SUBURBAN RAIL LOOP EAST

SRL East Draft Structure Plan | Cheltenham

Ecology and Arboriculture Technical Report

More Homes For Victorians

VICTORIA State Government

Suburban Rail Loop

PREPARED FOR SUBURBAN RAIL LOOP AUTHORITY

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

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Appendices

Glossary and abbreviations

TERM	DEFINITION
AJM-JV	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
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, Draft Structure Plans (Structure Plans) are being prepared for land identified as being suitable for significant change 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 Structure Plan, while protecting and preserving the features that people love about them now.

This technical report will inform the development of the Draft Cheltenham Structure Plan (Cheltenham 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 Cheltenham 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, residential areas. A significant portion is exclusively concrete and hard impervious surfaces with no native vegetation, as such there is limited habitat for flora and fauna. The Structure Plan Area does support small patches of remnant vegetation near Sir William Fry Reserve and along the rail corridor including Damp Sands Herb-rich Woodland (EVC 3) and Heathy Woodland (EVC 48) comprising a total of 0.069 hectares.

The Structure Plan Area is 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, threatened flora and fauna due to the modified nature of the Structure Plan Area.

Planted trees and artificial waterbodies at Sir William Fry Reserve may provide potential habitat for EPBC Act-listed threatened species including the Blue-winged Parrot and White-throated Needletail. While these species may occur within or fly over the Structure Plan Area, they are not considered reliant on it for permanent habitat.

ARBORICULTURE

The Structure Plan Area supports 9.5 per cent tree canopy cover in the overall Structure Plan Area. Residential properties and streetscapes support 12.7 per cent canopy cover in the Structure Plan Area, and commercial and industrial land use areas support 3.4 per cent canopy cover.

Two parcels of land in the Structure Plan Area are subject to an Environmental Significance Overlay (ESO3) and contain a tree considered significant under the Kingston Planning Scheme. Two trees in the City of Bayside portion of the Structure Plan Area are included on Bayside City Council's Significant Tree Register, implemented as part of the Bayside Neighbourhood Amenity Local Law.

Notable and mature tree plantings are evident in the Structure Plan Area at Cheltenham Cemetery and the golf driving range at 20 to 22 Wangara Road, Cheltenham, Sir William Fry Reserve, Lyle Anderson Reserve, and the former Highett Gas Works site, Highett.

Issues and Opportunities

ECOLOGY

Challenges for ecological values include the high proportion of developed areas and paved impervious surfaces, increasing population pressures and development, a heavy reliance on motor vehicles, the dominance of non-native and European street trees and a lack of large mature trees. Large open space is prioritised for community and recreational uses and is not considered to support biodiversity. There is limited cover of understorey vegetation and connected habitat across the Structure Plan Area.

Opportunities to enhance biodiversity and support local polices and strategies to retain and improve biodiversity include planting native canopy trees and diverse native understorey that provide a range of flowering plants and various heights. There is opportunity to improve blue infrastructure by rehabilitating existing waterbodies and creating new waterbodies where feasible. New and existing open spaces could be linked with native flowering canopy trees and plantings, such as by connecting habitat between Highett Grassy Woodland Reserve and Sir William Fry Reserve.

Additional planning controls and overlays could be considered to protect recreated habitat, planted trees and new dispersal corridors and links.

ARBORICULTURE

Development has potential to remove existing trees and reduce canopy cover, as well as reduce future 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 planting trees. Infrastructure works such as road upgrades and providing vehicle access could impact arboricultural values. This will create challenges for achieving the Bayside and Kingston targets 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 to support new tree growth and biophilic design in new development. 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.

Recommendations

Recommendations for structure plans

1. Promote the concept of habitat corridors that link new and potential open spaces to support City of Kingston *Climate and Ecological Emergency Response Plan*, City of Bayside *Urban Forest Strategy 2022–2040* and the City of Bayside *Biodiversity Action Plan 2018-2027.* This includes connecting habitat between Sir William Fry Reserve and the surrounding new open spaces including private land and along associated streetscapes.

    a. As depicted in the Figure 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. To support the City of Kingston Biodiversity Strategy and City of Bayside Biodiversity Action Plan, it is recommended that existing and proposed open spaces are enhanced with native plantings to increase indigenous coverage. Recommendations are proposed for the locations listed in the below table, with locations included in the below figure.

   a. It is recommended that canopy cover is increased to provide connectivity in and out of reserves and that a diversity of tree species are provided that increase nectar and other food resources.

   b. It is recommended that the ground layer of revegetated areas include a variety of flowering native shrub, herb and grass species.

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

3. Through development of the Structure Plan Area, support local policy, including Objective 1.1 and 1.3 of the City of Kingston Biodiversity Strategy and the City of Bayside Urban Forest Strategy 2022–2040, 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; and

   b. Increase tree canopy in the Urban Forest.

4. Align with the City of Kingston and City of Bayside 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. 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.

5. Improve blue infrastructure by rehabilitating the singular waterbody in Sir William Fry Reserve, by planting fringing native vegetation to manage erosion, reduce weeds and create aquatic habitat for fauna through provision of features such as logs and rocks. Also consider creating waterbodies in new open spaces to encourage movement of aquatic species.

6. To align with council objectives to maintain existing biodiversity, look for opportunities to provide offsets for impacts to Sir William Fry Reserve during construction by creating a new open space. This should include new plantings that comprise a diversity of species, flowers and height structures, that provide for increased biodiversity.

RECOMMENDATIONS FOR BIODIVERSITY IN PUBLIC OPEN SPACE

LOCATION	STATUS	PROPOSED CLASSIFICATION AND APPROX SIZE	RECOMMENDATION FOR BIODIVERSITY IMPROVEMENTS
Sir William Fry Reserve	Existing open space and proposed new open space	Function: Community park Size: 85,389 m² (existing) 54,500 m² (proposed)	• Retain all trees in the open space. • Revegetate and supply habitat features (logs, rocks, etc.) to waterbodies at Sir William Fry Reserve to provide greater habitat for common avifauna and frogs. • Plant more native trees that provide nectar resources for birds and increases canopy connectivity throughout the reserve.

LOCATION	STATUS	PROPOSED CLASSIFICATION AND APPROX SIZE	RECOMMENDATION FOR BIODIVERSITY IMPROVEMENTS
			• Increase the cover of diverse understorey throughout the reserve through revegetation with understorey flowering vegetation for pollinators that replaces non-native lawn. • Provide fauna nest boxes.
Pennydale Park	Existing open space	Function: Community park Size: 6324 m²	• Retain all trees in the open space. • Plant more native trees that provide nectar resources for birds • Revegetate understorey flowering vegetation for pollinators. that replaces non-native lawn • Use green street design and create a wildlife corridor between Pennydale park, Cheltenham Park Reserve and Tulip Grove. • Provide fauna nest boxes.
Lyle Anderson Reserve	Existing open space	Function: Community park Size: 10,158 m²	• Retain all trees in the open space. • Plant more native trees that provide nectar resources for birds. • Revegetate understorey flowering vegetation for pollinators that replaces non-native lawn. • Provide fauna nest boxes.
Tulip Grove Playground	Existing open space	Function: Community park Size: 594 m²	• Retain all trees in the open space. • Plant more native trees that provide nectar resources for birds. • Include diverse understorey plantings beneath existing and new trees.
Highett Common, Graham Rd	New open space	Function: Local community park Size: 40,000 m²	• Remove impervious and concrete surfaces. • Include linear and contiguous plantings of native trees that provide nectar resources for birds, and dense understorey flowering vegetation for pollinators as a 'wildlife corridor'. • Revegetate site to include the floristic diversity of Grassy Woodland species. • Consider improving blue infrastructure by creating a waterbody in the new open space, and planting fringing native vegetation to manage erosion, remove weeds and create aquatic habitat for local fauna.
Former Highett Gasworks site	New open space	Function: Local community linear park Size: 11,400 m²	• Remove impervious and concrete surfaces. • Include linear and contiguous plantings of native trees that provide nectar resources for birds, and dense understorey flowering vegetation for pollinators as a 'wildlife corridor'. • Revegetate site to consider and include patches of diverse native plantings. • Consider constructing new waterbodies in the new open space to create more connectivity for aquatic species between the new open space and Sir William Fry Reserve. • Use green street design along Turner Road to create a wildlife corridor to Highett Reserve.
Tennyson Street and Edsall Street, Highett.	New open space	Function: Community park Size: 1000 m²	• Remove impervious and concrete surfaces. • Include linear and contiguous plantings of native trees that provide nectar resources for birds, and dense understorey flowering vegetation for pollinators as a 'wildlife corridor'. • Revegetate site to include the floristic diversity of Grassy Woodland species.
Jack Road and Bay Road	New open space	Function: Community park Size: 20,000 m²	
Henry Street, Highett	New open space	Function: Community park Size: 1000 m²	
Melaleuca Drive and Reserve Road, Cheltenham	New open space	Function: Community park Size: 1000 m²	
Jellicoe Street, Cheltenham	New open space	Function: Community Park Size: 1000 m²	

Other opportunities

The following recommendations are other opportunities that may be considered by SRLA to support local policies and strategies:

- Support council street and public open space planting strategies to meet canopy coverage targets, as well as ensuring a diversity of tree species selected for resilience in the face of climate change
- Support Bayside City Council in the development of Masterplan and Conservation Management Plan currently being developed in the Structure Plan Area for the Highett Grassy Woodland Reserve, a 3 ha area south of the former CSIRO site, located on Graham Road, Highett.
- Consider an expansion of the green streets initiative by removing non-porous surfaces and replace with natural swales and native vegetation to help connect green open spaces in the Structure Plan Area.
- 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 East Structure Plan Area
SRL East Station Box
SRL East Alignment
Existing Metro Station
Existing Metro Line
Existing Public Open Space
Indicative Habitat Corridor

Ecology Data

Native Patch (AJM Data)
- 175 Grassy Woodland
- 3 Damp Sands Herb-rich Woodland

Native Scattered Trees (AJM Data)
- Native Scattered tree
- Native Tree in Patch
- Planted Tree

Modelled Ecological Vegetation Class (DEECA)
- 719 Grassy Woodland/Damp Sands Herb-rich Woodland Mosaic
- 48 Healthy Woodland

Victorian Biodiversity (VBA) Atlas Threatened Flora (DEECA)
- Giant Honey-myrtle
- Southern Blue-gum
- Spotted Gum

Data Sources:
AJMJV 2024
Esri 2024
SRLA 2024
VicMap (DEECA) 2024

SUBURBAN RAIL LOOP

AJM Joint Venture

aurecon Jacobs MOTT MACDONALD

Suburban Rail Loop
Cheltenham
Indicative Habitat Corridor

Drawing Number:			Revision:
SRL-301-AJM-TPWD-MAP-PPG-PWD-508304			A.7
Drawn By:	Approved By:	Date:	Map Size:
L. Tily	R. Ffrost	14/10/2024	A3

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Metres
Coordinate System: GDA2020 MGA Zone 55

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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 Cheltenham Structure Plan (Cheltenham 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 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 Cheltenham 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.

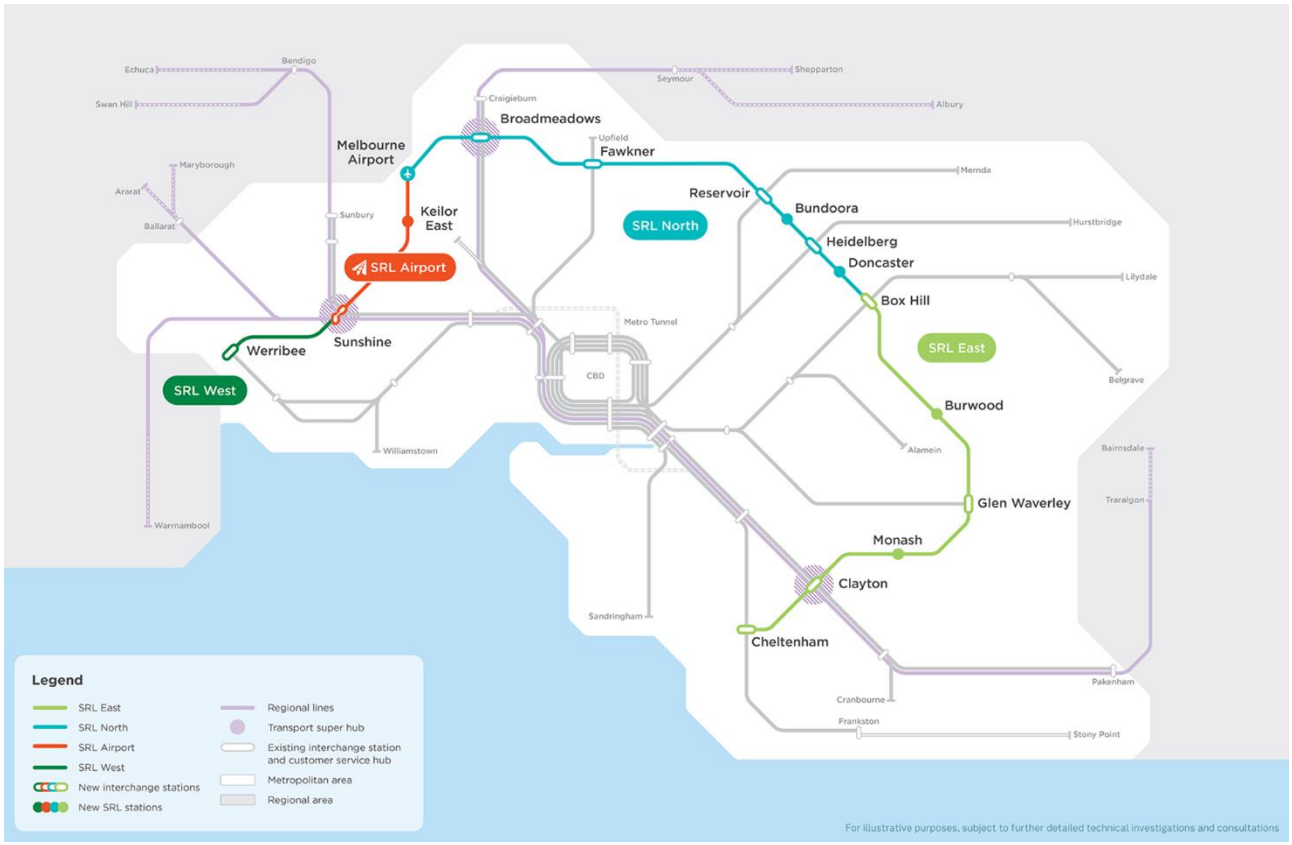

FIGURE 1.1 SRL EAST CONTEXT IN MELBOURNE'S RAIL NETWORK

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 Bayside and Kingston.

