SUBURBAN RAIL LOOP EAST

SRL East Draft Structure Plan | Clayton

Ecology and Arboriculture Technical Report

More Homes For Victorians

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SRL EAST DRAFT STRUCTURE PLAN – ECOLOGY AND ARBORICULTURE TECHNICAL REPORT - CLAYTON

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Appendices

Glossary and abbreviations

TERM	DEFINITION
AJMJV	Aurecon Jacobs Mott MacDonald Joint Venture
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DEECA	Department of Energy, Environment and Climate Action (formerly DELWP)
DELWP	Department of Environment, Land, Water and Planning (DELWP) is a former government department in Victoria, Australia (now referred to as DEECA or DTP).
DTP	Department of Transport and Planning
EES	Environment Effects Statement
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPR	Environmental Performance Requirement
ESO	Environmental Significance Overlay
EVC	Ecological Vegetation Class
FFG Act	*Flora and Fauna Guarantee Act 1988*
the Guidelines	*Guidelines for the removal, destruction of lopping of native vegetation* (DELWP, 2017)
ha	Hectare(s)
km	Kilometre(s)
LGA	Local Government Area
m	Metre(s)
MNES	Matters of National Environmental Significance
NVIM	Native Vegetation Information Management System
Plan Melbourne	*Plan Melbourne 2017-2050*
PMST	Protected Matters Search Tool
PPRZ	Public Park and Recreation Zone
Project Land	The Project Land describes the approval area which has been identified within the *Suburban Rail Loop East Incorporated Document (August 2022).* The Project Land includes the areas in which the Suburban Rail Loop East (the Project) components would be contained, including both permanent structures and temporary construction areas (both above and below ground).
SLO	Significant Landscape Overlay
SRL	Suburban Rail Loop
SRLA	Suburban Rail Loop Authority
SRL East (the Project)	Suburban Rail Loop East
VBA	Victorian Biodiversity Atlas
VPO	Vegetation Protection Overlay
WSUD	Water sensitive urban design

Executive summary

As part of the Suburban Rail Loop (SRL) East project, Draft Structure Plans (Structure Plans) are being prepared for the neighbourhoods surrounding the new underground stations at Box Hill, Burwood, Glen Waverley, Monash, Clayton and Cheltenham.

The Structure Plans will set a vision and framework to guide growth and change in each neighbourhood, while protecting and preserving the character and features people love about them now.

This technical report will inform the development of the Draft Clayton Structure Plan (Clayton Structure Plan).

The report describes the existing ecology and arboricultural values in the Structure Plan Area.

It identifies issues and opportunities that should be considered when developing the Clayton Structure Plan and makes recommendations to improve and enhance ecology and arboricultural values.

Existing Conditions

ECOLOGY

The Structure Plan Area is heavily modified and dominated by infrastructure, buildings and residential areas. A significant portion of the Structure Plan Area is exclusively concrete and hard impervious surfaces with no native vegetation. As such there are limited opportunities for threatened flora and fauna to be present.

No remnant patches of native vegetation occur in the Structure Plan Area, with native vegetation limited to a small number of scattered trees and is therefore unlikely to support listed *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Flora and Fauna Guarantee Act 1988* (FFG Act) threatened ecological communities. No EPBC Act and FFG Act-listed threatened flora and fauna are considered to have a high likelihood of occurring in the Structure Plan Area.

Challenges for enhancing and increasing biodiversity and green spaces include the high proportion of developed areas with low existing cover of native vegetation or habitat. There are very few open spaces in the Structure Plan Area, with it mostly being small, scattered community parks and cleared sports parks which are not considered to improve or support biodiversity. There is limited tree canopy cover or connectivity, with a dominance of non-native and/or European street trees, a lack of large mature trees, and very limited or no understorey habitat.

Opportunities to improve biodiversity include planting more flowering native trees, shrubs and grasses in the open space network to enhance habitat for fauna. Planting a diverse height layer of flowering native species in the understorey would promote habitat and foraging opportunities for native fauna.

Supporting the implantation of *Monash Urban Biodiversity Strategy* (2018 – 2028) and *City of Kingston Climate and Ecological Emergency Response Plan* initiatives and actions and implementing municipal street and public open space planting strategies could help enhance biodiversity, including by planting a diversity of species resilient to climate change which support habitat corridors. Planning controls and overlays could then be considered to protect recreated habitat, planted trees and new dispersal corridors and links.

ARBORICULTURE

The Structure Plan Area supports 7.7 per cent tree canopy cover in the overall Structure Plan Area. Land use is predominantly residential and characterised by limited canopy cover as a consequence of modestly scaled

plantings in road reserves and on private properties. Residential land supports 8 per cent tree canopy cover in the Structure Plan Area and commercial and industrial land supports 3.1 per cent of the canopy cover.

No environment or landscape planning overlays for the protection of trees have been applied to land in the Structure Plan Area.

There are relatively few sites with potentially notable tree plantations in the Structure Plan Area. Remembrance Gardens contains some established and mature specimen trees, as well as a commemorative planting, the Lone Pine (*Pinus halepensis*), to the north of Clayton Hall. Other sites that appear to contain notable tree plantations include Meade Reserve and Fregon Reserve.

Development has potential to remove existing trees and reduce canopy cover, as well as reduce opportunities to plant new trees. This can be caused by the rezoning of residential land to commercial and other uses. More intense development on residential land also has potential to remove trees and reduce opportunity for tree planting. Infrastructure works such as road upgrades and providing vehicle access could also impact arboricultural values. This will create challenges for achieving Monash and Kingston's target of 30 per cent tree canopy cover.

Opportunities to protect and enhance tree canopy and the urban forest include considering green infrastructure, green roofs and canopy trees in private open space and Water Sensitive Urban Design features to support tree growth and biophilic design in new developments.

Initiatives to enhance growing conditions for trees on public land could be implemented, such as providing structured soils and incorporating Water Sensitive Urban Design features into new developments. Supporting the implementation of municipal street and public open space planting strategies could also help protect and add to the tree canopy cover.

Recommendations

The following recommendations have been developed to inform the development of Clayton Structure Plan:

1. Promote the concept of habitat corridors to link new and existing open spaces within the Structure Plan Area in accordance with City of Kingston and City of Monash urban climate and biodiversity strategies and with Plan Melbourne 2017-2050: Direction 6.5 and Policy 6.5.1. Habitat corridors require the support of private landholders and public land managers in planting of native flowering canopy trees and native-understorey plantings on private land and along associated streetscapes.

    a. As depicted in the below figure, the proposed habitat corridors have been developed based on a logical path that incorporates areas of existing and proposed open spaces, remnant vegetation and habitat corridors in proximity to the Structure Plan Area.

    b. It is recommended that the habitat corridors are enhanced for biodiversity through the planting of native trees, particularly flowering natives, and understorey that provides a diversity of flowering plants at a variety of heights.

2. In accordance with objectives of the Monash Urban Biodiversity Strategy and the Kingston Biodiversity Strategy, it is recommended that existing and proposed open spaces are enhanced with native plantings (particularly a diversity of flowering trees) to increase indigenous coverage. It is recommended that the ground layer of revegetated areas include a variety of flowering native shrub, herb and grass species. Recommendations are proposed for the locations listed in the below table and identified in figure below.

    a. Native plant selection should consider drought-tolerant, long-lived and flowering species for biodiversity values.

RECOMMENDATIONS FOR BIODIVERSITY IN PUBLIC OPEN SPACE

LOCATION	STATUS	PROPOSED CLASSIFICATION AND APPROX SIZE	RECOMMENDATION FOR BIODIVERSITY IMPROVEMENTS
Jack Meade Reserve	Existing open space	Function: Sports Park Size: 25,058 m²	• Retain all native trees in the open space. • Plant more native trees around the sporting ground that provide foraging resources for birds. • Where possible, revegetate understorey flowering vegetation for pollinators that replace non-native lawn. • Provide fauna nest boxes where possible.
Meppel Drive Reserve	Existing open space	Function: Community Park Size: 1682 m²	• Retain all native trees in the open space. • Plant more native trees around the play ground that provide nectar resources for birds. • Revegetate with understorey flowering vegetation for pollinators that replaces non-native lawn.
Fregon Reserve	Existing open space	Function: Sports Park Size: 35,156 m²	• Retain all native trees in the open space. • Plant more native trees around the sporting ground that provide nectar resources for birds. • Where possible, revegetate understorey flowering vegetation for pollinators that replace non-native lawn. • Provide fauna nest boxes, where possible.
First Street Reserve	Existing open space	Function: Community Park Size: 8420 m²	• Retain all native trees in the open space. • Plant more native trees throughout the reserve that provide nectar resources for birds. • Revegetate with understorey flowering vegetation for pollinators that replaces non-native lawn.
Flora Road Reserve	Existing open space	Function: Expand existing local neighbourhood park Size: approx. 1000 m² addition	• Plant native trees that provide nectar resources for birds. • Revegetate with understorey flowering vegetation for pollinators that replaces non-native lawn. • Retain all native trees in the existing Flora Road Reserve.
PMP Printing development site, Carinish/Browns Rd	Planned (new open space)	Function: Local neighbourhood park, Local pocket park and civic space (3 public open spaces in total) Size: 8600 m²	• Remove impervious and concrete surfaces where the public parks are planned to be located. • Revegetate site to consider and include patches of diverse native plantings. • Consider improving blue infrastructure by creating a waterbody in the new open space, and planting fringing native vegetation to manage erosion, prevent weeds and create aquatic habitat for local fauna
Cooke Street	Planned (new open space)	Function: Community park Size: 1000 m2	• Remove impervious and concrete surfaces where the public parks are planned to be located. • Revegetate site to consider and include patches of diverse native plantings.
Madeleine Road	Planned (new open space)	Function: Community park Size: 3000 m2	
Eva Street and Ormond Road	Planned (new open space)	Function: Community park Size: 1000 m2	
Fulton Street and Manton Road	Planned (new open space)	Function: Community park Size: 1000 m2	
Wright street and Kanooka Grove	Planned (new open space)	Function: Community park Size: 3000 m2	

3. In accordance with Objective 1.1 and 1.3 of the City of Kingston Biodiversity Strategy, retain mature trees and minimise the loss of high value trees in proposed and existing open spaces.

    a. Preference retention of any old hollow-bearing trees and native trees that provide foraging resources for native fauna

    b. Increase tree canopy in the Urban Forest.

4. Align with the City of Monash and City of Kingston street and public open space planting strategies to meet canopy coverage targets and ensure a diversity of tree species are selected for their climate change resilience.

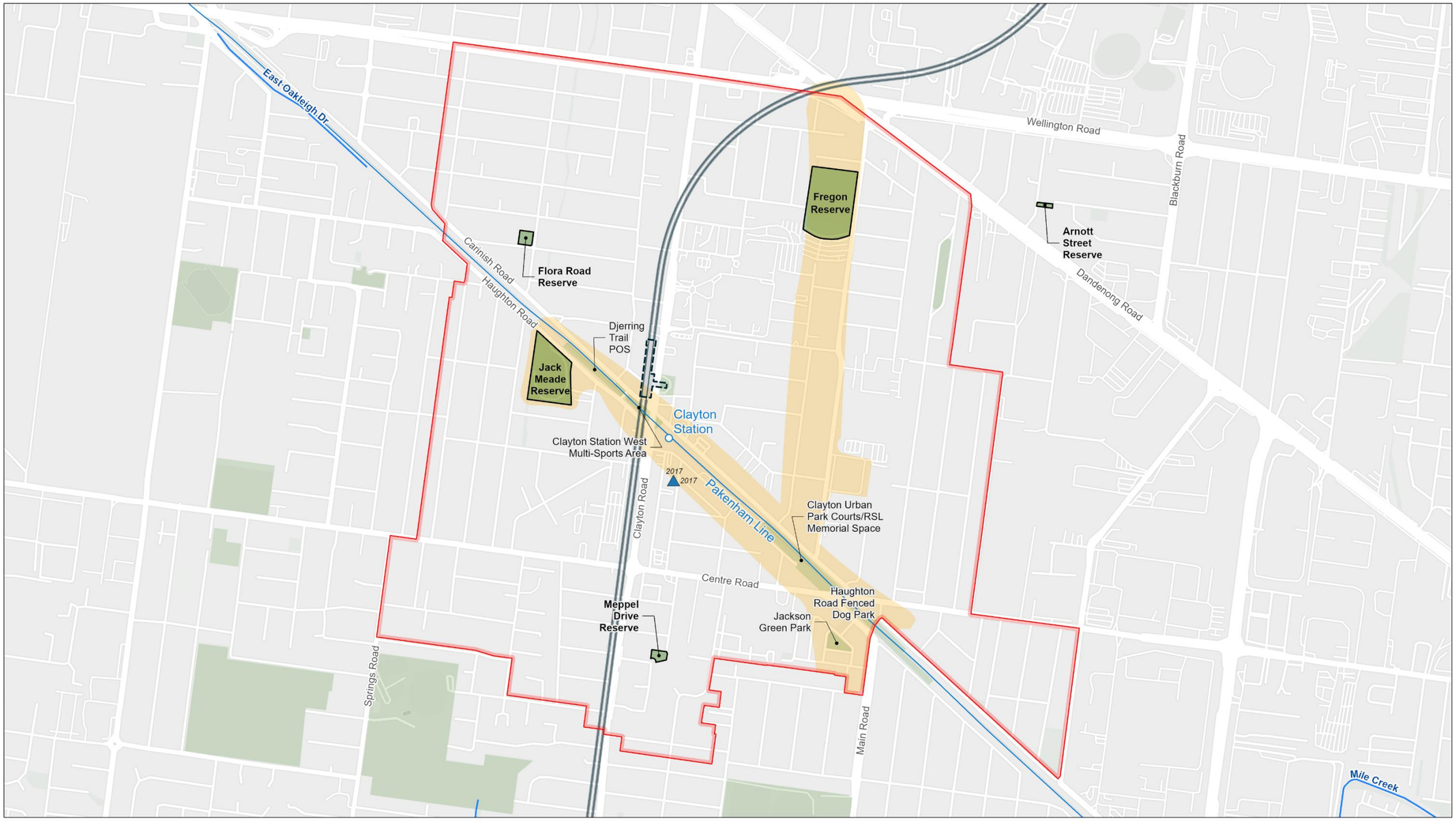
5. Support council strategies to increase biodiversity (Monash Urban Biodiversity Strategy or the Kingston Biodiversity Strategy) by improving the habitat value of blue infrastructure by creating waterbodies in feasible new open spaces, and planting fringing native vegetation to manage erosion, prevent weeds and create aquatic habitat for local fauna.

6. Support existing and new tree plantings to increase canopy cover in accordance with the Monash Urban Landscape and Canopy Vegetation Strategy, City of Kingston's Street & Park Tree Management Strategy and Urban Cooling Strategy 2020 and Living Melbourne, endorsed by both the City of Monash and City of Kingston. Ensure development includes integrated water management interventions that address green infrastructure assets, provides adequate irrigation for trees and other plantings, and optimises permeable surfaces to enhance tree growth. Examples of this outlined in the City of Monash Urban Biodiversity Strategy include wetlands, swales, litter traps, sediment traps and rain gardens to increase access to water and improve quality.

Other opportunities

- Support the implementation of actions aligning with the Monash Urban Biodiversity Strategy and related sustainability programs such as the Green Shoots Program and Gardens for Wildlife.

- Private landholders within the mapped corridor are to be encouraged and supported in contributing native trees and understorey plantings. It is considered that the Structure Plan Area wide habitat corridor will require local government and community support.



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INDICATIVE HABITAT CORRIDORS IN THE STRUCTURE PLAN AREA

1 Introduction

The Suburban Rail Loop (SRL) is a transformational project that will reshape Melbourne's growth in the decades ahead. It will better connect Victorians to jobs, retail, education, health services and each other – and help Melbourne evolve into a 'city of centres'.

SRL will deliver a 90-kilometre rail line linking every major train service from the Frankston Line to the Werribee Line via Melbourne Airport.

SRL East from Cheltenham to Box Hill will connect major employment, health, education and retail destinations in Melbourne's east and south east. Twin 26-kilometre tunnels will link priority growth suburbs in the municipalities of Bayside, Kingston, Monash and Whitehorse.

SRL East Structure Plan Areas will surround the six new underground stations at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill.

1.1 Purpose of this report

This technical report will inform the development of the Draft Clayton Structure Plan (Clayton Structure Plan) to guide land use planning and development in the Structure Plan Areas of SRL East.

The report describes the existing ecology and arboricultural values in the Box Hill Structure Plan Area and the surrounding area.

