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Final Report

Targeted Surveys for Matted Flax-lily *Dianella amoena*, 510 Summerhill Road, Wollert, Victoria

Prepared for

Cleanaway Operations Pty Ltd

March 2023

Ecology and Heritage Partners Pty Ltd

MELBOURNE: 292 Mt Alexander Road, Ascot Vale VIC 3032 **GEELONG:** 230 Latrobe Terrace, Geelong West VIC 3218
BRISBANE: Level 22, 127 Creek Street, Brisbane QLD 4000 **ADELAIDE**: 78 Edmund Avenue, Unley SA 5061
CANBERRA: 19-23 Moor Street, Turner ACT 2612 **SYDNEY:** Level 5, 616 Harris Street, Ultimo NSW 2007
www.ehpartners.com.au | 1300 839 325

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Address	510 Summerhill Road, Wollert, Victoria
Project number	16414
Project Manager	Callum Luke (Senior Zoologist)
Report Author	Elliot Day (Botanist)
Report Reviewer	Jeremy Coyne (Team Leader – Natural Heritage / Zoologist), Claire Ranyard (Senior Botanist)
Other EHP staff	Matthew Boyd (Ecologist), Braden Callaway (Field Technician)
Mapping	Monique Elsley (GIS Coordinator)
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Acknowledgements

Ecology and Heritage Partners acknowledge the Traditional Owners of the country we live and work on, and we pay our respect to Elders past, present and emerging.

EXECUTIVE SUMMARY

Introduction

Ecology and Heritage Partners Pty Ltd was engaged by Cleanaway Operations Pty Ltd (Cleanaway) to undertake targeted Matted Flax-lily *Dianella amoena* surveys at 510 Summerhill Road, Wollert, Victoria (the 'proposal area'). The surveys were undertaken to determine the presence or absence of Matted Flax-lily and address any implications for the construction of the proposed waste-to-energy (WtE) facility known as the Melbourne Energy and Resource Centre (MERC) under Commonwealth and State environmental legislation.

Methods

Relevant resources such as the DELWP Native Vegetation Information Management (NVIM) Tool (DELWP 2022a) and NatureKit Map (DELWP 2022b) were reviewed to provide an overview of flora values associated with the proposal area. Habitat assessments were then undertaken by two qualified ecologists to determine key areas of potential high-quality habitat for Matted Flay-lily within the proposal area. Targeted flora surveys were undertaken during the known flowering period of the species (November-January). Areas of potential habitat were walked by ecologists familiar with recognising the species and any Matted Flax-lily would have been recorded by GPS and the number of plants per land parcel were totalled if they had been found on the property.

Limitations

It is important to acknowledge that due to the size of the proposal area, key habitat areas had to be prioritised for surveying with some surveying conducted between identified patches of high-quality habitat. At the time of assessment, portions of the site were inundated with water. Livestock also were found actively grazing within the site during the time of assessment.

Results

At the time of the assessment there were approximately three documented records of Matted Flax-lily were recorded in the Victorian Biodiversity Atlas (VBA) within a 1-kilometre radius of the proposal area, with most recent records occurring in January 2022 (DELWP 2022c). Conditions within the site were generally consistent with the habitat preferences of the species with stony rises containing higher quality vegetation including native herbs and grasses, however large portions of the site were covered by exotic grasses. No Matted Flax-lily was detected within the proposal area, though surveys were conducted in optimal conditions and at a time when Matted Flax-lily is known to be flowering. The history of disturbance at the site is likely to have resulted in degradation of existing Matted Flax-lily habitat.

Legislative and Policy Implications

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act, 1999)

No Matted Flax-lily were recorded within the proposal area, with a population of species unlikely to be present within the proposal area due to a history of disturbance onsite. It is unlikely the proposed development will

impact Matted Flax-lily species. Therefore, a referral to the Commonwealth Environment Minister under the EPBC Act is not required for the species.

Flora and Fauna Guarantee Act 1988 (FFG Act - Victoria)

There were no Matted Flax-lily observed within the proposal area and no other threatened and/or protected species found under the FFG Act. Further, an FFG Act permit is not required for removal of protected flora species or communities on private land.