1.4 Structure of this report

- **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.

2.1.2 DATABASE SEARCHES

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 1st 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 2024c)
- VicPlan (DTP 2024a)
- Publicly available aerial imagery (dated 2024).

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 5.1.2.

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 existing arboriculture 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 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:

- Kingston Planning Scheme – Schedule 3 to the Environmental Significance Overlay.
- City of Kingston Local Law [consolidated]
- City of Kingston Street & Park Tree Management Strategy, 2019
- City of Kingston Urban Cooling Strategy, 2020
- City of Kingston Climate and Ecological Emergency Response Plan, June 2021
- Bayside City Council Street and Park Tree Management Policy, 2020

- Bayside City Council Bayside Tree Strategy, 2011
- Bayside City Council Neighbourhood Amenity Local Law 2021
- *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 technical 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 are:

- This report is intended for the purpose of identifying potential ecological existing conditions, issues and opportunities in the Structure Plan Area, with information presented in this report based on desktop information available and review of previous existing reports.
- Information presented in this desktop assessment is based on pre-existing data only (1st October 2024). The sources reviewed for this Assessment (such as Ecological Vegetation Class (EVC) mapping and EPBC PMST results) contain desktop information limited to the time desktop data is obtained (1st October 2024) and so should be considered as indicative only. No field assessment has been completed to verify the results of the desktop assessment.
- With regards to the Victorian Biodiversity Atlas (VBA) threatened species records, data is variable depending on the number of previous surveys undertaken and the ability to readily observed species. In the case of fauna, species move around the landscape and can be in hidden or cryptic locations, so while they potentially utilise 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 are:

- 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 has prepared the *SRL East Draft Structure Plan - Urban Design Report - Cheltenham* (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 makes consider 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 - Cheltenham* (AJM-JV 2025a).

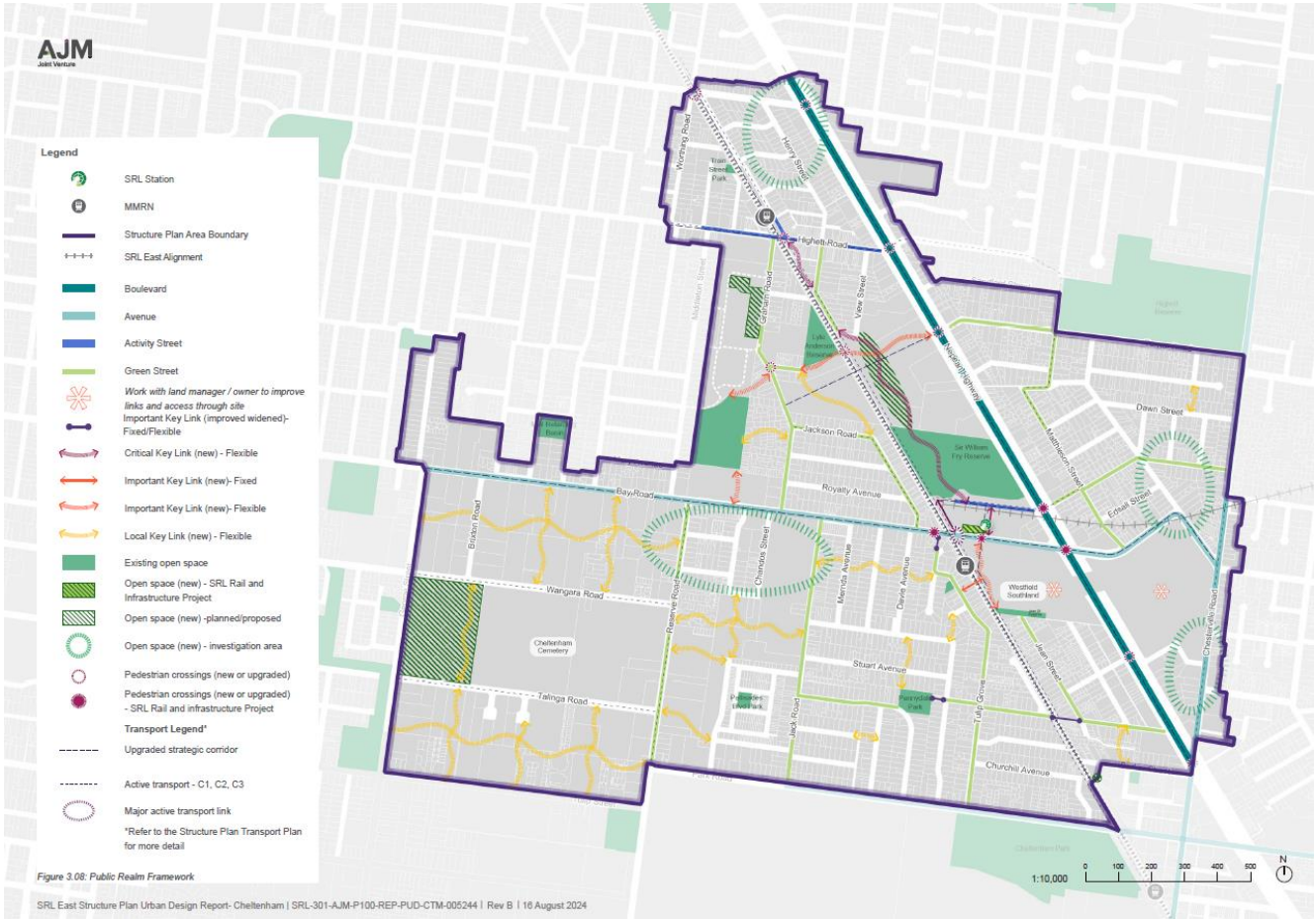

FIGURE 2.1 PUBLIC REALM FRAMEWORK SHOWING OPEN SPACE AND GREEN STREETS (AJM-JV 2025b)

2.4.2 LANDSCAPE HERITAGE

Trees subject to protection under the Heritage Overlay, including sites on the Victorian Heritage Register, are included in the *SRL East Draft Structure Plan - Historical Heritage Technical Report* (AJM-JV 2025b). This report identifies New Cheltenham Cemetery, located at Wangara Road, Cheltenham as subject to Heritage Overlay 728 (HO728), 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 Cheltenham Structure Plan Area are outlined in Section 5.2.3.

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

2.4.4 SUSTAINABILITY AND CLIMATE CHANGE

The *SRL East Draft Structure Plan - Climate Response Plan – Cheltenham* (AJM-JV 2025d) notes that Cheltenham consists of a few large open spaces and many very small open spaces, presenting a challenge when considering the loss of open space due to the proposed SRL station (significant loss of open space at Sir William Fry Reserve) and assumed development uplift and increased densification of the surrounding private land. High urban heat in Cheltenham is directly correlated with low tree canopy cover in the Structure Plan Area.

The *SRL East Draft Structure Plan - Climate Response Plan – Cheltenham* (AJM-JV 2025d) provides detailed assessments and recommendations for tree canopy coverage targets and green infrastructure for new developments.

2.4.5 OPEN SPACE ASSESSMENT

There are eight public open space areas covering 112,890 m² in the Structure Plan Area, as shown in Table 2.3. All the existing public open spaces in the Structure Plan Area are community parks, so there is opportunity to enhance and/or transform these spaces listed to encourage and facilitate biodiversity.

TABLE 2.3 STRUCTURE PLAN AREA OPEN SPACE CLASSIFICATIONS

PUBLIC OPEN SPACE	CURRENT CONDITION AND PRESENT VALUES	AREA (M²)
Eddie Reserve/ Beaumaris Parade Playground	A Community Park with playground in a cleared grassed areas. Indigenous plantings are present around the perimeter of the park	5515
Highett Grassy Woodland Reserve	A former CSIRO site that is being improved for conservation. Remnant grassy woodland on the site, with patches of exotic grassed areas and previously cleared areas with regenerating exotic and indigenous eucalypt species.	30,360
Jacks Road Mirvac Development	Linear reserve along Jack Road which is characterised by planted exotic and non-indigenous trees over mown exotic grass.	1879
Jean Street Childrens Playground	Community Park which provides for a playground immediately adjacent to Southland Shopping Centre. Some planted trees are present amongst the play equipment.	2462
Lyle Anderson Reserve	Small community reserve with a mix of planted exotic and non-indigenous trees over mown exotic grass.	10,158
Pennydale Park	Community Park with playground and open grassed areas and planted exotic and non-indigenous trees. Some potential remnant trees with some native understorey plantings.	6324
Sir William Fry Reserve	A large open community parkland with extensive areas of open grassed areas with patches of planted indigenous and non-indigenous trees. Some remnant vegetation is present.	85,389
Train Street Park	Community Park with playground and open grassed areas and planted exotic and non-indigenous trees.	567
Tulip Grove Playground	Community Park with playground and open grassed areas and planted exotic and non-indigenous trees.	594
Total area (ha)		**112,890**

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 fifteen 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 Cheltenham SRL East neighbourhood.

3.1 Cheltenham Structure Plan Area

The Cheltenham Structure Plan Area surrounds the SRL station at Cheltenham in the cities of Kingston and Bayside.

The Structure Plan Area is generally bordered by residential land north of Stayner Grove and Alison Street to the north, residential land east of Chesterville Road to the east, Park Road to the south and Middleton Street and Worthing Road to the west.

The Structure Plan Area is intersected by the Nepean Highway and the Frankston Line.

The Structure Plan Area is shown in Figure 3.1.

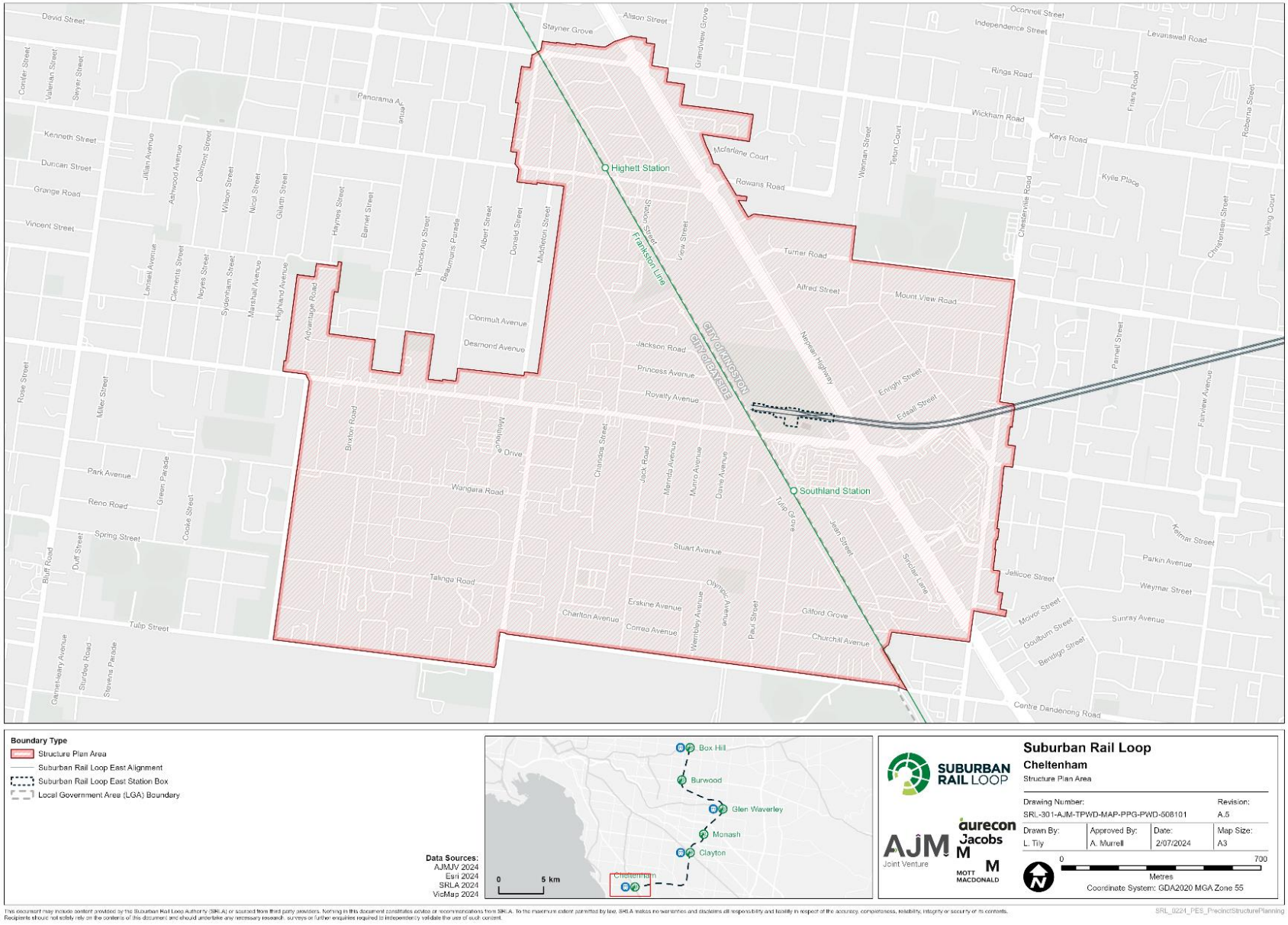

FIGURE 3.1 CHELTENHAM STRUCTURE PLAN AREA

4 Legislative and policy context

This section summarises legislation, polices and other documents relevant to the technical assessment, and to land use planning and development in the Structure Plan Area.

4.1 National

4.1.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The *Environment Protection and Biodiversity Conservation Act* (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* (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 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

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 Victorian 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 KINGSTON AND BAYSIDE PLANNING SCHEMES

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) 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 Kingston Planning Scheme

Clause 02.03-2 sets objectives for biodiversity:

- 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) sets the objectives:

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

Clause 12.01-1L sets the objectives:

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

Clause 15.01-5L-01 (Neighbourhood Character – Kingston) sets the objectives:

- 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 sets the objective:

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

4.3.1.2 Bayside Planning Scheme

Clause 02.03-2 sets objectives for biodiversity:

- Assist the conservation of biodiversity through retention of native vegetation, protection of habitat
- Protect the natural biodiversity of Conservation Reserves by ensuring that the primary purpose of the reserve is maintained
- Protect habitat provided by established trees and gardens on private property that may be reduced and fragmented by increased medium density housing.