Issues and opportunities relating to ecology and arboriculture that impact planning for the development of the Structure Plan Area are identified.

Recommendations to consider when developing the Clayton Structure Plan are made, with the objective to avoid, minimise or manage potential negative impacts of change, and to maximise potential for positive change.

1.2 Project context

Construction of the SRL East underground stations is underway at Box Hill, Burwood, Glen Waverley, Monash, Clayton and Cheltenham. This provides an opportunity to enhance the surrounding neighbourhoods. SRL East will support thriving and sustainable neighbourhoods and communities that offer diverse and affordable housing options, with easy access to jobs, transport networks, open space, and community facilities and services.

A Precinct Vision has been developed in consultation with the community and stakeholders for the Structure Plan Area and surrounds. The visions set out the long-term aspirations for these areas, ensuring they are ready to meet the needs of our growing population.

Figure 1.1 shows SRL East in the context of the entire SRL project and Melbourne's rail network.

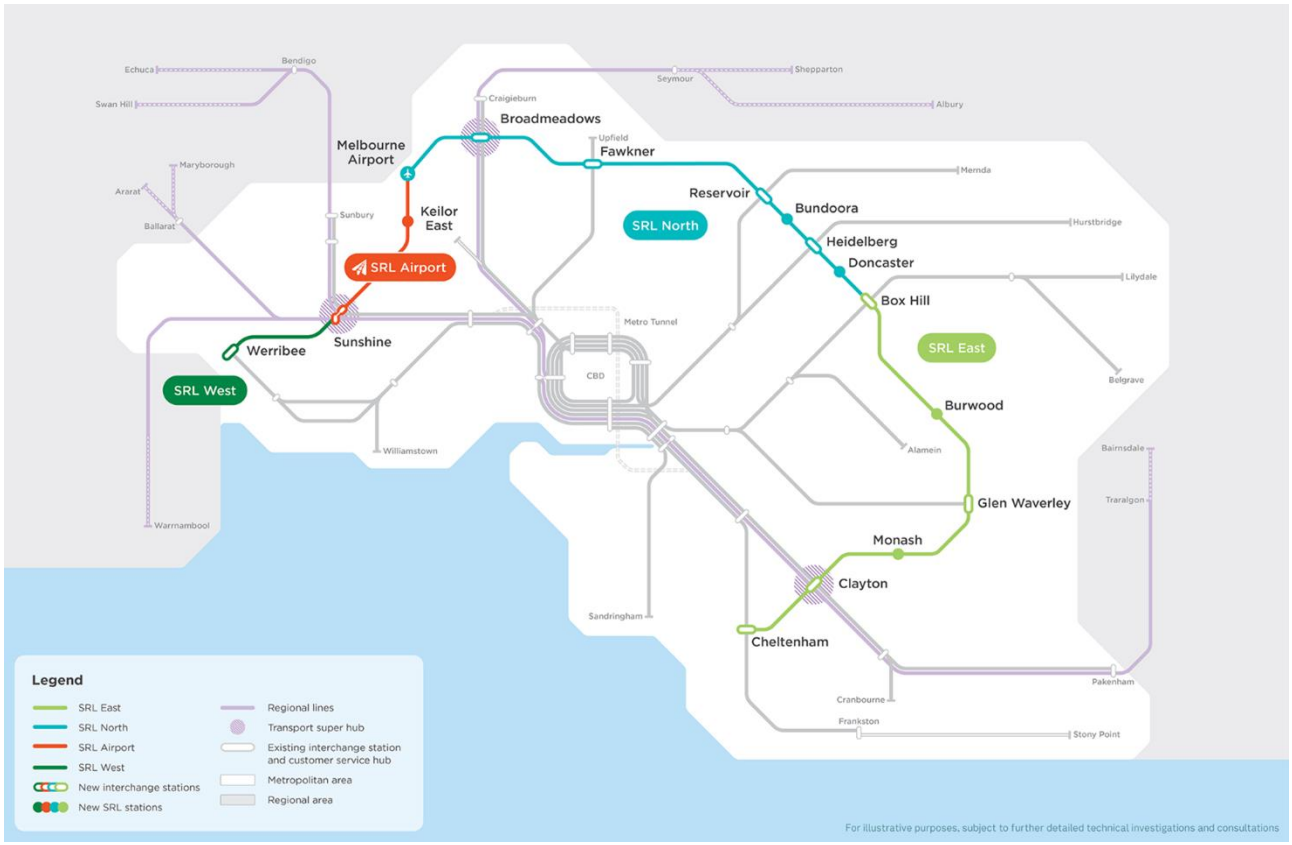

FIGURE 1.1 SRL EAST CONTEXT IN MELBOURNE'S RAIL NETWORK

1.3 Structure planning

Draft Structure Plans (Structure Plans) have been prepared for defined areas surrounding the new SRL East stations to help deliver the Precinct Vision developed for each SRL East neighbourhood.

The Structure Plans cover defined Structure Plan Areas that can support the most growth and change. These areas cover a walkable catchment that extends from the SRL station entrances. Additional places are included within each defined area as required to make planning guidance more robust and effective, and to align with each community's aspirations and current and future needs.

A Structure Plan is a blueprint to guide how an area develops and changes over a period of time. Structure Plans describe how future growth within the area will be managed in an appropriate and sustainable way to achieve social, economic and environmental objectives. The plans cover a wide range of matters, such as transport connections and car parking, housing and commercial development, community infrastructure, urban design, open space, water and energy management, climate resilience and sustainability.

By tailoring planning decisions to reflect the needs of a defined area, Structure Plans give effect to the policies and objectives set for these areas and cater for changing community needs. They also provide certainty for residents, businesses and developers by identifying the preferred locations and timing of future land uses, development and infrastructure provision.

Structure Plans take a flexible and responsive approach that enables places to evolve over time.

Planning scheme amendments will be required to implement the Structure Plans into the planning schemes of the cities of Kingston and Monash.

1.4 Structure of this reports

- **Section 1** provides the background and context of the technical assessment.
- **Section 2** explains the methodology for the technical assessment.
- **Section 3** defines the Structure Plan Area.
- **Section 4** summarises legislation, policies and other documents relevant to the assessment.
- **Section 5** describes the existing ecological and arboricultural conditions in the Structure Plan Area.
- **Section 6** sets out the findings of the assessment. It identifies the issues, challenges and opportunities relating ecology and arboriculture that will impact land use planning and development in each Structure Plan Area.
- **Section 7** sets out the recommendations to consider when developing the Structure Plan Area.

2 Methodology

The methodology for the ecology and arboriculture technical assessment involved:

- Study areas for the technical assessment were identified. For this assessment the study area is the same area as the Structure Plan Area (see Section 3).
- Legislation, policies and documents relevant to the assessment, and to land use planning and development in the Structure Plan Area was reviewed (see Section 4).
- The existing ecology and arboricultural values in the Structure Plan Area were identified (see Section 5). This included a desk top review of the Structure Plan Area and a radius of 5 kilometres from its boundary.
- Issues, challenges and opportunities relating to ecology and arboriculture and land use planning and development in the Structure Plan Area was identified (see Section 6).
- Based on the assessment, recommendations were developed to avoid, minimise or manage potential negative impacts of change relating to ecology and arboriculture, and to maximise potential for positive change in the Structure Plan Area (see Section 7).

2.1 Methodology for ecology existing conditions

The desktop study to assess existing ecology in the Structure Plan Area involved:

- **Previous reports** prepared for SRLA relevant to ecology and arboriculture were reviewed
- **Database searches** to identify threatened flora, fauna and ecological communities protected under the *Environment Protection and Biodiversity Act 1999* (Cth) (EPBC Act) and the *Flora and Fauna Guarantee Act 1999* (Vic) (FFG Act)
- **A likelihood of occurrence analysis** of threatened flora, fauna and ecological communities in the Structure Plan Area.

More information on these activities is provided below.

2.1.1 PREVIOUS REPORTS

Previous reports prepared for SRLA reviewed for this assessment were:

- *SRL East Environment Effects Statement Technical Appendix G.1 Ecology Existing Conditions* (AJM-JV 2021a October 2021)
- *SRL East Environment Effects Statement Technical Appendix G.2 Ecology Impact Assessment* (AJM-JV 2021b October 2021)

Information in these reports relevant to this assessment is summarised in Section 5.1.3.

2.1.2 DATABASE SEARCHES

Database searches were undertaken to understand the likely existing conditions of the Structure Plan Area. The database search area comprised the Structure Plan Area and a radius of 5 kilometres from its boundary. This is

referred to as the 5-kilometre search area in this report. Database searches identified a shortlist of potential flora, fauna and ecological communities that may occur in the Structure Plan Area.

Database records reviewed on 2nd October 2024 for the 5-kilometre search area were:

- Protected Matters Search Tool (PMST) of the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) for matters protected by the EPBC Act (DCCEEW 2024a, See Appendix A)
- The Victorian Biodiversity Atlas (DEECA 2024a) for records of listed threatened flora and fauna species.

The following information was also reviewed:

- The Victorian Native Vegetation Information Management System (NVIM) (DEECA 2024b)
- NatureKit (DEECA 2023c)
- VicPlan (DTP 2023a)
- Publicly available aerial imagery (dated 2023).

2.1.3 LIKELIHOOD OF OCCURRENCE ANALYSIS

Each species identified in the database search was considered against the suitability, condition and extent of suitable habitat in the Structure Plan Area and broader landscape to determine their likelihood of occurrence in the Structure Plan Area. The likelihood of a species occurring in the Structure Plan Area was classified as 'Negligible', 'Low', 'Moderate' or 'High' based on consideration of the:

- Presence or absence of previous records in the search region (as identified in the database search)
- Known habitat requirements and distribution of the species
- Suitability of habitat in the Structure Plan Area (based on the findings of the field assessment and previous reports).

The likelihood of ecological communities occurring in the Structure Plan Area was considered and is discussed in Section 5.

The criteria to rank the likelihood of threatened flora and fauna occurring in the Structure Plan Area is defined in Table 2.1 and Table 2.2 respectively. Species determined to have a high to moderate likelihood of occurring in the Structure Plan Area are discussed in Section 5.

TABLE 2.1 LIKELIHOOD OF OCCURRENCE CRITERIA FOR THREATENED FLORA SPECIES

LIKELIHOOD OF OCCURRENCE	CRITERIA
High	Recent records of the species in the local vicinity (in the last 10 years).
	Known to occur in the area based on site observations, database records or expert advice and/or the Structure Plan Area contains high-quality habitat.
Moderate	Previous reputable records of the species in the local vicinity and/or the Structure Plan Area contains moderate quality habitat
Low	Limited previous records of the species in the local vicinity; and/or the Structure Plan Area contains poor or limited habitat. May also be considered low if other environmental factors are present such as fragmented or isolated habitat.
Negligible	No suitable habitat and/or the Structure Plan Area falls outside the known species range.

TABLE 2.2 LIKELIHOOD OF OCCURRENCE CRITERIA FOR THREATENED AND MIGRATORY FAUNA SPECIES

LIKELIHOOD OF OCCURRENCE	CRITERIA
High	Known resident in the area based on site observations, database records or expert advice.
	Recent reputable records (in 5 years) of the species in the local area.
	The Structure Plan Area contains the species' preferred habitat.
Moderate	The species is likely to visit the Structure Plan Area regularly (at least seasonally).
	Previous reputable records of the species in the local area.
	The Structure Plan Area contains some characteristics of the preferred habitat of the species.
Low	The species is likely to visit the Structure Plan Area occasionally or opportunistically while en-route to more suitable sites.
	There are only limited or historical records of the species in the local area (more than 20 years old).
	The Structure Plan Area contains few or no characteristics of the preferred habitat of the species.
Negligible	No previous records of the species in the local area.
	Previous records of the species exist in the local area (but records are more than 30 years old).
	The species may fly over the area when moving between areas of more suitable habitat.
	Out of the known range of the species.
	No suitable habitat in the Structure Plan Area.
	Species is known to be regionally extinct.

2.2 Methodology for arboriculture existing conditions

The arboriculture existing conditions assessment comprised a review of previous relevant reports prepared for SRLA as well as other relevant planning and strategy documents. Aerial imagery of the Structure Plan Area and surrounds was also reviewed.

2.2.1 PREVIOUS REPORTS

Previous reports prepared for SRLA reviewed for this assessment were:

- *SRL East –Arboriculture and Urban Forest Existing Conditions*. TA D.1 Arbor EC (AJM-JV 2021c Revision 01 October 2021)
- *SRL East –Arboriculture and Urban Forest Impact Assessment*. TA D.2 Arbor IA (AJM-JV 2021d October 2021)

Other relevant documents reviewed for the assessment were:

- Monash Planning Scheme – Schedule 1 to the Vegetation Protection Overlay
- *Monash Urban Landscape and Canopy Vegetation Strategy* 2018
- *Living Melbourne: our metropolitan urban forest* (The Nature Conservancy and Resilient Melbourne 2019)
- *Plan Melbourne 2017–2050 (*DELWP 2017b).

Information from these reports relevant to this assessment is summarised in Section 5.1.3.

2.3 Assumptions and limitations

The following assumptions and limitations apply to this assessment:

- The assessment was based on desktop research. No fieldwork, site assessments, consultation or engagement was undertaken.

Assumptions and limitations specific to the ecology assessment:

- Information from the desktop research is limited to the time the data was obtained (6 June 2023) and so should be considered as indicative only. No field assessment was completed to verify the results of the desktop assessment.
- Victorian Biodiversity Atlas (VBA) data relating to threatened species varies depending on the number of previous surveys undertaken and the ability to readily observe species. In the case of fauna, species move around the landscape and can be in hidden or cryptic locations, so while they potentially use a site, they may often not be observed during surveys. A lack of species records for a given search area may reflect a simple lack of survey effort at a location rather than demonstrating the absence of species. This is particularly true for aquatic species as survey efforts are typically less than for terrestrial areas.

Assumptions and limitations specific to the arboriculture assessment:

- Existing tree canopy cover spatial data is sourced from Vicmap Vegetation Tree Extent (2020). The dataset defines tree cover as woody vegetation greater than 2 metres high, which is likely to over-state existing canopy cover, which is usually measured at 3 metres high or greater. Derived canopy polygons were not manually checked or corrected for the technical assessment.
- The arboriculture assessment is based on a desktop review and should not be considered an authoritative review, which would require fieldwork and an assessment of individual trees.

2.4 Interactions with other technical reports

2.4.1 URBAN DESIGN

In response to the SRL Urban Design Framework, AJM-JV prepared the *SRL East Draft Structure Plan - Urban Design Report - Clayton* (AJM-JV 2025a), which outlines the recommended urban design strategies and initiatives for the Structure Plan Area.

In relation to ecology, this includes identifying how the Structure Plan Area aligns with the SRL Urban Design Objectives including increasing tree canopy cover and other landscaping and optimising green and blue infrastructure in existing and new streets and open spaces.

Recommendations this report considers the recommended initiatives of the Draft Urban Design Report (AJM-JV 2025a), in particular using existing and proposed open spaces and Green Streets identified in the Public Realm Framework. As defined in the SRL Urban Design Framework, Green Streets are a broad classification for a local street that may be enhanced to support a range of opportunities including pedestrian connectivity and access to recreation facilities, enhanced environmental and biodiversity outcomes, and the potential to accommodate cycle and bus routes. Green Streets provide a valuable opportunity to increase habitat and dispersal corridors for biodiversity.

More detail is provided in the *SRL East Draft Structure Plan - Urban Design Report - Clayton* (AJM-JV 2025a).