CONTENTS

1 INTRODUCTION

1.1 Background

Ecology and Heritage Partners Pty Ltd was engaged by Cleanaway Operations Pty Ltd (Cleanaway) to undertake targeted surveys for Matted Flax-lily *Dianella amoena* at 510 Summerhill Road, Wollert (proposal area) (Figure 1). The surveys were undertaken to address any implications for the construction of the proposed waste-to-energy (WtE) facility known as the Melbourne Energy and Resource Centre (MERC) under Commonwealth and State environmental legislation.

Targeted surveys for Matted Flax-lily were recommended to be undertaken by City of Whittlesea prior to the completion of the ecological due diligence for this site (Ecology and Heritage Partners 2022).

The purpose of this assessment was to undertake targeted surveys for Matted Flax-lily to determine the presence or absence of this species, and where possible to ascertain its distribution and abundance and the extent of the species habitat within the proposal area.

The proposal area falls within the Northern Quarries Precinct Structure Plan (PSP) area within the Melbourne Strategic Assessment (MSA) and is subject to the assessment process and Environment Mitigation Levy under the Biodiversity Conservation Strategy. This report addresses any implications under Commonwealth and State environmental legislation and provides information on mitigation measures associated with the proposed development that would have been required had Matted Flax-lily been identified within the proposal area.

1.1.1 Biodiversity Conservation Strategy

The BCS (DEPI 2013) identifies conservation outcomes and offset consolidation strategies for Victoria's native vegetation and Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), including mechanisms for how these outcomes will be delivered. The BCS covers Melbourne's four growth corridors within the expanded 2010 Urban Growth Boundary, as well as 28 precincts under the 2005 Urban Growth Boundary, except where a planning scheme amendment to introduce a Precinct Structure Plan has been approved prior to 1 March 2012.

To facilitate the planning approvals process for Melbourne's growth areas, the Victorian Government has introduced the 'Time Stamping' project. This project captures, and 'time stamps' native vegetation information within Melbourne's urban growth areas. This data can then be used to calculate native vegetation offsets for future development, and to prepare Native Vegetation Precinct Plans (NVPP) for these areas.

Classes of actions associated with urban development in most of the land in Melbourne's growth corridors have been approved under Section 146B of the EPBC Act by the Commonwealth Environment Minister (Minister). The approval was made in relation to the western, north-western and northern growth corridors on 5 September 2013.

The proposal area is located within the northern growth corridor. The Commonwealth approvals are subject to conditions, which included the former Habitat Compensation Obligations (HCO) and the restriction of urban development in identified conservation areas.

1.2 Scope and Objectives

The objectives of the targeted surveys were to:

- Confirm the presence/absence of Matted Flax-lily within the proposal area.
- If Matted Flax-lily is detected:
    - Determine any potential indirect impacts Matted Flax-lily, and its habitat at a National and State level associated with the proposed development
    - Provide advice on mitigation measures that may be undertaken to avoid and/or mitigate potential adverse impacts on Matted Flax-lily
    - Provide information in relation to any implications of Commonwealth and State environmental legislation and Government policy associated with future proposed development of the proposal area.

1.3 Proposal area

The proposal area is located at 510 Summerhill Road, Wollert, and is approximately 26 kilometres north of Melbourne's CBD (Figure 1). The proposal area covers approximately 82 hectares in area and is bound by Summerhill Road to the south, and is surrounded by undeveloped pastureland to the north, east and west.

According to the Department of Environment, Land, Water and Planning (DELWP) Native Vegetation Information Management Tool (DELWP 2022b), the proposal area occurs within the Victorian Volcanic Plain bioregion, within the jurisdiction of the Yarra Valley Water Catchment Management Authority (CMA) and the City of Whittlesea municipality.

The proposal area falls within the Farming Zone (FZ), Rural Conservation Zone (RCZ) and includes Environmental Significance Overlay – Schedule 4 (ESO4). The proposal area is within the Northern Quarries Precinct Structure Plan (PSP) area within the MSA area and is subject to the assessment process and Environment Mitigation Levy under the Biodiversity Conservation Strategy (BCS) Melbourne's Growth Corridors (DEPI 2013).