Clause 12.01-1L (Protection of Biodiversity) sets the objectives:

- Retain significant tree and vegetation cover particularly in areas where trees and plants contribute to habitat, erosion control and absorption of run-off
- Design subdivision to retain links between habitat areas and open space
- Maintain indigenous vegetation forming part of the corridor along the sandbelt (golf club region)

- Protect the biodiversity values of the Bay Road Heathland Sanctuary
- Provide landscaping treatments and flora species on properties adjoining the Bay Road Heathland Sanctuary that are compatible with its biodiversity values
- Implement measures to help control pest plants and animals wherever possible
- Protect the biologically significant Highett Grassy Woodlands.

Clause 15.01-5L (Bayside preferred neighbourhood character) applies to development located in residential zones, as shown on the neighbourhood character precincts map.

Common preferred character strategies for these precincts are:

- Retain established trees and vegetation
- Retain large, established trees wherever possible
- Provide for the planting of new indigenous trees and shrubs (locate footings outside root zone)
- Replace any trees removed with species that will grow to a similar height
- Retain large trees and established vegetation where possible and provide space for the planting of new vegetation.

4.3.1.3 Relevant planning zones

The typical planning zone that affects public 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:

- To recognise areas for public recreation and open space
- To protect and conserve areas of significance where appropriate
- To provide for commercial uses where appropriate.

No vegetation removal permit triggers are in the PPRZ. It is noted that occurrences of most threatened flora and fauna species mapped are located within reserves in the 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 are the primary instrument of a municipal planning scheme for protecting non-native vegetation.

Trees identified in the Kingston municipality as significant are covered by Schedule 3 to the Environmental Significance Overlay (ESO3). There are no overlays that apply in the City of Bayside portion of the Structure Plan Area that protect trees or vegetation.

4.3.1.4.1 Environmental Significance Overlay – Schedule 3 (City of Kingston)

ESO3 (Significant Trees) relates to the retention of trees identified in the *City of Kingston – Register of Significant Trees*. The Register aims to preserve the municipality's leafy neighbourhood character, cultural heritage, history and biological diversity.

Tree listed on the Register are considered to be the 'best of the best' of the species in Kingston. The Register identifies two sites that contain significant trees in the portion of the Structure Plan Area in the City of Kingston.

Application of the ESO for protecting individually significant trees has broader applicability than the VPO. The ESO may contain requirements for the construction of buildings and works as well as fence construction. The ESO can also include requirements for subdivision and the removal, destruction or lopping of vegetation (VPP Practice Note PPN07 *Vegetation protection in urban areas* (PPN07)).

The ESO3 requires a permit to remove, destroy or lop vegetation, except a tree which is dead, as determined to the satisfaction of the responsible authority.

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 KINGSTON STREET & PARK TREE MANAGEMENT STRATEGY

This *Street & Park Management 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. The Strategy provides the strategic direction for managing the public urban forest.

The Strategy applies the 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 per cent.

4.3.3 KINGSTON URBAN COOLING STRATEGY 2020

The *Urban Cooling Strategy* outlines pathways to mitigate urban heat in the City of Kingston. The Strategy has a focus on shading provided by trees, the selection of tree species resilient to climate change, increasing greening in industrial areas, and protecting significant and large canopy trees.

4.3.4 KINGSTON CLIMATE AND ECOLOGICAL EMERGENCY RESPONSE PLAN

The *Climate and Ecological Emergency Response Plan* aims to accelerate emissions reductions in the City of Kingston, strengthen natural environment protection, and increase community support. The Plan includes goals

to support carbon 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:

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

4.3.5 KINGSTON BIODIVERSITY STRATEGY 2018 – 2023

The *Biodiversity Strategy 2018 – 2023* sets out goals and strategic objectives for protecting, preserving and improving natural resource areas managed by the City of Kingston. To combat the loss of native biodiversity while promoting greater quality of life for people living in the local government area, the City of Kingston has developed strategies for future planning:

- Reduce environmental impacts on the natural and built environment
- Protect 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, Kingston City Council has developed an action plan which sets objectives and management actions to meet sustainability and environmental goals.

Specific environmental objectives and actions relevant to the Structure Plan Area are:

- Action No. 1.1 – minimise the loss of high value trees and vegetation from in the municipality
- Action No. 2.2 – increase indigenous coverage by natural regeneration and revegetation programs.

4.3.6 BAYSIDE CITY COUNCIL NEIGHBOURHOOD AMENITY LOCAL LAW 2021

The neighbourhood amenity local law places controls on the removal of vegetation from private property. A permit is required to destroy, damage, remove, prune or lop any significant tree or protected tree, including trees replanted as a condition of a local law tree permit.

A significant tree is defined in the City of Kingston *Register of Significant Trees*, based on the criteria set out for the Assessment of significant trees by the National Trust of Australia (Victoria). A protected tree means a tree with a single trunk circumference or combined trunk circumference greater than 155 centimetres measured at 1 metre above ground level but excluding species which are noxious weeds (as defined in Victoria's *Catchment and Land Protection Act* 1994).

4.3.7 BAYSIDE STREET AND PARK TREE MANAGEMENT POLICY

The *Street and Park Tree Management Policy* recognises the value and importance of public trees in Bayside and aims to provide adequate protection for those trees.

The Policy defines the Council's endorsed tree management positions, including for tree retention and removal.

The selection of street tree species and planting sites to preserve Bayside's leafy street character is administered through the Council's *Street and Park Tree Selection Guide 2016*.

4.3.8 BAYSIDE TREE STRATEGY 2011

The *Bayside Tree Strategy* seek to achieve public and private spaces in the municipality that are well treed. It sets the objectives:

- Influence people through effective communications and community education, regulation and enforcement
- Protect and enhance treescapes for the benefit of tree health, enhance neighbourhood 'character', contribute to biodiversity and habitat, enhance the amenity of private property and enhance public landscapes
- Monitor the tree population to establish and measure the 'Landscaping Rating' of the municipality, collate and manage data on the Bayside tree population and provide evidence to influence future decision making.

4.3.9 BAYSIDE BIODIVERSITY ACTION PLAN 2018–2027

The *Biodiversity Action Plan* aims to achieve biodiversity and biodiversity goals of Bayside City Council.

Actions relevant for the protection and enhancement of biodiversity in the Structure Plan Area are:

- Understand Bayside's biodiversity values for conservation, protection and management
  - » Identify areas of important biological diversity and threatening processes
  - » Improve the protection of biodiversity
- Manage the biodiversity and threatening processes
  - » Effectively manage biodiversity in conservation reserves
  - » Effectively manage biodiversity on other public land and promote conservation in private land.

4.3.10 BAYSIDE URBAN FOREST STRATEGY 2022–2040

The *Urban Forest Strategy 2022–2040* was prepared in response to the Bayside City Council *Climate Emergency Action Plan 2020 –2025* to expand the municipality's urban forest and increase the overall benefits in terms of reducing the heat island effect to generate health benefits, improve habitat diversity and connectivity, and conserve biodiversity. The Strategy aims to increase the municipal tree canopy cover from 16 per cent to 30 per cent by 2040, and on Council land to achieve:

- Tree canopy cover over parks and reserves to increase from 20.3 per cent to 30 per cent
- Tree canopy cover over roads and streets to increase from 24 per cent to 35 per cent
- Tree canopy cover on Council owned car parks to increase from 15.6 per cent to 25 per cent
- Tree canopy cover on the foreshore and other areas* to increase from 17.4 per cent to 30 per cent

The Strategy also seeks to raise awareness of the urban forest and biodiversity with the community, and substantially increase understorey vegetation to improve biodiversity, habitat and food sources for fauna.

4.3.11 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.

4.3.12 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.

4.3.13 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 375 hectares of high-density urban space. The Structure Plan Area is heavily modified from its natural state, with much of the Structure Plan Area now supporting commercial areas, residential housing and man-made reserves. The majority of the Structure Plan Area is made up of residential and commercial areas interspersed with a large reserve and Cheltenham Memorial Park/Cemetery.

As a result of previous disturbance, the Structure Plan Area is cleared of almost all remnant vegetation (DEECA 2024b), and a mix of planted non-indigenous natives and introduced species primarily occurs in the Structure Plan Area today. The site comprises a variety of mature planted trees including indigenous and non-indigenous species as well as non-native species. The most commonly occurring planted species include River Red-gum (*Eucalyptus camaldulensis*), Narrow-leaved Black Peppermint (E*ucalyptus nicholii*) and Red Ironbark (*Eucalyptus sideroxylon*) (AJM-JV 2021a).

Sir William Fry Reserve contains the largest density of vegetation in the Structure Plan Area, comprising some understorey plantings of native species including Spiny-headed Mat-rush (*Lomandra longifolia*) and non-indigenous canopy trees including Lemon-scented Gum (*Corymbia citriodora*), Tuart (*Eucalyptus gomphocephala*) and Swamp Sheoak (*Casuarina glauca*) (AJM-JV 2021a).

Currently, a masterplan and conservation management plan are being developed for The Highett Grassy Woodland Reserve which is a 3 hectare area south of the former CSIRO site, located on Graham Road, Highett. The aim is to revegetate the area to support existing areas of endangered Plains Grassy Woodland and will including planting Yellow Box trees (Bayside City Council 2023).

There are no waterways present in the Structure Plan Area, nor any significant wetland habitats in the immediate vicinity. Previous records for threatened species and current modelled distributed of native vegetation in the 5-kilometre search area are mapped in Figure 5.1 and discussed below.

5.1.1 NATIVE VEGETATION DESKTOP ASSESSMENT

Three main pre-170 vegetation communities are modelled within and surrounding the Structure Plan Area, this included; Grassy Woodland/Damp Sands Herb-rich Woodland Mosaic (EVC 719), Heathy Woodland (EVC 48) and Sedgy Swamp Woodland (EVC 707).

The current (2005) modelled vegetation layer showed that the Structure Plan Area has very little mapped remnant vegetation remaining (DEECA 2024b) as shown in Figure 5.2. This was supported by a review of aerial imagery of the site which confirmed that the majority of the Structure Plan Area is heavily modified as a result of human activities, development and urbanisation.

Three small patches of Damp Sands Herb-rich Woodland (EVC 3) were identified in a previous ecological Assessment (AJM-JV 2021a) comprising a total of (0.04 ha) that consisted of small areas of understorey trees and shrubs. The patches were located along the rail line bordering Sir William Fry Reserve.

Given the current residential and commercial land use of the Structure Plan Area today, it is considered much of the vegetation identified in aerial reviews consists of non-native street plantings and revegetated public parks and reserves, comprising non-indigenous native or exotic plant species.

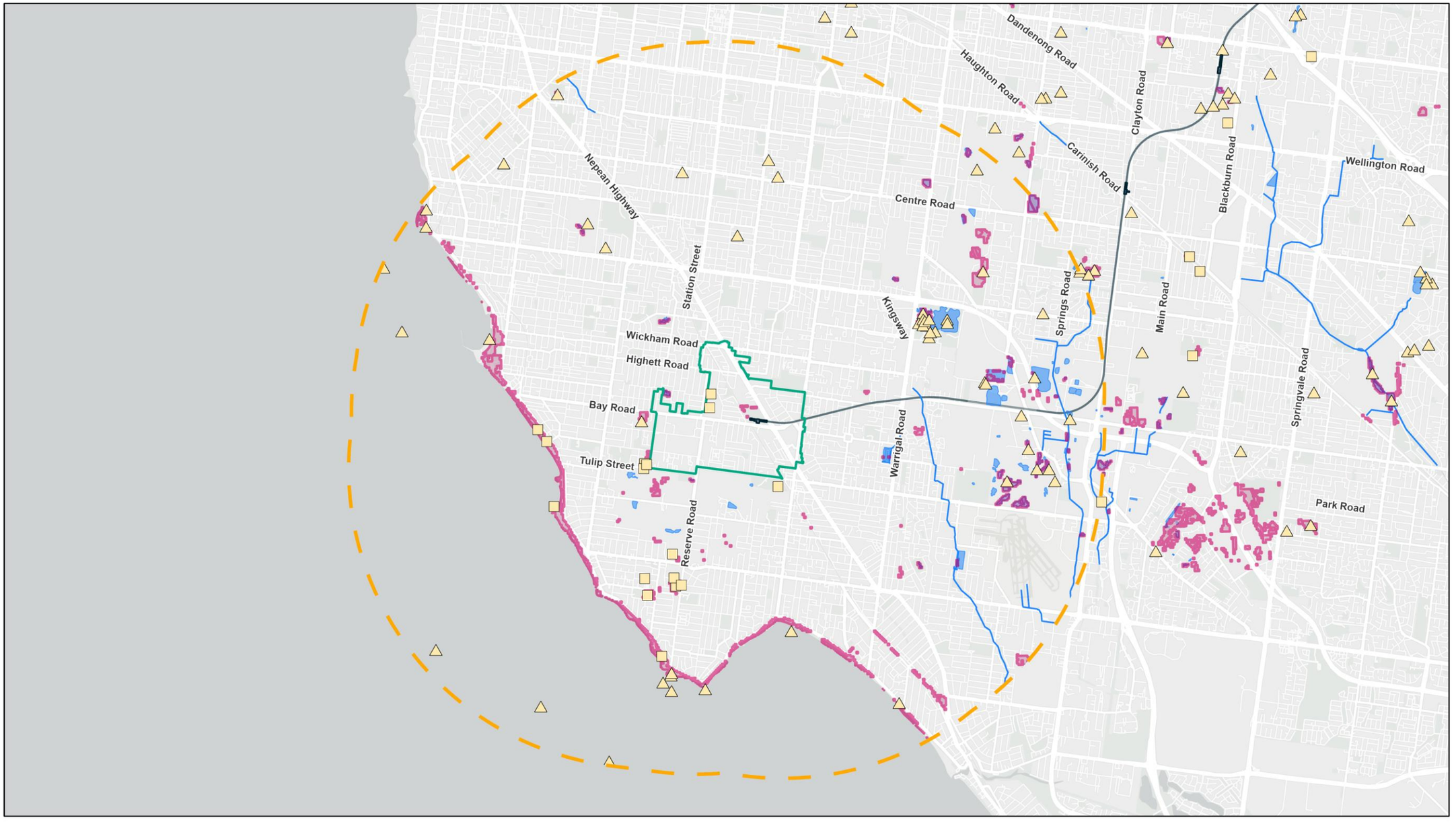

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FIGURE 5.1 SUMMARY OF ECOLOGICAL VALUES (NATIVE VEGETATION AND LISTED THREATENED SPECIES) WITHIN 5-KM SEARCH AREA