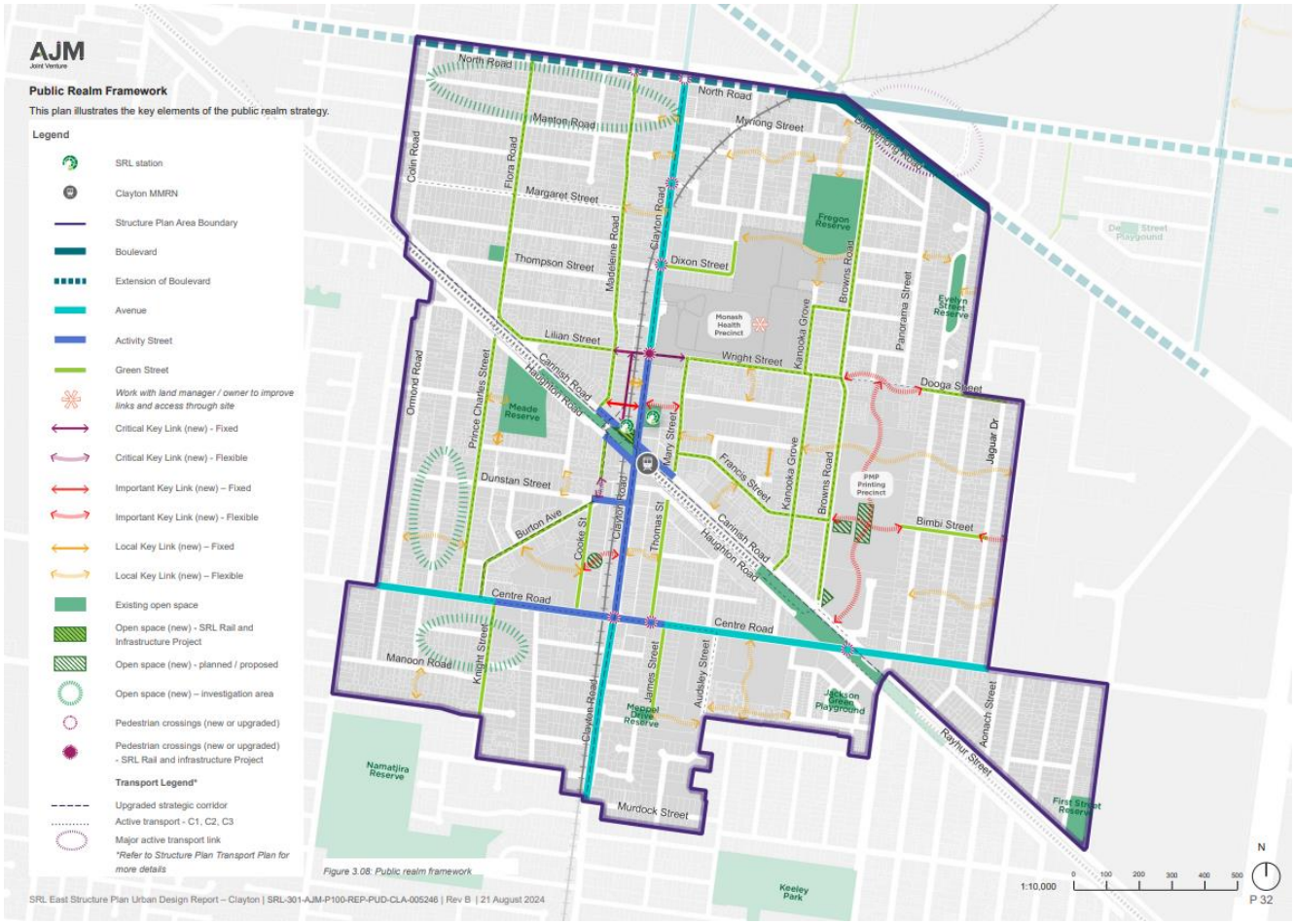

FIGURE 2.1 PUBLIC REALM FRAMEWORK SHOWING OPEN SPACE AND GREEN STREETS (AJM-JV 2025b)

2.4.2 LANDSCAPE HERITAGE

Trees subject to protection under the Heritage Overlay, including sites included on the Victorian Heritage Register, are included in the *SRL East Draft Structure Plan – Historical Heritage Technical Report* (AJM-JV 2025b). This report identifies a Peppercorn Tree (*Schinus areira*), located at Clayton Road, Clayton as subject to Heritage Overlay 12 (HO12), which includes tree controls.

2.4.3 FLOODING AND WATER MANAGEMENT

Water sensitive urban design (WSUD) has a role to support new tree growth and biophilic design in new development and is further considered in greater detail in the *SRL East Draft Structure Plan – Integrated Water Management Strategy* (AJM-JV 2025c).

Specific WSUD opportunities relating to the Structure Plan Area are outlined in Section 6.2.2.

Recommendations for the implementation of Integrated Water Management as Structure Plan Objectives are outlined in *SRL East Draft Structure Plan - Climate Response Plan – Clayton* (AJM-JV 2025d).

2.4.4 SUSTAINABILITY AND CLIMATE CHANGE

The *SRL East Draft Structure Plan - Climate Response Plan – Clayton* (AJM-JV 2025d) notes that Clayton has significant gaps in its open space network, with significant challenges to increase permeability and green corridors between northern regions of the Structure Plan Area and existing open space in the south.

Furthermore, the Structure Plan Area has the lowest tree canopy cover when considering the walking and cycling network and the canopy cover across the Structure Plan Area.

The Clayton Climate Response Plan provides detailed assessments and recommendations for tree canopy coverage targets and green infrastructure for new developments.

2.4.5 OPEN SPACE ASSESSMENT

There are 13 public open space areas in the Structure Plan Area covering 112,879 m². The largest open spaces currently are Sports Parks which contain limited vegetation. The open spaces in the Structure Plan Area are listed in Table 2.3.. Notably, the majority of these open public spaces support recreational facilities, grassed areas and parks and comprise little to no native vegetation or ecological values considered to provide high quality habitat for native flora and fauna. These open spaces provide opportunities to enhance and/or transform these spaces to encourage and facilitate biodiversity and increased tree canopy cover.

Open spaces outlined in this report consider the recommended initiatives of the *SRL East Draft Structure Plan - Open Space Technical Report* (AJM-JV 2025e) and may be subject to change.

TABLE 2.3 STRUCTURE PLAN AREA CURRENT OPEN SPACE CONDITION AND PRESENT VALUES

PUBLIC OPEN SPACE	CURRENT CONDITION AND PRESENT VALUES	AREA (M²)
Clayton Station West Multi-Sports Area	Sports Park with planted trees and shrubs and a mown exotic understory	2736
Clayton Urban Park Courts/RSL Memorial Space	Sports Park with predominantly impervious surfaces and small areas of maintained understory	14,455
Djerring Trail POS	Linear Park with no vegetation	5562
Evelyn Street Reserve	Community Park with a mixture of planted native and non-native trees and a mown exotic understory	7280
First Street Reserve	Community Park with a mown exotic understory and planted trees	8420
Flora Road Reserve	Community Park with a remnant River Red-gum and exotic planted trees	2083
Fregon Reserve	Sports Park with cleared understory but some native and non-native trees surrounding	35,156
Haughton Road Fenced Dog Park	Community Park with no apparent vegetation	3279
Jack Meade Reserve	Sports Park cleared area surrounded by some indigenous and non-indigenous tree species	25,058
Jackson Green Playground	Community Park with a few shrubs	3117
Meppel Drive Reserve	Community Park with a few native shrubs and trees with an exotic grassy understory	1682
No name public forecourt	Community Park with no vegetation	752
Remembrance Garden/ Clayton Hall	Landscape Park with exotic over and understory species	3292
Total		**112,879**

As documented in the *SRL East Draft Structure Plan - Open Space Technical Report* (AJM-JV 2025e), in addition to retaining the current areas of open space in the Structure Plan Area, a total of ten sites comprising new and/or enhanced open spaces and pedestrian links have the potential to provide additional biodiversity benefits in the Structure Plan Area. These sites are summarised in the *SRL East Draft Structure Plan - Open Space Technical Report* (AJM-JV 2025e).

3 Structure Plan Area

This section defines the Structure Plan Area in the Clayton SRL East neighbourhood.

3.1 Clayton Structure Plan Area

The Clayton Structure Plan Area surrounds the SRL station at Clayton in the cities of Monash and Kingston.

The Structure Plan Area is generally bordered by North Road / Wellington Road to the north, Ormond Road to the west, residential lots between Alward Avenue and Murdock Street, and parts of the Cranbourne / Pakenham Line to the south, and Kombi Road and Buckland Street to the east.

Dandenong Road is a major road, running in a north-west to south-east alignment through the edge of the Structure Plan Area. The existing Cranbourne / Pakenham Line intersects the Structure Plan Area in an east-west alignment.

The Structure Plan Area is shown in Figure 3.1.

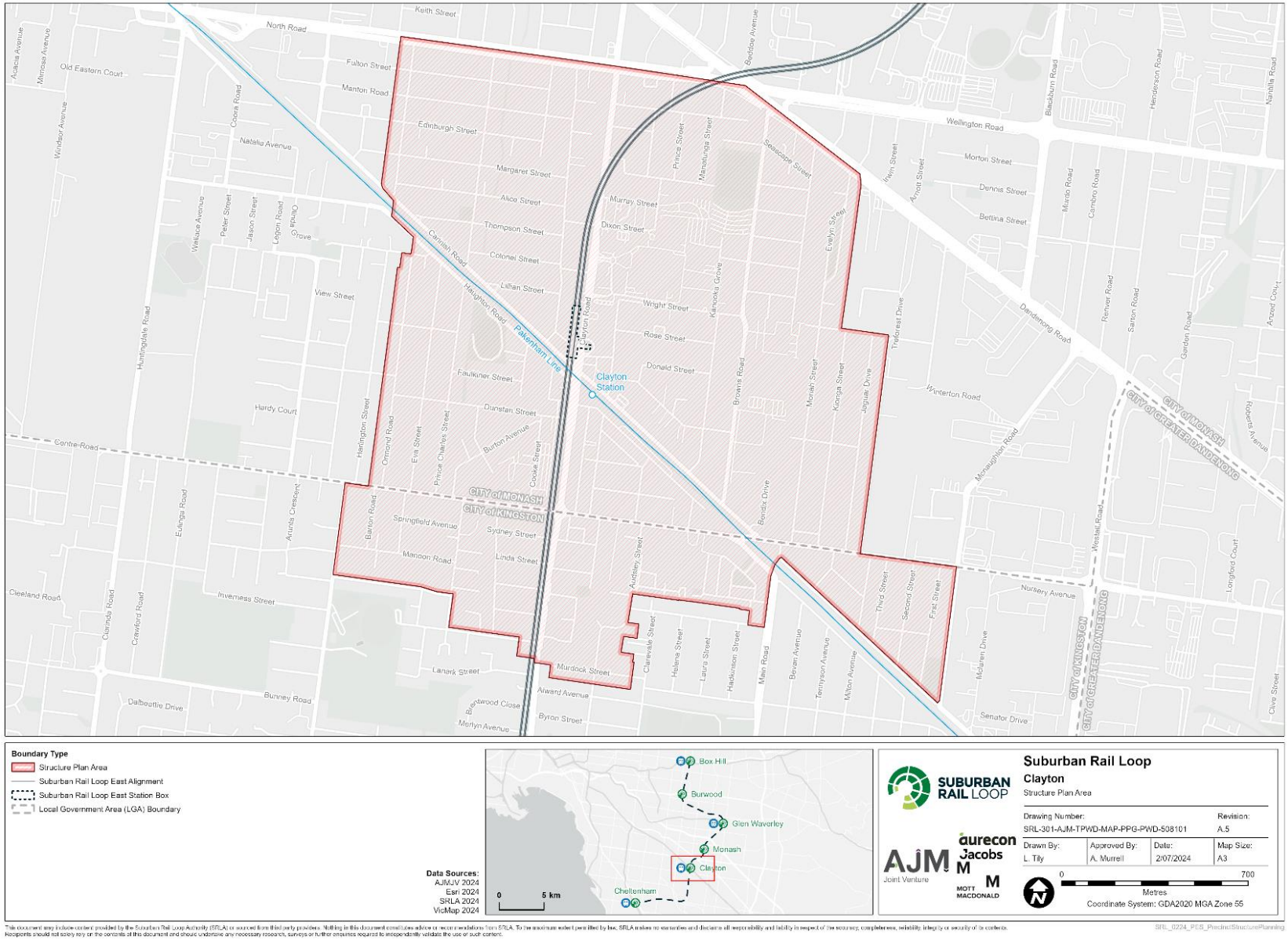

FIGURE 3.1 CLAYTON STRUCTURE PLAN AREA

4 Legislative and policy context

4.1 National

4.1.1 ENVIRONMENT PROTECTION AND BIODVIERSITY CONSERVATION ACT 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) is Commonwealth legislation that provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, termed Matters of National Environmental Significance (MNES).

Under the EPBC Act, an action that has, will have, or is likely to have, a significant impact on a MNES must be referred to the Commonwealth Minister for the Environment. The Minister will then determine whether the proposed action requires formal assessment and approval under the EPBC Act.

4.2 State

4.2.1 FLORA AND FAUNA GUARANTEE ACT 1988

The *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) is the key Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatening processes. Under the FFG Act a permit is required from the Department of Energy, Environment and Climate Action (DEECA) to take (kill, injure, disturb or collect) threatened or protected flora species from public land.

4.2.2 PLANNING AND ENVIRONMENT ACT 1987 (VIC)

The *Planning and Environment Act 1987* (Vic) establishes a framework for planning the use, development and protection of land in Victoria. It sets out procedures for preparing and amending the Victoria Planning Provisions and planning schemes. Each municipality is required to have a planning scheme which includes the Planning Policy Framework (which sets out state and regional policies) and the Local Planning Policy Framework (that is specific to each municipality), zones, overlays and particular and general provisions.

4.3 Local

4.3.1 MONASH AND KINGSTON PLANNING SCHEMES

A review of the City of Monash and Kingston Planning Scheme identified the following relevant policy and provisions relating to ecology and arboriculture:

- Clause 12.01-1S (Protection of Biodiversity) seeks to protect and enhance Victoria's biodiversity. Of relevance to the Structure Plan Area is the need to support land use and development that contributes to protection and enhancing habitat for indigenous plants and animals in urban areas.
- Clause 12.01-2S (Native vegetation management) and Clause 52.17 (Native Vegetation) aims to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.

4.3.1.1 Monash Planning Scheme local provisions

Under Clause 21.01 (Municipal Profile of the Local Planning Policy Framework) the 'garden city character', including well vegetated private gardens, high canopy trees and wide streets with street trees, is identified as an integral aspect of the City and a key determinant of the character of the residential areas of the city.

Clause 21.04 (Residential Development) seeks the need to maintain and enhance the city's garden city character with the following objective:

- *To recognise the need to conserve treed environments and revegetate new residential developments to maintain and enhance the garden city character of the municipality.*

This objective is reinforced with a strategy that seeks a high level of amenity provided for new residential development, including canopy tree cover (among other matters), which is implemented by:

- *Clause 22.05 (Tree Conservation Policy), which applies to all land.*
- *Applying the Vegetation Protection Overlay to areas which possess a special leafy character, valued by the community.*

The relevant objectives of Clause 22.05 (Tree Conservation Policy) are to:

- *To maintain, enhance and extend the Garden City Character throughout Monash by ensuring that new development and redevelopment is consistent with and contributes to the Garden City Character as set out in the Municipal Strategic Statement.*
- *To promote the retention of mature trees and encourage the planting of new canopy trees with spreading crowns throughout Monash.*

4.3.1.2 Kingston Planning Scheme local provisions

Under Clause 02.03-2 includes strategic directions for Biodiversity, which include the following:

- *Enhance the quality and ecological value of Kingston's natural environments.*
- *Maintain and enhance the tree canopy within existing urban areas.*
- *Identify and protect trees and vegetation corridors of significance.*
- *Encourage native planting to protect and improve rural landscape character, particularly along main roads in the green wedge areas.*

Clause 12.01-1L (Protection of biodiversity – Kingston) includes the following relevant strategies:

- *Retain and replant native trees and vegetation cover where possible.*
- *Promote opportunities for reinstating and enhancing local biodiversity.*

Clause 12.01-1L also has the following relevant policies:

- *Protecting the extent or integrity of significant indigenous vegetation.*
- *Providing for the reinstatement of native vegetation and/or the creation of habitat corridors where appropriate.*

Clause 15.01-5L-01 (Neighbourhood Character – Kingston) includes the following relevant strategies:

- *Maintain landscaping and trees as a major character element of residential areas.*
- *Encourage the retention of existing semi-mature and mature canopy trees.*

Clause 15.01-5L-01 also has the following relevant policy:

- *Encouraging the planting of at least one semi-mature canopy trees with spreading crowns in front setbacks and open space areas.*

4.3.1.3 Relevant planning zones

The typical planning zone that affects publicly open space and reserves in the Structure Plan Area is the Public Park and Recreation Zone (PPRZ).

4.3.1.3.1 Public Park and Recreation Zone

The primary purposes of the PPRZ are to

- *Recognise areas for public recreation and open space.*
- *Protect and conserve areas of significance where appropriate.*
- *Provide for commercial uses where appropriate*

No vegetation removal permit triggers are within this Zone. It is noted that the occurrences of most threatened flora and fauna species mapped are located in reserves zoned as PPRZ. Any planning permit for buildings and works on PPRZ land must be accompanied by written consent from the public land management.