The site has recently been acquired by Cleanaway and is currently being used for agriculture (cattle grazing) and is heavily modified, with a residence and associated sheds in the central portion of the property. The site is predominantly low lying with several low rising stony knolls present throughout. Three large dams are located within the site and have previously inundated areas of the paddocks during past weather events.

Vegetation within the site consists predominantly of exotic pasture grasses (Plate 1; Plate 2; Plate 3) including Perennial ryegrass *Lolium perenne*, Toowoomba Canary-grass *Phalaris aquatica*, Chilean Needle Grass *Nassella neesiana* and Yorkshire Fog *Holcus lanatas*. Scattered native species are present within the site, including Kangaroo Grass *Themeda triandra* (Plate 4), Blue Devil *Eryngium ovinum* and Rush *Juncus* spp, primarily within stony knolls and low-lying inundated areas within the site. Patches of insavies weeds such as Artichoke thistle *Cynara cardunculus* and Gorse *Ulex europaeus* are also present across the site.

Plate 1: Stony knoll and grass cover within the site (Ecology and Heritage Partners Pty Ltd 08/11/2022)

Plate 2: View from the top of a stony knoll showing typical paddock within the site (Ecology and Heritage Partners Pty Ltd 08/11/2022)

Plate 3: Stony knoll and surrounding pasture grass (Ecology and Heritage Partners Pty Ltd 08/11/2022)

Plate 4: Kangaroo grass on stony knoll within the site (Ecology and Heritage Partners Pty Ltd 08/11/2022)

1.4 Matted Flax-lily *Dianella amoena*

EPBC Act Conservation Status: Endangered

FFG Act Conservation Status: Critically Endangered

Matted Flax-lily (Plate 5) is a perennial, tufted, mat-forming lily which can form patches of up to five metres wide. The plant can grow vegetatively, through sending underground rhizomatous roots, which rise above the ground with a tiller of several leaves, spread over a distance from the parent plant.

Plate 5. Matted Flax-lily (*Dianella amoena*) Ecology and Heritage Partners Pty Ltd.

The leaves of Matted Flax-lily are generally glaucous, blue in colour but may be red at the base and usually but not always having small hooks (teeth) along the margins and midrib. The leaves taper to approximately 45 centimetres long depending on site and climatic conditions and are born on tillers with the leaves arranged alternatively, with several leaves per tiller. Matted Flax-lily generally flowers between November and February but may continue flowering with summer and autumn rains. It has pale blue to violet flowers with bright yellow stamens and berries, which are generally purple in colour. The flowers and berries are born on culms extending to typically 30 cm in height but this may alter depending on location and season (DSE 2010).

Matted Flax-lily generally occurs in grassland and grassy woodland habitats, on well drained to seasonally wet fertile sandy loams to heavy cracking clay soils derived from Silurian or Tertiary sediments, or from volcanic geology (DSE 2010).

Due to the history of agricultural land use within the property, targeted surveys primarily covered fenced vegetation patches and stony knolls, which were identified as key areas of potential Matted Flax-lily habitat (Section 2.3). Eighteen key areas were identified during the pre-survey habitat assessment (Figure 2). A reference site located in Epping was visited prior to surveying the proposal area where the species was seen flowering.

2 METHODS

2.1 Nomenclature

Common and scientific names of vascular plants follow the Victorian Biodiversity Atlas (VBA) (DELWP 2022c). Vegetation community names follow the Department of Energy, Environment and Climate Action (DEECA) (formerly the Department of Environment, Land, Water and Planning) Ecological Vegetation Classes (EVC) benchmarks (DEECA 2023). The names of aquatic and terrestrial vertebrate and invertebrate fauna follow the VBA (DEPI 2022).

2.2 Desktop Assessment

The following information sources were reviewed prior to the targeted surveys for Matted Flax-lily, to provide an overview of the flora values associated with the proposal area:

- The DELWP Native Vegetation Information Management (NVIM) Tool (DELWP 2022a) and NatureKit Map (DELWP 2022b) for:
    - The extent of historic and current EVCs.
- The VBA for previously documented flora records within the project locality (DELWP 2022c)
- The National Recovery Plan for the Matted Flax-lily *Dianella amoena* for species description and habitat specifications (DSE 2010)
- Aerial photography of the proposal area
- Previous ecological assessments for the proposal area, including:
    - Ecological Due Diligence for 510 Summerhill Road, Wollert, Victoria (Ecology and Heritage Partners 2022).

