 1, 1	Large Shrub	0.5	Indigenous	Retain
89	<i>Eucalyptus radiata</i>	35, 18	Immature Canopy Tree	4.7	Indigenous	Retain
90	<i>Acacia melanoxylon</i>	2, 3, 1, 1, 2	Large Shrub	0.5	Indigenous	Retain
91	<i>Eucalyptus radiata</i>	36	Immature Canopy Tree	4.3	Indigenous	Retain
92	<i>Acacia melanoxylon</i>	8	Large Shrub	2	Indigenous	Retain
93	<i>Acacia melanoxylon</i>	3	Large Shrub	2	Indigenous	Retain
94	<i>Eucalyptus radiata</i>	5, 9, 7, 12	Immature Canopy Tree	2.1	Indigenous	Retain
95	<i>Eucalyptus radiata</i>	50, 52	Immature Canopy Tree	8.7	Indigenous	Retain
96	<i>Eucalyptus sp.</i>	65	Immature Canopy Tree	7.8	Indigenous	Retain
98	<i>Eucalyptus sp.</i>	25	Immature Canopy Tree	3	Indigenous	Remove Within area of proposed road
99	<i>Eucalyptus sp.</i>	9	Immature Canopy Tree	2	Indigenous	Remove Within area of proposed road
101	<i>Acacia melanoxylon</i>	22	Large Shrub	2.64	Indigenous	Retain
102	<i>Acacia melanoxylon</i>	10, 9, 6	Large Shrub	2	Indigenous	Retain
103	<i>Acacia melanoxylon</i>	22, 8	Large Shrub	2.8	Indigenous	Retain Exclusion of machinery and vehicles from the TPZ with temporary fencing is recommended
104	<i>Eucalyptus yarraensis</i>	91	Large Canopy Tree	10.92	Indigenous	Retained • It is important the TPZ of tree #104 is isolated from construction impacts; machinery and vehicles must not be driven over the TPZ unless ground protection is in place. • Exclusion of machinery and vehicles from the TPZ with temporary fencing is recommended.
105	<i>Eucalyptus ovata</i>	73, 57	Large Canopy Tree	11.1	Indigenous	Retain
106	<i>Eucalyptus yarraensis</i>	96	Large Canopy Tree	11.52	Indigenous	Retain A laydown area is proposed near the Ingram Road intersection within the Rosemount Road area near to Tree ID 106 temporary fencing is recommended for this tree and machinery and vehicles must only be restricted to the paved road and not drive over the TPZ or impact the canopy of these trees within HZ03a. All lifting of pipes will be done outside of this area
107	<i>Eucalyptus radiata</i>	32, 24	Immature Canopy Tree	4.8	Indigenous	Retain
111	<i>Eucalyptus ovata</i>	75	Large Canopy Tree	9	Indigenous	Retain
112	<i>Eucalyptus ovata</i>	70	Large Canopy Tree	8	Indigenous	Retain
113	<i>Eucalyptus ovata</i>	70	Large Canopy Tree	8	Indigenous	Retain
114	<i>Eucalyptus ovata</i>	100	Large Canopy Tree	12	Indigenous	Retain
115	<i>Eucalyptus ovata</i>	70	Large Canopy Tree	8	Indigenous	Retain

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Tree ID	Species	DBH (cm)	Tree Type	TPZ	Origin	Impact
116	<i>Eucalyptus ovata</i>	70	Large Canopy Tree	8	Indigenous	Retain
117	<i>Eucalyptus ovata</i>	75	Large Canopy Tree	9	Indigenous	Retain
118	<i>Eucalyptus ovata</i>	70	Large Canopy Tree	8	Indigenous	Retain
119	<i>Eucalyptus yarraensis</i>	78	Large Canopy Tree	9	Indigenous	Retain
120	<i>Eucalyptus yarraensis</i>	100	Large Canopy Tree	12	Indigenous	Retain
121	<i>Eucalyptus yarraensis</i>	120	Large Canopy Tree	14	Indigenous	Retain
124	<i>Eucalyptus ovata</i>	80	Large Scattered Tree	10	Indigenous	Retain
125	<i>Eucalyptus ovata</i>	74	Large Canopy Tree	9	Indigenous	Retain
126	<i>Eucalyptus ovata</i>	70	Large Canopy Tree	8	Indigenous	Retain
127	<i>Eucalyptus ovata</i>	70	Large Canopy Tree	8	Indigenous	Retain
128	<i>Eucalyptus radiata</i>	115	Large Scattered Tree	14	Indigenous	Retain
Tree ID	Species	DBH (cm)	TPZ	Origin	Impact	
130	Dead <i>Eucalyptus</i> Sp.	102	12.24	Planted/Native	Retain	
129	<i>Eucalyptus botryoides</i>	79	9.48	Planted/Native	Retain	
137	<i>Eucalyptus camaldulensis</i>	79	10.8	Planted/Native	Retain	
149	<i>Eucalyptus camaldulensis</i>	90	9.24	Planted/Native	Retain	
145	<i>Eucalyptus camaldulensis</i>	77	9.84	Planted/Native	Retain	
144	<i>Eucalyptus camaldulensis</i>	82	9.84	Planted/Native	Retain	
					Retain Minor TPZ encroachment (0.64%) non-invasive construction techniques will be used during pipeline installation mitigation measures will be applied.	
143	<i>Eucalyptus camaldulensis</i>	134	16.08	Planted/Native	Retain	
123	<i>Eucalyptus camaldulensis</i>	64	7.68	Planted/Native	Retain	
114	<i>Eucalyptus camaldulensis</i>	74	8.88	Planted/Native	Retain	
142	<i>Eucalyptus camaldulensis</i>	60	7.2	Planted/Native	Retain	
141	<i>Eucalyptus camaldulensis</i>	68	8.16	Planted/Native	Retain	
124	<i>Eucalyptus cladocalyx</i>	53	6.36	Planted/Native	Retain	
135	<i>Eucalyptus crenulata</i>	30	3.6	Planted/Native	Retain	
128	<i>Eucalyptus dives</i>	57	6.84	Planted/Native	Retain	
147	<i>Eucalyptus globulus</i>	95	11.4	Planted/Native	Retain	
146	<i>Eucalyptus globulus</i>	89	10.68	Planted/Native	Retain	
					Retain Minor TPZ encroachment (3.68%) non-invasive construction techniques will be used during pipeline installation mitigation measures will be applied.	
140	<i>Eucalyptus globulus</i>	140	16.8	Planted/Native	Retain	
148	<i>Eucalyptus globulus</i>	98	11.76	Planted/Native	Retain	
					Retain Minor TPZ encroachment (0.02%) non-invasive construction techniques will be used during pipeline installation mitigation measures will be applied.	
151	<i>Eucalyptus globulus</i>	156	18.72	Planted/Native	Retain	
117	<i>Eucalyptus globulus</i>	54	6.48	Planted/Native	Retain	
136	<i>Eucalyptus melliodora</i>	60	7.2	Planted/Native	Retain	
150	<i>Eucalyptus microcarpa</i>	88	10.56	Planted/Native	Retain	

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Tree ID	Species	DBH (cm)	Tree Type	TPZ	Origin	Impact
152	<i>Eucalyptus microcarpa</i>			122	14.64	Planted/Native Retain
138	<i>Eucalyptus microcarpa</i>			64	7.68	Planted/Native Retain
112	<i>Eucalyptus ovata</i>			70	8.4	Planted/Native Retain
111	<i>Eucalyptus ovata</i>			70	8.4	Planted/Native Retain
122	<i>Eucalyptus ovata</i>			64	7.68	Planted/Native Retain
108	<i>Eucalyptus ovata</i>			52	6.24	Planted/Native Retain
110	<i>Eucalyptus ovata</i>			74	8.88	Planted/Native Retain
109	<i>Eucalyptus ovata</i>			65	7.8	Planted/Native Retain
113	<i>Eucalyptus radiata subsp. radiata</i>			115	13.8	Planted/Native Retain
127	<i>Eucalyptus radiata subsp. radiata</i>			93	11.16	Planted/Native Retain
						Retain Minor TPZ encroachment (0.74%) non-invasive construction techniques will be used during pipeline installation mitigation measures will be applied.
139	<i>Eucalyptus radiata subsp. radiata</i>			124	14.88	Planted/Native Retain
134	<i>Eucalyptus radiata subsp. radiata</i>			58	6.96	Planted/Native Retain
126	<i>Eucalyptus radiata subsp. radiata</i>			68	8.16	Planted/Native Retain
116	<i>Eucalyptus Sp.</i>			64	7.68	Planted/Native Retain
118	<i>Eucalyptus Sp.</i>			30	3.6	Planted/Native Retain
153	<i>Eucalyptus Sp.</i>			110	13.2	Planted/Native Retain
120	<i>Eucalyptus Sp.</i>			69	8.28	Planted/Native Retain
131	<i>Eucalyptus Sp.</i>			61	7.32	Planted/Native Retain
119	<i>Eucalyptus viminalis</i>			74	8.88	Planted/Native Retain
121	<i>Eucalyptus viminalis</i>			127	15.24	Planted/Native Retain
132	<i>Eucalyptus viminalis</i>			93	11.16	Planted/Native Retain
115	<i>Melaleuca Sp.</i>			34	4.08	Planted/Native Retain

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## Appendix F. VQA (habitat hectare) assessment

Table F.1: VQA assessment results

Habitat Zone		1	2	3	4	5	6	7	
Bioregion		Highlands – Southern Fall (HSF)				Gippsland Plains	HSF	HSF	
EVC #, name		164 Creeklime Herb-rich Woodland	164 Creeklime Herb-rich Woodland	164 Creeklime Herb-rich Woodland	164 Creeklime Herb-rich Woodland	821 Tall Marsh	653 Aquatic Herbland	164 Creeklime Herb-rich Woodland	
Site Condition	Component	Max score							
	Large trees	10	0	0	3	2	N/A	N/A	9
	Canopy cover	5	2	0	5	4	N/A	N/A	5
	Understorey	25	5	5	10	10	5	5	5
	Lack of weeds	15	0	4	4	4	4	4	0
	Recruitment	10	5	5	3	5	0	0	0
	Organic Litter	5	5	3	5	3	3	3	3
	Logs	5	0	0	0	0	0	0	0
	EVC Standardiser	n/a	1	1	1	1	1.36	1.36	1
	Standardised Score	75	17	17	30	28	16.32	16.32	22
Landscape value	25	3	3	3	3	3	3	3	
Habitat Score	100/75 (treeless)	20	20	33	31	19	19	25	
Habitat points = #/100	1	0.20	0.20	0.33	0.31	0.19	0.19	0.25	