4.3.1.4 Relevant planning overlays

Overlays in planning schemes are the primary instrument for the protection of non-native vegetation within a municipal planning scheme.

No environment or landscape planning overlays have been applied to land in the Structure Plan Area.

4.3.1.5 Relevant Particular Provisions

4.3.1.5.1 Clause 52.17 Native vegetation

Clause 52.17 (Native Vegetation) requires that the removal of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity, and that this is achieved by applying the three-step approach outlined in the Victorian *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a):

- **Avoid** the removal, destruction or lopping of native vegetation.
- **Minimise** impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
- Provide an **offset** to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.

4.3.2 MONASH URBAN LANDSCAPE AND CANOPY VEGETATION STRATEGY

The *Monash Urban Landscape and Canopy Vegetation Strategy*, through a series of strategic objectives, seeks to protect and enhance Monash's preferred future landscape character and tree canopy cover, including

responding to recognised urban character, climate change, biodiversity, public health and wellbeing and provide a cohesive vision for landscape character across public and private land that can be implemented as updates to regulatory controls and the planning scheme.

The strategy provides a municipal-wide analysis of landscape character and tree cover, identifies issues for both residential and non-residential land and provides further analysis on a precinct basis.

The strategy provides guidelines that respond to stated objectives including detailed recommendations for reinforcing existing canopy character, tree retention and replanting.

4.3.3 MONASH URBAN BIODIVERSITY STRATEGY 2018 – 2028

The *Monash Urban Biodiversity Strategy* details programs to improve biodiversity quality and habitat connectivity in the urban environment. This strategy sets out biodiversity management directions for the next 10 years and is supported by an implementation plan. Council's vision for biodiversity is:

- Thriving indigenous vegetation communities
  - » Stable and sustainable refuges for native bird and other fauna
  - » Resilient ecosystems that can adapt to environmental changes
  - » An active and engaged community that participates in ongoing biodiversity protection.
  - » The key objectives outlined in this strategy that support Councils vision for biodiversity includes:
- Increase community understanding, active engagement and appreciation of biodiversity
  - » Enhance biodiversity through revegetation and protection of remnant vegetation
  - » Collaborate with other public land managers to create broad-scale biodiversity gain
  - » Proactively reduce biodiversity threats
  - » Identify ecological baseline and indicators to monitor and assess environmental conditions
  - » Strengthen Biodiversity Policy and Legislation

4.3.4 CITY OF MONASH TREE MANAGEMENT POLICY

The Monash tree management policy provides guidance and direction in relation to the planting of new trees and to promote planting, focused on conserving a greener city. The policy also provides guidance on continued maintenance, management and protection of trees located on Council managed land.

The policy provides a basis to make decisions on the management of trees with a particular vision to protect and conserve the environment whilst balancing amenity and environmental goals whilst managing risk trees can pose to people and property.

4.3.5 CITY OF KINGSTON STREET & PARK TREE MANAGEMENT STRATEGY

This strategy is the first of two volumes aimed at implementing the operational guidelines for achieving the visions and targets of a range of other urban cooling, biodiversity, climate change and urban character strategies by providing an overview of the strategic direction for the management of the public Urban Forest.

The strategy applies the following principles:

- Increase canopy cover
- Increase the proportion of indigenous and native trees

- Ensure trees do not compromise safety
- Ensure legislative compliance
- Enhance streetscape and park amenity
- Ensure community engagement
- Sets a target to increase tree canopy cover to 30%.

4.3.6 CITY OF KINGSTON URBAN COOLING STRATEGY 2020

The *Urban Cooling Strategy* outlines Council's pathways to mitigate urban heat. The strategy has a strong focus on shading provided by trees, selection of tree species suitable for adapting to climate change, providing an increase of greening in industrial areas and protection of significant and large canopy trees.

4.3.7 KINGSTON CLIMATE AND ECOLOGICAL EMERGENCY RESPONSE PLAN

Developed to accelerate Council's emissions reductions, strengthen natural environment protection and ramp up community support, the plan includes goals to support sinks that reduce emissions and absorb carbon simultaneously, including by growing Kingston's urban forest.

Priority Area 5, Draw Down or Sequester Carbon from the Atmosphere includes a high priority to "Scope, commission, finalise and implement Council's Urban Forest Strategy" with objectives to include:

- Protecting existing vegetation and canopy cover (private and public land)
- Expanding vegetation and canopy cover (private and public land)
- Strengthen biodiversity and habitat using appropriate native species, and restore natural resource area ecosystems where possible
- Reducing urban heat island effects
- Contributing to draw down (the removal of carbon from the atmosphere).

4.3.8 CITY OF KINGSTON BIODIVERSITY STRATEGY 2018 – 2023

The City of Kingston Biodiversity Strategy sets out goals and strategic objectives for protecting, preserving and improving our biodiversity within Councils Natural Resource Areas. To combat the loss of native biodiversity whilst promoting greater quality of life for people living in the local government area, the City of Kingston has developed the following strategies for future planning:

- Reducing environmental impacts on the natural and built environment
- Protecting and enhancing Kingston's natural habitat and bushland reserves
- Maintain all parks, reserves and open space to set standards

To achieve a sustainable green environment with accessible open spaces, the Kingston City Council has developed an action plan which details objectives of the council and management actions to meet sustainability and environmental goals. Specific environmental objectives and actions relevant to the Structure Plan Area include:

- Action No. 1.1 – minimise the loss of high value trees and vegetation from within the municipality

- Action No. 2.2 – increase indigenous coverage by natural regeneration and revegetation programs

4.3.9 PLAN MELBOURNE 2017–2050

Plan Melbourne is the Victorian Government's long-term metropolitan planning strategy. Of particular relevance to the urban forest is Outcome 6 *Melbourne is a sustainable and resilient city*.

Direction 6.4 *Make Melbourne cooler and greener* seeks to create urban forests throughout the metropolitan area by:

- Assembling and disseminating spatial data on the green space network, existing tree cover and surfaces. This data will be the baseline for modelling future greening strategies and their impacts on amenity of our urban areas including cooling effects
- Working with local government to establish greening targets for each of the metropolitan regions
- Liaising with water corporations to identify opportunities for use of alternative water supply to support greening strategies
- Supporting development of municipal urban forest strategies using a coordinated approach with Department of Transport, private road operators and other public land owners and managers
- Preparing greening strategies for state-owned public land, including schools, parkland, road, rail and utility corridors, achieving an appropriate balance between asset protection and urban greening
- Investigating a targeted grants program to support innovation and actions for greening neighbourhoods
- Investigating demonstration projects including green roofs, green walls and landscapes
- Preparing new guidelines and regulations that support greening new subdivisions and developments via landscaping, green walls, green roofs and increase the percentage of permeable site areas in developments.

This requires a 'whole-of-government approach to cooling and greening Melbourne'.

Direction 6.5 *Protect and restore natural habitats* recognises that as Melbourne grows there is the potential for habitat loss and waterway degradation that can impact native flora and fauna.

Policy 6.5.1 *Create a network of green spaces that support biodiversity conservation and opportunities to connect with nature* recognises the importance of protecting existing green spaces and that new green spaces need to be created to improve landscape connectivity and resilience. By mapping the network of green spaces there is opportunity to identify where the network could be improved and support the development of the metropolitan urban forest strategy as identified above.

4.3.10 LIVING MELBOURNE

The *Living Melbourne: our metropolitan urban forest* policy was developed by Resilient Melbourne, hosted by the City of Melbourne as part of the Global Cities Resilience Network. Living Melbourne is a strategy for a greener, more liveable Melbourne to respond to urban challenges with nature.

The vision of Living Melbourne is that our urban forest protects human health, nurtures abundant nature, and strengthens natural infrastructure.

Victorian Government departments and local governments have endorsed the Living Melbourne policy.

4.3.11 PROTECTING VICTORIA'S ENVIRONMENT – BIODIVERSITY 2037

Protecting Victoria's Environment – Biodiversity 2037 is the Victorian Government's plan to stop the decline of native biodiversity and improve the natural environment.

Priorities and initiatives relevant to this assessment are :

- Increase opportunities for all Victorians to have daily connections with nature:
  - » Promote additional greening in established urban areas through broadening standards for public open-space
- Increase opportunities for all Victorians to act to protect biodiversity:
  - » Promote programs to raise awareness to protect and care for biodiversity
  - » Implement and promote programs to increase engagement with community groups that protect biodiversity
  - » Link opportunities to connect with nature with on-the ground biodiversity management needs
- Help to create more liveable and climate adapted communities
  - » Implementation of Plan Melbourne
- Deliver excellent in management of all land and waters
  - » Better understand and respond to key threats and opportunities for biodiversity conservation (control of weeds and pest animals, fore regimes, disease, apex predators and climate change)
  - » Reduce degradation of environments through practical threat management action, informed by science
  - » Develop partnerships with public land managers and Traditional Owners in managing biodiversity.

5 Existing conditions

This section describes the existing conditions relevant to ecology and arboriculture in the Structure Plan Area. That is, within the Structure Plan Area and a 5km-kilometre radius around it.

5.1 Ecology

The Structure Plan Area encompasses approximately 334 hectares of high-density urban space. The Structure Plan Area is heavily modified from its natural state, with much of it supporting transport infrastructure, commercial areas, residential housing and sports grounds and Monash Hospital.

Previous disturbance means the Structure Plan Area is cleared of almost all remnant vegetation (DEECA 2024b), with a mix of planted non-indigenous natives and introduced species primarily occurring today. The most commonly occurring include: English Oak (*Quercus robur*); Water Gum (*Tristaniopsis laurina*); Peppercorn (*Schinus molle*); and an understorey comprising tanbark mulch or planted shrubs and grasses including Spiny-headed Mat-rush (*Lomandra longifolia*) (AJMJV 2021b). Previous records for threatened species and current modelled distributions of native vegetation in the 5-kilometre search area are mapped in Figure 5.1 and discussed below.

There are no waterways present in the Structure Plan Area, nor any significant wetland habitats in the immediate vicinity.

5.1.1 NATIVE VEGETATION

Three main pre-1750 modelled vegetation communities are mapped in the Structure Plan Area (DEECA 2024b), this included:

- Damp Sands Herb-rich Woodland/Heathy Woodland Mosaic (EVC 881)
- Grassy Woodland (EVC 175)
- Swampy Woodland (EVC 937).

The current (2005) modelled vegetation layer for the Structure Plan Area identified no modelled remnant vegetation (DEECA 2024b) as shown in Figure 5.2. This is supported by a review of aerial imagery which confirmed the majority of the Structure Plan Area is heavily modified from development and urbanisation.

Given the current suburban and commercial land use of the Structure Plan Area, much of the vegetation identified consists of non-native street plantings and revegetated public parks and sporting grounds comprising non-indigenous native plants and exotic trees. This was confirmed during previous ecological surveys within sections of the Structure Plan Area (AJMJV 2021a, 2021b, 2021c, 2021d), although four scattered remnant trees were located in the existing rail corridor west of Clayton Station (see Section 5.1.3).

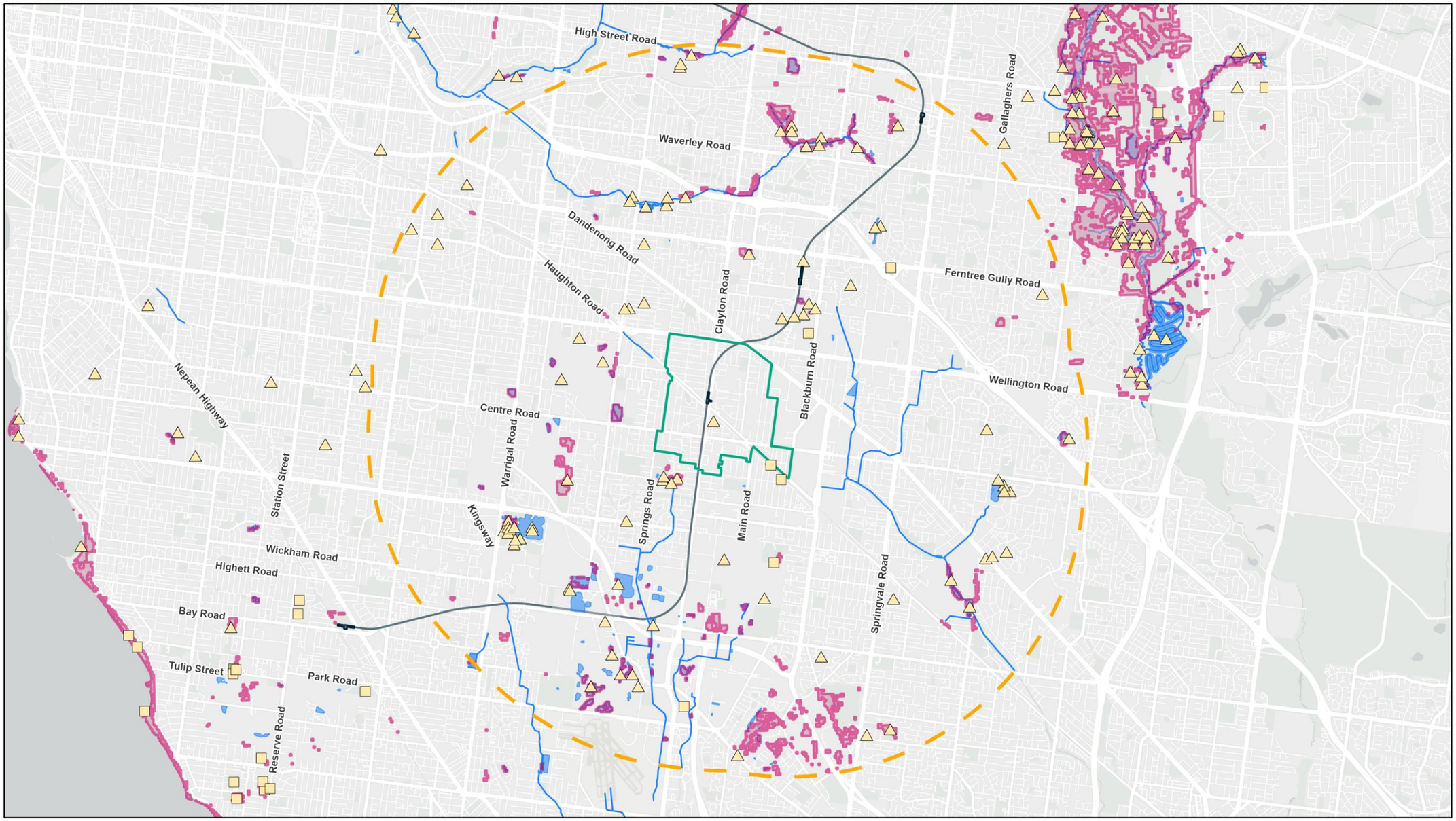

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FIGURE 5.1 SUMMARY OF ECOLOGICAL VALUES (NATIVE VEGETATION AND LISTED THREATENED SPECIES) IN 5-KM SEARCH AREA