2.3 Habitat Assessment

An assessment of the proposal area was undertaken by two qualified ecologists on 8 November 2022. The entire site was walked in 100 metres transects with the intention of determining potential habitat for further detailed surveying. The inspection sought to identify the extent and suitability of potential habitat for Matted Flax-lily present within the proposal area, and to identify key areas of high quality habitat to prioritise within the site.

The following attributes of habitat quality for the Matted Flax-lily were recorded as part of the preliminary habitat assessment:

- Areas protected from disturbance by livestock and vehicles
- Areas of mapped native vegetation
- Areas with low high-threat weed cover

- Stony knolls.

Habitat quality was defined with reference to the following criteria:

- **High quality habitat:** Areas that currently contain important habitat attributes required by the species for undisturbed growth (e.g. protection from livestock grazing, areas of remnant native vegetation, stony knolls, soils and habitat quality consistent with DSE (2010))
- **Moderate quality habitat:** Habitat that supports one or more key habitat characteristics outlined above, but not all
- **Low quality habitat:** Habitat unlikely to support Matted Flax-lily due to one or more of the following; lack of native vegetation, presence of high-threat weeds, heavy grazing by livestock, low vegetation cover
- **No suitable habitat / degraded:** Highly modified areas dominated by high-threat weeds, or areas with no vegetation cover.

2.4 Targeted Surveys for Matted Flax-lily

Targeted flora surveys were undertaken on 25 November 2022 by two experienced botanists, to coincide with the known flowering period of the species (November to February). A reference site known to support a population of the species located at Epping Recreation Reserve, Epping, was used to examine the diagnostic features of the species prior to undertaking surveys within the proposal area, and to confirm active flowering.

Matted Flax-lily surveys were undertaken using the following standards as outlined in the *Biodiversity Precinct Structure Planning Kit* (DSE 2010):

- Targeted surveys were conducted by people familiar with recognising the species
- The survey effort was directed to all potential habitat areas (i.e. remnant grassland and the degraded grassy areas surrounding the remnant grassland)
- Transects were walked at five-metre grid intervals through high quality potential habitat
- Where found, locations of Matted Flax-lily were recorded by GPS (accuracy of +/- three metres) and the number of plants per land parcel was totalled.

2.5 Assessment Qualifications and Limitations

Due to the size of the proposal area, key habitat areas were prioritised for surveying (Section 2.3, Figure 2). The proposal area was walked on foot and surveying was conducted in between identified patches of high-quality habitat. At the time of assessment, portions of the site were inundated, particularly in the south of the site and around the three dams (Plate 6). Livestock were actively grazing within the site at the time of assessment (Plate 7) and there was significant soil disturbance in low lying areas and around waterbodies.

Data collected during the field assessment, and information obtained from relevant sources (e.g. biological databases and relevant literature) are considered adequate to provide an accurate assessment of the presence/absence of Matted Flax-lily within the proposal area.

Plate 6: Inundated patch within the site

Plate 7: Livestock grazing at base of a stony knoll

3 RESULTS

3.1 Desktop Assessment

According to NatureKit (DELWP 2022b) mapped vegetation within the site consists of small patches of Plains Grassland (EVC 132) and Plains Grassy Wetland (EVC 125), with the majority of vegetation within the site considered to be exotic pasture grass. Three Matted Flax-lily specimens are recorded in the VBA within one kilometre of the site, with the most recent record occurring in January 2022. The nearest significant population of Matted Flax-lily occurs at Kalkallo Common Grassland and Cemetery, approximately five kilometres north west of the site (Figure 3). Conditions within the site are generally consistent with the habitat preferences of the species, as a grassland with seasonally wet soils (DSE 2010). Stony rises are present throughout the site and were expected to provide greater native species diversity and potential habitat for Matted Flax-lily due to protection provided from trampling and grazing among the rocks and lack of suitability for cropping (Bull 2018) and other potential historic disturbance events.