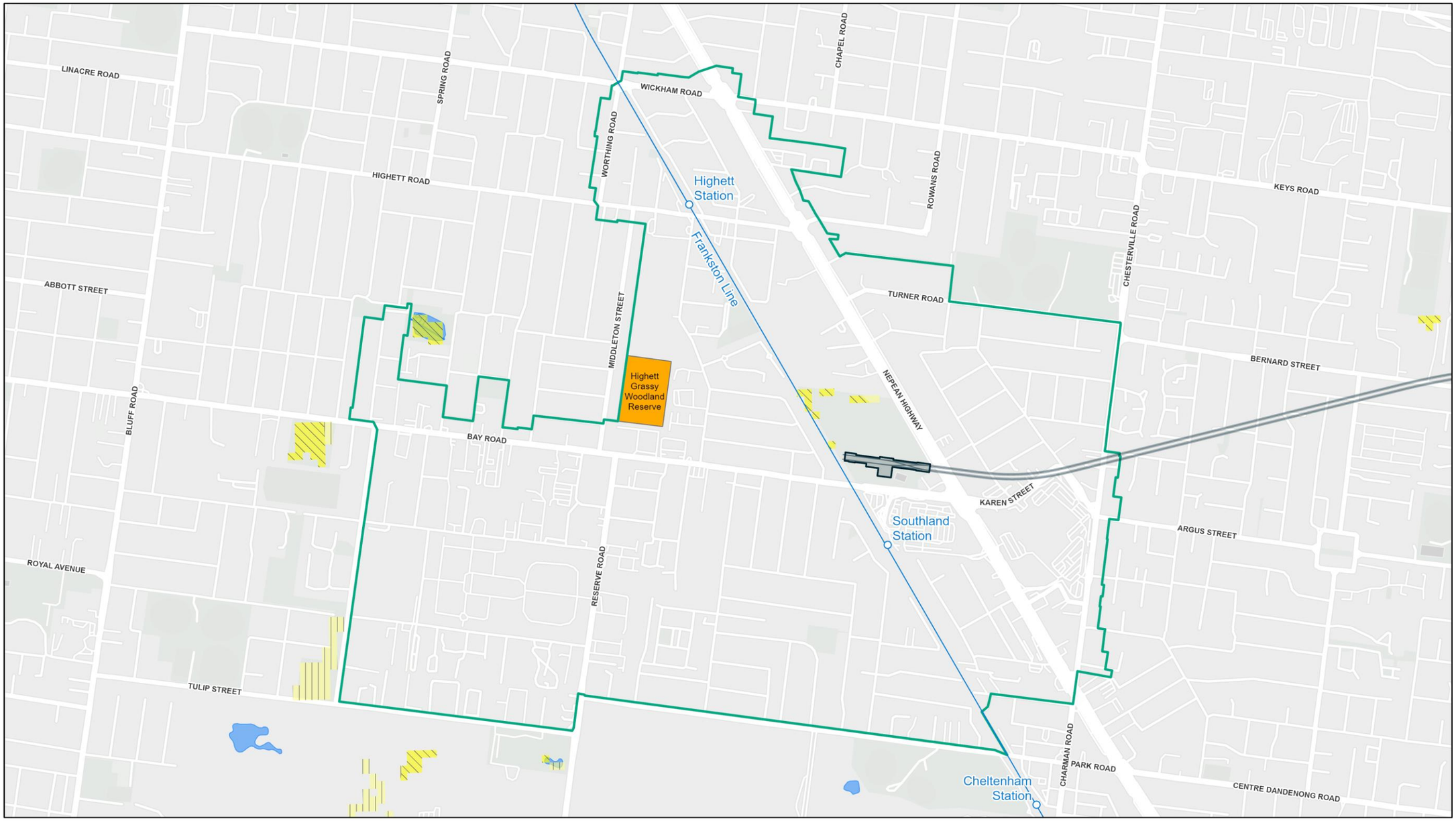

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FIGURE 5.2 MODELLED NATIVE VEGETATION IN THE STRUCTURE PLAN AREA

5.1.2 THREATENED SPECIES AND COMMUNITIES DESKTOP ASSESSMENT

5.1.2.1 Threatened flora

The review of the relevant databases (PMST and VBA) returned 35 listed threatened flora species, seven of which have previously been recorded in the 5 km search area. 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. Threatened flora previously recorded in the Structure Plan Area is mapped in Figure 5.3.

The database search returned no threatened flora species occurring in the last five years in the Structure Plan Area. The SRL ecological assessment in Cheltenham (AJM-JV 2021a) confirmed four flora species listed under the FFG Act, Spotted Gum (*Corymbia maculata*), Giant Honey-myrtle (*Melaleuca armillaris subsp. armillaris*), Southern Blue-gum (*Eucalyptus globulus*) and Maiden's Gum (*Eucalyptus maidenii*), were located in the Structure Plan Area. It is considered that all threatened flora species are likely planted given location of the records outside the natural distribution of the species and the modified condition of the Structure Plan Area.

One protected flora species, Common Heath (*Epacris impressa*), was identified in the same assessment (AJM-JV 2021a).

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

5.1.2.2 Threatened fauna

The review of the relevant databases (PMST and VBA) returned 123 threatened and/or migratory fauna species (including one frog, 92 birds, seven fish, one invertebrate, 15 mammals and six 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 123 threatened fauna species considered to occur in the Structure Plan Area, 65 have previously been recorded in the 5 km search area.

Based on the assessment in Appendix B, two EPBC Act and/or FFG Act-listed fauna species have a moderate likelihood of occurring in the Structure Plan Area due to potential use of habitat in residential areas and revegetated areas around reserves. Fauna species considered as potentially occurring in the Structure Plan Area are listed in Table 5.1.

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

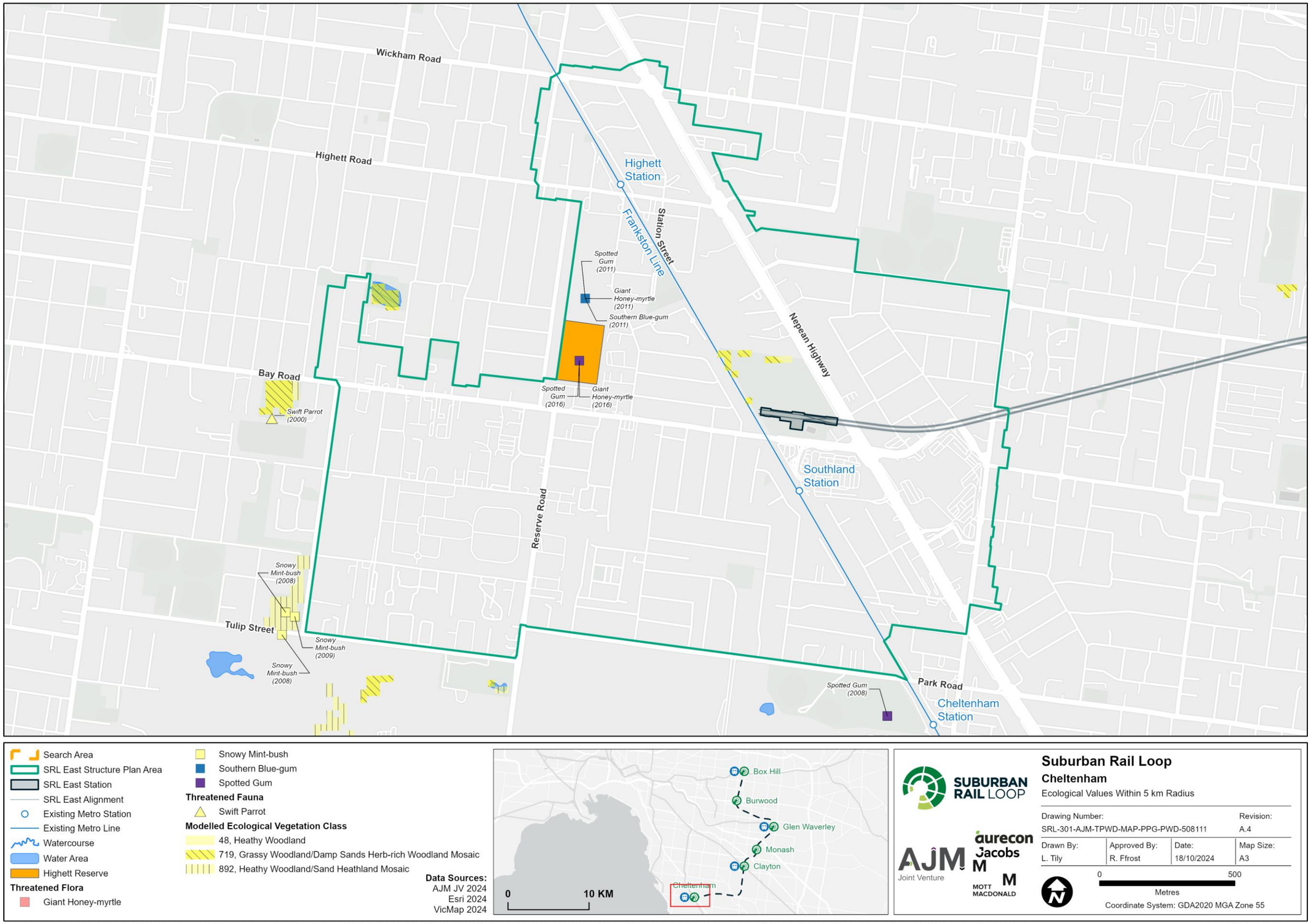
SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT		
Neophema chrysostoma	Blue-winged Parrot	VU		Inhabits a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Throughout their range they favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones.	Moderate
Hirundapus caudacutus)	White-throated Needletail	VU	VU	Almost exclusively aerial, over a wide variety of habitats	Moderate

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

Results of the desktop assessment include the potential presence of two bird species in the Structure Plan Area. The revegetated areas surrounding parks and reserves as well as artificial waterbodies within Sir William

Fry Reserve may provide temporary terrestrial habitat for the Blue-winged Parrot. The Highett Grassy Woodland may also provide habitat for the species, although occurrence is considered to be limited to occasional visitation and opportunistic foraging.

Numerous records exist for the White-throated Needletail in the Structure Plan Area. This species may use the parkland habitat in the Structure Plan Area for occasional foraging. Given the limited availability of habitat that would support these species, it is considered unlikely they would make regular use of the vegetation in the Structure Plan Area during migration in the region.



SRL_0224_ArboricultureEcology

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

5.1.2.3 Threatened ecological communities

EPBC Act listed ecological communities

Two EPBC Act listed threatened ecological communities were listed in the PMST as known or likely to occur within 5 kilometres of the search area (DCCEEW 2024a), being Natural Damp Grassland of the Victorian Coastal Plains and Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains. An Assessment against the listing criteria for each of the EPBC Act listed threatened ecological communities is provided below 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 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 revegetated parks and reserves, likely dominated by introduced grasses and planted tree species. As no suitable habitat features or diagnostic characteristics were noted during the desktop assessment, **this community is considered unlikely to occur in the Structure Plan Area**.
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains – listed as Critically Endangered	This community comprises isolated, freshwater wetlands that are usually inundated on a seasonal basis through rainfall, then dry out, so surface water is not permanently present. They occur on the lowland plains of temperate south-eastern Australia and have a vegetation structure that is open, i.e. woody cover is absent to sparse, and the ground layer is dominated by herbs (grasses, sedges and forbs) adapted to seasonally wet or waterlogged conditions (TSSC 2012). The desktop and aerial review of the Structure Plan Area suggests that the site does not support any freshwater wetlands. Given the lack of historical species records, the lack of suitable modelled vegetation and the current site condition, **it is considered that this community is unlikely to occur in the Structure Plan Area.**
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland - listed as Critically Endangered	This community is characterised by a species-rich understorey of native tussock grasses, herbs and scattered shrubs, and dominance of White Box, Yellow Box or Blakely's Red Gum trees (TSSC 2006). Due to various factors including the highly disturbed and developed environment, the lack of suitable modelled vegetation and likelihood for remnant native vegetation, **it is considered this community is 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 Cheltenham, it is considered unlikely that any FFG Act listed ecological communities occur in the Structure Plan Area.

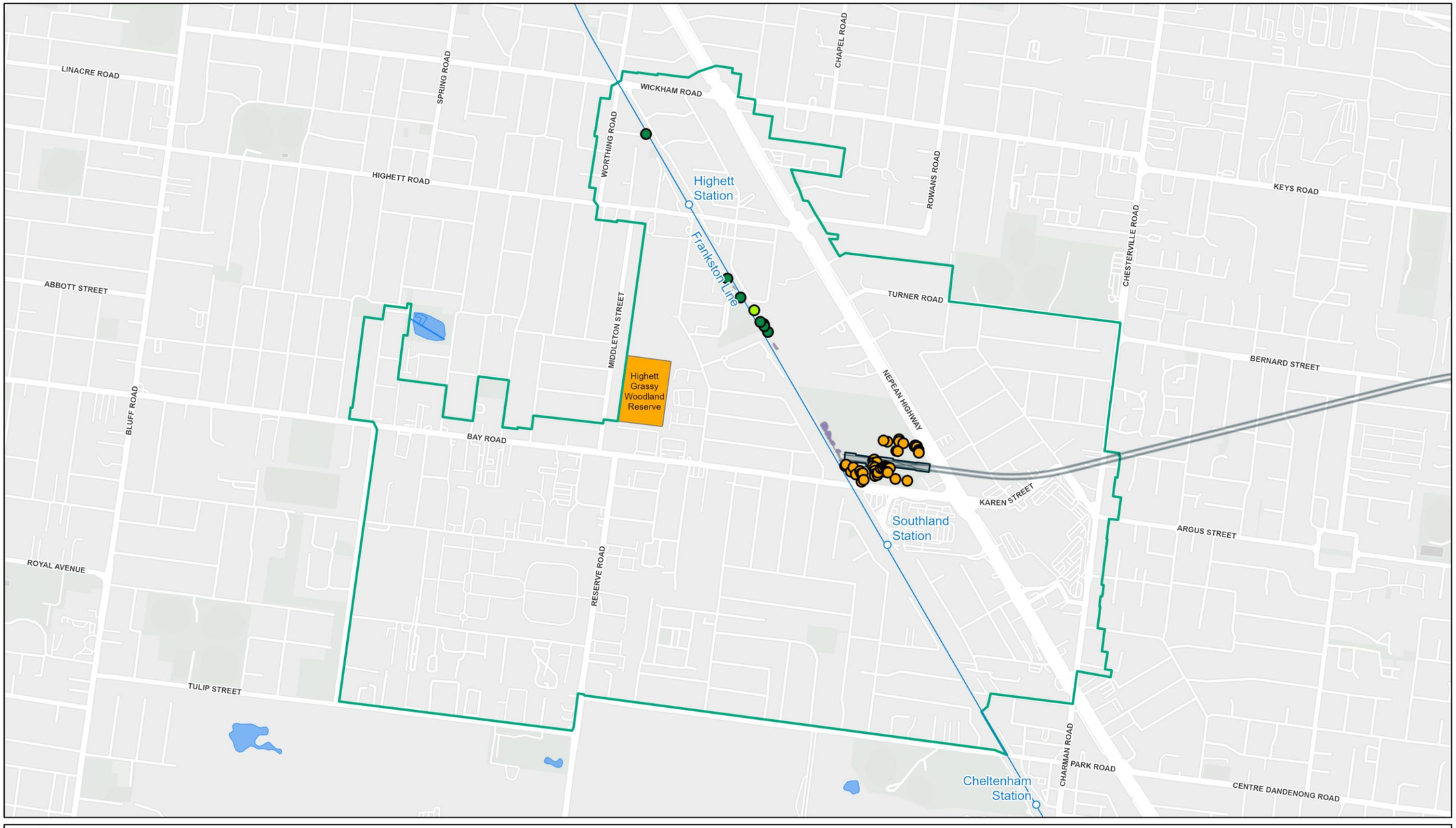
5.1.3 REVIEW OF PREVIOUS REPORTS

Previous ecology assessments have been undertaken within various extents of the current Structure Plan Area, particularly focused around Sir William Fry Reserve and the rail corridor.