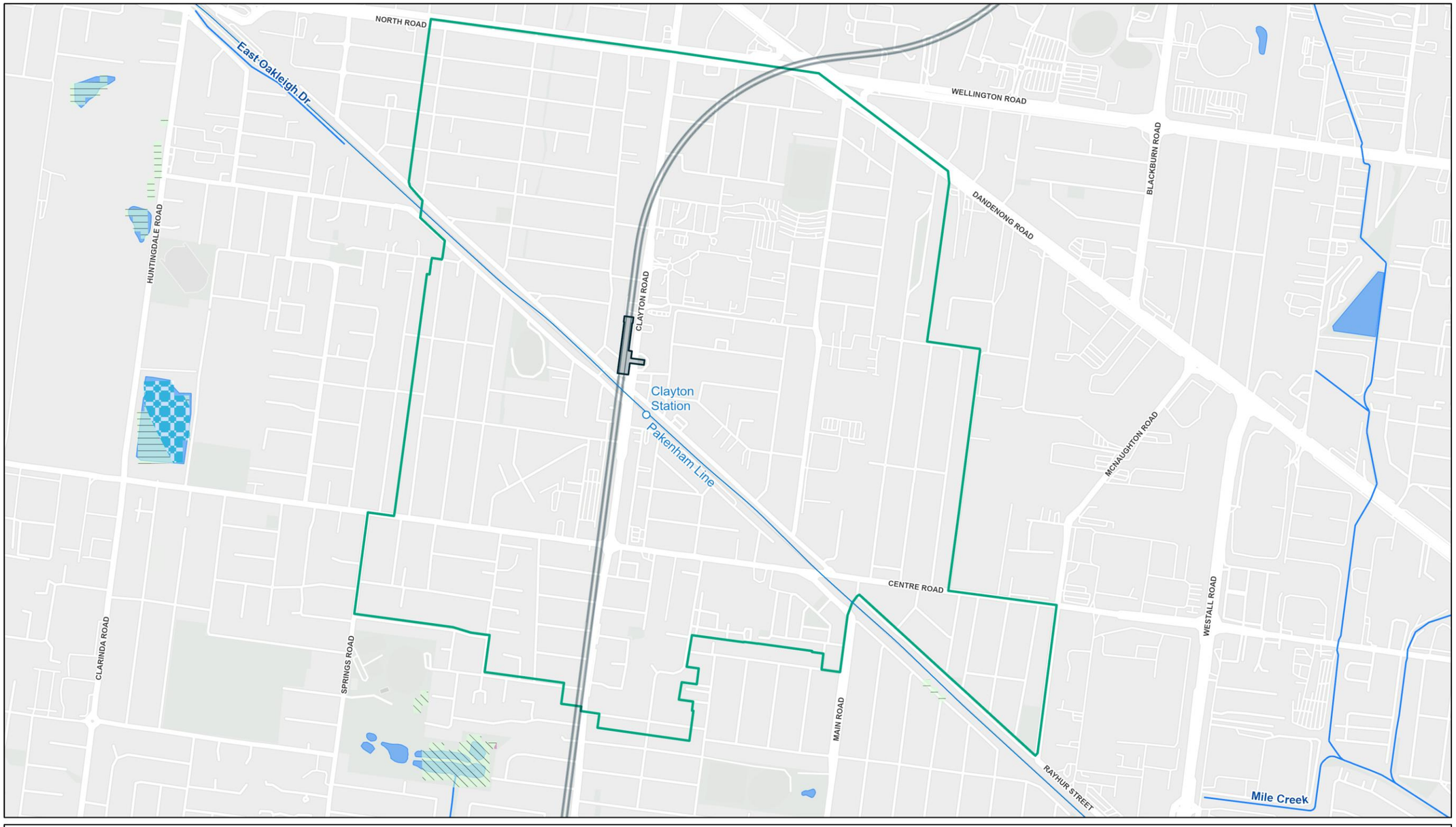

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FIGURE 5.2 MODELLED NATIVE VEGETATION IN THE STRUCTURE PLAN AREA

5.1.2 THREATENED SPECIES AND COMMUNITIES

5.1.2.1 Threatened flora

The review of the relevant databases (PMST and VBA) returned 20 listed threatened flora species, seven of which have previously been recorded within the 5-kilometre search area. Details of each of the habitat requirements of each species, as well as an analysis of the likelihood of their occurrence in the Structure Plan Area, is provided in Appendix B.

Threatened flora previously recorded in the Structure Plan Area are mapped in Figure 5.3.

The database search returned two different threatened flora species as occurring in the last five years in the 5-kilometre search area. These were Snowy River Wattle (*Acacia boormanii)* and Giant Honey-myrtle (*Melaleuca armillaris subsp. Armillaris*). Additionally, the Ecology Existing Conditions report (AJMJV, 2021a) confirmed one flora species listed under the FFG Act, Spotted Gum (*Corymbia maculata*), was located in the Structure Plan Area. Despite the recent species records, it is considered that all threatened flora species are planted given location of the records outside the natural distribution of the species and the modified condition and current land use in the Structure Plan Area.

No EPBC Act or FFG Act threatened flora species are considered to have a moderate or high likelihood of occurrence due to previous disturbance and the lack of suitable habitat features in the Structure Plan Area.

5.1.2.2 Threatened fauna

The review of the relevant database (PMST and VBA) returned 76 threatened and/or migratory fauna species (including one frog, 57 birds, three fish, three invertebrates, eight mammals and four reptiles). Details of each of these species habitat requirements as well as an analysis of the likelihood of occurrence in the Structure Plan Area is provided in Appendix B. Of the 58 threatened fauna species considered to occur in the Structure Plan Area, 31 have previously been recorded within the 5-kilometre search area. Threatened fauna previously recorded in the Structure Plan Area are mapped in Figure 5.3.

Based on the assessment in Appendix B, it has been determined that one EPBC Act and/or FFG Act-listed fauna species has a moderate to high likelihood of occurring in the Structure Plan Area due to potential use of habitat in residential areas and revegetated areas around sporting grounds and small reserves. This species is summarised in Table 5.1.

TABLE 5.1 LISTED THREATENED FAUNA SPECIES WITH A MODERATE TO HIGH LIKELIHOOD OF OCCURRENCE IN THE STRUCTURE PLAN AREA

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT		
Callocephalon fimbriatum	Gang-gang Cockatoo	EN		During summer, the Gang-gang Cockatoo is found in tall mountain forests and woodlands, with dense shrubby understoreys. In winter, Gang-gangs will move to lower altitudes into drier, more open forests and woodlands. At this time, they may be seen by roadsides and in parks and gardens of urban areas. They require tall trees for nest hollows.	Moderate

Legend CR = critically endangered, EN = endangered, VU = vulnerable

The vegetation surrounding sporting grounds and small reserves as well as private backyards in residential areas may provide opportunistic foraging habitat for the Gang-gang Cockatoo. However, given the limited

availability of mature trees that would support hollows for nesting of this species it is considered unlikely that the Gang-gang Cockatoo would make regular use of the Structure Plan Area.

Although the desktop assessment determined that a number of aquatic birds (Appendix B) may occur within the 5-kilometre search area, it is considered that no waterfowl or aquatic birds are likely to occur in the Structure Plan Area. Based on review of species records, aquatic fauna are primarily confined to other wetlands located outside the Structure Plan Area including Karkarook Park, Notting Hill Reservoir and Namatjira Reserve. As these wetlands occur surrounding the Structure Plan Area, it is considered that some aquatic avifauna may occasionally fly over the Structure Plan Area as they move throughout the landscape. Due to extensive urban development no habitat is present in the Structure Plan Area for these species and they are unlikely to occur.

Records that have historically occurred in the Structure Plan Area are mapped in Figure 5.3 and Appendix B.

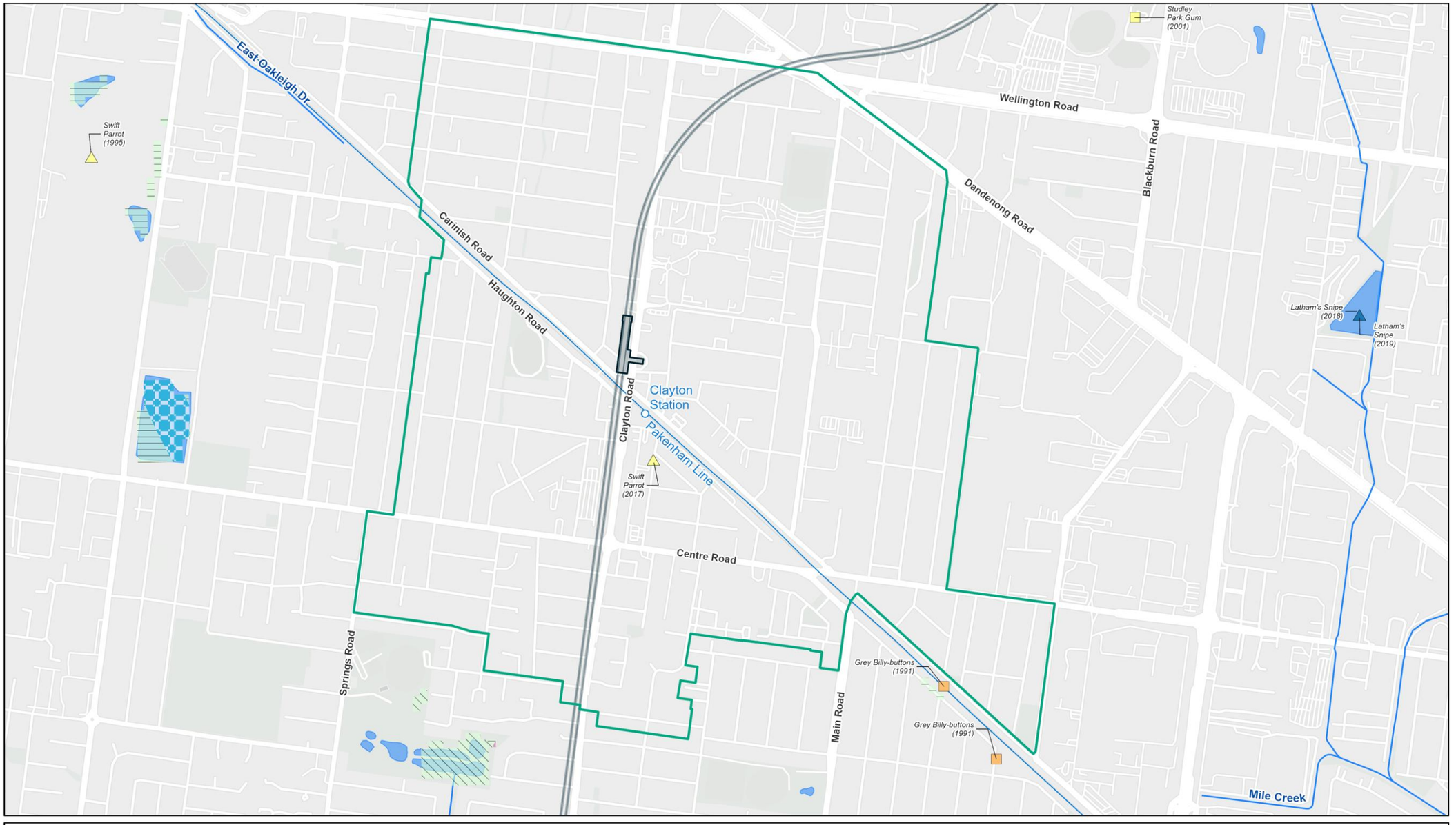

FIGURE 5.3 THREATENED FLORA AND FAUNA RECORDED IN THE STRUCTURE PLAN AREA

5.1.2.3 Threatened ecological communities

EPBC Act-listed ecological communities

One EPBC Act-listed threatened ecological community was listed in the PMST as known or likely to occur in the 5-kilometre search area (DCCEEW 2024a), Natural Damp Grassland of the Victorian Coastal Plains. An assessment against the listing criteria for the EPBC Act-listed threatened ecological community is provided in Table 5.2.

TABLE 5.2 ASSESSMENT OF LIKELIHOOD OF OCCURRENCE OF EPBC ACT-LISTED THREATENED ECOLOGICAL COMMUNITIES IN THE STRUCTURE PLAN AREA

EPBC ACT LISTED ECOLOGICAL COMMUNITY	LIKELIHOOD OF OCCURRENCE IN THE STRUCTURE PLAN AREA
Natural Damp Grassland of the Victorian Volcanic Coastal Plains – listed as Critically Endangered	This community is characterised by a native grassland ranging to an open grassy woodland on seasonally damp waterlogged soils. This community is dominated by a ground layer comprising native tussock species and herbaceous flora, with a sparse presence of trees and shrubs (DSE 2015). The desktop and aerial review of the Structure Plan Area at Clayton suggests that the site does not support any areas of native grassland as the land has been almost entirely cleared for commercial and residential infrastructure. Areas where vegetation exists comprises slashed sporting fields and parks, likely dominated by introduced grasses and planted tree species. As no suitable habitat features or diagnostic characteristics were noted during the desktop Assessment, **it is considered unlikely to occur in the Structure Plan Area**.

FFG Act-listed ecological communities

Based on the heavily modified site condition and lack of modelled native vegetation within and surrounding Clayton, it is considered unlikely that any FFG Act-listed ecological communities occur in the Structure Plan Area.

5.1.3 REVIEW OF PREVIOUS REPORTS

Previous ecology assessments have been undertaken in the Structure Plan Area. These studies have determined the Structure Plan Area comprises highly modified and built-up environments comprising residential areas interspersed with commercial buildings, sporting grounds, transport infrastructure and Monash Hospital.

Any vegetation in the Structure Plan Area exists around sporting grounds and small reserves and comprises a mix of planted non-indigenous natives and introduced species. The most commonly occurring are English Oak (*Quercus robur*), Water Gum (*Tristaniopsis laurina*) and Peppercorn (*Schinus areira*) (AJMJV 2021a, AJMJV 2021b, AJMJV 2021c).

One flora species listed under the FFG Act, Spotted Gum (*Corymbia maculata*) was located during a field assessment (AJMJV, 2021a) which were determined to be planted in the Structure Plan Area. No threatened fauna under the EPBC or FFG Acts were identified.

All ecological assessments conducted in the Structure Plan Area determined that no EPBC Act MNES or FFG Act threatened species are considered to have a high likelihood of occurrence, as no suitable habitat is present. No threatened species are therefore predicted to be impacted.

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FIGURE 5.4 NATIVE VEGETATION PREVIOUSLY RECORDED IN THE STRUCTURE PLAN AREA

5.1.4 PLANNING ZONES AND OVERLAYS

A review of the database records identified in Figure 5.3 and Figure 5.4 against planning scheme zones and overlays was completed to determine whether previously recorded ecological values are protected by local planning controls. This review is separate from the likelihood of occurrence assessment of threatened species and communities in Section 5.1.2.

Table 5.3 below identifies the Planning Scheme zone and overlays that affect the land containing modelled native vegetation and threatened species and communities in the Structure Plan Area.

TABLE 5.3 PLANNING ZONE AND OVERLAYS FOR LAND WITH MODELLED NATIVE VEGETATION AND THREATENED SPECIES AND COMMUNITIES IN STRUCTURE PLAN AREA

MODELLED NATIVE VEGETATION AND THREATENED SPECIES AND COMMUNITIES	ADDRESS / NAME / OWNERSHIP	PLANNING ZONE	ENVIRONMENT AND LANDSCAPE PLANNING OVERLAYS
Swift Parrot	Thomas Street, Clayton 3168	Residential Growth Zone (Schedule 3 - Clayton Major Activity Centre and Monash National Employment and Innovation Cluster)	N/A
Grey Billy-buttons	Haughton Road, Clayton South 3169	Transport Zone 1 (Principal road network)	N/A

Table 5.3 confirms the threatened species and communities are not affected by environment or landscape planning overlays that could otherwise afford vegetation and tree removal protection. Records for both threatened species are located within road or rail reserves.

Land ownership details are not known at the time of this assessment.

5.2 Arboriculture

The Structure Plan Area is predominantly residential and characterised by limited canopy cover as a consequence of modestly scaled plantings within road reserves and within private properties. Commercial and industrial precincts typically contain limited tree plantings.

5.2.1 CANOPY COVER

The Structure Plan Area supports 291,090 m^2 of tree canopy, which equates to 7.7 per cent tree canopy cover in the overall Structure Plan Area, significantly less than 22 per cent canopy cover overall as cited in the *Monash Urban Landscape and Canopy Vegetation Strategy*, whereas tree canopy cover lies from 8.9 per cent to 9.7 per cent in Kingston. The existing tree canopy of the Structure Plan Area is shown in Figure 5.5.

Comparing all land in the Structure Plan Area broadly zoned for residential use to commercial and industrial zoned land reveals greater canopy cover in residential areas, with 8 per cent canopy cover for residential zonings compared to 3.1 per cent for commercial and industrial land. Canopy cover for all other areas, including parks, land in the road zone, schools and the Monash Medical Centre lies at 9.3 per cent.