3.2 Habitat Assessment

A habitat assessment of the proposal area was undertaken by two qualified ecologists on 8 November 2022. The site was walked in 100 metres transects, with particular attention given to identified stony rises. Stony rises throughout the site were found to contain comparatively higher quality vegetation, including native herbs and grasses. Large portions of the site consisted of a dense cover of exotic grasses, predominantly Toowoomba Canary Grass and Perennial Rye Grass; native grasses were not observed across the majority of the site during the habitat assessment. Low lying areas within the site were inundated and showed moderate trampling damage from livestock.

The eighteen stony knolls and their surrounds were determined to contain the highest quality habitat for Matted Flax-lily in the habitat assessment based on the presence of remnant native vegetation, reduced grazing impact from livestock, and low cover of exotic grasses.

3.3 Targeted Surveys

In accordance with the recommendation from the City of Whittlesea, targeted surveys were conducted across suitable habitat at 510 Summerhill Road, Victoria on 25 of November 2022. A total of 18 key habitat areas were surveyed, and most of the proposal area was traversed on foot to account for any areas of remnant native vegetation or areas of refugia not mapped in the initial site assessment.

No Matted Flax-lily were detected within the proposal area, despite systematic surveys across the entire site during optimal survey conditions and at a time when Matted Flax-lily is known to be flowering and when detection is highest.

Most of the proposal area has been modified and disturbed as a result of historic and current land uses. These disturbances include grazing by cattle and sheep and the presence of introduced fauna species including European Rabbit *Oryctolagus cuniculus*.

The absence of the species within the proposal area may be due to several factors including:

- Consistent grazing by livestock
- Sowing of exotic pasture grass species
- Encroachment by high-threat weeds
- Reduction in population in surrounding landscape due to development resulting in a lack of dispersal and recruitment
- Pesticide/herbicide use.

These factors are consistent with Matted Flax-lily decline across the state, as described by Carter (DSE 2010) in the Matted Flax-lily Recovery Plan.

4 LEGISLATIVE AND POLICY IMPLICATIONS

4.1 *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions (i.e. project, development, undertaking, activity, or series of activities) that are likely to have a significant impact on matters of national environmental significance (MNES), or on Commonwealth land. An action, unless otherwise exempt, requires approval from the Commonwealth Environment Minister if it is considered likely to have an impact on any MNES.

4.1.1 Implications

Targeted surveys were completed for Matted Flax-lily, however despite systematic survey efforts no individuals were recorded. Therefore, a referral to the Commonwealth Environment Minister under the *EPBC Act* is not required for the species.

4.2 *Flora and Fauna Guarantee Act 1988* (Victoria)

The FFG Act is the primary legislation dealing with biodiversity conservation and sustainable use of native flora and fauna in Victoria. Proponents are required to apply for an FFG Act Permit to 'take' listed and/or protected flora species, listed vegetation communities and listed fish species in areas of public land (i.e. within road reserves, drainage lines and public reserves). An FFG Act permit is generally not required for removal of species or communities on private land, or for the removal of habitat for a listed terrestrial fauna species.

Although the proposal area is privately owned and therefore a permit to remove protected flora species, listed vegetation communities and listed fish species is not required, the Responsible Authority and/or the Department of Energy, Environment and Climate Action (DEECA) take into consideration the presence of FFG Act matters (e.g. species, ecological communities and threatening processes) as part of the strategic and statutory assessment and approval process (e.g. rezoning and planning permit application). Despite targeted surveys being undertaken during an appropriate survey period and conditions, Matted Flax-lily was not recorded within the proposal area. Consequently, there are no implications under the FFG Act relating to these species for any future development of the proposal area.

5 CONCLUSION

Targeted flora surveys were conducted at 510 Summerhill Road, Wollert on 25 November 2022 to coincide with the known flowering period for Matted Flax-lily. Surveys on areas of potential habitat for the species, primarily remnant grassland and the degraded grassy areas surrounding the remnant grassland.

Despite targeted surveys been undertaken during optimal survey conditions when the species was known to be flowering at a nearby reference site, the species was not detected within the proposal area. As such, based on available information a resident population does not exist within the proposal area and the species will not be impacted by the proposed development of the proposal area.