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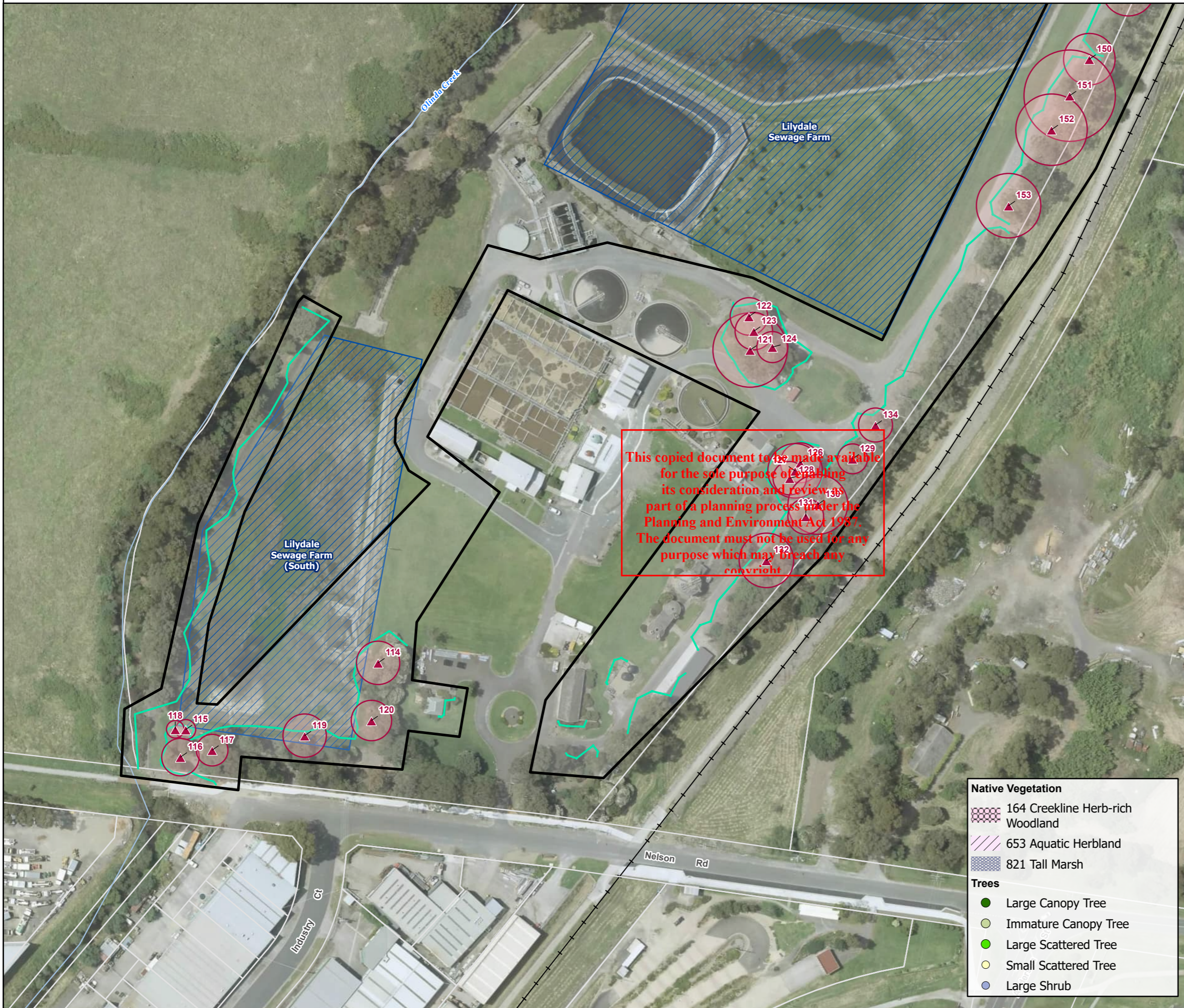
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## Appendix G. Mapping

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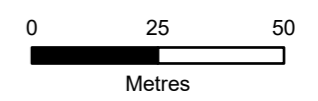
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- Legend**
- ▲ Planted Native / Indigenous Trees
  - Native / Indigenous Revegetation Area
  - Tree Protection Zone
  - ▭ Lilydale STP Facility Assessment Area
  - ▨ Current DELWP Wetlands

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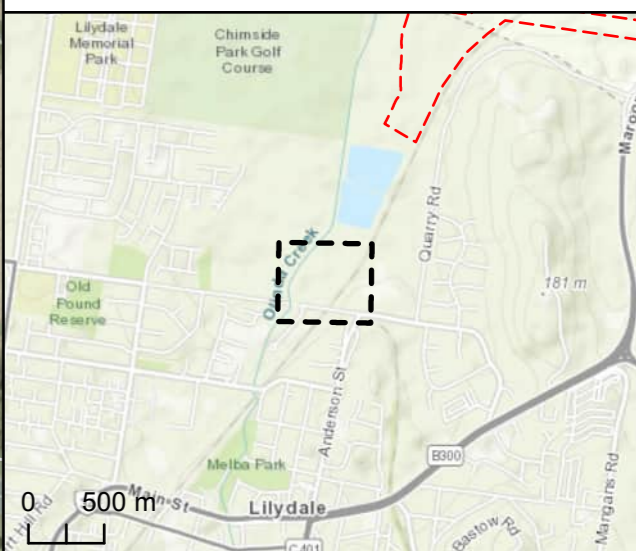
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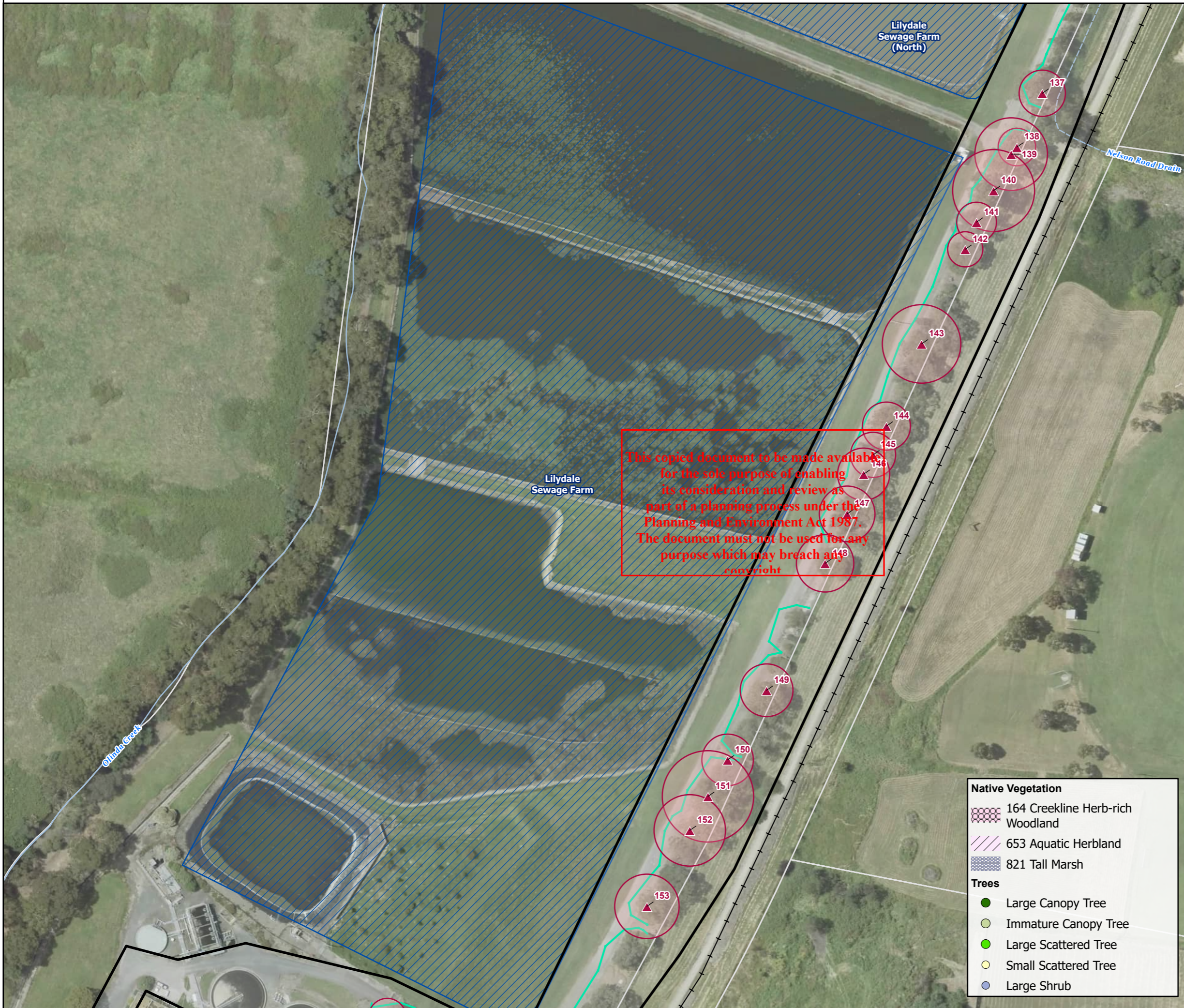
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- Native Vegetation**
- ▨ 164 Creekline Herb-rich Woodland
  - ▨ 653 Aquatic Herbland
  - ▨ 821 Tall Marsh
- Trees**
- Large Canopy Tree
  - Immature Canopy Tree
  - Large Scattered Tree
  - Small Scattered Tree
  - Large Shrub







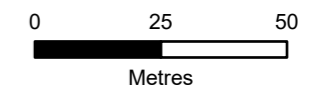
Legend

- ▲ Planted Native / Indigenous Trees
- Native / Indigenous Revegetation Area
- Tree Protection Zone
- Lilydale STP Facility Assessment Area
- Current DELWP Wetlands

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Native Vegetation

- 164 Creeklane Herb-rich Woodland
- 653 Aquatic Herbland
- 821 Tall Marsh

Trees

- Large Canopy Tree
- Immature Canopy Tree
- Large Scattered Tree
- Small Scattered Tree
- Large Shrub







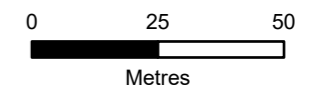
**Legend**

- Assessment Area
- Planted Native / Indigenous Trees
- Native / Indigenous Revegetation Area
- Tree Protection Zone
- Lilydale STP Facility Assessment Area
- Current DELWP Wetlands

**ADVERTISED PLAN**



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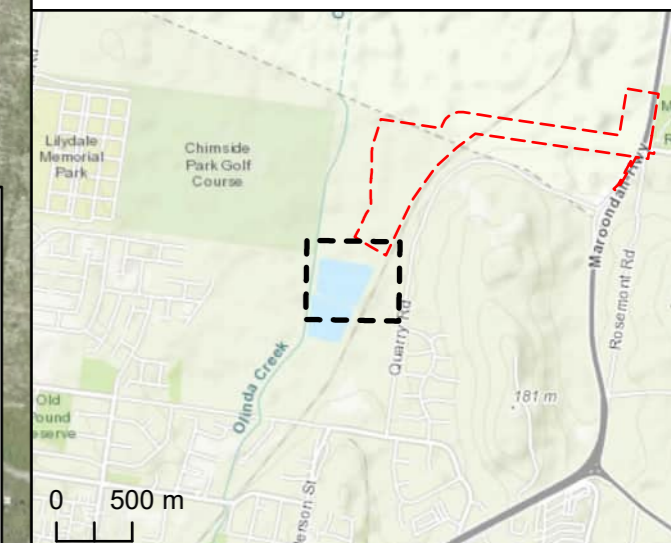
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**Native Vegetation**

- 164 Creepline Herb-rich Woodland
- 653 Aquatic Herbland
- 821 Tall Marsh




**Trees**

- Large Canopy Tree
- Immature Canopy Tree
- Large Scattered Tree
- Small Scattered Tree
- Large Shrub







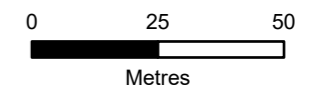
- Legend**
-  Assessment Area
  -  Lilydale STP Facility Assessment Area
  -  Current DELWP Wetlands