These studies have determined that the current Structure Plan Area comprises predominantly modified and built-up environments comprising predominantly residential and commercial areas.

The AJM-JV ecological assessment in 2021 (AJM-JV 2021a) identified three small patches of EVC 3: Damp Sands Herb-rich Woodland located along the rail line bordering Sir William Fry Reserve. The rest of the

Structure Plan Area comprised a variety of mature planted trees including indigenous and non-indigenous species as well as non-native species. The most commonly occurring planted species include River Red-gum (*Eucalyptus camaldulensis*), Narrow-leaved Black Peppermint (E*ucalyptus nicholii*) and Red Ironbark (*Eucalyptus sideroxylon*). The survey areas in Sir William Fry Reserve, comprised some understorey plantings of native species including Spiny-headed Mat-rush (*Lomandra longifolia*) and non-indigenous canopy trees including Lemon-scented Gum (*Corymbia citriodora*), Tuart (*Eucalyptus gomphocephala*) and Swamp Sheoak (*Casuarina glauca*) (AJM-JV 2021a).



SRL_0224_ArboricultureEcology

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 5.2 and Figure 5.3 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 and 5-kilometre search area.

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

MODELLED NATIVE VEGETATION AND THREATENED SPECIES AND COMMUNITIES	ADDRESS / NAME / OWNERSHIP	PLANNING ZONE	ENVIRONMENT AND LANDSCAPE PLANNING OVERLAYS
Grassy woodland/Damp Sands Herb-rich Woodland Mosaic (EVC 719) native vegetation	1150 Nepean Highway, Highett 3190 Sir William Fry Reserve	Public Park and Recreation Zone	N/A
Southern Blue-gum	37 Graham Road, Highett 3190	Residential Growth Zone (Schedule 3 - Former CSIRO Site, Highett)	N/A
Spotted Gum	32 Middleton Street, Highett 3190	Residential Growth Zone (Schedule 3 - Former CSIRO Site, Highett)	N/A
Giant Honey-Myrtle	32 Middleton Street, Highett 3190	Residential Growth Zone (Schedule 3 - Former CSIRO Site, Highett)	N/A

Table 5.3 confirms the modelled native vegetation area and threatened species and communities are not affected by environment or landscape planning overlays that could otherwise afford vegetation or tree removal protection. As outlined in Section 4.3.1.5.1, Clause 52.17 is also a planning tool for protection of native vegetation. It is common for land located in a Public Park and Recreation Zone to not be affected by such overlays due to the 'public' purpose of the zone. As outlined in Section 4.3.1.5.1, Clause 52.17 is also a planning tool for protection of native vegetation.

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

5.2 Arboriculture

The Structure Plan Area includes extensive residential precincts to each side of Nepean Highway and the Frankston railway line. Commercial precincts are clustered around the Highett and Southland activity centres, and in the south eastern portion of the Structure Plan Area.

5.2.1 CANOPY COVER

The Structure Plan Area supports 353,096m^2 of tree canopy, which equates to 9.5 per cent tree canopy cover in the overall Structure Plan Area in the range of Kingston's canopy cover of 8.9 to 9.7 per cent, but significantly less than 16 per cent canopy cover across Bayside. 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 the heavy reliance of residential properties and streetscapes in sustaining the greater proportion of canopy, that is 12.7 per cent for residential zonings compared to just 3.4 per cent for commercial and industrial land. All other land, including parks, schools, land in the road zone and Cheltenham Cemetery supports 11.5 per cent canopy cover.

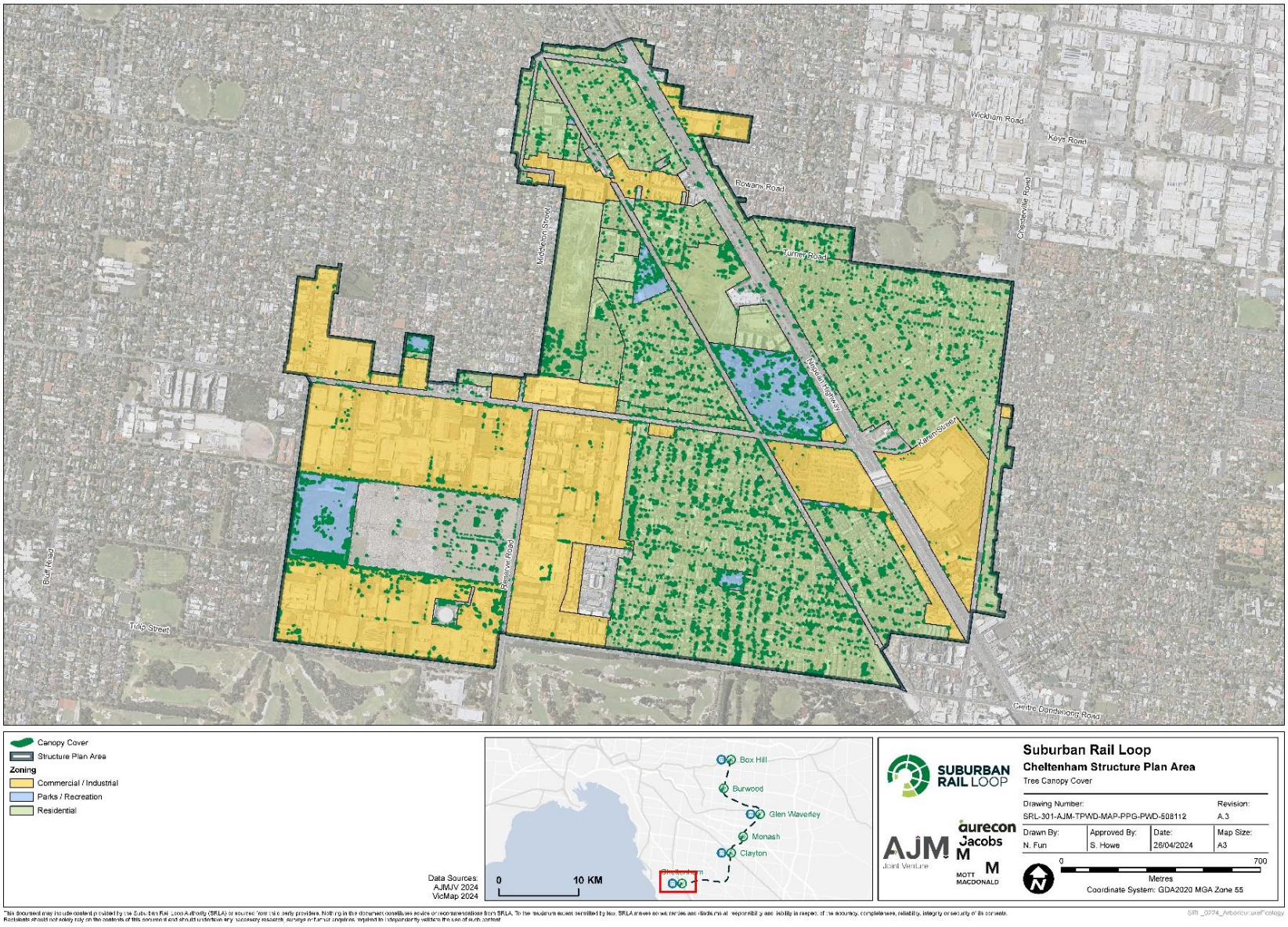


FIGURE 5.5 TREE CANOPY COVER IN STRUCTURE PLAN AREA

5.2.2 IDENTIFICATION OF SIGNIFICANT TREES

5.2.2.1 City of Kingston

Two parcels of land in the Kingston portion of the Structure Plan Area are subject to Schedule 3 to the Environmental Significance Overlay and contain a tree (or trees) considered significant under the Kingston Planning Scheme.

The locations of the land parcels subject to ESO3 are shown in Figure 5.6, with significant trees listed in Table 5.4.

TABLE 5.4 SIGNIFICANT TREES IN THE STRUCTURE PLAN AREA SUBJECT TO ESO3

MAP ID	TAXON	COMMON NAME	ADDRESS
1	*Eucalyptus camaldulensis*	River Red Gum	1239-1241 Nepean Highway, Highett & 64 Matthieson Street, Highett
2	*Phoenix canariensis*	Canary Island Date Palm	1125 Nepean Highway, Highett

5.2.2.2 City of Bayside

Two trees in the Bayside portion of the Structure Plan Area are included on Bayside's Significant Tree Register.

The locations of the trees included on the register are shown in Figure 5.6 with tree details listed in Table 5.5.

TABLE 5.5 BAYSIDE SIGNIFICANT TREES IN THE STRUCTURE PLAN AREA

MAP ID	TAXON	COMMON NAME	ADDRESS	NOTES
1	*Arburtus unedo*	Irish Strawberry Tree	20 Munro Avenue Cheltenham.	0 m from west boundary 2 m from south boundary
2	*Corymbia citriodora*	Lemon-scented Gum	10 Worthing Road, Highett	5 m from north boundary 9 m from east boundary

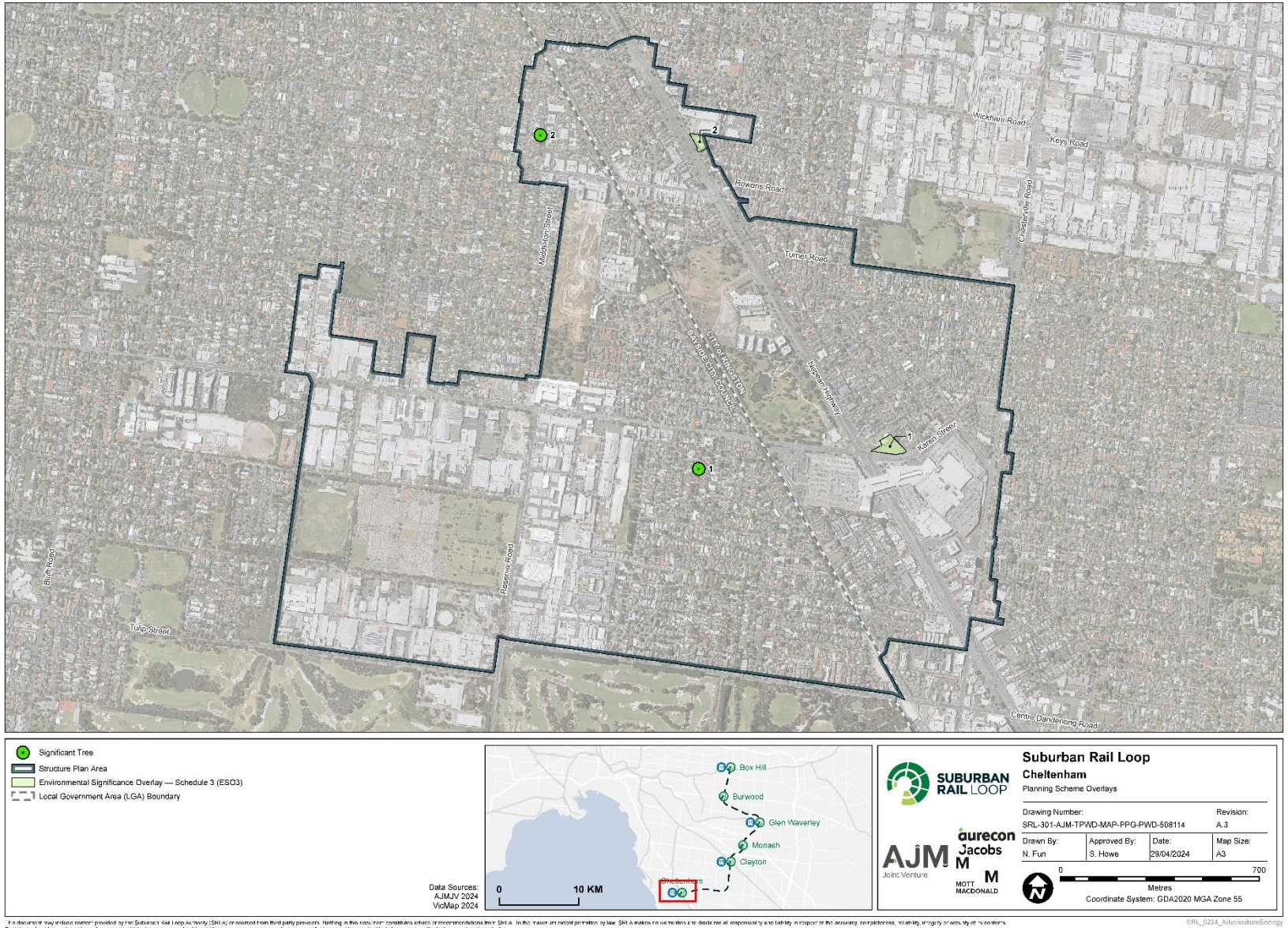


FIGURE 5.6 SITES SUBJECT TO ESO3 AND TREES INCLUDED ON THE BAYSIDE SIGNIFICANT TREES REGISTER IN THE STRUCTURE PLAN AREA

5.2.3 OTHER NOTABLE AVENUE PLANTATIONS/PARKS AND GARDENS

Notably large and mature tree plantings are noted in the following locations in the Structure Plan Area:

- Cheltenham Cemetery (with tree controls applicable in the schedule to the heritage overlay for HO728)
- Perimeter plantings to the golf driving range at 20-22 Wangara Road, Cheltenham
- Sir William Fry Reserve, Highett. The southern portion of the reserve is within SRL East Project land
- Lyle Anderson Reserve, Highett
- Former Highett Gas Works site, Nepean Highway

Tree surveys undertaken as part of the SRL East EES revealed a predominantly Australian and Victorian native treed character on public land, with many large trees within Sir William Fry Reserve and generally smaller statured specimens planted in road reserves.

