Western Plains South Green Wedge Management Plan
Draft Background Report – City of Melton

April 2018

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1 Introduction

The City of Melton and City of Wyndham together are preparing a Management Plan for the Western Plains South Green Wedge (WPSGW). The Management Plan will provide a framework to support sustainable land use, land management, and development of the WPSGW. As the WPSGW is spread over two municipalities, ultimately two Management Plans will be prepared. However, future use and development of the WPSGW will be guided by a single vision and shared principles.

This draft Background Report documents the findings of an initial information gathering study examining the current conditions within the WPSGW. As the WPSGW is contained within two municipalities, two Background Reports have been prepared, one each for the City of Wyndham and the City of Melton. Council is now seeking feedback from the community and stakeholders to test and validate the findings of the draft Background Reports.

1.1 GREEN WEDGE

Green wedges are the non-urban areas of metropolitan Melbourne that lie outside the Urban Growth Boundary (UGB, see section 0 for further explanation). There are twelve designated green wedge areas that collectively form a ring around Melbourne (Figure 1). These twelve green wedges are:

- Manningham
- Mornington Peninsula
- Nillumbik
- South East
- Southern Ranges
- Sunbury
- Werribee South
- Western Plains South
- Western Plains North
- Westernport
- Whittlesea
- Yarra Valley and Yarra and Dandenong Ranges.

The City of Melton is one of seventeen fringe municipalities within metropolitan Melbourne which contain green wedges. A green wedge is an area of land which has agricultural, environmental, historic, landscape, recreation and/or tourism value. Consequently, intense urban development is precluded in these areas.

FIGURE 1: MELBOURNE'S GREEN WEDGES

More specifically as documented in the Principles, Issues and Guidelines for Green Wedges[1] the role of the green wedges includes:

- Providing opportunities for agricultural uses, such as market gardening, viticulture, aquaculture, farm forestry and broad acre farming.
- Preserving rural and scenic landscapes.
- Preserving conservation areas close to where people live.
- Preserving renewable and non-renewable resources and natural areas, such as water catchments.
- Providing and safeguarding sites for infrastructure that supports urban areas, such as airports and sewage treatment plants.
    - Allowing industries such as sand and stone extraction to operate close to major markets.
    - Enabling the development of networks of open space.
- Providing opportunities for tourism and recreation.

1.2 GREEN WEDGE MANAGEMENT PLANS

As part of the implementation of Melbourne 2030 (the metropolitan planning strategy at the time) and the introduction of an UGB for Melbourne, the Victorian State Government introduced a process for the preparation of management plans for all of Melbourne's green wedges, mandating a consistent format.

[1] Department of Sustainability and Environment (2005) Principles, Issues and Guidelines for Green Wedges

These plans are intended to:

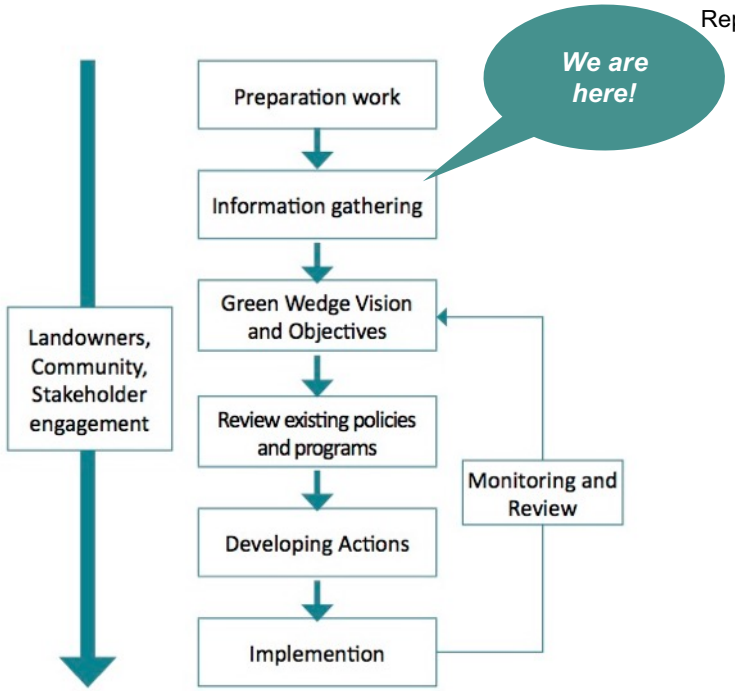
- Enhance knowledge of the environmental, social and economic attributes of the non- urban parts of the City, including addressing issues of environmental degradation and economic viability of traditional farming methods.
- Enhance community knowledge and awareness of non-urban land use, development and management issues.
- Identify initiatives to be undertaken by Councils, other bodies and a range of partnerships to ensure improved long term sustainable management of land and other resources in the green wedge areas.