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


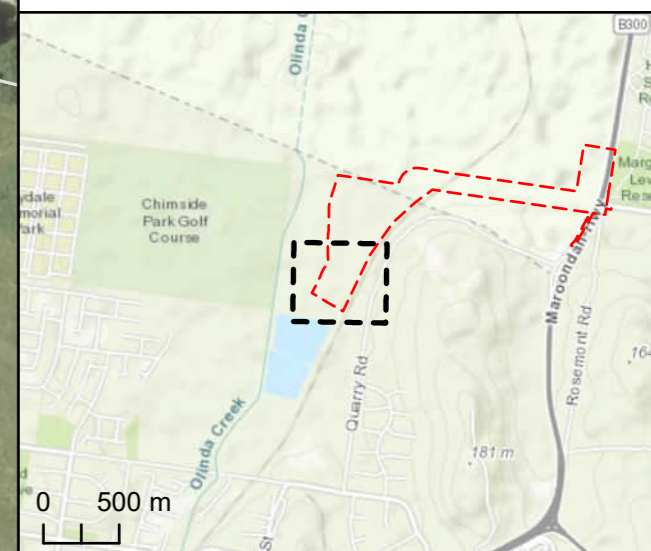
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- Native Vegetation**
-  164 Creepline Herb-rich Woodland
  -  653 Aquatic Herbland
  -  821 Tall Marsh
- Trees**
-  Large Canopy Tree
  -  Immature Canopy Tree
  -  Large Scattered Tree
  -  Small Scattered Tree
  -  Large Shrub






Lilydale Sewage Farm (North)







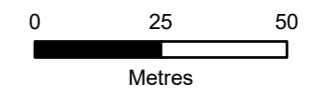
Legend

-  Assessment Area
-  Kiosk 1500 Kva 22kV
-  Waste to Energy Facility

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




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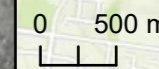
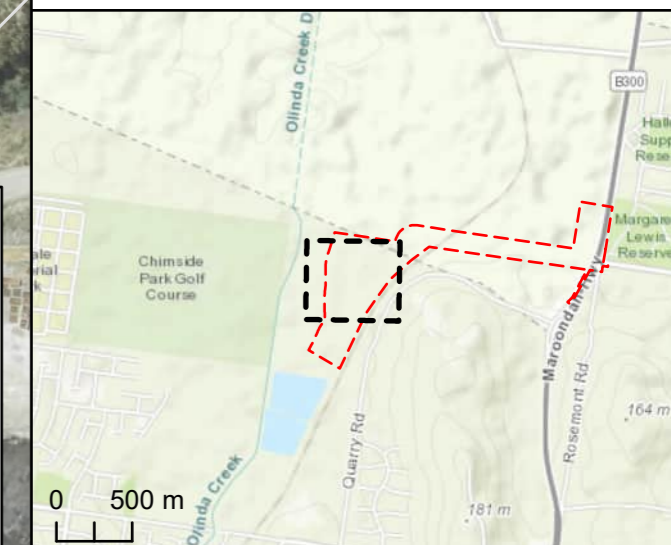
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Native Vegetation

-  164 Creeklime Herb-rich Woodland
-  653 Aquatic Herbland
-  821 Tall Marsh





Trees

-  Large Canopy Tree
-  Immature Canopy Tree
-  Large Scattered Tree
-  Small Scattered Tree
-  Large Shrub





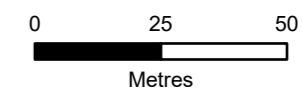
Legend

-  Assessment Area
-  Native / Indigenous Revegetation Area
-  Kiosk 1500 Kva 22kV
-  Waste to Energy Facility

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



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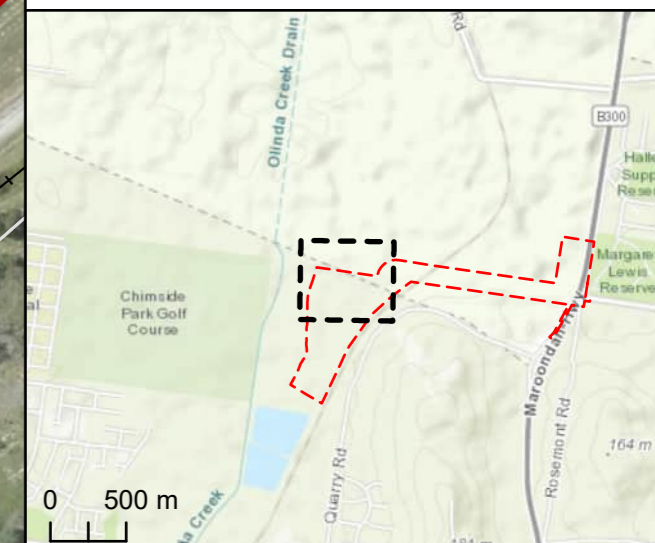


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- Native Vegetation**
-  164 Creepline Herb-rich Woodland
  -  653 Aquatic Herbland
  -  821 Tall Marsh
- Trees**
-  Large Canopy Tree
  -  Immature Canopy Tree
  -  Large Scattered Tree
  -  Small Scattered Tree
  -  Large Shrub





Legend

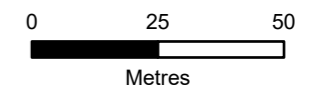
-  Assessment Area
-  Native / Indigenous Revegetation Area
-  Waste to Energy Facility

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



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Native Vegetation

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-  653 Aquatic Herbland
-  821 Tall Marsh

Trees

-  Large Canopy Tree
-  Immature Canopy Tree
-  Large Scattered Tree
-  Small Scattered Tree
-  Large Shrub







Legend

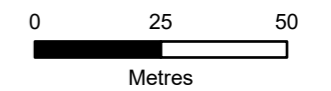
Assessment Area

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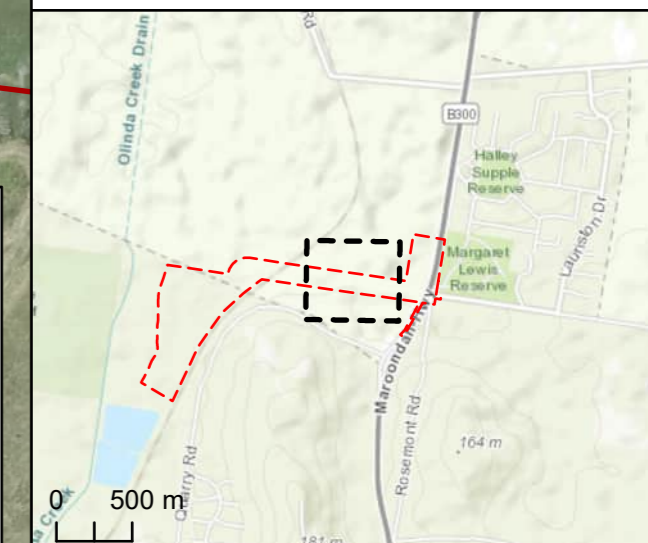
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Native Vegetation

- 164 Creeklane Herb-rich Woodland
- 653 Aquatic Herbland
- 821 Tall Marsh

Trees

- Large Canopy Tree
- Immature Canopy Tree
- Large Scattered Tree
- Small Scattered Tree
- Large Shrub



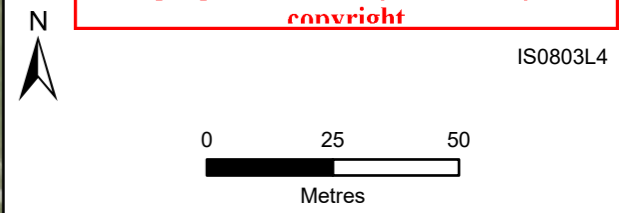




- Legend**
- Assessment Area
  - Eucalyptus yarraensis
  - Planted Native / Indigenous Trees
  - Tree Protection Zone

**ADVERTISED PLAN**

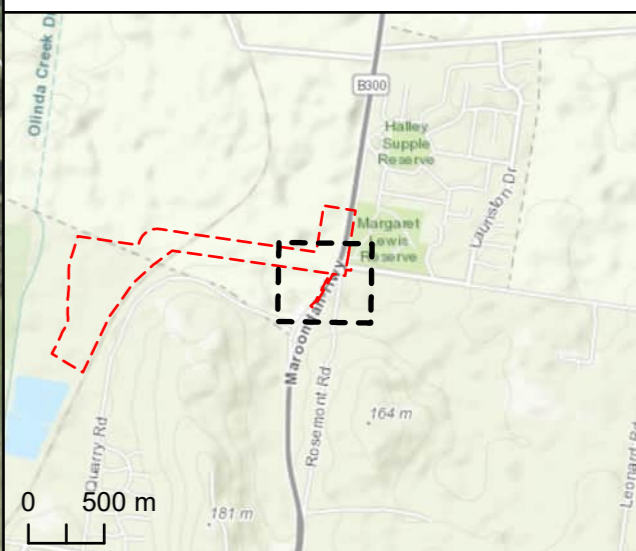
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- Native Vegetation**
- 164 Creekline Herb-rich Woodland
  - 653 Aquatic Herbland
  - 821 Tall Marsh
- Trees**
- Large Canopy Tree
  - Immature Canopy Tree
  - Large Scattered Tree
  - Small Scattered Tree
  - Large Shrub







**Legend**

- Assessment Area
- Eucalyptus yarraensis

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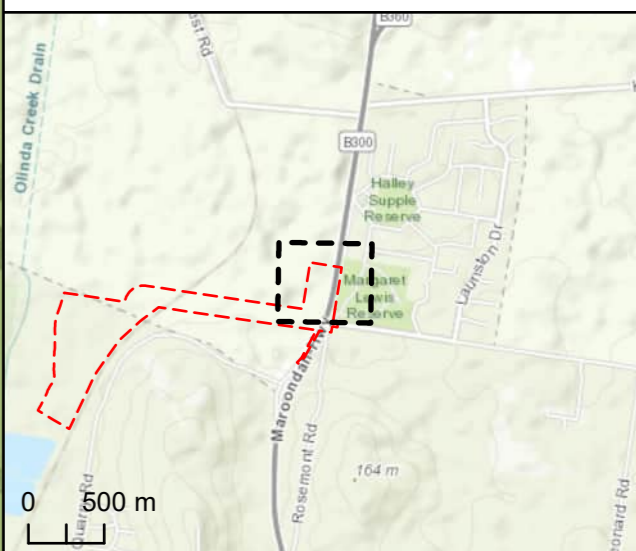
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**Native Vegetation**

- 164 Creepline Herb-rich Woodland
- 653 Aquatic Herbland
- 821 Tall Marsh

**Trees**

- Large Canopy Tree
- Immature Canopy Tree
- Large Scattered Tree
- Small Scattered Tree
- Large Shrub





## Appendix H. Vegetation Removal Report

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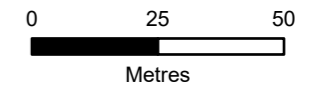
**Legend**

- Lilydale STP Facility Assessment Area
- Planted Native / Indigenous Trees
- Native / Indigenous Revegetation Area
- Watercourse Stream
- Railway
- Transmission Infrastructure**
- Existing 22kV Supply Line (Line Replacement)
- Waste to Energy Facility 22kV Supply Line (New)
- RO Permeate Pipeline to Lilydale Treatment Plant
- Tree Protection Zone
- Current DELWP Wetlands
- Cadastre

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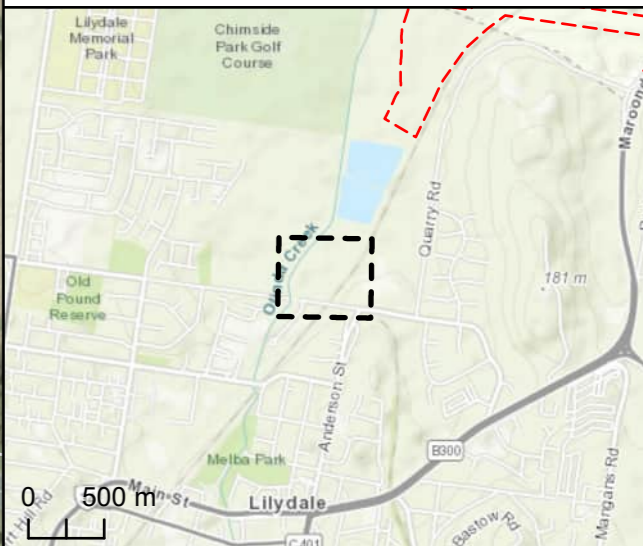