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 consists of predominantly residential and commercial areas interspersed with reserves and a memorial park / cemetery. In its present state, the Structure Plan Area does not contain any habitat corridors or contiguous habitat from adjacent landscapes to encourage the movement and dispersal of native fauna through the Structure Plan Area. Rather there are scattered native trees along linear transport corridors and small and isolated open spaces. The site is unlikely to contain or support areas of significant permanent habitat for EPBC Act and FFG Act-listed threatened species or threatened ecological communities.

It is considered that future development in the Structure Plan Area would present low risk impacts to ecological matters given the lack of existing native vegetation and that there are few existing open spaces that allow for links in and out of the Structure Plan Area. Whilst it is unlikely that existing areas of open space provide significant habitat or support permanent populations of native flora and fauna species, Sir William Fry Reserve and Highett Grassy Woodland Reserve are comparatively large areas that can form the basis for increasing biodiversity in the Structure Plan Area and offer increased habitat corridor opportunities for native flora and fauna.

6.1.1 ISSUES

The Structure Plan Area contains extensive areas of residential areas with limited vegetation, which is predominately planted trees and shrubs comprising a mix of native, non-indigenous and introduced flora. Significant urban pressures present several challenges for biodiversity occurrence and use in the Structure Plan Area include:

- Limited spaces for existing natural environments with large spaces prioritised for community and recreation uses and not considered to cater for biodiversity. Increased population pressures and development of the Structure Plan Area will further reduce the availability and quality of open space for biodiversity over the long term and impact council objectives and policies that aim to retain and enhance existing biodiversity values.
- Heavy reliance on motor vehicles for transportation increasing the risk of road kill/ 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. Across the Structure Plan Area there is limited tree canopy cover connectivity of native Victorian or Australian species, and very limited or no understorey habitat.
- Lack of large mature trees for breeding, habitat and refuge that are decreasing over time due to public safety risk and increased development from rezoning of the Structure Plan Area, which may impact on local council policies to protect existing tree canopy cover and biodiversity and impact the ability to further increase biodiversity and create habitat corridors.

- 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 trees, green spaces and biodiversity through rezoning residential land to commercial or industrial land may negatively impact council goals and objectives to increase biodiversity and native tree canopy cover and state government objectives 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

While the findings of the existing conditions assessment noted the limited amount of native vegetation, flora and fauna, the assessment noted opportunities to enhance biodiversity in the Structure Plan Area are:

- Existing open public spaces provide opportunities to meet City of Kingston, City of Bayside 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 *Bayside Biodiversity Action Plan* (2018 – 2027) 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 Clayton Structure Plan Area.

6.2 Arboriculture

The Structure Plan Area includes extensive residential precincts on each side of Nepean Highway and the Frankston rail line with commercial areas clustered around the Highett and Southland Activity Centres, and in the south-east of the Structure Plan Area. Overall, tree canopy cover is at 10 per cent in the overall Structure Plan Area compared to between 8.9 per cent to 9.7 per cent in Kingston and 16 per cent canopy cover in Bayside.

Individually significant trees in the Structure Plan Area are protected by ESO3 that applies as part of the Kingston Planning Scheme and the Bayside significant tree register implemented through a local law.

Trees on Council-managed land including parks and gardens and public roads are managed in accordance with the *Bayside Tree Strategy* or the *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 tree canopy cover in the Structure Plan Area are:

- Loss of individually listed significant trees listed in Schedule 3 to the Environmental Significance Overlay (Kingston), or trees included on the Bayside Significant Tree Register
- Loss of urban tree canopy cover through re-zoning residential land to commercial or industrial uses, and more intense 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 works 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.

Whilst the proposed SRL station will incur significant tree loss in the southern portion of Sir William Fry Reserve, future development guided by the Structure Plan is not anticipated to change public parks and other land uses such as schools that support higher canopy cover. Council-managed trees in streetscapes are, however, directly at risk from works such as changes to road functional layouts and vehicle crossings, and indirectly from construction activities on private land.

The potential overall loss of trees in the private and public realms will place additional challenges in achieving Bayside and Kingston's target of 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 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 any urban tree canopy targets. Improvements to public tree planting conditions, in addition to planting more trees in the public realm, will assist in compensating for loss of canopy cover from 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.

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

Recommendations for enhancing ecology and arboricultural values when developing the Cheltenham Structure Plan are set out below. Recommendations include those to be considered in the Structure Planning Process (Section 7.1) and other recommendations to be considered within the Structure Plan Area (Section 7.2).

7.1 Structure planning

1. Promote the concept of habitat corridors that link new and potential open spaces to support City of Kingston *Climate and Ecological Emergency Response Plan*, City of Bayside *Urban Forest Strategy 2022–2040* and the City of Bayside *Biodiversity Action Plan 2018-2027*. This includes connecting habitat between Sir William Fry Reserve and the surrounding new open spaces including 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 in 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. To support the City of Kingston *Biodiversity Strategy* and City of Bayside *Biodiversity Action Plan*, it is recommended that existing and proposed open spaces are enhanced with native plantings to increase indigenous coverage.

    a. It is recommended that canopy cover is increased to provide connectivity in and out of reserves and that a diversity of tree species are provided that increase nectar and other food resources.

    b. 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.

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

3. Through development of the Structure Plan Area, support local policy, including Objective 1.1 and 1.3 of the City of Kingston *Biodiversity Strategy 2018 – 2023* and the City of Bayside *Urban Forest Strategy 2022–2040*, 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 Kingston and City of Bayside 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. 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.

5. Improve blue infrastructure by rehabilitating the singular waterbody in Sir William Fry Reserve, by planting fringing native vegetation to manage erosion, reduce weeds and create aquatic habitat for fauna through provision of features such as logs and rocks. Also consider creating waterbodies in new open spaces to encourage movement of aquatic species.

6. To align with council objectives to maintain existing biodiversity, look for opportunities to provide offsets to impacts to Sir William Fry Reserve during construction by creating a new open space. This should include new plantings that comprise a diversity of species, flowers and height structures, that provide for increased biodiversity.

TABLE 7.1 RECOMMENDATIONS FOR BIODIVERSITY IN PUBLIC OPEN SPACE

LOCATION	STATUS	PROPOSED CLASSIFICATION AND APPROX SIZE	RECOMMENDATION FOR BIODIVERSITY IMPROVEMENTS
Sir William Fry Reserve	Existing open space and proposed new open space	Function: Community park Size: 85,389 m² (existing) 54,500 m² (proposed)	• Retain all trees in the open space. • Revegetate and supply habitat features (logs, rocks, etc.) to waterbodies at Sir William Fry Reserve to provide greater habitat for common avifauna and frogs. • Plant more native trees that provide nectar resources for birds and increases canopy connectivity throughout the reserve. • Increase the cover of diverse understorey throughout the reserve through revegetation with understorey flowering vegetation for pollinators that replaces non-native lawn. • Provide fauna nest boxes.
Pennydale Park	Existing open space	Function: Community park Size: 6324 m²	• Retain all trees in the open space. • Plant more native trees that provide nectar resources for birds. • Revegetate understorey flowering vegetation for pollinators that replaces non-native lawn. • Use green street design and create a wildlife corridor between Pennydale park, Cheltenham Park Reserve and Tulip Grove. • Provide fauna nest boxes.
Lyle Anderson Reserve	Existing open space	Function: Community park Size: 10,158 m²	• Retain all trees in the open space. • Plant more native trees that provide nectar resources for birds. • Revegetate understorey flowering vegetation for pollinators that replaces non-native lawn. • Provide fauna nest boxes.
Tulip Grove Playground	Existing open space	Function: Community park Size: 594 m²	• Retain all trees in the open space. • Plant more native trees that provide nectar resources for birds. • Include diverse understorey plantings beneath existing and new trees.
Highett Common, Graham Rd	New open space	Function: Local community park Size: 40,000 m²	• Remove impervious and concrete surfaces. • Include linear and contiguous plantings of native trees that provide nectar resources for birds, and dense understorey flowering vegetation for pollinators as a 'wildlife corridor'. • Revegetate site to include the floristic diversity of Grassy Woodland species. • Consider improving blue infrastructure by creating a waterbody in the new open space, and planting fringing native vegetation to manage erosion, remove weeds and create aquatic habitat for local fauna.
Former Highett Gasworks site	New open space	Function: Local community linear park Size: 11,400 m²	• Remove impervious and concrete surfaces. • Include linear and contiguous plantings of native trees that provide nectar resources for birds, and dense understorey flowering vegetation for pollinators as a 'wildlife corridor'.

LOCATION	STATUS	PROPOSED CLASSIFICATION AND APPROX SIZE	RECOMMENDATION FOR BIODIVERSITY IMPROVEMENTS
			• Revegetate site to consider and include patches of diverse native plantings. • Consider constructing new waterbodies in the new open space to create more connectivity for aquatic species between the new open space and Sir William Fry Reserve. • Use green street design along Turner Road to create a wildlife corridor to Highett Reserve.
Tennyson Street and Edsall Street, Highett.	New open space	Function: Community park Size: 1000 m2	• Remove impervious and concrete surfaces. • Include linear and contiguous plantings of native trees that provide nectar resources for birds, and dense understorey flowering vegetation for pollinators as a 'wildlife corridor'. • Revegetate site to include the floristic diversity of Grassy Woodland species.
Jack Road and Bay Road	New open space	Function: Community park Size: 20,000 m2	
Henry Street, Highett	New open space	Function: Community park Size: 1000 m2	
Melaleuca Drive and Reserve Road, Cheltenham	New open space	Function: Community park Size: 1000 m2	
Jellicoe Street, Cheltenham	New open space	Function: Community Park Size: 1000 m2	

7.2 Other opportunities

- Support council street and public open space planting strategies to meet canopy coverage targets, as well as ensuring a diversity of tree species selected for resilience in the face of climate change
- Support Bayside City Council in the development of Masterplan and Conservation Management Plan currently being developed in the Structure Plan Area for the Highett Grassy Woodland Reserve, a 3 ha area south of the former CSIRO site, located on Graham Road, Highett.
- Consider an expansion of the green streets initiative by removing non-porous surfaces and replace with natural swales and native vegetation to help connect green open spaces in the Structure Plan Area.
- 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.

FIGURE 7.1 INDICATIVE HABITAT CORRIDORS IN THE STRUCTURE PLAN AREA

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AJM-JV 2021b *SRL East Environment Effects Statement Technical Appendix G.2 Ecology Impact Assessment* (Revision 01 October 2021)

AJM-JV 2021c *SRL East Environment Effects Statement Technical Appendix D.1 Arboriculture and Urban Forest Existing Conditions* (Revision 01 October 2021)

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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 IN THE 5KM SEARCH AREA FOR CHELTENHAM