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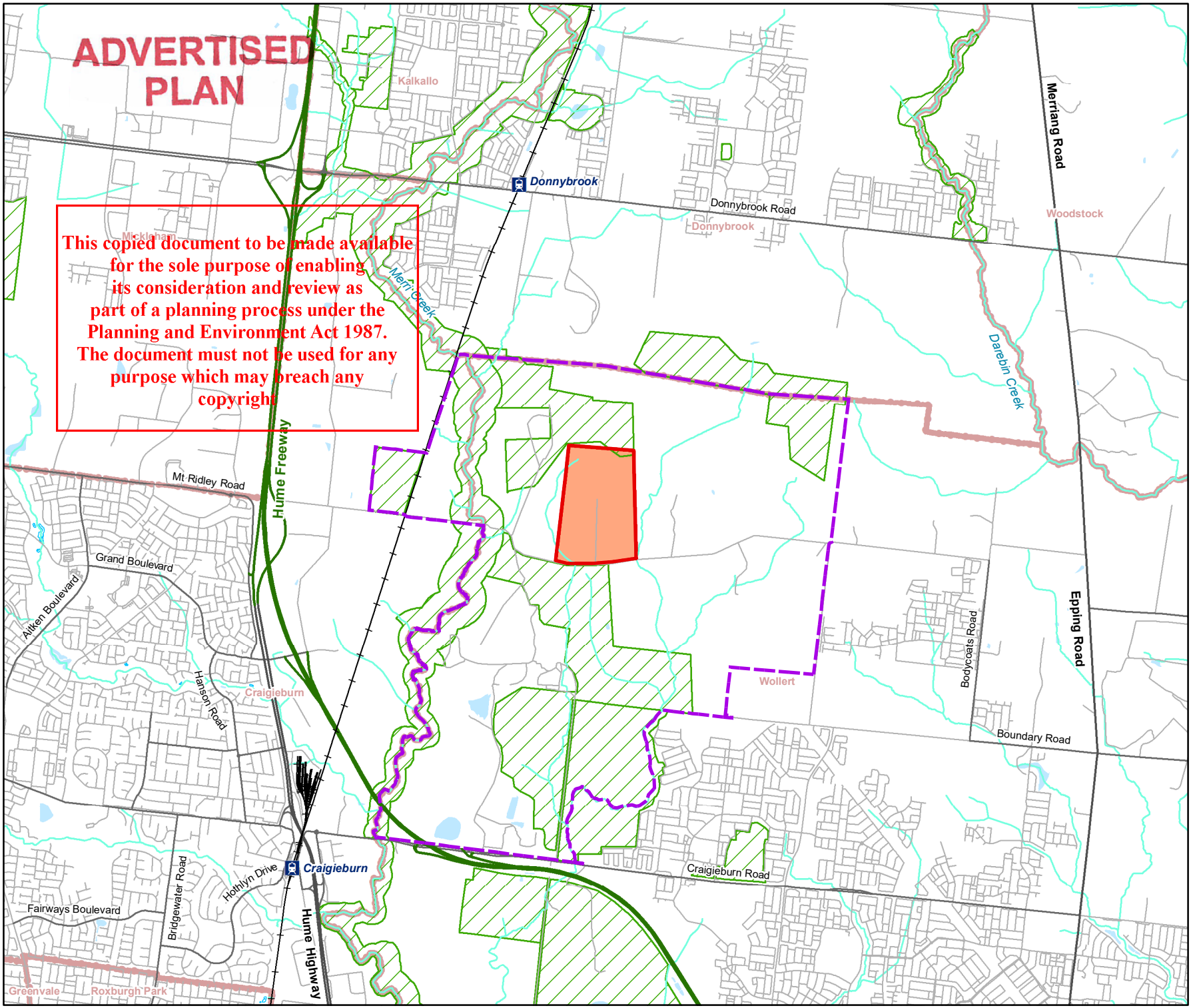
FIGURES



Legend

- Proposal Area
- Northern Quarries PSP
- Railway
- Freeway
- Major Road
- Collector Road
- Minor Road
- Minor Watercourse
- Permanent Waterbody
- Wetland/Swamp
- BCS Conservation Area
- Localities