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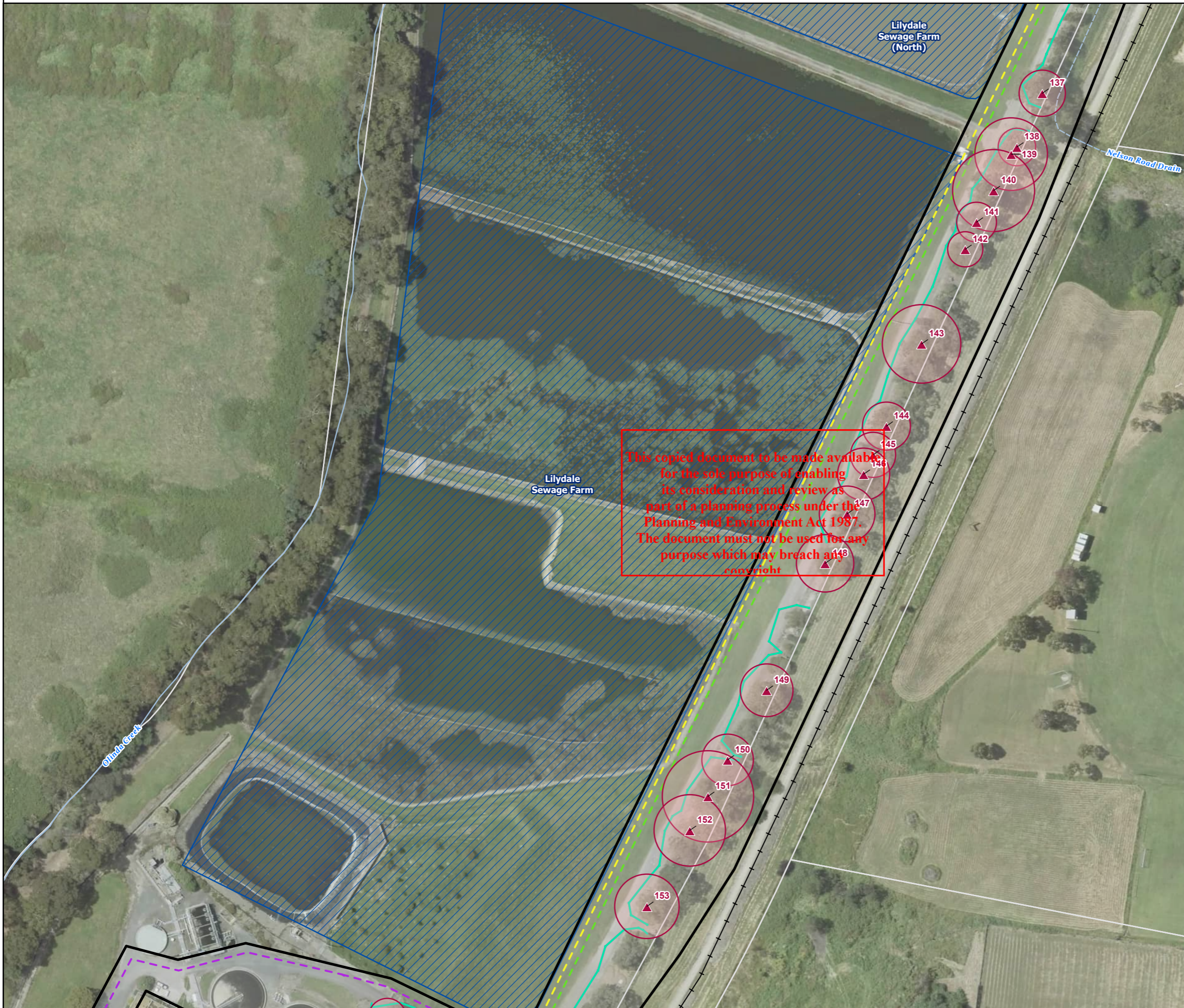


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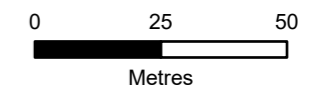
**Legend**

- Lilydale STP Facility Assessment Area
- Planted Native / Indigenous Trees
- Native / Indigenous Revegetation Area
- Channel / Drain
- Watercourse Stream
- Railway
- Transmission Infrastructure**
- Existing 22kV Supply Line (Line Replacement)
- Waste to Energy Facility 22kV Supply Line (New)
- RO Permeate Pipeline to Lilydale Treatment Plant
- Tree Protection Zone
- Current DELWP Wetlands
- Cadastre

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**Legend**

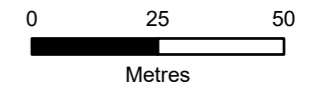
- Assessment Area
- Lilydale STP Facility Assessment Area
- Planted Native / Indigenous Trees
- Native / Indigenous Revegetation Area
- Proposed Footprint
- Channel / Drain
- Watercourse Stream
- Railway
- Transmission Infrastructure**
- Existing 22kV Supply Line (Line Replacement)
- Waste to Energy Facility 22kV Supply Line (New)
- RO Permeate Pipeline to Lilydale Treatment Plant
- Tree Protection Zone
- Current DELWP Wetlands
- Cadastre
- Native Vegetation**
- 821 Tall Marsh

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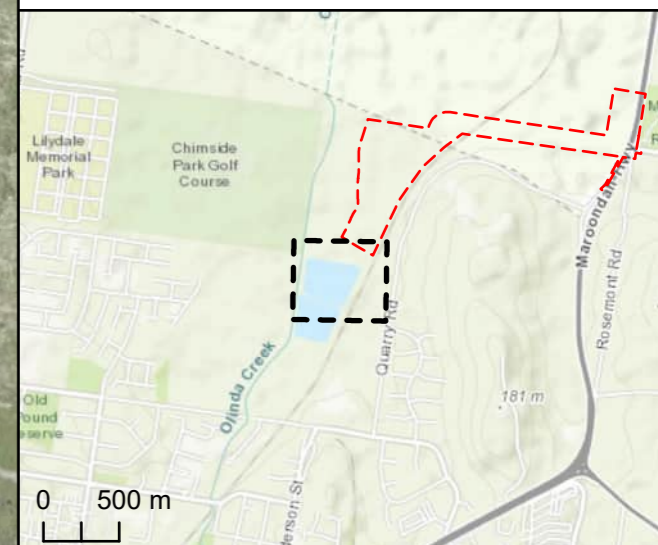
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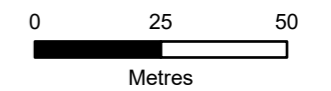
**Legend**

- Assessment Area
- Lilydale STP Facility Assessment Area
- Proposed Footprint
- Channel / Drain
- Railway
- Transmission Infrastructure**
- Existing 22kV Supply Line (Line Replacement)
- Waste to Energy Facility 22kV Supply Line (New)
- RO Permeate Pipeline to Lilydale Treatment Plant
- Current DELWP Wetlands
- Cadastre
- Native Vegetation**
- 821 Tall Marsh

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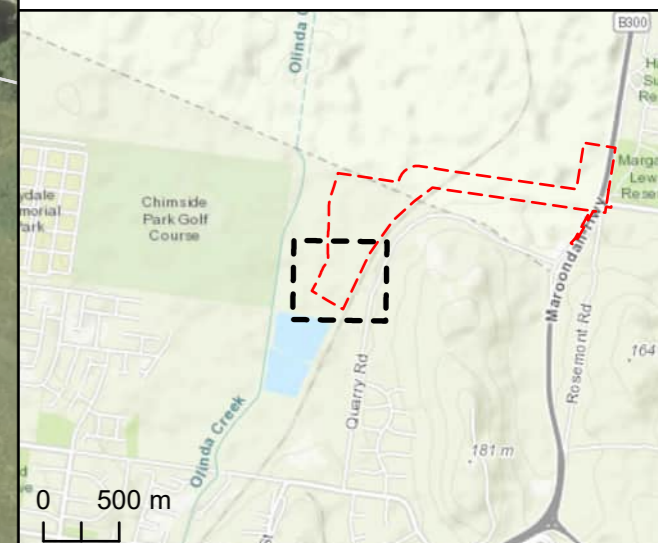


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Lilydale Sewage Farm (North)



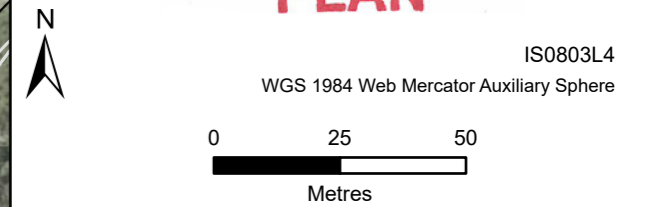




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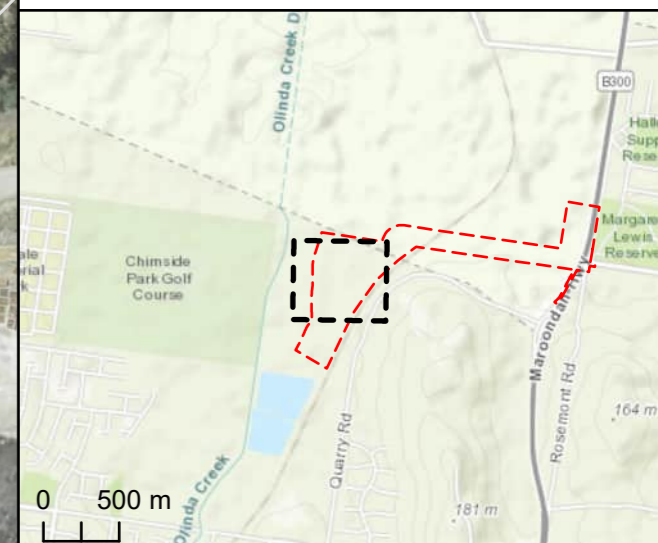
- Assessment Area
- Waste to Energy Facility
- Proposed Footprint
- Channel / Drain
- Railway
- Transmission Infrastructure**
- Waste to Energy Facility 22kV Supply Line (New)
- RO Permeate Pipeline to Lilydale Treatment Plant
- Kiosk 1500 Kva 22kV
- Tree Protection Zone
- Native Vegetation to be Impacted
- Cadastre
- Native Vegetation**
- 164 Creekline Herb-rich Woodland
- 653 Aquatic Herbland
- 821 Tall Marsh

**ADVERTISED PLAN**



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**Legend**

- Assessment Area
- Waste to Energy Facility
- Native / Indigenous Revegetation Area
- Proposed Footprint
- Channel / Drain
- Railway
- Transmission Infrastructure**
- Waste to Energy Facility 22kV Supply Line (New)
- Kiosk 1500 Kva 22kV
- Tree Protection Zone
- Native Vegetation to be Impacted
- Cadastre
- Native Vegetation**
- 164 Creepline Herb-rich Woodland
- 653 Aquatic Herbland
- 821 Tall Marsh

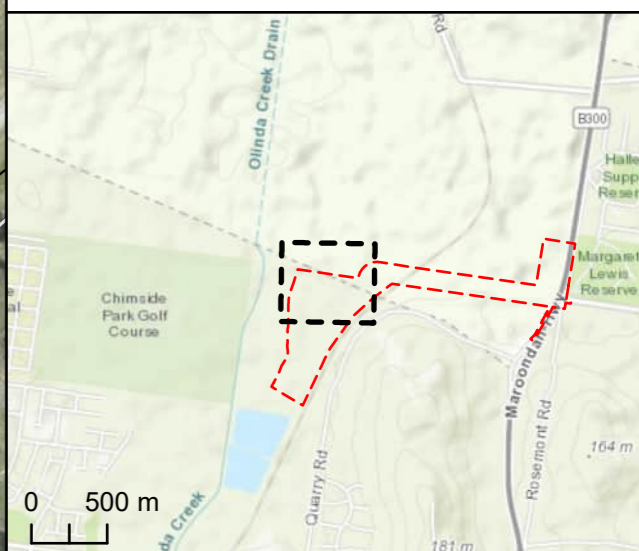
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Metres