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS		HABITAT PREFERENCE	COUNT OF SIGHTINGS	LAST RECORD	LIKELIHOOD OF OCCURRENCE
		EPBC ACT	FFG ACT				
Lachnagrostis adamsonii	Adamson's Blown-grass	Endangered	Endangered	Occurs in and around saline depressions on the Volcanic Plain where recorded from Portalington west almost to the South Australian border.	0	PMST	Negligible– no historical records and no suitable habitat in the Structure Plan Area
Heterozostera nigricaulis	Australian Grass-wrack		Endangered	Forms large meadows in shallow coastal waters to a depth of c. 15 m.	1	18/01/2007	Negligible -one old record and no suitable habitat in the Structure Plan Area
Geranium solanderi var. solanderi s.s.	Austral Crane's-bill		Endangered	An uncommon species of damp to dryish, usually sheltered sites in grassy woodlands, often along drainage lines or in seepage areas.	1	2/08/1900	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Diuris X palachila	Broad-lip Diuris		Endangered	Known from a few localities in western Victoria in open forests, woodlands and grasslands.	1	1/09/1920	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Eucalyptus crenulata	Buxton Gum	Endangered	Endangered	Confined to swampy sites in foothills just north and south of the Great Dividing Range, near Buxton, Narbethong and Yarra Glen where it forms hybrids at points of contact with the far more widespread Swamp Gum, E. ovata. Also sparingly stablished at Traralgon in Victoria.	1	1/09/2003	Low – the Structure Plan is outside the known distribution of the species.
Glycine latrobeana	Clover Glycine	Vulnerable	Vulnerable	Widespread but of sporadic occurrence and rarely encountered. Grows mainly in grasslands and grassy woodlands.	1	01/11/1852	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Salsola tragus subsp. pontica	Coast Saltwort		Endangered	Recorded from coastal sites near Portland and around Port Phillip Bay and Western Port.	1	6/03/1963	Negligible – records 60 years old, no suitable habitat in the 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 in the Structure Plan Area
Senecio campylocarpus	Floodplain Fireweed		Endangered	In Victoria mostly throughout central Victoria and in the north-east in loam to clay soils in forest and woodland, usually in seasonally inundated areas.	1	6/08/2008	Negligible - one old record and no suitable habitat in the Structure Plan Area
Caladenia robinsonii	Frankston Spider-orchid	Endangered	Critically Endangered	Endemic to Victoria where currently known from 1 small extant population near Rosebud on the Mornington Peninsula in heathy near-coastal woodland on sandy soil.	1	01/10/1896	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Corybas fimbriatus	Fringed Helmet-orchid		Endangered	Usually forming colonies on moist, shaded sandy soil near the coast and generally east of Western Port, but with isolated occurrences near Melbourne at Gembrook, Warrandyte and Greensborough.	1	9/08/1900	Negligible – records >100 years old, 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				
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.	26	2021 AJM-JV field Assessment	Confirmed- one planted Giant Honey-myrtle located during the 2021 AJM-JV ecology survey
Eucalyptus fulgens	Green Scentbark		Endangered	Occurs east from Healesville and Woori Yallock to the Latrobe Valley near Driffield.	1	7/08/2008	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 in the Structure Plan Area
Diuris behrii	Golden Cowslips		Endangered	Locally common in grassland and open woodland mostly in western Victoria.	1	01/10/1887	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Thryptomene calycina	Grampians Thryptomene		Endangered	Confined to the Grampians (see note below) where occurring in heathlands and heathy woodlands mostly on sandy soils. Naturalised at Black Rock (south-east suburb of Melbourne).	1	27/10/1987	Negligible – the Structure Plan Area is well beyond the known distribution of the species.
Caladenia venusta	Large White Spider-orchid		Endangered	In woodlands and heathy woodland west of Port Phillip Bay, usually coastal or subcoastal but also in the Grampians, on well-drained or moisture-retentive soils.	4	29/10/1901	Negligible – records >100 years old
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 in the 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 in the Structure Plan Area
Eucalyptus globulus subsp. maidenii	Maiden's Gum		Vulnerable	Eastern distribution in Victoria, occurring in the subcoastal ranges of the upper Genoa and Cann Rivers	1	2021 AJM-JV field Assessment	Confirmed- one planted Maiden's Gum located during the 2021 AJM-JV ecology survey
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 in the Structure Plan Area
Pterostylis X toveyana	Mentone Greenhood		Endangered	Grows in moist areas of open forest and in coastal scrub, usually on sandy soils.	3	1/06/1910	Negligible – records >100 years old, 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				
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.	2	1/12/1900	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Diuris punctata var. punctata	Purple Diuris		Endangered	Formerly widespread and common in Victoria, occurring in the open forests, woodlands and grasslands of the fertile lowlands, now much reduced through clearing for agriculture and restricted to relatively few, isolated sites, but sometimes locally abundant.	1	1/11/1910	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Euphrasia collina subsp. muelleri	Purple Eyebright	Endangered	Endangered	Endemic in Victoria. Formerly widespread in lowland to montane central and western Victoria, but now exceedingly rare through habitat destruction, surviving in heathland and heathy woodland on the Mornington Peninsula and near Jamieson.	2	9/08/1900	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Pterostylis pedoglossa	Prawn Greenhood		Endangered	Scattered in coastal and near-coastal heath and grasstree plains east of Melbourne, often on moist peaty soils.	4	5/05/1934	Negligible – records 90 years old, no suitable habitat in the 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 in the Structure Plan Area
Banksia saxicola	Rock Banksia		Endangered	Apparently restricted to higher peaks and sheltered gullies and slopes in the Grampians and on Wilsons Promontory (e.g. Sealers Cove), usually in rocky sites.	3	1/01/1991	Negligible – likely planted, outside of range and no suitable habitat in the Structure Plan Area
Euphrasia scabra	Rough Eyebright		Endangered	Formerly widespread, but not common, in lowland and montane regions throughout Victoria, confined to a few sites in the eastern ranges (e.g. Mt Koonika, Nunniong Plateau, Bendock areas). Observed in damp grassy situations, amongst shrubs, in sclerophyll forest, clearings or subalpine woodland.	1	01/01/1856	Negligible – records >100 years old, no suitable habitat in the 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 – no suitable habitat considered to occur within the Structure Plan Area
Pterostylis X ingens	Sharp Greenhood		Vulnerable	Favours moist areas around swamps and stream banks on heavy soils.	1	1/08/1910	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Prostanthera nivea var. nivea	Snowy Mint-bush		Vulnerable	Largely confined to shrubland and open woodland associated with granite outcrops (e.g. Mts Hope, Terrick Terrick, Kooyora and Pilot, and the You Yangs), also in Lerderderg Gorge, Barwon Heads and Anglesea areas.	6	13/03/2009	Low – no suitable habitat considered to occur 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				
				Sparingly established in heathland reserve at Sandringham.			
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	2/08/2017	Low - likely planted and outside natural distribution
Eucalyptus globulus subsp. globulus	Southern Blue-gum		Endangered	Recent studies of variation in Southern Blue-gums (Jordan et al. 1993) suggest that populations of typical subsp. globulus occur in Victoria only in the area south of the Strzelecki Range, e.g. Port Franklin, Wilsons Promontory, and that other populations in south Gippsland and the Otway Ranges probably represent intergrades between subsp. globulus and subsp. pseudoglobulus.	2	2021 AJM-JV field Assessment	Confirmed – one planted Southern Blue-gum located during the 2021 AJM-JV ecology survey
Xanthosia tasmanica	Southern Xanthosia		Endangered	Occurring mainly in coastal areas in heath on sand.	1	11/10/1942	Negligible – record 80 years old, no suitable habitat in the Structure Plan Area
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 in the Structure Plan Area
Pimelea spinescens subsp. spinescens	Spiny Rice-flower	Critically Endangered	Critically Endangered	Endemic in Victoria. Grows in grassland, open shrubland and occasionally woodland, often on basalt-derived soils. Mostly west of Melbourne (to near Horsham) but extending as far north as Echuca.	0	PMST	Negligible– no historical records and no suitable habitat in the Structure Plan Area
Corymbia maculata	Spotted Gum		Vulnerable	Only known in Victoria from the Mottle Range, south of Buchan.	1	2021 AJM-JV field Assessment	Confirmed – one planted Spotted Gum located during the 2021 AJM-JV ecology survey
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 in the 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 in the Structure Plan Area
Triglochin minutissima	Tiny Arrowgrass		Endangered	Scattered on damp saline soils near salt-lakes, and forming part of herbfield in coastal saltmarshes.	1	01/11/1852	Negligible – records >100 years old, 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				
Billardiera scandens s.s.	Velvet Apple-berry		Endangered	Uncommon in Victoria, occurring chiefly in dry open-forests and woodlands in the north-east (Beechworth, Whitfield etc.), with isolated occurrences near Mt Macedon, Eltham-Hurstbridge area, Eildon and Orbost.	2	1/08/1922	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Caladenia reticulata s.s.	Veined Spider-orchid		Endangered	Also SA. In Victoria, known only from scattered localities in the Stawell, Ararat, Horsham and Dunolly areas. Usually in open Eucalyptus leucoxylon woodland on poorly structured clay loams.	1	1/10/1924	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Correa alba var. pannosa	Velvet White Correa		Endangered	Also SA. Occurring in coastal areas from the lower Glenelg River to Port Phillip Bay, usually on calcareous substrates.	1	1/05/1904	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Caladenia oenochila	Wine-lipped Spider-orchid		Critically Endangered	Endemic to Victoria where mostly known from the foothills immediately east of Melbourne, but sporadically distributed from Yarram through to Ararat. Relatively common in moist, often grassy forest or woodland, often in shaded habitats.	1	01/09/1898	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Callitriche umbonata	Winged Water-starwort		Endangered	Scattered and uncommon, mainly in inland parts of Victoria, in damp and swampy places.	1	1/10/1908	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
Philydrum lanuginosum	Woolly Waterlily		Endangered	Scattered, and very localized throughout lowland Victoria in shallow freshwater swamps	1	1/12/1907	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area

TABLE B.2 LIKELIHOOOD OF OCCURRENCE ANALYSIS FOR THRETENED FAUNA IN THE 5KM SEARCH AREA FOR CHELTENHAM

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.	3	16/10/1893	Negligible – records >100 years old, no suitable habitat in the Structure Plan Area
BIRDS							
Diomedea antipodensis	Antipodean Albatross	Vulnerable, Migratory		Sea bird recorded foraging between Coffs Harbour, NSW, and Wilson's Promontory, Victoria	0	PMST	Negligible - no previous species records and no coastal habitat in the Structure Plan Area
Botaurus poiciloptilus	Australasian Bittern	Endangered	Critically Endangered	Frequents reedbeds, and other vegetation in water such as cumbungi, lignum and sedges.	4	19/12/1976	Negligible - no recent species records and no aquatic habitat in the Structure Plan Area
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.	6	19/12/1976	Negligible - no recent 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	01/01/1835	Negligible – record >100 years old, no suitable habitat in the Structure Plan Area
Ixobrychus dubius	Australian Little Bittern		Endangered	Favours reedbeds, dense freshwater swamps and well-fringed watercourses, including thick reedbeds	4	11/11/1962	Negligible - no recent species records and 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	23/10/1976	Negligible - no recent species records and no aquatic habitat in the Structure Plan Area
Limosa lapponica	Bar-tailed Godwit	Vulnerable, Migratory	Vulnerable	Coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays	4	20/10/1973	Negligible - no recent species records and 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	2	30/04/1978	Negligible - no recent species records and no aquatic 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				
				areas. It roosts in trees at night and often on power poles by day			
Thalassarche melanophris	Black-browed Albatross	Vulnerable, Migratory		Seabird which is an uncommon visitor to the continental shelf-break of southern Australia - reaching South Australia, Tasmania and western and eastern Bass Strait in the south-east and Antarctica	2	20/10/1973	Negligible - no recent species records and no coastal habitat in the Structure Plan Area
Monarcha melanopsis	Black-faced Monarch	Migratory		Rainforest ecosystems, including tropical, subtropical and cool temperate rainforest	0	PMST	Negligible – no species records and no suitable habitat in the Structure Plan Area
Limosa limosa	Black-tailed Godwit		Critically Endangered	Inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia and are often seen in large flocks and in the company of other waders.	1	1/01/1962	Negligible - no recent species records and no coastal 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.	2	31/12/1969	Negligible - no recent species records and no aquatic habitat 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 their range they favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones.	2	5/05/2021	Moderate – recent records in the Structure Plan Area, suitable temporary habitat potentially in the Structure Plan Area
Antigone rubicunda	Brolga		Endangered	In Victoria, Brolga occur in the south-west, the Northern Plains and adjacent parts of the Murray River. Habitat includes large open wetlands and grassy plains.	1	18/12/1818	Negligible – record >100 years old, no suitable habitat in the Structure Plan Area
Climacteris picumnus	Brown Treecreeper	Vulnerable		Found in the drier open forests and woodlands	6	29/04/1978	Negligible – no recent species records and no open forest or woodland habitat in the Structure Plan Area
Thalassarche bulleri	Buller's Albatross	Vulnerable, Migratory	Endangered	Seabird limited to the Pacific Ocean and the Tasman Sea, although birds do reach the east coast of the Australian mainland	0	PMST	Negligible - no species records and no coastal habitat in the Structure Plan Area
Thalassarche impavida	Campbell Albatross	Vulnerable, Migratory		Seabird most commonly seen foraging over the oceanic continental slopes off Tasmania, Victoria and New South Wales	0	PMST	Negligible - no species records and no coastal 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.	4	3/01/1979	Negligible - no recent species records and no aquatic 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				
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.	12	1/08/1978	Negligible - no recent species records and no coastal 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.	4	1/04/1972	Negligible - no recent species records and no aquatic habitat in the Structure Plan Area
Calidris ferruginea	Curlew Sandpiper	Critically Endangered, Migratory	Critically Endangered	Intertidal mudflats in sheltered coastal areas. Non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms.	1	13/03/1977	Negligible - no recent species records and no aquatic 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	2	17/10/1979	Low – no recent species records and limited suitable habitat in the Structure Plan Area
Numenius madagascariensis	Eastern Curlew	Critically Endangered, Migratory	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.	13	13/03/1977	Negligible - no recent species records and no coastal 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.	1	2/01/2017	Negligible - one recent species record however no aquatic habitat in the Structure Plan Area
Pachyptila turtur subantarctica	Fairy Prion (southern)	Vulnerable		The burrows of fairy prions (southern) are usually in crevices, in hollows beneath cushions of *Colobanthus muscoides* or in burrows in peaty soil held together by a thick cover of *Cotula plumosa*	0	PMST	Negligible - no species records and no aquatic habitat in the Structure Plan Area
Sternula nereis nereis	Fairy Tern	Vulnerable	Critically Endangered	Nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation.	9	13/03/1977	Negligible - no recent species records and no aquatic habitat in the Structure Plan Area
Ardenna carneipes	Flesh-footed Shearwater	Migratory		Seabird which commonly visits waters of the continental shelf and continental slope off southern Australia	0	PMST	Negligible - no species records and no aquatic habitat in the Structure Plan Area
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 species records and no aquatic habitat in the Structure Plan Area
Stictonetta naevosa	Freckled Duck		Endangered	Prefers permanent fresh water swamps and creeks with heavy growth of cumbungi (bullrushes), lignum or tea-tree. During drier	18	16/11/2019	Low – the Structure Plan Area does not support the preferred habitat characteristics. The species is unlikely

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				times, the Freckled Duck moves from ephemeral (not permanent) breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewerage ponds. They generally rest in dense cover.			to permanently occur within the area. How
Callocephalon fimbriatum	Gang-gang Cockatoo	Endangered	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.	5	22/09/2001	Low – no recent species records, limited suitable habitat in the Structure Plan Area
Diomedea antipodensis gibsoni	Gibson's Albatross	Vulnerable		breeds only in the subantarctic Auckland Islands archipelago of New Zealand. Breeding females feed mainly in the Tasman Sea, while the males forage further south in the sub Australian or mid Pacific sectors of the Southern Ocean between latitudes of 30° and 50° S	0	PMST	Negligible - no species records and no aquatic habitat in the Structure Plan Area
Pterodroma leucoptera leucoptera	Gould's Petrel	Endangered		breeds on several small islands off the New South Wales coast in Australia, but primarily on Cabbage Tree Island	0	PMST	Negligible - no species records and no aquatic habitat in the Structure Plan Area
Calidris tenuirostris	Great Knot	Critically Endangered	Critically Endangered	Prefers sheltered coastal habitats, with large intertidal mudflats or sandflats	1	31/07/1963	Negligible - no recent species records and no coastal habitat in the Structure Plan Area
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.	2	19/12/1976	Negligible - no recent species records and no coastal 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 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	31/12/1969	Negligible - no recent species records and no coastal habitat in the Structure Plan Area
Pluvialis squatarola	Grey Plover		Vulnerable	Almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding,	10	19/12/1976	Negligible - no recent species records and no coastal habitat in the Structure Plan Area