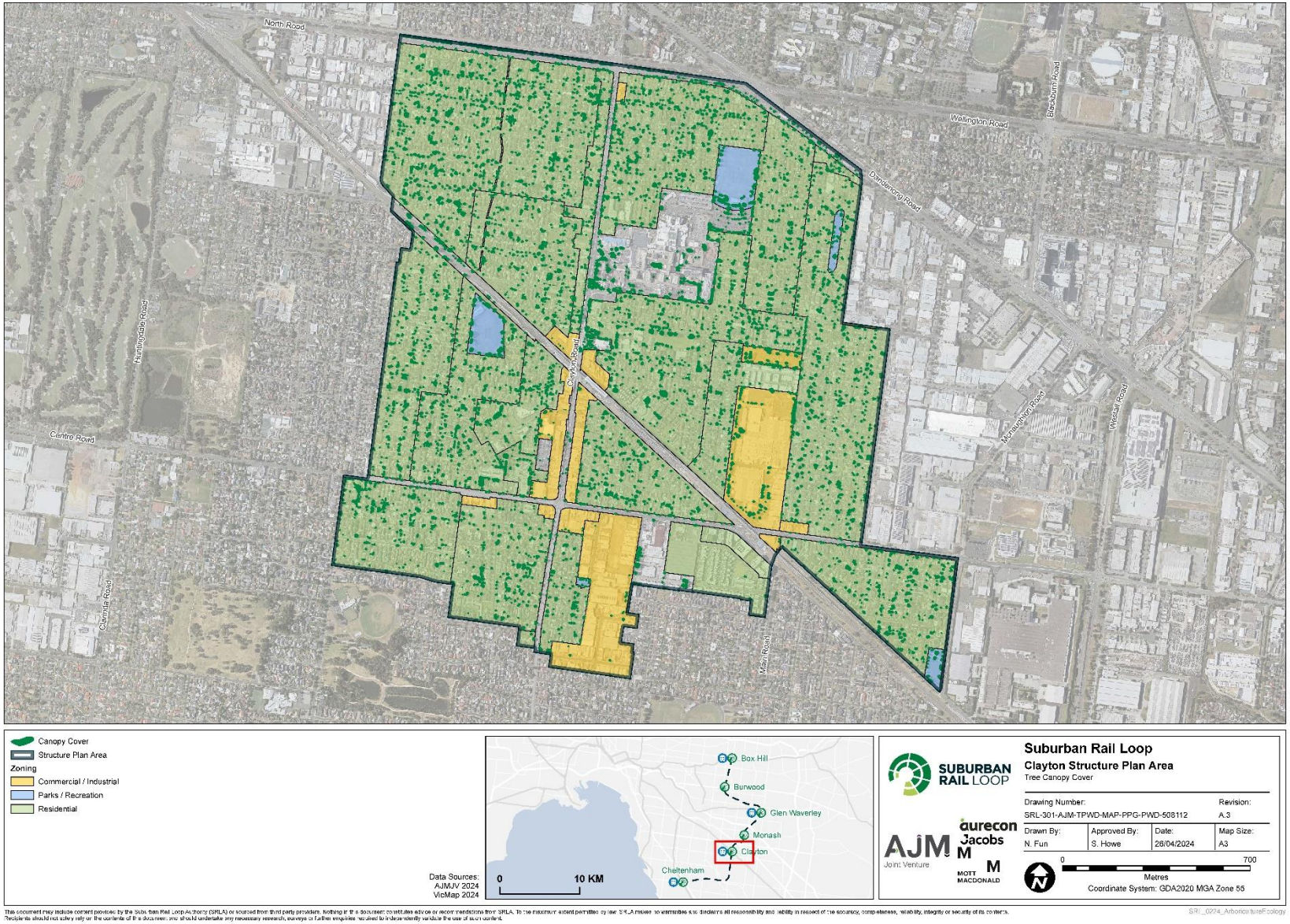


FIGURE 5.5 TREE CANOPY COVER IN STRUCTURE PLAN AREA

5.2.2 IDENTIFICATION OF SIGNIFICANT TREES

The City of Monash does not maintain a specific significant tree register with protection under the planning scheme, nor a tree protection local law.

A number of trees or tree groups in the municipality are specifically listed in the schedule to the Heritage Overlay that applies as part of the Monash Planning Scheme, as well as other heritage sites included in the heritage overlay where tree controls apply - see Section 2.4.2.

Kingston protects significant trees through the application of Schedule 3 to the Environmental Significance Overlay which does not apply in the Structure Plan Area.

5.2.3 OTHER NOTABLE AVENUE PLANTATIONS/PARKS AND GARDENS

None of the land in the Structure Plan Area is subject to VPO1, the sole environmental and landscape overlay that applies as part of the Monash Planning Scheme.

A review of aerial photography reveals relatively few sites with potentially notable tree plantations. Remembrance Gardens contains some established and mature specimen trees, as well as a Lone Pine (*Pinus halepensis*) to the north of Clayton Hall, a commemorative planting. Much of this area lies within SRL East Project land.

Other sites that appear to contain notable tree plantations include:

- Meade Reserve
- Fregon Reserve.

Tree surveys undertaken as part of the SRL East Environment Effects Statement (EES) and for early works outside the EES boundary revealed a predominantly Australian native and exotic treed character on public land, with a predominance of small statured specimens, reflected in the overall limited canopy cover recorded in the Structure Plan Area.

5.3 Committed projects

Initial and early works underway that were subject to SRL East approved rail scope have removed trees, and further tree removals will occur as main works commence.

Environmental performance requirements (EPRs) developed for SRL East include provisions for the protection of trees proposed to be retained as part of the project (EPR AR3), as well as implementation of a tree canopy replacement plan to mitigate against loss of canopy cover (EPR AR4).

In recognition that SRL East will require some tree removal and subsequent loss of canopy cover, EPR AR4 requires that double the amount of tree canopy cover (m^2) removed in each local government area is replaced by 2050. The Tree Canopy Replacement Plan has been developed in consultation with municipal and other land managers and prioritises tree planting on Project land to provide canopy cover for pedestrian and hard paved areas.

6 Findings

This section sets out the results relating to ecology and arboriculture that impact land use planning and development in the Structure Plan Area.

- A summary of the issues for improving ecology and potential opportunities are listed in Section 6.1.
- A summary of the issues for arboriculture and potential opportunities are listed in Section 6.2.

6.1 Ecology

The Structure Plan Area is distinguished by a heavily modified environment, exclusively dominated by infrastructure, housing and recreational parks. The results of the ecology assessment for the Structure Plan Area determined that the site is unlikely to contain or support areas of significant habitat for threatened species or threatened ecological communities.

The Structure Plan Area does not contain habitat corridors or linked habitat from adjacent landscapes to encourage the movement and dispersal of native fauna into and beyond the Structure Plan Area. Therefore, future development in the Structure Plan Area would present a low risk of impacts to listed ecological matters.

The Structure Plan Area contains areas of planted vegetation comprising a mixture of non-indigenous native and introduced flora, with only few remnant scattered trees. Whilst it is unlikely that these areas provide significant habitat or support permanent populations of native flora and fauna, it is recommended that treed habitat and open spaces are retained and enhanced to increase the amount of biodiversity in the Structure Plan Area.

6.1.1 ISSUES

The Structure Plan Area contains very little vegetation and few open spaces, comprising small, disjunct community parks and cleared sports parks. Some challenges that may impede increasing biodiversity and limiting open spaces may include:

- High proportion of developed areas (buildings, houses and other structures) with low existing cover of native vegetation or habitat throughout the Structure Plan Area.
- Limited space for existing natural environments, with population pressures and development reducing the availability and quality of open space for biodiversity to thrive long term. Larger open spaces are prioritised for community and recreation that are not considered to improve or cater for biodiversity. There is potential that biodiversity is not included in any new open space or enhancement of existing open space that could help support or meet the *Monash Urban Biodiversity Strategy* or the *Kingston Biodiversity Strategy.*
- Heavy reliance on motor vehicles for transportation increasing the risk of road kill and injury to wildlife and limiting opportunities for wildlife corridors.
- Dominance of non-native and/or European street trees that do not provide adequate foraging resources for Australian native wildlife including pollinators.
- Lack of large mature trees for breeding, habitat and refuge and canopy cover throughout the Structure Plan Area. These resources are decreasing over time due to removal of trees for public safety from increased

development that will occur through the Structure Plan Area. A decrease in large, mature trees will be contrary to *Monash Urban Biodiversity Strategy* or the *Kingston Biodiversity Strategy* that have strategies and objectives to protect and retain existing biodiversity values.

- Ground cover primarily paved with impervious surfaces, comprising non-native plantings and/or extensive areas supporting mown grass that provides no ecological value for biodiversity.

- Further loss of green spaces and areas for biodiversity through rezoning residential land to commercial or industrial land may negatively impact council goals and objectives (*Monash Urban Biodiversity Strategy,* the *Kingston Biodiversity Strategy* and the *Kingston Climate and Ecological Emergency Response Plan*) to increase biodiversity and to enhance and connect green and open spaces in urban areas.

- Limited state or local planning controls exist to protect open spaces that may be enhanced for biodiversity values and connectivity.

6.1.2 OPPORTUNITIES

The Structure Plan Area has the following opportunities to enhance biodiversity values:

- Existing open public spaces provide opportunities to meet City of Kingston, City of Monash and State Government policy to increase biodiversity through increasing the cover of native vegetation, including native canopy trees and native understorey to provide habitat for biodiversity.

- Proposed new open spaces recommended for the Structure Plan Area provide an opportunity to increase the cover and abundance of native trees and understorey and contribute to habitat for native fauna.

- Consider supporting the implementation of local biodiversity and climate change policies, including *Monash Urban Biodiversity Strategy* (2018 – 2028) and *City of Kingston Climate and Ecological Emergency Response Plan* through linking new and existing open spaces with habitat corridors. This includes private properties, streetscapes and community areas in the Structure Plan Area.

6.2 Arboriculture

The Structure Plan Area comprises residential areas to the east and west, with commercial and industrial zones centred along Clayton and Carinish Roads. Overall, tree canopy cover is at 7 per cent in the overall Structure Plan Area compared to 22 per cent canopy cover in Monash, and from 8.9 per to 9.7 per cent in Kingston.

There are no tree control overlays that apply as part of the Monash or Kingston Planning Schemes.

Trees on Council-managed land including parks and gardens and public roads are managed in accordance with the *City of Monash Tree Management Policy* or *City of Kingston Street & Park Tree Management Strategy*, which provide guidelines for the management of Council trees in each municipality.

6.2.1 ISSUES

Potential impacts to trees and canopy cover from development in the Structure Plan Area are:

- Loss of urban tree canopy cover through re-zoning residential land to commercial or industrial uses, and more intense development of land use and change in building typology for residential land (such as multi-unit developments replacing multiple single dwelling lots and commensurate loss of trees)

- Impacts to street trees and loss of canopy cover due to activities such as reconfigured road networks, infrastructure upgrades and parcel access.

The risk of tree and canopy loss is greatest on private land, especially where rezoning from residential to commercial or other intensive development may occur.

While public parks (outside SRL-East project land) and other land uses such as schools that support higher canopy cover are unlikely to change, Council-managed trees in streetscapes are also directly at risk from works such as changes to road functional layouts and changes to vehicle crossings as well as indirectly from construction activities on adjacent private land.

The potential overall loss of trees in the private and public realms will place additional challenges in attaining Monash and Kingston's target of achieving 30 per cent tree canopy cover.

6.2.2 OPPORTUNITIES

Opportunities to protect and enhance the tree canopy and urban forest in the Structure Plan Area include:

- Consider green infrastructure, green roofs and canopy trees in private open space (where possible) and Water Sensitive Urban Design (WSUD) to support new tree growth and biophilic design in new development
- Provide for enhanced growing conditions (such as structured soils and WSUD) for trees on public land to be implemented as part of new development
- Support implementation of municipal street and public open space planting strategies that seek to:
  - » Increase urban tree canopy cover to improve the overall amenity and environmental values
  - » Increase species diversity in tree and plant selection to improve resilience, especially in consideration of climate change.

With the loss of trees on private property, especially on residential land where the building typology may change from single dwelling to multi-unit development, there will be an increased reliance on trees in the public realm to support urban tree canopy targets. Enhancing public tree planting conditions, in addition to planting more trees in the public realm, will assist in compensating for the loss of canopy cover on private land.

The ability to accommodate new tree plantings on private land will depend on the nature of future zoning implemented as part of the Structure Plan, with intensive, high density residential and commercial development anticipated to provide limited opportunities for significant tree plantings. There is an opportunity for medium density development to deliver localised increases in tree canopy cover as the existing baseline is low, especially compared to Monash overall (22%) and metropolitan Melbourne more broadly, which lies at 15 per cent canopy cover.

Change in existing commercial and industrial zoned land where tree cover is low provides an opportunity to require innovative, or at least improved approaches to greening within land uses that previously were largely devoid of trees and vegetation.

7 Recommendations

This section provides arboricultural and ecology recommendations to consider when developing the Structure Plans.

7.1 Structure Plan

1. Promote the concept of habitat corridors to link new and existing open spaces within the Structure Plan Area in accordance with City of Kingston and City of Monash urban climate and biodiversity strategies and with Plan Melbourne 2017-2050: Direction 6.5 and Policy 6.5.1. Habitat corridors require the support of private landholders and public land managers in planting of native flowering canopy trees and native-understorey plantings on private land and along associated streetscapes.

    a. As depicted in Figure 7.1 below, the proposed habitat corridors have been developed based on a logical path that incorporates areas of existing and proposed open spaces, remnant vegetation and habitat corridors in proximity to the Structure Plan Area.

    b. It is recommended that the habitat corridors are enhanced for biodiversity through the planting of native trees, particularly flowering natives, and understorey that provides a diversity of flowering plants at a variety of heights.

2. In accordance with objectives of the Monash Urban Biodiversity Strategy and the Kingston Biodiversity Strategy, it is recommended that existing and proposed open spaces are enhanced with native plantings (particularly a diversity of flowering trees) to increase indigenous coverage. It is recommended that the ground layer of revegetated areas include a variety of flowering native shrub, herb and grass species. Recommendations are proposed for the locations listed in Table 7.1. These locations are included in Figure 7.1.

    a. Native plant selection should consider drought-tolerant, long-lived and flowering species for biodiversity values.

TABLE 7.1 RECOMMENDATIONS FOR BIODIVERSITY IN PUBLIC OPEN SPACE

LOCATION	STATUS	PROPOSED CLASSIFICATION AND APPROX SIZE	RECOMMENDATION FOR BIODIVERSITY IMPROVEMENTS
Jack Meade Reserve	Existing open space	Function: Sports Park Size: 25,058 m²	• Retain all native trees in the open space. • Plant more native trees around the sporting ground that provide foraging resources for birds. • Where possible, revegetate understorey flowering vegetation for pollinators that replace non-native lawn. • Provide fauna nest boxes where possible.
Meppel Drive Reserve	Existing open space	Function: Community Park Size: 1682 m²	• Retain all native trees in the open space • Plant more native trees around the play ground that provide nectar resources for birds. • Revegetate with understorey flowering vegetation for pollinators that replaces non-native lawn.
Fregon Reserve	Existing open space	Function: Sports Park Size: 35,156 m²	• Retain all native trees in the open space. • Plant more native trees around the sporting ground that provide nectar resources for birds. • Where possible, revegetate understorey flowering vegetation for pollinators that replace non-native lawn.

LOCATION	STATUS	PROPOSED CLASSIFICATION AND APPROX SIZE	RECOMMENDATION FOR BIODIVERSITY IMPROVEMENTS
			• Provide fauna nest boxes, where possible.
First Street Reserve	Existing open space	Function: Community Park Size: 8420 m²	• Retain all native trees in the open space. • Plant more native trees throughout the reserve that provide nectar resources for birds. • Revegetate with understorey flowering vegetation for pollinators that replaces non-native lawn.
Flora Road Reserve	Existing open space	Function: Expand existing local neighbourhood park Size: approx. 1000 m² addition	• Plant native trees that provide nectar resources for birds. • Revegetate with understorey flowering vegetation for pollinators that replaces non-native lawn. • Retain all native trees in the existing Flora Road Reserve.
PMP Printing development site, Carinish/Browns Rd	Planned (new open space)	Function: Local neighbourhood park, Local pocket park and civic space (3 public open spaces in total) Size: 8600 m²	• Remove impervious and concrete surfaces where the public parks are planned to be located. • Revegetate site to consider and include patches of diverse native plantings. • Consider improving blue infrastructure by creating a waterbody in the new open space, and planting fringing native vegetation to manage erosion, prevent weeds and create aquatic habitat for local fauna.
Cooke Street	Planned (new open space)	Function: Community park Size: 1000 m2	• Remove impervious and concrete surfaces where the public parks are planned to be located. • Revegetate site to consider and include patches of diverse native plantings.
Madeleine Road	Planned (new open space)	Function: Community park Size: 3000 m2	
Eva Street and Ormond Road	Planned (new open space)	Function: Community park Size: 1000 m2	
Fulton Street and Manton Road	Planned (new open space)	Function: Community park Size: 1000 m2	
Wright street and Kanooka Grove	Planned (new open space)	Function: Community park Size: 3000 m2	• Remove impervious and concrete surfaces where the public parks are planned to be located. • Revegetate site to consider and include patches of diverse native plantings.
Meppel Drive Reserve	Planned (new open space))	Function: Community park Size: 1682 m2	

3. In accordance with Objective 1.1 and 1.3 of the City of Kingston Biodiversity Strategy, retain mature trees and minimise the loss of high value trees in proposed and existing open spaces.

    a. Particularly any old hollow-bearing trees and native trees that provide foraging resources for native fauna; and

    b. Increase tree canopy in the Urban Forest.