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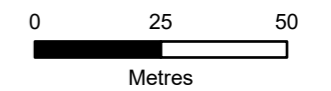
**Legend**

- Assessment Area
- Waste to Energy Facility
- Native / Indigenous Revegetation Area
- Proposed Footprint
- Channel / Drain
- Railway
- Not Impacted
- Native Vegetation to be Impacted
- Cadastre
- Native Vegetation**
- 164 Creekline Herb-rich Woodland

**ADVERTISED PLAN**

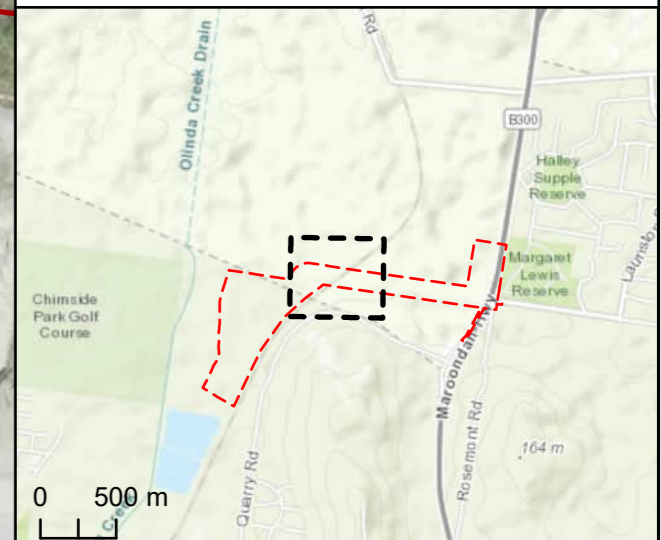


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Legend

- Assessment Area
- Proposed Footprint
- Watercourse Stream
- Railway
- Not Impacted
- Native Vegetation to be Impacted
- Cadastre
- Native Vegetation**
- 164 Creepline Herb-rich Woodland

ADVERTISED PLAN

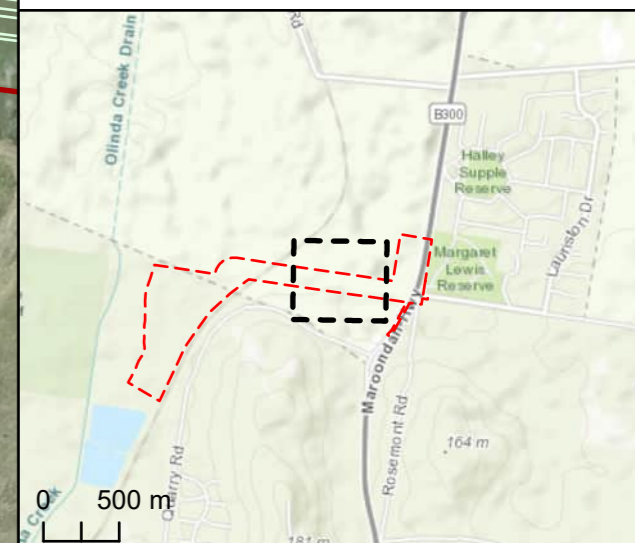


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Metres

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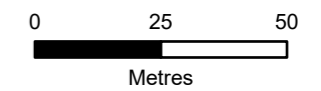
Legend

- Assessment Area
- Planted Native / Indigenous Trees
- Proposed Footprint
- Channel / Drain
- Watercourse Stream
- Eucalyptus yarraensis
- Not Impacted
- Tree Protection Zone
- Native Vegetation to be Impacted
- Tree Protection Zone
- Cadastre
- Native Vegetation**
- 164 Creeklane Herb-rich Woodland

# ADVERTISED PLAN

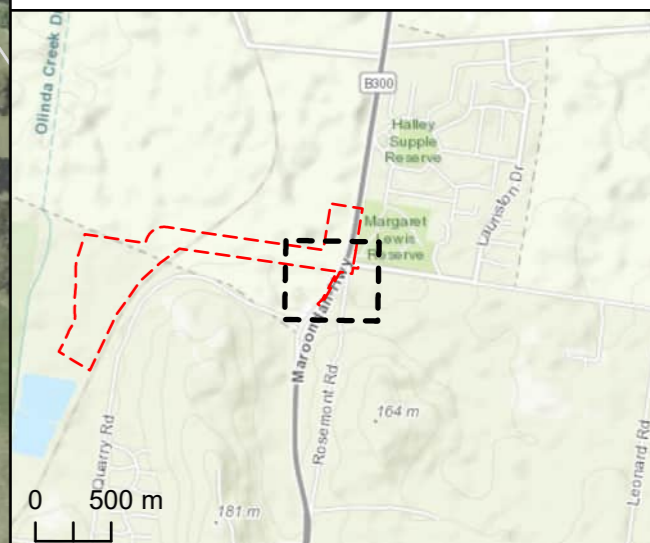


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**Legend**

- Assessment Area
- Proposed Footprint
- Channel / Drain
- Watercourse Stream
- Eucalyptus yarraensis
- Not Impacted
- Tree Protection Zone
- Native Vegetation to be Impacted
- Cadastre

**Native Vegetation**

- 164 Creeklane Herb-rich Woodland

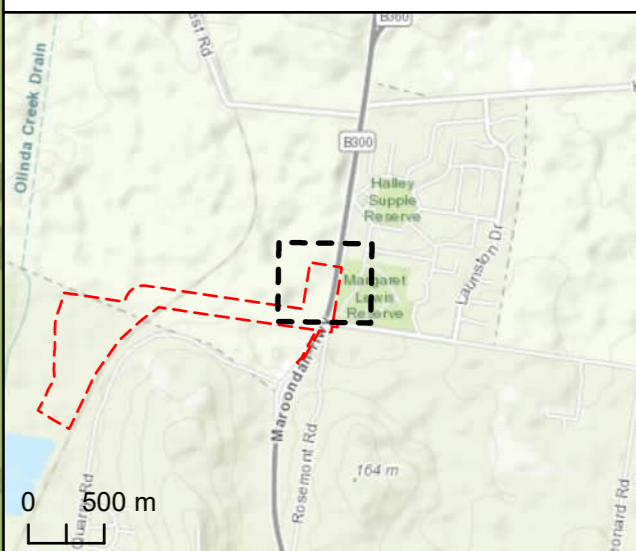
## ADVERTISED PLAN

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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 report **is not an assessment by DELWP** 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.

Date of issue: 26/04/2023  
Time of issue: 9:33 pm

Report ID: JAC\_2023\_028

Project ID	NVIA_IS0803L4_Lilydale_WastetEnergy_24082022
------------	----------------------------------------------

## Assessment pathway

Assessment pathway	Intermediate Assessment Pathway
Extent including past and proposed	0.180 ha
Extent of past removal	0.000 ha
Extent of proposed removal	0.180 ha
No. Large trees proposed to be removed	0
Location category of proposed removal	Location 2 The native vegetation is in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map). Removal of less than 0.5 hectares of native vegetation in this location will not have a significant impact on any habitat for a rare or threatened species.

### 1. Location map



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## Offset requirements if a permit is granted

Any approval granted will include a condition to obtain an offset that meets the following requirements:

<b>General offset amount<sup>1</sup></b>	0.054 general habitat units
Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Yarra Ranges Shire Council
Minimum strategic biodiversity value score <sup>2</sup>	0.509
Large trees	0 large trees

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

Appendix 1 includes information about the native vegetation to be removed

Appendix 2 includes information about the rare or threatened species mapped at the site.

Appendix 3 includes maps showing native vegetation to be removed and extracts of relevant species habitat importance maps

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<sup>1</sup> The general offset amount required is the sum of all general habitat units in Appendix 1.

<sup>2</sup> Minimum strategic biodiversity score is 80 per cent of the weighted average score across habitat zones where a general offset is required

## Next steps

Any proposal to remove native vegetation must meet the application requirements of the Intermediate Assessment Pathway and it will be assessed under the Intermediate Assessment Pathway.

If you wish to remove the mapped native vegetation you are required to apply for a permit from your local council. Council will refer your application to DELWP for assessment, as required. **This report is not a referral assessment by DELWP.**

This *Native vegetation removal report* must be submitted with your application for a permit to remove, destroy or lop native vegetation.

Refer to the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) for a full list of application requirements. This report provides information that meets the following application requirements:

- The assessment pathway and reason for the assessment pathway
- A description of the native vegetation to be removed (met unless you wish to include a site assessment)
- Maps showing the native vegetation and property
- The offset requirements determined in accordance with section 5 of the Guidelines that apply if approval is granted to remove native vegetation.

Additional application requirements must be met including:

- Topographical and land information
- Recent dated photographs
- Details of past native vegetation removal
- An avoid and minimise statement
- A copy of any Property Vegetation Plan that applies
- A defensible space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- An offset statement that explains that an offset has been identified and how it will be secured.

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Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DELWP Customer Service Centre 136 186

[www.delwp.vic.gov.au](http://www.delwp.vic.gov.au)

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Obtaining this publication does not guarantee that an application will meet the requirements of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes.

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# Appendix 1: Description of native vegetation to be removed

All zones require a general offset, the general habitat units each zone is calculated by the following equation in accordance with the Guidelines:

$$\text{General habitat units} = \text{extent} \times \text{condition} \times \text{general landscape factor} \times 1.5, \text{ where the general landscape factor} = 0.5 + (\text{strategic biodiversity value score}/2)$$

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 in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
1-4b	Patch	hsf_0164	Vulnerable	0	no	0.310	0.032	0.032	0.970		0.015	General
1-5b	Patch	gipp0821	Vulnerable	0	no	0.190	0.085	0.085	0.496		0.018	General
1-4a	Patch	hsf_0164	Vulnerable	0	no	0.310	0.027	0.027	0.970		0.012	General
1-1b	Patch	hsf_0164	Vulnerable	0	no	0.200	0.024	0.024	0.360		0.005	General
1-3z	Patch	hsf_0164	Vulnerable	0	no	0.330	0.002	0.002	0.380		0.001	General
1-2b	Patch	hsf_0164	Vulnerable	0	no	0.200	0.007	0.007	0.380		0.001	General
1-3a	Patch	hsf_0164	Vulnerable	0	no	0.330	0.002	0.002	0.970		0.001	General
1-3d	Patch	hsf_0164	Vulnerable	0	no	0.330	0.002	0.002	0.970		0.001	General

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## Appendix 2: Information about impacts to rare or threatened species' habitats on site

This is not applicable in the Intermediate Assessment Pathway.