Figure 1

Location of the proposal area

Targeted Matted Flax-lily surveys for 510 Summerhill Road, Wollert

0 500 1,000
Metres

Map Scale: 1:50,000 @ A4
Coordinate System: GDA2020 MGA Zone 55

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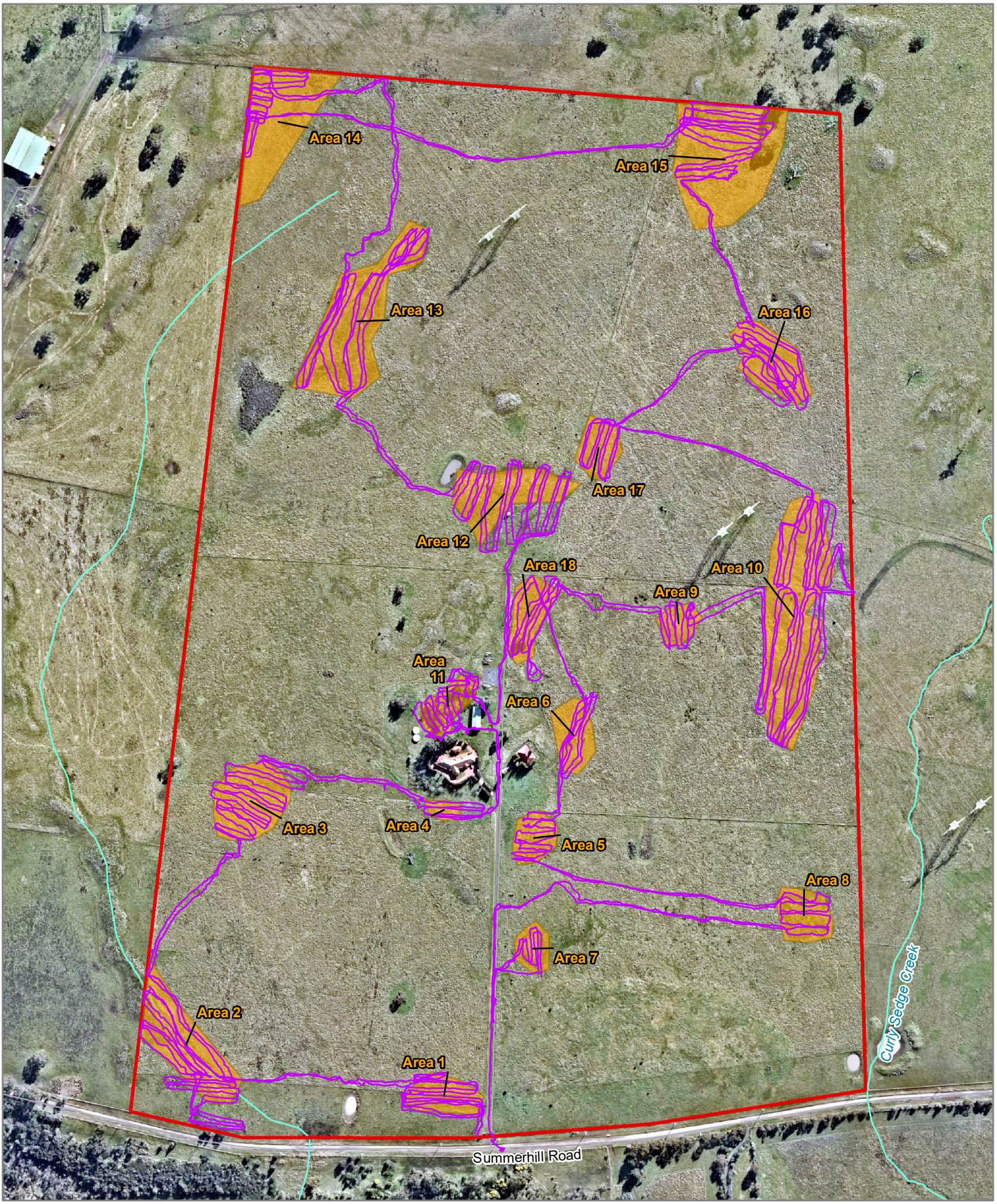

Figure 2

Survey results

Targeted Matted Flax-lily surveys for 510 Summerhill Road, Wollert

Legend

- Proposal Area
- Survey area
- Minor Watercourse
- Matted Flax-lily survey transects (survey date: 25/1/2022)