4. Align with the City of Monash and City of Kingston street and public open space planting strategies to meet canopy coverage targets and ensure a diversity of tree species are selected for their climate change resilience.

5. Support council strategies to increase biodiversity (*Monash Urban Biodiversity Strategy* or the *Kingston Biodiversity Strategy*) by improving the habitat value of blue infrastructure by creating waterbodies in

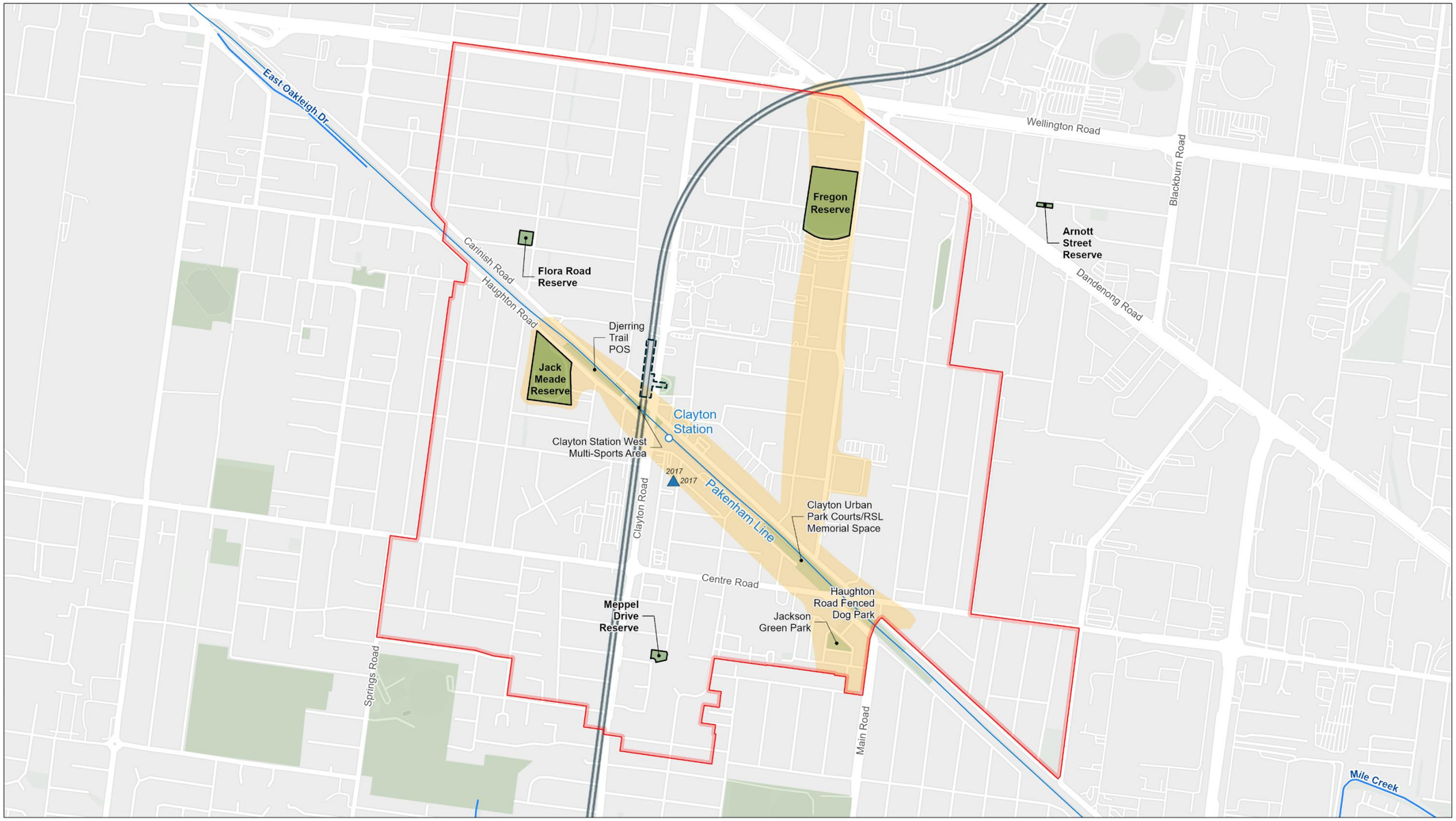
feasible new open spaces, and planting fringing native vegetation to manage erosion, prevent weeds and create aquatic habitat for local fauna.

6. Support existing and new tree plantings to increase canopy cover in accordance with the *Monash Urban Landscape and Canopy Vegetation Strategy,* City of Kingston's *Street & Park Tree Management Strategy* and *Urban Cooling Strategy 2020* and *Living Melbourne,* endorsed by both the City of Monash and City of Kingston. Ensure development includes integrated water management interventions that address green infrastructure assets, provides adequate irrigation for trees and other plantings, and optimises permeable surfaces to enhance tree growth. Examples of this outlined in the *City of Monash Urban Biodiversity Strategy* include wetlands, swales, litter traps, sediment traps and rain gardens to increase access to water and improve quality.

7.2 Other Opportunities

- Support the implementation of actions aligning with the Monash *Urban Biodiversity Strategy* and related sustainability programs such as the Green Shoots Program and Gardens for Wildlife.

- Private landholders within the mapped corridor are to be encouraged and supported in contributing native trees and understorey plantings. It is considered that the Structure Plan Area wide habitat corridor will require local government and community support.



SRL_0224_ArboricultureEcology

FIGURE 7.1 INDICATIVE HABITAT CORRIDORS IN THE STRUCTURE PLAN AREA

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Appendix A

Protected Matters Search Tool Report

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 01-Oct-2024

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	78
Listed Migratory Species:	41

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	52
Whales and Other Cetaceans:	8
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	10
Key Ecological Features (Marine):	None
Biologically Important Areas:	4
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status	Buffer Status
Historic			
HMVS Cerberus	VIC	Listed place	In buffer area only

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Edithvale-seaford wetlands	Within 10km of Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community likely to occur within area	In feature area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area	In buffer area only
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area	In buffer area only

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Breeding known to occur within area	In feature area
Aphelocephala leucopsis			
Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Nannoperca obscura Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area	In feature area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
FROG			
Litoria raniformis Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area	In feature area
INSECT			
Synemon plana Golden Sun Moth [25234]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat may occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area	In buffer area only
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat likely to occur within area	In feature area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lachnagrostis adamsonii Adamson's Blown-grass, Adamson's Blowngrass [76211]	Endangered	Species or species habitat may occur within area	In buffer area only
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat may occur within area	In feature area
Pimelea spinescens subsp. spinescens Plains Rice-flower, Spiny Rice-flower, Prickly Pimelea [21980]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area	In feature area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat likely to occur within area	In feature area
SHARK			
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Migratory Marine Species			
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Defence		
Defence - Airport Builidng [21422]	VIC	In buffer area only
Defence - MOORABBIN AERO RESEARCH [20014]	VIC	In buffer area only
Defence - SANDRINGHAM TRAINING DEPOT [20990]	VIC	In buffer area only
Defence - SANDRINGHAM TRAINING DEPOT [20989]	VIC	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea as Puffinus griseus			
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis			
Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Mammal			
Arctocephalus forsteri			
Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus			
Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Reptile			
Caretta caretta			
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas			
Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea			
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only

Whales and Other Cetaceans		[Resource Information]	
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Caperea marginata			
Pygmy Right Whale [39]		Species or species habitat may occur within area	In buffer area only
Delphinus delphis			
Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis			
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Ricketts Point	Marine Sanctuary	VIC	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Residential Development	2003/1278	Controlled Action	Completed	In feature area
Not controlled action				
Dingley Route Freeway Construction	2001/256	Not Controlled Action	Completed	In feature area
High Street Road Upgrade	2001/268	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Port Phillip Channel Deepening Project - Trial Dredge Program	2005/2164	Not Controlled Action	Completed	In buffer area only
Redevelopment of Royal Melbourne Yacht Squadron Jetty	2006/2619	Not Controlled Action	Completed	In buffer area only
Suburban Rail Loop East	2021/9101	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
extension of a sporting facility and upgrading of associated infrastructure	2004/1325	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence	Buffer Status
Seabirds			
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur	In buffer area only
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur	In buffer area only
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur	In buffer area only
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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AJM
Joint Venture

Appendix B

Threatened Species Likelihood of Occurrence

TABLE B.1 LIKELIHOOD OF OCCURRENCE ANALYSIS FOR THREATENED FLORA WITHIN THE 5-KM SEARCH AREA FOR CLAYTON

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC STATUS	FFG STATUS				
Thesium australe	Austral Toadflax	Vulnerable	Endangered	Once widespread across Victoria, but all recent collections are from highland areas in the vicinity of Wulgulmerang and it is believed to have become extinct across most of its Australian range due to loss of habitat and grazing. Grows in grasslands, woodlands and herbfields, usually in damp situations.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Isolepis gaudichaudiana	Benambra Club-sedge		Vulnerable	Apparently uncommon, known from a few scattered records from the coast to subalps, where occurring in moist open situations	1	9/11/1991	Negligible - limited number of historical records and no suitable habitat within Structure Plan Area
Glycine latrobeana	Clover Glycine	Vulnerable	Vulnerable	Widespread but of sporadic occurrence and rarely encountered. Grows mainly in grasslands and grassy woodlands.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Prasophyllum spicatum	Dense Leek-orchid	Vulnerable	Critically Endangered	Grows in coastal heath and sandhills. Localised across southern Victoria in coastal heathland and near-coastal heathy forest on sandy soils. Flowers Aug.-Nov.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Melaleuca armillaris subsp. armillaris	Giant Honey-myrtle		Endangered	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.	2	10/07/2018	Low - likely planted and outside natural distribution
Pterostylis chlorogramma	Green-striped Greenhood	Vulnerable	Endangered	Apparently localised 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.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Craspedia canens	Grey Billy-buttons		Critically Endangered	Known in Victoria only from grassland (often bordering swamps) at low altitude between c. Cranbourne and Traralgon.	2	11/11/1991	Negligible– no recent historical records and no suitable habitat within Structure Plan Area
Senecio macrocarpus	Large-fruit Fireweed	Vulnerable	Critically Endangered	In Victoria largely confined to remnant Kangaroo Grass grasslands on loamy clay soils derived from basalt from near Melbourne west to Skipton area. Also known from auriferous ground near Stawell.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Pterostylis cucullata	Leafy Greenhood	Vulnerable	Endangered	Usually found in protected areas of stabilized coastal sand dunes under open to closed scrub dominated by Coast Tea-tree (Leptospermum laevigatum), and/or Moonah (Melaleuca lanceolata), with an open ground stratum.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Syzygium paniculatum	Magenta Cherry	Vulnerable		S.paniculatum is a reliable species in most temperate and subtropical climates. Occurs in littoral, and subtropical rainforests of the central coast of New South Wales.	1	16/07/2009	Negligible – planted as it grows exclusively in coastal NSW

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC STATUS	FFG STATUS				
Dianella amoena	Matted Flax-lily	Endangered	Critically Endangered	Lowland grasslands, grassy woodlands, valley grassy forest and creeklines of herb-rich woodlands.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Thelymitra epipactoides	Metallic Sun-orchid	Endangered	Endangered	Grows mostly in coastal heathland, grassland and woodland, but extending further inland into similar habitats in the western part of its range. Substrates may be moist or dry sandy soils.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Amphibromus fluitans	River Swamp Wallaby-grass	Vulnerable		Permanent swamps, lagoons, billabongs and dams.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Angophora floribunda	Rough-barked Apple		Endangered	In Victoria confined to far East Gippsland (east of c. Wingan Inlet) where found mainly in lowland, near-coastal forests on sandy soils.	1	16/07/2009	Low – likely planted as outside natural distribution
Acacia boormanii	Snowy River Wattle		Endangered	Restricted mostly to open-forest on rocky slopes and along banks of the Snowy River and its tributaries, with outlying populations at Mt Typo and Gapsted in the Mytleford area. Occasionally sparingly established on roadside plantings, for example between Bungal and Mt Egerton.	1	19/08/2019	Low – likely planted as outside natural distribution
Lepidium aschersonii	Spiny Peppercress	Vulnerable	Endangered	Mostly on heavy clay soil near salt lakes on volcanic plain, but with outlying records from near Lake Omeo (in 1940 &1981) and the Grampians (in 1893).	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Corymbia maculata	Spotted Gum		Vulnerable	Only known in Victoria from the Mottle Range, south of Buchan.	3	2021 (AJMJV 2021a)	Confirmed – one planted spotted gum located during the 2021 AJMJV ecology survey
Acacia howittii	Sticky Wattle		Vulnerable	Endemic to Victoria. 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.).	1	3/10/2015	Low - likely planted and outside natural distribution
Xerochrysum palustre	Swamp Everlasting	Vulnerable	Critically Endangered	Occurs in lowland swamps, usually on black cracking clay soils, scattered from near the South Australian border north-west of Portland to Bairnsdale district, but rare due to habitat depletion.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area
Senecio psilocarpus	Swamp Fireweed	Vulnerable		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.	0	PMST	Negligible– no historical records and no suitable habitat within Structure Plan Area

TABLE B.2 LIKELIHOOOD OF OCCURRENCE ANALYSIS FOR THRETENED FAUNA WITHIN THE 5-KM SEARCH AREA FOR CLAYTON

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
AMPHIBIAN							
Litoria raniformis	Growling Grass Frog	Vulnerable	Vulnerable	Persists in waterways and other aquatic habitats in the greater Melbourne region. Key habitat features for the species includes submerged vegetation for egg-laying, rocks and logs for basking, permanent freshwater lagoons for breeding and cracks, as well as debris and dense vegetation for refuge.	0	PMST	Negligible - no previous species records and no aquatic habitat or habitat corridors in the Structure Plan Area
BIRDS							
Botaurus poiciloptilus	Australasian Bittern	Endangered	Critically Endangered	Frequents reedbeds, and other vegetation in water such as cumbungi, lignum and sedges.	0	PMST	Negligible - no previous species records and no aquatic habitat in the Structure Plan Area
Ardeotis australis	Australian Bustard		Critically Endangered	Found on dry plains, grasslands and in open woodland. More widespread in the north of Australia and are increasingly rare in the south.	1	01/01/1843	Negligible – Most recent record is >100 years old. The Structure Plan Area lacks any suitable characteristics to support the species.
Spatula rhynchotis	Australasian Shoveler		Vulnerable	Found in all kinds of wetlands, preferring large undisturbed heavily vegetated freshwater swamps. It is also found on open waters and occasionally along the coast.	2	11/01/2019	Low – may have used habitat as temporary refuge
Sternula nereis nereis	Australian Fairy Tern	Vulnerable	Critically Endangered	Nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation.	0	PMST	Negligible - no previous species records and no beach habitat in the Structure Plan Area
Ixobrychus dubius	Australian Little Bittern		Endangered	Favours reedbeds, dense freshwater swamps and well-fringed watercourses, including thick reedbeds	1	16/09/2011	Negligible - no aquatic habitat in the Structure Plan Area
Rostratula australis	Australian Painted-Snipe	Endangered	Critically Endangered	Inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. Also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains.	1	01/09/1979	Negligible - no aquatic habitat in the Structure Plan Area
Falco subniger	Black Falcon		Critically Endangered	Found along tree-lined watercourses and in isolated woodlands, mainly in arid and semi-arid areas. It roosts in trees at night and often on power poles by day	1	1/03/1978	Low – The Structure Plan Area does not contain any habitat to support the species.
Monarcha melanopsis	Black-faced Monarch	Migratory		Rainforest ecosystems, including tropical, subtropical and cool temperate rainforest	0	PMST	Negligible – no rainforest habitat in the Structure Plan Area
Oxyura australis	Blue-billed Duck		Vulnerable	Almost wholly aquatic. Non-breeding flocks congregate on large, deep open freshwater dams and lakes in autumn.	53	24/10/2017	Negligible – no bodies of water in the Structure Plan Area
Neophema chrysostoma	Blue-winged Parrot	Vulnerable		Inhabits a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Throughout	1	1/06/1979	Negligible – no suitable habitat in the Structure Plan Area