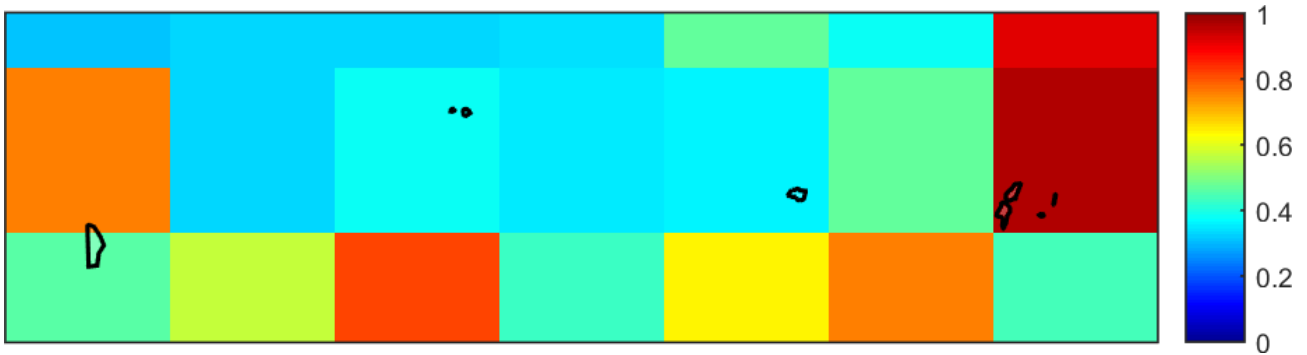
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## Appendix 3 – Images of mapped native vegetation

### 2. Strategic biodiversity values map



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### 3. Aerial photograph showing mapped native vegetation



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#### 4. Map of the property in context



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Yellow boundaries denote areas of proposed native vegetation removal.

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## Appendix I. Offset Report

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# Report of available native vegetation credits

This report lists native vegetation credits available to purchase through the Native Vegetation Credit Register.

This report is **not evidence** that an offset has been secured. An offset is only secured when the units have been purchased and allocated to a permit or other approval and an allocated credit extract is provided by the Native Vegetation Credit Register.

Date and time: 27/04/2023 02:50

Report ID: 18675

## What was searched for?

### General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.054	0.509	0	CMA	Port Phillip and Westernport
			or LGA	Yarra Ranges Shire

## Details of available native vegetation credits on 27 April 2023 02:50

These sites meet your requirements for general offsets.

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Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0277	4.541	453	Port Phillip and Westernport	Mornington Peninsula Shire	No	Yes	No	Abezco, Ethos, VegLink
BBA-0670	0.355	0	Port Phillip and Westernport	Cardinia Shire	No	Yes	No	Bio Offsets
BBA-0670	17.706	141	Port Phillip and Westernport	Cardinia Shire	No	Yes	No	Abezco, VegLink
BBA-0677	14.947	1470	Port Phillip and Westernport	Whittlesea City	No	Yes	No	Abezco, VegLink
BBA-0678	44.587	2612	Port Phillip and Westernport	Nillumbik Shire	No	Yes	No	VegLink
BBA-0678_2	0.388	59	Port Phillip and Westernport	Nillumbik Shire	No	Yes	No	VegLink
BBA-2789	1.317	14	Port Phillip and Westernport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2790	2.911	116	Port Phillip and Westernport	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2832	0.126	0	Port Phillip and Westernport	Nillumbik Shire	Yes	Yes	Yes	Nillumbik SC
BBA-2870	2.480	419	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
BBA-2871	15.600	1605	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
BBA-3030	0.085	0	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	No	VegLink
BBA-3030	0.121	0	Port Phillip and Westernport	Moorabool Shire	Yes	Yes	Yes	VegLink

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TFN-C1636	0.756	130	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	Yarra Ranges SC
TFN-C1650	0.098	20	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1663	0.102	27	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	Yes	Yarra Ranges SC
TFN-C1664	1.538	61	Port Phillip and Westernport	Yarra Ranges Shire	Yes	Yes	No	Yarra Ranges SC
TFN-C1763_3	11.231	0	Port Phillip and Westernport	Mornington Peninsula Shire	Yes	Yes	No	Ecocentric
TFN-C1962	0.097	8	Goulburn Broken, Port Phillip and Westernport	Macedon Ranges Shire	No	Yes	No	Contact NVOR
VC_CFL-0838_01	0.209	697	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3682_01	1.834	0	Port Phillip And Westernport	Nillumbik Shire	Yes	Yes	No	Abezco
VC_CFL-3687_01	0.294	62	Port Phillip And Westernport	Baw Baw Shire	Yes	Yes	No	Baw Baw SC
VC_CFL-3708_01	0.198	507	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3709_01	0.139	395	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3710_01	7.606	322	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3740_01	1.041	92	Port Phillip And Westernport	Cardinia Shire, Yarra Ranges Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3740_01	0.318	16	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3744_01	1.890	367	Port Phillip And Westernport	Macedon Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3762_01	0.247	91	Port Phillip And Westernport	Moorabool Shire	Yes	Yes	No	VegLink
VC_CFL-3764_01	7.605	50	Port Phillip And Westernport	Yarra Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3769_01	0.103	18	Port Phillip And Westernport	Nillumbik Shire	Yes	Yes	No	VegLink
VC_CFL-3769_01	0.556	0	Port Phillip And Westernport	Nillumbik Shire	Yes	Yes	Yes	VegLink

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**These sites meet your requirements using alternative arrangements for general offsets.**

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
VC_CFL-3084_01	0.172	102	Port Phillip And Westernport	Cardinia Shire	Yes	Yes	No	VegLink

**These potential sites are not yet available, land owners may finalise them once a buyer is confirmed.**

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
VC_CFL-3746_01	4.050	467	Port Phillip And Westernport	Macedon Ranges Shire	Yes	Yes	No	VegLink
VC_CFL-3781_01	5.568	24	Port Phillip And Westernport	Moorabool Shire	Yes	Yes	No	VegLink

LT - Large Trees

CMA - Catchment Management Authority

LGA - Municipal District or Local Government Authority

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## Next steps

### If applying for approval to remove native vegetation

Attach this report to an application to remove native vegetation as evidence that your offset requirement is currently available.

### If you have approval to remove native vegetation

Below are the contact details for all brokers. Contact the broker(s) listed for the credit site(s) that meet your offset requirements. These are shown in the above tables. If more than one broker or site is listed, you should get more than one quote before deciding which offset to secure.

## Broker contact details

Broker Abbreviation	Broker Name	Phone	Email	Website
Abezco	Abzeco Pty. Ltd.	(03) 9431 5444	offsets@abzeco.com.au	www.abzeco.com.au
Baw Baw SC	Baw Baw Shire Council	(03) 5624 2411	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bio Offsets	Biodiversity Offsets Victoria	0452 161 013	info@offsetsvictoria.com.au	www.offsetsvictoria.com.au
Contact NVOR	Native Vegetation Offset Register	136 186	nativevegetation.offsetregister@delwp.vic.gov.au	www.environment.vic.gov.au/native-vegetation
Ecocentric	Ecocentric Environmental Consulting	0410 564 139	ecocentric@me.com	Not available
Ethos	Ethos NRM Pty Ltd	(03) 5153 0037	offsets@ethosnrm.com.au	www.ethosnrm.com.au
Nillumbik SC	Nillumbik Shire Council	(03) 9433 3316	offsets@nillumbik.vic.gov.au	www.nillumbik.vic.gov.au
TFN	Trust for Nature	8631 5888	offsets@tfn.org.au	www.trustfornature.org.au
VegLink	Vegetation Link Pty Ltd	(03) 8578 4250 or 1300 834 546	offsets@vegetationlink.com.au	www.vegetationlink.com.au
Yarra Ranges SC	Yarra Ranges Shire Council	1300 368 333	biodiversityoffsets@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au

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For more information contact the DELWP Customer Service Centre 136 186 or the Native Vegetation Credit Register at [nativevegetation.offsetregister@delwp.vic.gov.au](mailto:nativevegetation.offsetregister@delwp.vic.gov.au)

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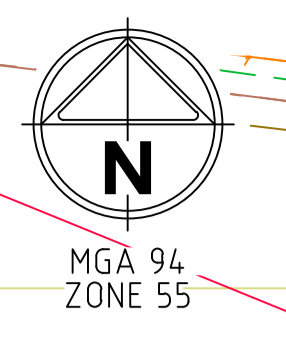


## Appendix J. Final Detailed Plans

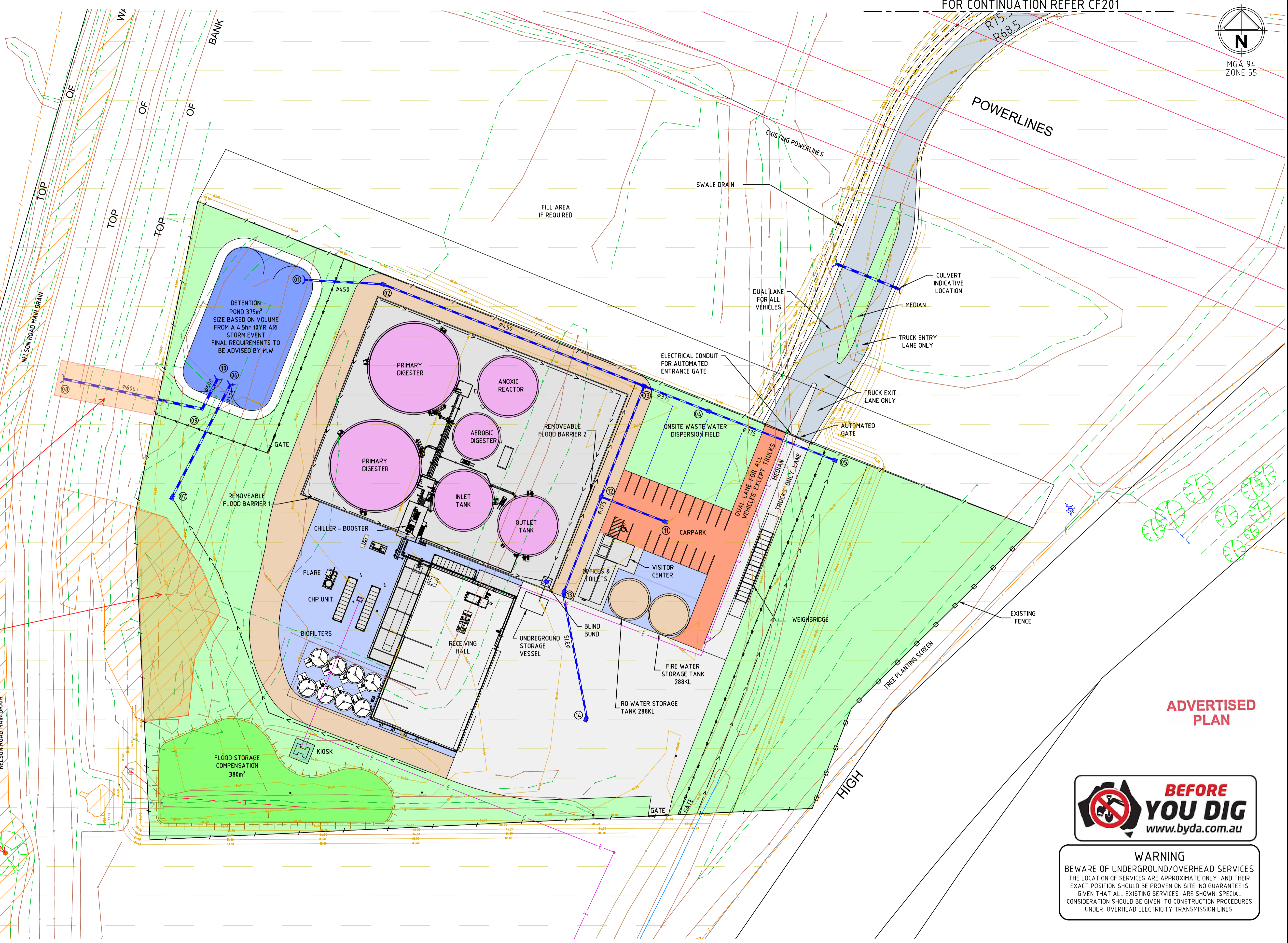
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- LEGEND:**
- FINE CRUSHED ROCK (FCR) - 1715m<sup>2</sup>
  - GRAVEL ROAD BASE - 2023m<sup>2</sup>
  - GROUND BEARING CONCRETE TANK FOUNDATION 2-COAT SEAL SURFACE - 1779m<sup>2</sup>
  - CONCRETE 350mm THICK 35MPa HEAVY VEHICLE - 4494m<sup>2</sup>
  - CONCRETE 150mm THICK 25MPa CONCRETE EQUIPMENT FOUNDATION - 2954m<sup>2</sup>
  - ASPHALT - 947m<sup>2</sup>
  - GRASS - 9327m<sup>2</sup>
  - PERIMETER SECURITY FENCING - 514m
  - INTERNAL RURAL FENCING - 194m
  - EXISTING EASTERN FENCE - 98m
  - STORMWATER OPEN INVERTS
  - TREE - REMOVE
  - TREE - DEEMED LOST
  - TREE - NOT IMPACTED
  - TREE - IMPACTED: MINOR
  - TREE - IMPACTED: MAJOR
  - VEGETATION IMPACT AREA
  - CULTURAL HERITAGE MANAGEMENT AREA