N

0 50 100

Metres

Map Scale: 1:5,500 @ A4
Coordinate System: GDA2020 MGA Zone 55

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Aerial source: Nearmap 2022

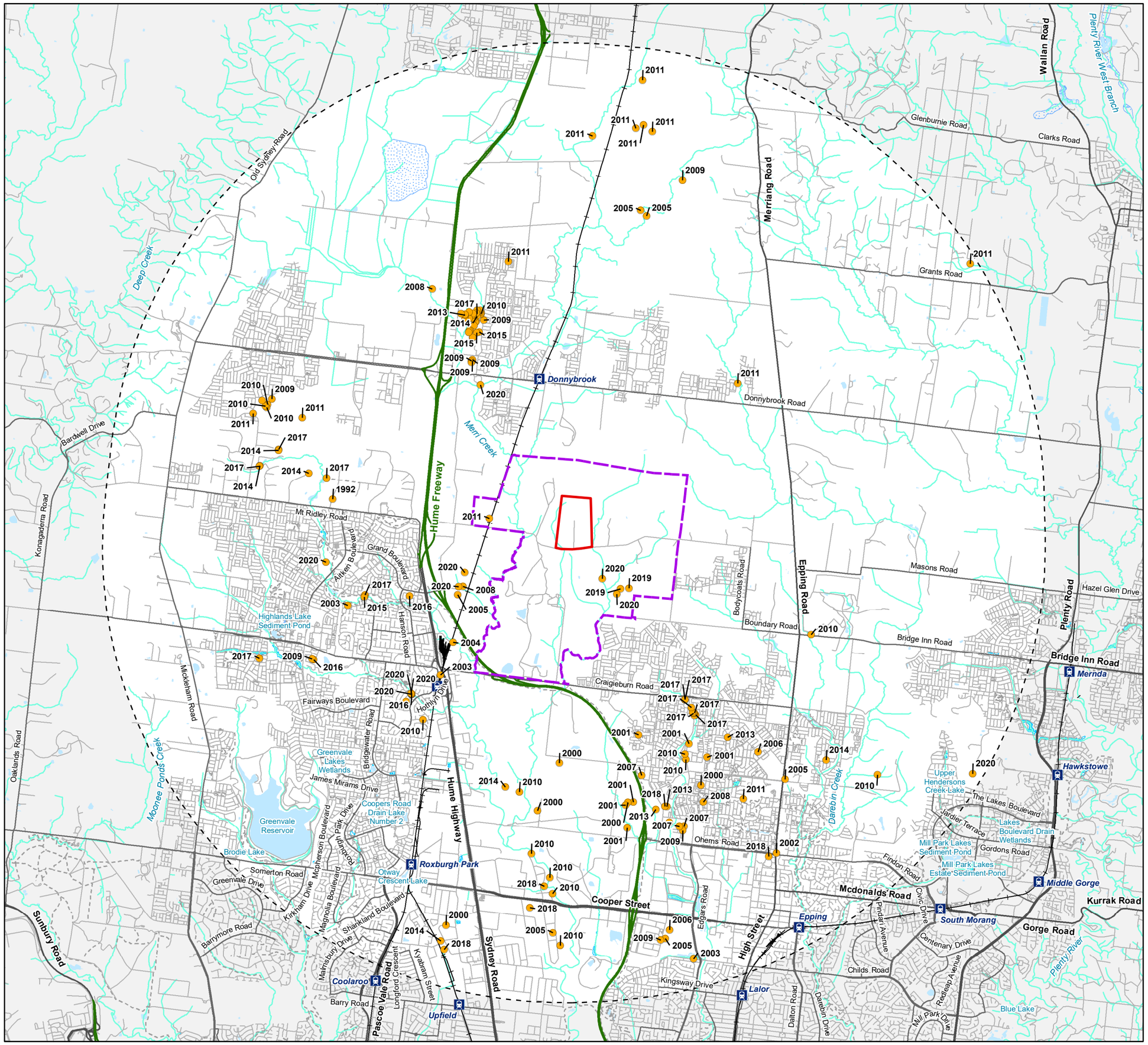

Figure 3

Previously documented Matted Flax-lily records within 10km of the proposal area

Targeted Matted Flax-lily surveys for 510 Summerhill Road, Wollert