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
				their range they favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones.			
Climacteris picumnus	Brown Treecreeper	Vulnerable		Found in the drier open forests and woodlands		PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Hydroprogne caspia	Caspian Tern		Vulnerable	Widespread around the Australian coastline, and also occur inland along major rivers, especially in the Murray–Darling and Lake Eyre drainage basins.	2	1/06/1978	Negligible – no recent records and no suitable habitat in the Structure Plan Area
Tringa nebularia	Common Greenshank, Greenshank	Migratory	Endangered	Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity, typically with large mudflats and saltmarsh, mangroves or seagrass.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Actitis hypoleucos	Common Sandpiper	Migratory	Vulnerable	Utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats.	2	1/12/1977	Negligible – no recent records and no suitable habitat in the Structure Plan Area
Oreoica gutturalis	Crested Bellbird		Endangered	The Crested Bellbird occurs from semi-arid coastlines to the arid Australia interior. They are found in acacia shrublands, eucalypt woodlands, spinifex and chenopod (saltbush) plains or dunes.	1	31/05/2018	Low – the Structure Plan Area does not contain any semi-arid shrubland or habitat suitable to support the species
Calidris ferruginea	Curlew Sandpiper	Critically Endangered	Critically Endangered	Intertidal mudflats in sheltered coastal areas. Non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Stagonopleura guttata	Diamond Firetail	Vulnerable	Vulnerable	Found in open grassy woodland, heath and farmland or grassland with scattered trees	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Numenius madagascariensis	Eastern Curlew	Critically Endangered	Critically Endangered	Largest shorebird in Australia. Breeds in Russia and north-eastern China, arrives back to Australia in August to feed on crabs and molluscs in intertidal mudflats on the coast.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Ardea alba modesta	Eastern Great Egret		Vulnerable	Distributed across mainland Australia and preferring permanent shallow waters; including damp or flooded grasslands, wetland habitat, rivers, lakes and estuarine mudflats.	77	11/04/2019	Low – may occasionally visit sporting reserves in Structure Plan Area but no suitable habitat
Sternula nereis	Fairy Tern	Vulnerable	Critically Endangered	Nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation.	1	31/05/2018	Low – The Structure Plan Area does not contain any beach habitat
Apus pacificus	Fork-tailed Swift	Migratory		Almost exclusively aerial. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
Stictonetta naevosa	Freckled Duck		Endangered	Prefers permanent fresh water swamps and creeks with heavy growth of cumbungi (bullrushes), lignum or tea-tree.	1	14/06/2019	Negligible – one record but no suitable habitat in the Structure Plan Area
Callocephalon fimbriatum	Gang-gang Cockatoo	Endangered		During summer, the Gang-gang Cockatoo is found in tall mountain forests and woodlands, with dense shrubby understoreys. In winter, Gang-gangs will move to lower altitudes into drier, more open forests and woodlands. At this time, they may be seen by roadsides and in parks and gardens of urban areas. They require tall trees for nest hollows.	26	23/08/2021	Moderate – recent records present within 5 km and potential habitat in the Structure Plan Area
Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Vulnerable	Feed almost exclusively on the seeds in the cones of she-oak trees and are associated with woodlands and open forests dominated by she-oaks from eastern Queensland, through NSW to eastern Victoria.	1	3/04/2020	Low – The Structure Plan Area lacks suitable foraging tree species
Charadrius leschenaultii	Greater Sand Plover	Vulnerable	Vulnerable	Almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Falco hypoleucos	Grey Falcon	Vulnerable	Vulnerable	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Accipiter novaehollandiae	Grey Goshawk		Endangered	Occurs in coastal areas in northern and eastern Australia, found in most forest types, especially tall closed forests, including rainforests.	1	4/06/2017	Low – The Structure Plan does not provide any suitable habitat to support the species
Pomatostomus temporalis	Grey-crowned Babbler		Vulnerable	The Grey-crowned Babbler is found in open forests and woodlands, favouring inland plains with an open shrub layer, little ground cover and plenty of fallen timber and leaf litter. May be seen along roadsides and around farms.	1	1/09/1980	Negligible – one old previous species record and no suitable habitat in the Structure Plan Area
Pluvialis squatarola	Grey Plover	Vulnerable	Vulnerable	Almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts.	1	16/02/2020	Low – The Structure Plan does not provide any suitable habitat to support the species
Melanodryas cucullata	Hooded Robin	Endangered	Vulnerable	Found in lightly timbered woodland, mainly dominated by acacia and/or eucalypts.	3	31/05/2018	Low – The Structure Plan does not provide any suitable habitat to support the species
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	Migratory		Occurs in a range of permanent and ephemeral wetlands including freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies)	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
Lewinia pectoralis	Lewin's Rail		Vulnerable	Freshwater to saline wetlands, either permanent or ephemeral.	1	1/09/1980	Negligible – one old previous species record and no suitable habitat in the Structure Plan Area
Hieraaetus morphnoides	Little Eagle		Vulnerable	Seen over woodland and forested lands and open country, extending into the arid zone. It tends to avoid rainforest and heavy forest.	3	11/05/1999	Negligible – a few old records but no suitable habitat in the Structure Plan Area
Egretta garzetta	Little Egret		Endangered	Tidal mudflats, saltwater and freshwater wetlands, and mangroves.	1	19/09/1999	Negligible – one old record but no suitable habitat in the Structure Plan Area
Anseranas semipalmata	Magpie Goose		Vulnerable	Widespread in northern Australia, where they may congregate in huge flocks. Was once also widespread in southern Australia, but disappeared from the region largely due to drainage of breeding wetlands. Attempts to reintroduce Magpie Geese back into southern have had varied success.	3	12/04/2019	Low – The Structure Plan does not provide any suitable habitat to support the species
Lophochroa leadbeateri	Major Mitchell's Cockatoo	Endangered	Critically Endangered	Found across the arid and semi-arid inland from south to north-west Victoria. Inhabits a wide range of treed and treeless inland habitats, always within easy reach of water.	2	31/05/2018	Low – The Structure Plan does not provide any suitable habitat to support the species
Stipiturus mallee	Mallee Emu-wren	Endangered	Endangered	The mallee emu-wren is found in the mallee country on the South Australian and Victorian border. It occurs in areas of spinifex sometimes with an overstorey of mallee woodland. It prefers dense stands (hummocks) of long unburnt spinifex.	1	31/05/2018	Low – The Structure Plan occurs well beyond the known distribution of the species and does not provide any suitable habitat to support the species
Biziura lobata	Musk Duck		Vulnerable	Aquatic habitats. Broadly ranging throughout Australia.	16	19/09/2018	Negligible – a few records but no aquatic habitat in the Structure Plan Area
Grantiella picta	Painted Honeyeater	Vulnerable	Vulnerable	Found in dry open forests and woodlands, and is strongly associated with mistletoe.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Calidris melanotos	Pectoral Sandpiper	Migratory		Prefers shallow fresh to saline wetlands and is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Pycnoptilus floccosus	Pilotbird	Vulnerable	Vulnerable	Found in wet and dry sclerophyll forests with dense undergrowth and woodlands occupying dry slopes and ridges	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Pedionomus torquatus	Plains-wanderer	Critically Endangered	Critically Endangered	Inhabit sparse native grasslands and are often absent from areas where grass becomes too dense or too sparse. They nest amongst native grasses and herbs, or sometimes amongst crops.	0	PMST	Negligible – no previous species records and no suitable habitat within the Structure Plan Area.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
Ardea intermedia plumifera	Plumed Egret		Critically Endangered	Prefers freshwater swamps, billabongs, floodplains and wet grasslands with dense aquatic vegetation, and is only occasionally seen in estuarine or intertidal habitats.	3	28/05/1999	Negligible – a few old records but no aquatic habitat in the Structure Plan Area
Ninox strenua	Powerful Owl		Vulnerable	Occurs in open forests and woodlands, as well as along sheltered gullies in wet forests with dense understoreys, especially along watercourses. Will sometimes be found in open areas near forests such as parks and suburban areas. Needs old growth trees to nest.	1	13/11/2018	Low – may use trees in suburban areas
Calidris canutus	Red Knot	Endangered	Endangered	Intertidal mudflats, sandflats and sandy beaches of sheltered coasts	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Critically Endangered	Primarily occurs in box-ironbark woodland, but also occurs in other forest types. Mainly feeds on nectar from eucalypts and mistletoes with movements governed by the flowering of select eucalypt species.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Myiagra cyanoleuca	Satin Flycatcher	Migratory		Inhabits heavily vegetated gullies in eucalypt-dominated forests and taller woodlands	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Calidris acuminata	Sharp-tailed Sandpiper	Migratory		Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Melanodryas cucullata cucullata	South-eastern Hooded Robin	Endangered	Vulnerable	Lightly timbered woodland, mainly dominated by acacia and/or eucalypts.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Aphelocephala leucopsis	Southern Whiteface	Vulnerable		Dry open forests and woodland and inland scrubs of mallee, mulga and saltbush are the preferred habitat of Southern Whiteface, especially areas with fallen timber or dead trees and stumps.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Pyrrholaemus sagittatus	Speckled Warbler	Vulnerable	Endangered	Lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies.	2	07/07/1897	Negligible – the most recent record is >100 years old. The Structure Plan Area does not contain any preferred habitat.
Polytelis swainsonii	Superb Parrot	Vulnerable	Endangered	Found along timbered waterways and nearby well-watered woodlands, especially in River Red Gums along the Murray and Murrumbidgee Rivers. They are usually seen in family parties or small flocks. They roost communally in trees.	1	31/08/2000	Low – no recent records and no suitable habitats within the Structure Plan Area.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
Lathamus discolor	Swift Parrot	Critically Endangered	Critically Endangered	Breeds in Tasmania and overwinters in Victoria. Found in dry sclerophyll forests and woodlands, suburban parks and gardens where it feeds on the nectar of flowering eucalypts, namely Grey, Red Ironbark, Mugga Ironbark, Yellow Gum and White Box. Also feed on lerp psyllids amongst Red Gum.	40	31/03/2001	Low – no recent records and suitable habitat limited to planted trees in suburban backyards
Hirundapus caudacutus	White-throated Needletail	Vulnerable	Vulnerable	Almost exclusively aerial, over a wide variety of habitats	28	10/02/2020	Low – Structure Plan Area contains little to no suitable habitat, may occasionally fly over the Structure Plan Area
Haliaeetus leucogaster	White-bellied Sea-Eagle		Endangered	Habitat generally characterised by presence of large areas of open water sources including swamps, rivers, lakes and the sea. Terrestrial habitat includes coastal dunes, tidal flats, grassland, heathland, woodlan and forest. Breeding within mature open forest, tall woodland and swamp sclerophyll forest close to foraging habitat.	2	6/02/2018	Low – Whilst the species has the potential to overfly the Structure Plan Area, the species is unlikely to make use of the area.
Tringa glareola	Wood Sandpiper		Endangered	Occur in small flocks or singly on inland shallow freshwater wetlands, often with other waders. They prefer ponds and pools with emergent reeds and grass, surrounded by tall plants or dead trees and fallen timber.	1	16/08/1958	Negligible - one previous species record and no suitable habitat in the Structure Plan Area
Motacilla flava	Yellow Wagtail	Migratory		Data deficient in Australia. Typically in Europe where the species favours wet meadows, marshland, grassy and muddy lakeshores. Occurs in fields and often near livestock during migration.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
FISH							
Prototroctes maraena	Australian Grayling	Vulnerable	Endangered	Occurs in streams and rivers on the eastern and southern flanks of the Great Dividing Range, from Sydney, southwards to the Otway Ranges of Victoria and in Tasmania. The species is found in fresh and brackish waters of coastal lagoons.	0	PMST	Negligible - no previous species records and no aquatic habitat in the Structure Plan Area
Galaxiella pusilla	Dwarf Galaxias	Vulnerable	Endangered	Slow flowing, still shallow permanent and temporary freshwater habitats.	0	PMST	Negligible - no previous species records and no aquatic habitat in the Structure Plan Area
Nannoperca obscura	Yarra Pygmy Perch	Vulnerable	Vulnerable	Preferring slow-moving or still waters including rivers, streams and lakes. Often located within sites that contain abundant submerged and emergent aquatic vegetation and wood debris.	0	PMST	Negligible - no previous species records and no aquatic habitat in the Structure Plan Area
INVERTEBRATES							
Acrodipsas brisbanensis	Large Ant Blue Butterfly		Endangered	Confined to remnants of open forest and woodland in central Victoria, including near Broadford, Mansfield, Kangaroo Ground and Wedderburn.	4	4/12/1907	Negligible – most recent record is >100 years old. The Structure Plan Area is unlikely to support the species.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
Synemon plana	Golden Sun Moth	Vulnerable	Vulnerable	Occurs in grassy areas in the greater Melbourne region, mainly in areas dominated by native grasses such as wallaby grass and spear grass, but also in areas of introduced grasses such as Chilean Needle-grass.	0	PMST	Negligible - no previous species records and no suitable grassland habitat in the Structure Plan Area
Engaeus victoriensis	Foothill Burrowing Crayfish		Endangered	Found in large cavernous burrows in grey, clay-dominated soils in temperate, wet sclerophyll forest at the foot of the Dandenong Ranges.	1	3/04/2020	Negligible – the Structure Plan Area does not support any suitable habitat.
MAMMALS							
Petauroides volans	Southern Greater Glider	Endangered	Endangered	Greater Gliders are distributed throughout forested parts of eastern Victoria, including inland and southern falls of the Great Dividing Range, as well as the Strzelecki and Strathbogie Ranges. Greater Gliders are forest dependent and prefer older tree age classes in moist forest types. Typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Vulnerable	Requires foraging resources and roosting sites. The primary food source is blossom from Eucalyptus and related genera but commonly forages on fruit trees in urban areas. Two known Flying Fox camps occur in the greater Melbourne region including one at Yarra Bend and one at Doveton.	2	7/01/1999	Low – may utilize fruit trees in urban areas
Pseudomys novaehollandiae	New Holland Mouse	Vulnerable	Endangered	Open heathlands, woodlands and dry sclerophyll forests with a heath understorey, grasslands and vegetated sand dunes	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Isoodon obesulus obesulus	Southern Brown Bandicoot	Endangered	Endangered	Inhabits areas of dense ground cover in heathland, shrubland, sedgeland, heathy open forest and woodland. Suitable habitat includes any areas of vegetation (native or introduced) in the species range, that comprises an understorey vegetation structure with 50–80% foliage cover in the 0.2–1 m height range.	21	12/09/1976	Low – although a few records exist, unlikely to still inhabit the area, no records in the last 40 years
Dasyurus maculatus maculatus	Spot-tailed Quoll	Endangered	Endangered	Temperate and subtropical rainforests in mountain areas wet schlerophyll forest lowland forests open and closed eucalypt woodlands.	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Antechinus minimus maritimus	Swamp Antechinus	Vulnerable	Vulnerable	Habitat includes dense wet heathlands, tussock grasslands, sedgelands, damp gullies, swamps and some shrubby woodlands	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area
Petaurus australis australis	Yellow-bellied Glider	Vulnerable	Vulnerable	Found at altitudes between sea level to 1400 m above sea level and has a widespread but patchy distribution from south-eastern QLD to near the SA-Vic border in eucalypt-	0	PMST	Negligible - no previous species records and no suitable habitat in the Structure Plan Area

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
				dominated woodlands and forests, including both wet and dry sclerophyll forests.			
Saccolaimus flaviventris	Yellow-bellied Sheathtail Bat		Vulnerable	Occurs in a wide range of habitats, roosts in hollow old trees.	1	1/06/1965	Low – one old record and no suitable habitat likely in the Structure Plan Area
REPTILES							
Varanus varius	Lace Monitor		Endangered	Distributed along the east coast of Australia, occurring in a range of habitats including open forest and coastal plains.	1	9/08/1977	Negligible – no suitable habitat to support the species.
Aprasia parapulchella	Pink-tailed Worm-lizard	Vulnerable	Endangered	Habitat includes rocky outcrops or scattered partly buried rocks in grassland and woodland in south-east Australia.	0	PMST	Negligible – no previous records and no suitable habitat present to support the species.
Delma impar	Striped Legless Lizard	Vulnerable	Endangered	Inhabits intact grassland habitats where it shelters in grass tussocks, under rocks and in cracks in the soil	0	PMST	Negligible – no previous records and no suitable habitat present to support the species.
Lissolepis coventryi	Swamp Skink	Endangered	Endangered	Often restricted to densely vegetated swamps and associated watercourses, and adjacent wet heaths (Melaleuca or Leptospermum thickets), sedgelands and saltmarshes. Can occur in association with freshwater and saltmarsh environments.	0	PMST	Negligible - no previous species records and no suitable swampy habitat in the Structure Plan Area

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