Impacted area 5 m either side of drain

Native vegetation impacted. Remaining is untouched

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Tree 105 not impacted

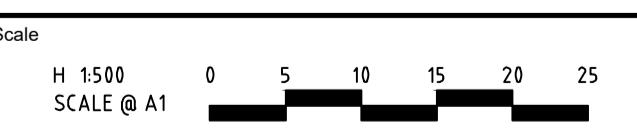
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Rev	Description	Approved	Date
H	FOR INFORMATION ONLY	K.W.	01/03/23
G	FOR INFORMATION ONLY	K.W.	16/02/23
F	FOR INFORMATION ONLY	K.W.	13/02/23
E	FOR INFORMATION ONLY	K.W.	25/01/23
D	DRAINAGE PIPE SIZE REVISED	K.W.	04/04/22
C	FOR INFORMATION ONLY	K.W.	01/04/22
B	LAYOUT REVISED		16/03/2022
A	ADD BIOSOLIDS AND NATURAL AREAS ABOVE BOXING SURFACE		29/04/2021



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 Date  
 01/04/22

**YVW LILYDALE WTE**  
**ERTECH**  
 FUNCTIONAL LAYOUT PLAN  
 DESIGN DRAWINGS - SHEET 1  
 YARRA RANGES SHIRE COUNCIL  
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Dwg No  
**308746CF200**

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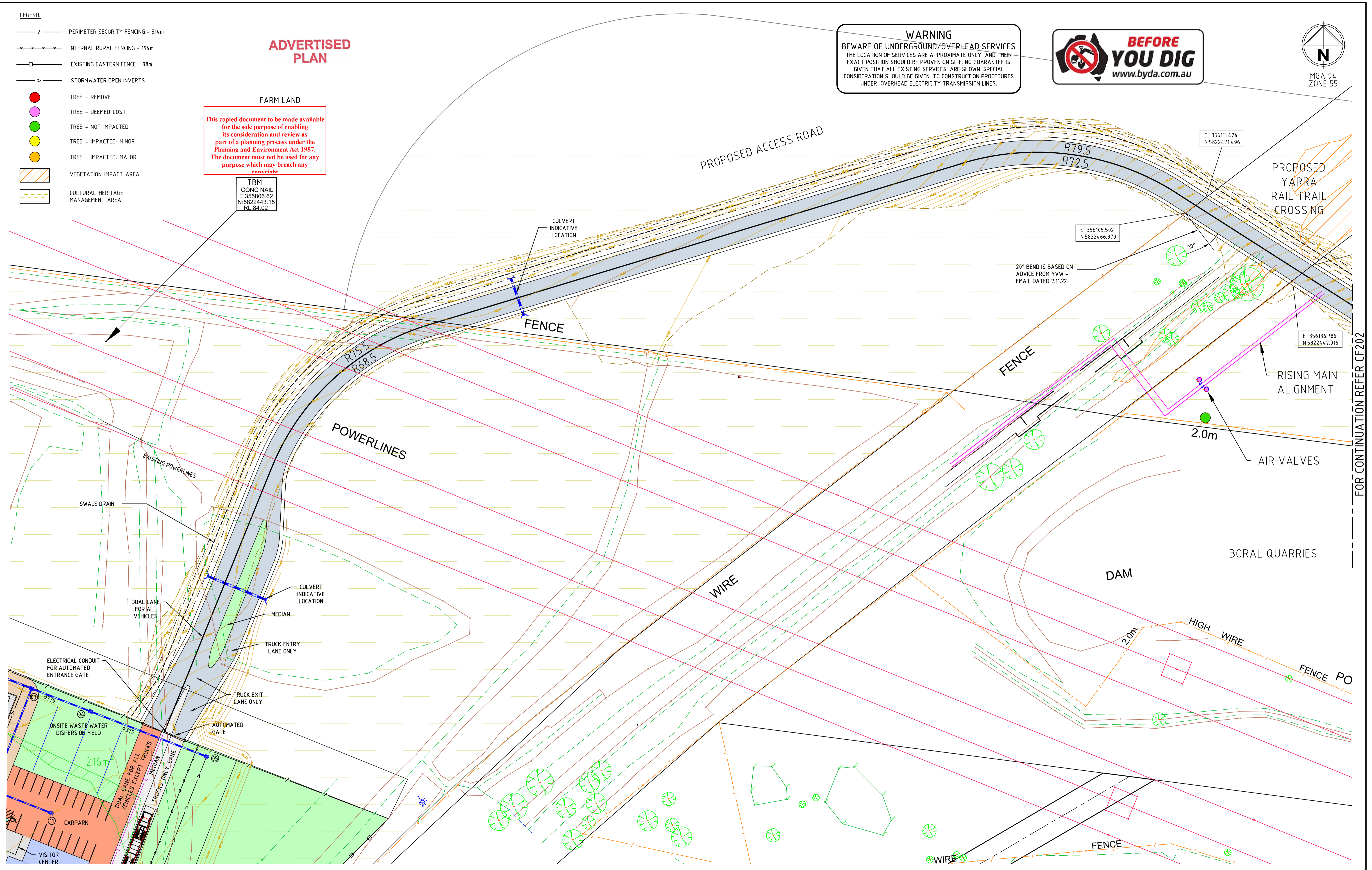
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- / — PERIMETER SECURITY FENCING - 514m
  - \* — \* — INTERNAL RURAL FENCING - 194m
  - □ — EXISTING EASTERN FENCE - 98m
  - > — STORMWATER OPEN INVERTS
  - TREE - REMOVE
  - TREE - DEEMED LOST
  - TREE - NOT IMPACTED
  - TREE - IMPACTED: MINOR
  - TREE - IMPACTED: MAJOR
  - ▨ VEGETATION IMPACT AREA
  - ▨ CULTURAL HERITAGE MANAGEMENT AREA

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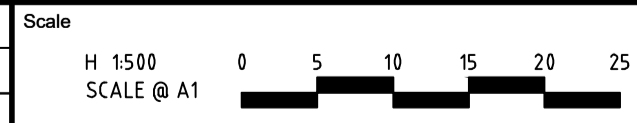
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B	ACCESS ROAD / RAIL TRAIL CROSSING ALIGNMENT UPDATED	KW	10/11/22
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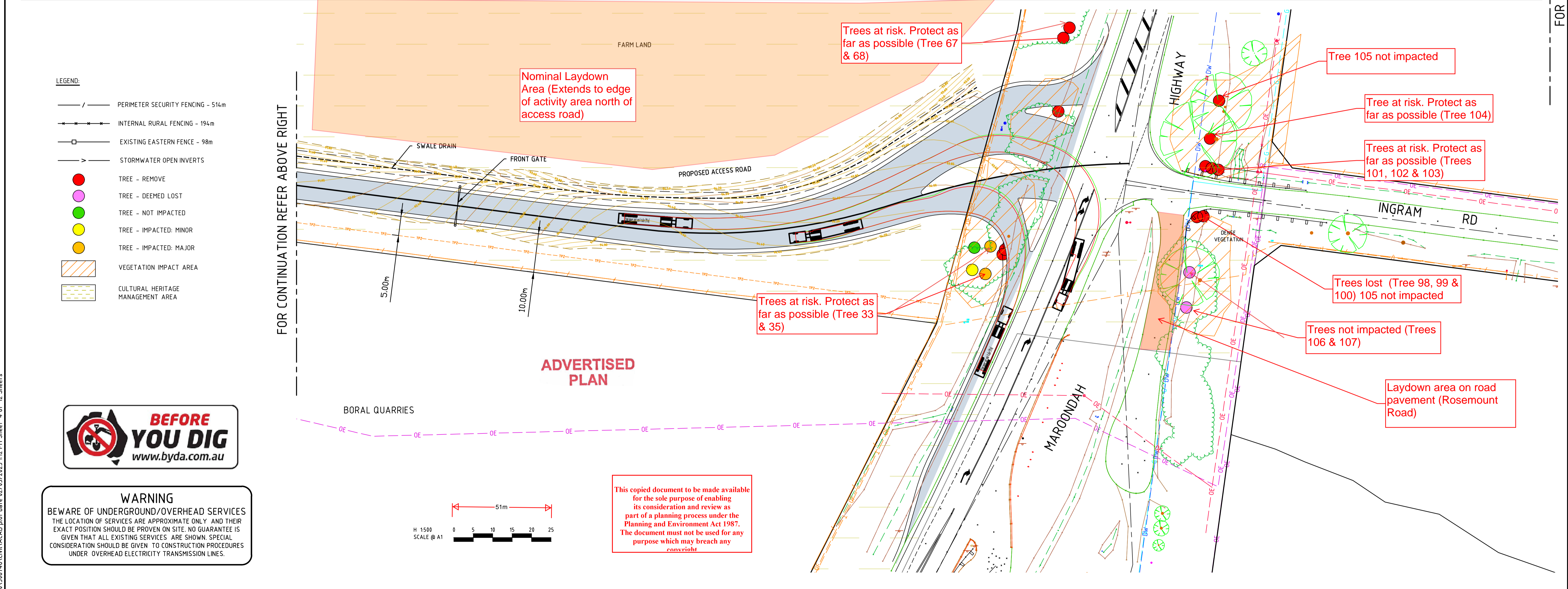
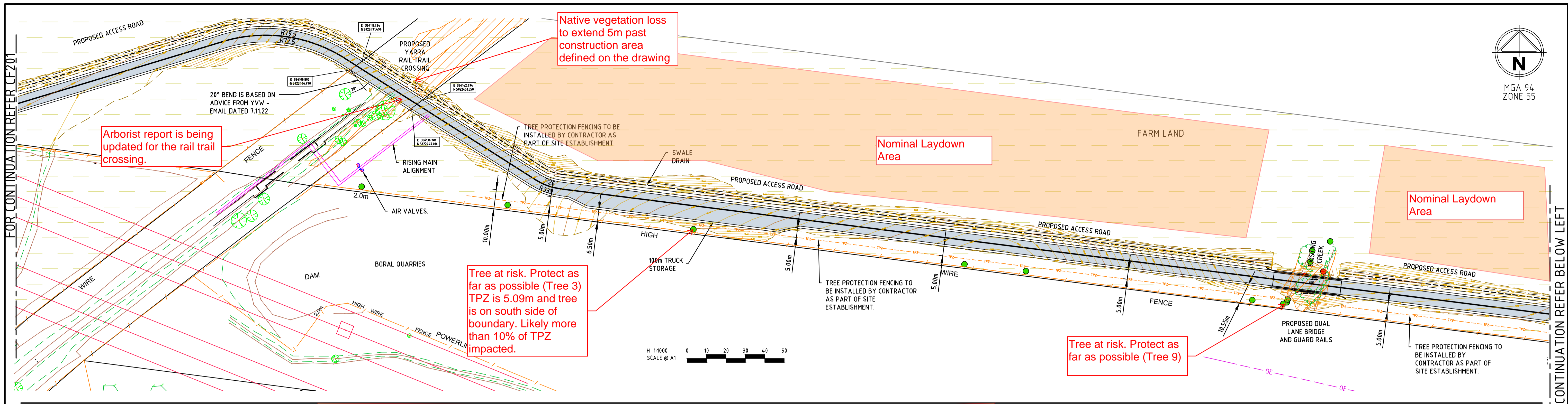
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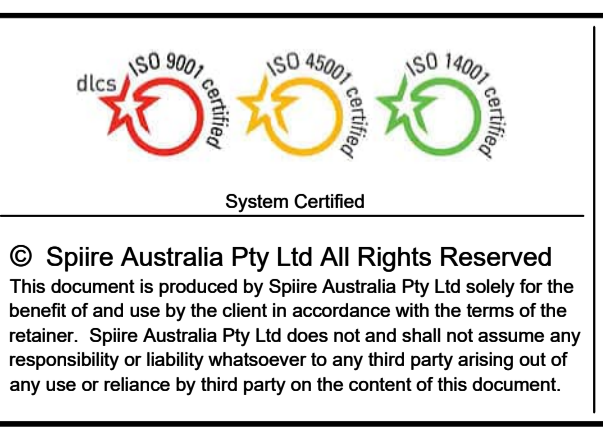