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				sandy beaches for roosting, and also on rocky coasts.			
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.	3	22/09/1985	Negligible – no recent records and no suitable habitat in the Structure Plan Area
Thalassarche chrysostoma	Grey-headed Albatross	Endangered, Migratory	Endangered	Seabird which disperse widely across the Southern Ocean, at more southerly latitudes in summer than in winter, when they frequent the waters off southern Australia and New Zealand	0	PMST	Negligible - no species records and no suitable coastal habitat in the Structure Plan Area
Tringa brevipes	Grey-tailed Tattler		Critically Endangered	The species is rarely recorded in Victoria, however sightings have been reported in Gippsland, and east of McLaughlans Beach.	2	31/12/1976	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Thinornis cucullatus	Hooded Plover	Vulnerable	Vulnerable	Widely dispersed on or near sandy beaches in south-eastern Australia.	2	31/12/1950	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Melanodryas cucullata	Hooded Robin	Endangered	Vulnerable	Found in lightly timbered woodland, mainly dominated by acacia and/or eucalypts.	1	31/12/1976	Negligible – no recent species records and no woodland habitat in the Structure Plan Area
Thalassarche carteri	Indian Yellow-nosed Albatross	Vulnerable, Migratory	Endangered	Seabird which forages mostly in the southern Indian Ocean where it is particularly abundant off Western Australia	0	PMST	Negligible - no species records and no suitable coastal habitat in the Structure Plan Area
Gallinago hardwickii	Latham's 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 species records and no suitable aquatic habitat in the Structure Plan Area
Charadrius mongolus	Lesser Sand Plover	Endangered	Endangered	Usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. It also sometime occurs in short saltmarsh or among mangroves.	1	19/12/1976	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Lewinia pectoralis	Lewin's Rail		Vulnerable	Freshwater to saline wetlands, either permanent or ephemeral.	1	31/12/1950	Negligible - no recent species records and no suitable aquatic habitat in the Structure Plan Area

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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.	2	31/12/1976	Negligible – no recent species records and no suitable habitat in the Structure Plan Area
Egretta garzetta	Little Egret		Endangered	Tidal mudflats, saltwater and freshwater wetlands, and mangroves.	4	1/08/1978	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Sternula albifrons	Little Tern	Migratory	Critically Endangered	Mainly coastal, being found on beaches, sheltered inlets, estuaries, lakes, sewage farms, lagoons, river mouths and deltas.	3	13/03/1977	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Anseranas semipalmata	Magpie Goose		Vulnerable	Seen in floodplains and wet grasslands. Some individuals, mostly younger birds, may be seen at quite long distances inland.	3	12/04/2019	Low – the Structure Plan Area does not support any preferred habitat.
Tringa stagnatilis	Marsh Sandpiper		Endangered	Commonly seen singly, or in small to large flocks in fresh or brackish (slightly salty) wetlands such as rivers, water meadows, sewage farms, drains, lagoons and swamps.	2	31/07/1963	Negligible - no recent species records and no suitable aquatic habitat in the Structure Plan Area
Biziura lobata	Musk Duck		Vulnerable	Aquatic habitats. Broadly ranging throughout Australia.	13	18/12/1979	Negligible - no recent species records and no suitable aquatic habitat in the Structure Plan Area
Thalassarche bulleri platei	Northern Buller's Albatross	Vulnerable		It breeds on islands around New Zealand, and feeds in the seas off Australia and the South Pacific.	0	PMST	Negligible - no species records and no suitable coastal habitat in the Structure Plan Area
Macronectes halli	Northern Giant-Petrel	Vulnerable, Migratory	Endangered	Breeds in the sub-Antarctic, and visits areas off the Australian mainland mainly during the winter months (May-October).	3	31/12/1976	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Diomedea sanfordi	Northern Royal Albatross	Endangered, Migratory		Seabird which ranges widely over the Southern Ocean, regularly feeds in Tasmanian and South Australian waters, and less frequently in NSW waters.	0	PMST	Negligible - no species records and no suitable coastal habitat in the Structure Plan Area
Limosa lapponica baueri	Nunivak Bar-tailed Godwit	Vulnerable		Occurs mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats	0	PMST	Negligible - no species records and no suitable coastal habitat in the Structure Plan Area
Neophema chrysogaster	Orange-bellied Parrot	Critically Endangered	Critically Endangered	Almost exclusively in coastal and sub-coastal areas, preferring peninsulas and islands. Saltmarshes, littoral (shore) heathlands and low scrublands are preferred habitats as well as grassy areas, which can include golf courses.	1	31/12/1950	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area

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				Present in Victoria in March to November. They breed in forests on the west coast of Tasmania.			
Pluvialis fulva	Pacific Golden Plover		Vulnerable	Inhabits coastal habitats, though it occasionally occurs around inland wetlands.	10	13/03/1977	Negligible - no recent species records and no suitable coastal 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 species records and no suitable woodland 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 species records and no suitable aquatic 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 species records and no suitable woodland 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.	3	1/05/1956	Negligible – no recent species records and no native grassland habitat in the Structure Plan Area
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.	1	1/09/1943	Negligible - no recent species records and no suitable 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	1/08/1927	Negligible – no recent species records and no suitable woodland habitat in the Structure Plan Area
Calidris canutus	Red Knot	Endangered, Migratory	Endangered	Intertidal mudflats, sandflats and sandy beaches of sheltered coasts	6	19/12/1976	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Turnix pyrrhothorax	Red-chested Button-quail		Endangered	Grassland (and open grassy woodland) habitats	1	1/01/1928	Negligible – no recent species records and no suitable grassland 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	1	1/01/1971	Negligible – no recent species records and no forest or woodland habitat in the Structure Plan Area

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				movements governed by the flowering of select eucalypt species.			
Arenaria interpres	Ruddy Turnstone		Endangered	The Ruddy Turnstone is found singly or in small groups along the coastline and only occasionally inland. They are mainly found on exposed rocks or reefs, often with shallow pools, and on beaches.	6	20/10/1973	Negligible - no recent species records and no suitable coastal habitat in the Structure Plan Area
Rhipidura rufifrons	Rufous Fantail	Migratory		Inhabits wet sclerophyll forests, often in gullies dominated by tall eucalypts, usually with a dense shrubby understorey and ferns.	0	PMST	Negligible - no species records and no suitable habitat in the Structure Plan Area
Thalassarche salvini	Salvin's Albatross	Vulnerable, Migratory		Seabird which is a visitor to southern Australian waters	0	PMST	Negligible - no species records and no suitable coastal 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 species records and no suitable habitat in the Structure Plan Area
Neophema splendida	Scarlet-chested Parrot		Endangered	This species is endemic to central South Australia and inland southern Western Australia. They feed mainly on grass seeds and are most commonly sighted in spinifex.	1	31/12/1976	Negligible - no recent 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 species records and no suitable aquatic habitat in the Structure Plan Area
Thalassarche cauta	Shy Albatross	Endangered, Migratory	Endangered	The only albatross species endemic to Australia. The species has breeding colonies on three small islands off Tasmania, predominately occur in waters adjacent to Tasmania and southern Australia	1	31/12/1976	Negligible - no recent species records and no suitable aquatic habitat in the Structure Plan Area
Phoebetria fusca	Sooty Albatross	Vulnerable, Migratory	Critically Endangered	Seabird occuring singly or in small groups at sea.	0	PMST	Negligible - no species records and no suitable aquatic habitat in the Structure Plan Area
Ardenna grisea	Sooty Shearwater	Migratory		Pelagic seabird found in the southern hemisphere during summer, where the species breeds around New Zealand, southern Australia	0	PMST	Negligible - no species records and no suitable aquatic habitat in the Structure Plan Area
Macronectes giganteus	Southern Giant-Petrel	Endangered, Migratory	Endangered	Marine bird that occurs in Antarctic to subtropical waters.	0	PMST	Negligible - no species records and no suitable aquatic habitat in the Structure Plan Area

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Diomedea epomophora	Southern Royal Albatross	Vulnerable, Migratory	Critically Endangered	Seabird that nest almost exclusively on the Chatham Islands and may circumnavigate the Southern Ocean, though it is most commonly sighted in New Zealand and South American waters.	0	PMST	Negligible - no species records and no suitable aquatic 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 species records and no suitable habitat within the Structure Plan Area
Pyrrholaemus sagittatus	Speckled Warbler		Critically Endangered	Lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies.	1	31/12/1976	Negligible – The Structure Plan Area lacks the preferred habitat characteristics to support the species
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.	2	31/12/1982	Low – Historical species record. The Structure Plan Area does not contain any significant habitat features or preferred characteristics to support the species.
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.	2	31/12/1976	Low – The species may occasionally overfly the Structure Plan Area whilst on route throughout the environment. However there are limited foraging trees that are considered to support the species.
Diomedea exulans	Wandering Albatross	Vulnerable, Migratory	Critically Endangered	Seabird which breeds on Macquarie Island and feeds in Australian portions of the Southern Ocean	1	31/12/1976	Negligible – the species is exclusively pelagic and the Structure Plan Area does not support any breeding activities.
Numenius phaeopus	Whimbrel		Endangered	Found mainly on the coast, on tidal and estaurine mudflats, especially near mangroves. They are sometimes found on beaches and rocky shores.	2	31/05/1962	Negligible – Historical species record. The Structure Plan Area does not support any preferred habitat features to support the species.
Haliaeetus leucogaster	White-bellied Sea-Eagle		Endangered	Distributed along the coastline of mainland Australia, also extending inland along some of the larger waterways.	1	26/08/1984	Negligible - Historical species record. The Structure Plan Area does not support any preferred habitat features to support the species.
Thalassarche steadi	White-capped Albatross	Vulnerable, Migratory		Common off the coast of south-east Australia throughout the year.	0	PMST	Negligible – no species records and no suitable habitat within the Structure Plan Area

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Pelagodroma marina	White-faced Storm-Petrel		Endangered	Marine species can normally be found over pelagic waters except when at breeding colonies.	1	29/02/2020	Negligible - the species is exclusively pelagic and the Structure Plan Area does not support any breeding activities.
Hirundapus caudacutus	White-throated Needletail	Vulnerable	Vulnerable	Almost exclusively aerial, over a wide variety of habitats	24	2/09/2018	Moderate – the species has the potential to overfly the Structure Plan 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.	2	31/05/1965	Negligible – The Structure Plan Arae does not contain any preferred wetland or shallow freshwater habitat considered to support the species.
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 species records and no suitable habitat within 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 species records and no suitable aquatic habitat in the Structure Plan Area
Seriolella brama	Blue Warehou	Conservation Dependent	Conservation Dependent	Mostly occur in offshore waters, although juveniles may be found in bays, estuaries and coastal waters.	0	PMST	Negligible - no species records and no suitable 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 species records and no suitable aquatic habitat in the Structure Plan Area
Carcharodon carcharias	Great White Shark	Vulnerable, Migratory	Endangered	Marine species found worldwide	0	PMST	Negligible - no species records and no suitable aquatic habitat in the Structure Plan Area
Lamna nasus	Porbeagle, Mackerel Shark	Migratory		Marine shark typically occuring in oceanic waters off the continental shelf, although they occasionally enter coastal waters	0	PMST	Negligible - no species records and no suitable aquatic habitat in the Structure Plan Area
Thunnus maccoyii	Southern Bluefin Tuna	Conservation Dependent	Conservation Dependent	Highly migratory pelagic species, present along the western and southern coasts of Australia	0	PMST	Negligible - no species records and no suitable aquatic habitat in the Structure Plan Area

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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 species records and no suitable aquatic habitat in the Structure Plan Area
INVERTEBRATES							
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 species records and no native grasslands in the Structure Plan Area
MAMMALS							
Tursiops australis	Burrunan Dolphin		Critically Endangered	Marine mammal which is a restricted species only found in Victoria, Tasmania and South Australia. Port Phillip Bay population has ~120 individuals. Gippsland Lakes has ~65 individuals.	47	14/04/2014	Negligible - no suitable aquatic habitat in the Structure Plan Area
Lagenorhynchus obscurus	Dusky Dolphin	Migratory		Marine mammal occurring mostly in temperate and sub-Antarctic waters. They are considered to primarily inhabit inshore waters but may also be pelagic at times	0	PMST	Negligible - no suitable aquatic habitat in the Structure Plan Area
Petauroides volans	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 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.	6	1/03/1995	Low – no recent species records and limited suitable habitat in the Structure Plan Area
Megaptera novaeangliae	Humpback Whale	Migratory	Critically Endangered	Migrate in close proximity to the coast of Australia on their way to winter breeding areas off the north Queensland coast and Antarctic feeding areas	0	PMST	Negligible - no suitable aquatic 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				
Pseudomys novaehollandiae	New Holland Mouse, Pookila	Vulnerable		Open heathlands, woodlands and dry sclerophyll forests with a heath understorey, grasslands and vegetated sand dunes	0	PMST	Negligible
Caperea marginata	Pygmy Right Whale	Migratory		Present along the southern Australian coastal area.	0	PMST	Negligible - no suitable aquatic 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.	0	PMST	Negligible - no species records and no suitable habitat in the Structure Plan Area
Megaptera novaeangliae australis	Southern Humpback Whale		Critically Endangered	Migrate in close proximity to the coast of Australia on their way to winter breeding areas off the north Queensland coast and Antarctic feeding areas	7	7/06/2000	Negligible - no suitable aquatic habitat in the Structure Plan Area
Eubalaena australis	Southern Right Whale	Endangered, Migratory	Endangered	Present along the Australian coast (all except Northern Territory) between late April and early November.	0	PMST	Negligible - no suitable aquatic habitat in the Structure Plan Area
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 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 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-dominated woodlands and forests, including both wet and dry sclerophyll forests.	0	PMST	Negligible - no species records and no suitable habitat in the Structure Plan Area
Saccolaimus flaviventris	Yellow-bellied Sheathtail Bat		Vulnerable	Occurs in a wide range of habitats, roosts in hollow old trees.	1	2/05/1971	Negligible - no recent species records and limited suitable habitat in the Structure Plan Area
REPTILES							
Chelonia mydas	Green Turtle	Vulnerable, Migratory		Occur in seaweed-rich coral reefs and inshore seagrass pastures in tropical and subtropical areas of the Indo-Pacific region.	0	PMST	Negligible - no suitable aquatic 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				
Dermochelys coriacea	Leatherback Turtle	Endangered, Migratory	Critically Endangered	Found worldwide in tropical, temperate waters in all oceans of the world.	0	PMST	Negligible - no suitable aquatic habitat in the Structure Plan Area
Caretta caretta	Loggerhead Turtle	Endangered, Migratory		Found worldwide with a tropical and subtropical distribution.	0	PMST	Negligible - no suitable aquatic habitat in the Structure Plan Area
Emydura macquarii	Murray River Turtle		Critically Endangered	Rivers, creeks, dams and lagoons associated with the Murray-Darling drainage systems of south east Australia.	8	11/02/2015	Negligible - no suitable aquatic habitat in the Structure Plan Area
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 species records and no suitable grassland habitat
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 species records and no suitable swamp habitat

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