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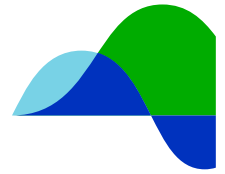


## Appendix K. Preliminary Land Management Plan

**ADVERTISED  
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# ADVERTISED PLAN



## Preliminary Land Management Plan for Lilydale Waste to Energy Facility

The concept Preliminary Land Management Plan has been prepared at the request of Department of Environment, Land, Water and Planning.

### Yarra Ranges Planning Scheme

Schedule 1 to Clause 42.01 Environmental Significance Overlay states that indigenous vegetation within habitat corridors has been fragmented and degraded by past land management practices. The policy seeks to improve the network of flora and fauna habitats through the rehabilitation of these degraded areas especially along watercourses.

Sub-clause 4.0 states:

*A preliminary land management plan (may be required as a condition of permit) that identifies the important environmental values of the site and describes the land management actions, such as revegetation and fencing, that are proposed to be undertaken in conjunction with the proposed development or vegetation removal.*

### Land management measures to be included in the Preliminary Land Management Plan

Prior to the commencement of construction, a Preliminary Land Management Plan (PLMP) for the land affected by the Waste to Energy Facility is to be prepared to the satisfaction of the responsible authority. The PLMP must set out how flora and fauna habitats will be supported and enhanced post-construction in the areas that works have been undertaken.

The Land Management Plan must include (but not be limited to):

- Site plan
- Land to which the preliminary Land Management Plan applies (and does not apply)
- Site description
- List of the objectives for the property
- A description of native plant and animals on site and in the area
- A description of the site outside the native vegetation areas
- Identification of Land Management Issues
- Goal setting, specification of actions, implementation and monitoring of the identified actions.

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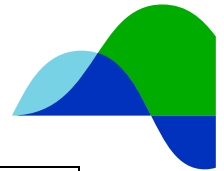
# ADVERTISED PLAN



## Preliminary Land Management Plan

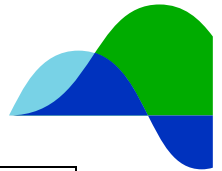
<b>Site Plan</b>	Refer to Figure 1
<b>Affected land</b>	The LMP applies to land shown in Figure 1 that is owned by Yarra Valley Water. The LMP does not apply to land shown in Figure 1 that is not owned by Yarra Valley Water.
<b>Site description</b>	83-85 Nelson Road, Lilydale which comprises of the following affected titled lots: 1\TP125400, 2\TP895065, 1\TO340613 and 1\TP428498. The land is zoned as Public Use Zone 1. The land is owned by Yarra Valley Water. Yarra Valley Water uses the land as a sewerage treatment plant. The land is significantly disturbed and there is limited native and non-native vegetation on the land. Easements that apply to the land are high voltage transmission, drainage, channel, pipeline and passageway. 535-537 Maroondah Highway, Coldstream which comprises of the following affected titled lots: 1\TP550095 and 5\PS327190. The land is zoned as Green Wedge Zone 2 and Green Wedge Zone 4, respectively. The land is owned by Yarra Valley Water. Yarra Valley Water leases the land for farming purposes. The land has been disturbed by past farming practices. Native and non-native vegetation is generally limited to the waterways and fenced property boundaries. Easements that apply to the land are high voltage transmission.
<b>Objectives for the property</b>	<ul style="list-style-type: none"> <li>To facilitate the use and development of the land in accordance with the planning controls, permits and other approvals that apply to the land.</li> <li>To protect and maintain wildlife corridors along waterways and fence lines.</li> <li>To support the re-establishment of native flora and fauna in areas disturbed by the Waste to Energy Facility works.</li> <li>Re-connecting habitat connectivity and networks were disturbed by the project.</li> </ul>
<b>Description of native plant and animals on site and in the area</b>	<p><b>Nelson Road Drain</b> Comprises EVC 821 Tall Marsh dominate by Common Reed (Phragmites australis) in combination with some Juncus (Juncus sp.) and Broad-leaf Cumbungi (Typha orientalis). A Swamp Gum (Eucalyptus ovata) also occurs along the Nelson Road Drain. Common Eastern Froglet (Crinia signifera) and provides habitat for various wetland bird species</p> <p><b>Yarra Rail crossing</b> Blackwood (Acacia melanoxyton) and Weeping Grass (Microlaena stipoides var. stipoides) and Silver Wattle (Acacia dealbata), likely planted for conservation purposes.</p> <p><b>Lilydale drain</b> Blackwood (Acacia melanoxyton) and, an occasional eucalypt tree (Swamp Gum) and some grasses, such as Wallaby Grass (Rytidosperma sp.) or Weeping Grass (Microlaena stipoides var. stipoides) Is habitat for birds and reptiles</p> <p><b>Fence line</b></p>

# ADVERTISED PLAN



	<p>Eucalyptus species comprising: <i>Eucalyptus ovata</i>, <i>Eucalyptus obliqua</i> and <i>Eucalyptus viminalis</i> and scattered native shrubs such as Blackwood (<i>Acacia melanoxylon</i>)</p>
<p><b>Description of the site outside the native vegetation areas</b></p>	<p><b>Vegetation with the Lilydale Waste to Energy project area</b> The area is predominantly exotic weed species, including Brassica (*<i>Brassica</i> sp.), Plantain (*<i>Plantago</i> sp.), Small-flower Mallow (*<i>Malva parviflora</i>) and Cocksfoot (*<i>Dactylis glomerata</i>). In wetter areas are Water Couch (*<i>Paspalum distichum</i>) and Toowoomba Canary-grass (*<i>Phalaris aquatica</i>). The majority of the WtE Facility Project Area is previously disturbed due to past land use. The remainder of the trees within the WtE facility Project Area are planted Southern Mahogany (#<i>Eucalyptus botryoides</i>).</p> <p><b>Vegetation within the subject land and surrounds</b> Area containing exotic species, such as Common Nettle (*<i>Urtica dioica</i>), *Small-flower Mallow, Paspalum (*<i>Paspalum dilatatum</i>) and *Cocksfoot <u>Fence line</u> Planted along the fence line Monterey Cypress (*<i>Hesperocyparis macrocarpa</i>), Southern Mahogany (*<i>Eucalyptus botryoides</i>) and Pine Oak (*<i>Quercus palustris</i>) <u>The Lilydale Drain</u> The system is dominated by weeds, including Paspalum, Blackberry (*<i>Rubus fruticosus</i> spp. agg.), *Brassica and Gorse (*<i>Ulex europaeus</i>). Is habitat for birds</p> <p><b>Weeds found within subject land and surrounds</b> Declared noxious weeds include the following species:</p> <ul style="list-style-type: none"> <li>• Spear Thistle (*<i>Cirsium vulgare</i>)</li> <li>• Blackberry (*<i>Rubus fruticosus</i> spp. agg.)</li> <li>• Gorse (*<i>Ulex europaeus</i>)</li> <li>• Fennel (*<i>Foeniculum vulgare</i>)</li> <li>• Watsonia (*<i>Watsonia meriana</i>).</li> </ul>
<p><b>Land Management Issues</b></p>	<ul style="list-style-type: none"> <li>• Protection and enhancement of indigenous flora and fauna</li> <li>• Revegetation to support connectivity and network of habitat for indigenous flora and fauna</li> <li>• Pests and weed control</li> <li>• Revegetation of trees and shrubs within the high voltage (220kV) transmission line easement to be undertaken in accordance with Ausnet Services guide to planting near electricity lines.</li> <li>• Revegetation not to impede line-of-sight on approach to intersections at Yarra Valley Rail Trail and Maroondah Highway</li> </ul>
<p><b>Goal setting, specification of actions, implementation</b></p>	<ul style="list-style-type: none"> <li>• Natural regrowth of the tree canopy over access road at the intersection with the Lilydale Drain East (Branch) to be supported to the extent that it does not impact on the use of the land and movement of vehicles.</li> </ul>





	<ul style="list-style-type: none"><li>• Planting of vegetation between Yarra Valley Rail Trail and Maroondah Highway with species to be agreed in consultation with Yarra Ranges Shire Council</li><li>• Weeds to be managed in accordance with maintenance program.</li></ul>
<b>Monitoring</b>	<ul style="list-style-type: none"><li>• Monitor regrowth of habitat connectivity and network.</li><li>• Identify whether further actions are required to support habitat.</li></ul>

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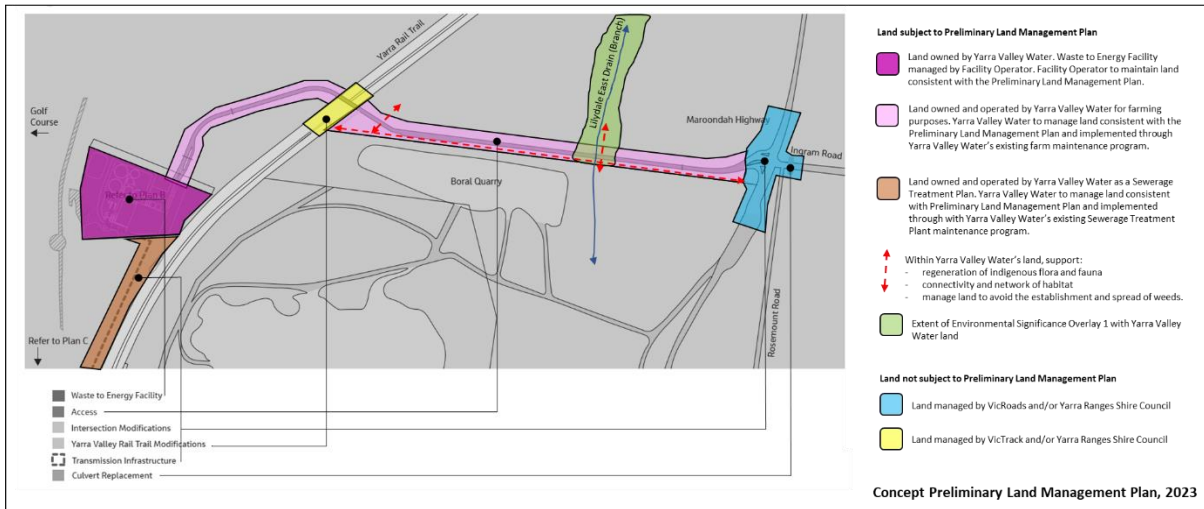


Figure 1: Concept Preliminary Land Management Plan, 2023

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