Planning Practice Note No.31: Preparing a Green Wedge Management Plan states that a Green Wedge Management Plan should contain a number of key elements, relative to their particular areas. These elements include:

- An assessment of the context, both in relation to existing policy from both a Council and broader agency context.
- The development of an overall vision for the area, including the setting of goals and objectives.
- Identification of key issues based on the attributes and values of the area, its land uses, land ownership pattern, the social and economic conditions, the environmental qualities and the values, conditions and issues associated with the natural resource base.
- The development of key themes that outline opportunities to address the identified issues through planning, environmental and native resource initiatives, infrastructure improvements, local actions, and partnerships.
- Actions to be taken by a range of stakeholders that will assist in achieving the overall vision outlined within the Green Wedge Management Plan.

The Practice Note provides a typical model for preparing a Green Wedge Management Plan (Figure 2). This Background Report project addresses the Information Gathering stage of developing the WPSGW Management Plan. Core information required to inform preparation of the management plan should ideally include land capability, vegetation and habitat mapping, land ownership, land use, land condition and potential productive uses, location of significant natural sites and elements, landscape values, heritage sites and attributes, specific resources and hazards.

FIGURE 2: MODEL FOR PREPARING A GREEN WEDGE MANAGEMENT PLAN



The Green Wedge Management Plan and accompanying planning policy recommendations is implemented by local government through its planning scheme. As the WPSGW is contained within two municipalities, two Background Reports have been prepared, one each for the City of Wyndham and the City of Melton.

Preparation of this Background Report includes the following key tasks:

- Desktop research, literature review and ground survey to compile information and data on the area.
- Stakeholder consultation to test validate the findings of the desktop research.
- Community consultation to provide opportunity for community discussion and input to the Background Report.

1.3 STUDY AREA

Green wedge land within City of Melton is located outside the Urban Growth Boundary (UGB) and includes land which is zoned as Green Wedge Zone (or Green Wedge A Zone), Rural Conservation Zone, as well as land in Public and Special Use Zones.

The City of Melton has two designated green wedges (Figure 1):

- Western Plains North
- Western Plains South.

A Green Wedge Management Plan has been completed for the Western Plains North Green Wedge.

The WPSGW is located in an area generally bounded by the Melton South township to the north; the Princes Freeway to the south; the municipal boundaries of Greater Geelong and Moorabool to the west; and the UGB to the east. The WPSGW is contained within the City of Wyndham and the City of Melton (Figure 3).

The WPSGW within City of Melton City extends to the City of Wyndham municipal boundary to the south (Figure 4).

Note that planning associated with the Eynesbury township, Urban Growth Boundary and proposed Western Grasslands Reserve is outside the scope of the WPSGW Management Plan. The Green Wedge Management Plan will consider the interface and connections between the WPSGW and the Western Grasslands Reserve, Eynesbury township and the Urban Growth Boundary. Changes to the extent or boundaries of the Western Grasslands Reserve, Eynesbury township and Urban Growth Boundary will not be considered by the Green Wedge Management Plan.

FIGURE 3: WPSGW STUDY AREA

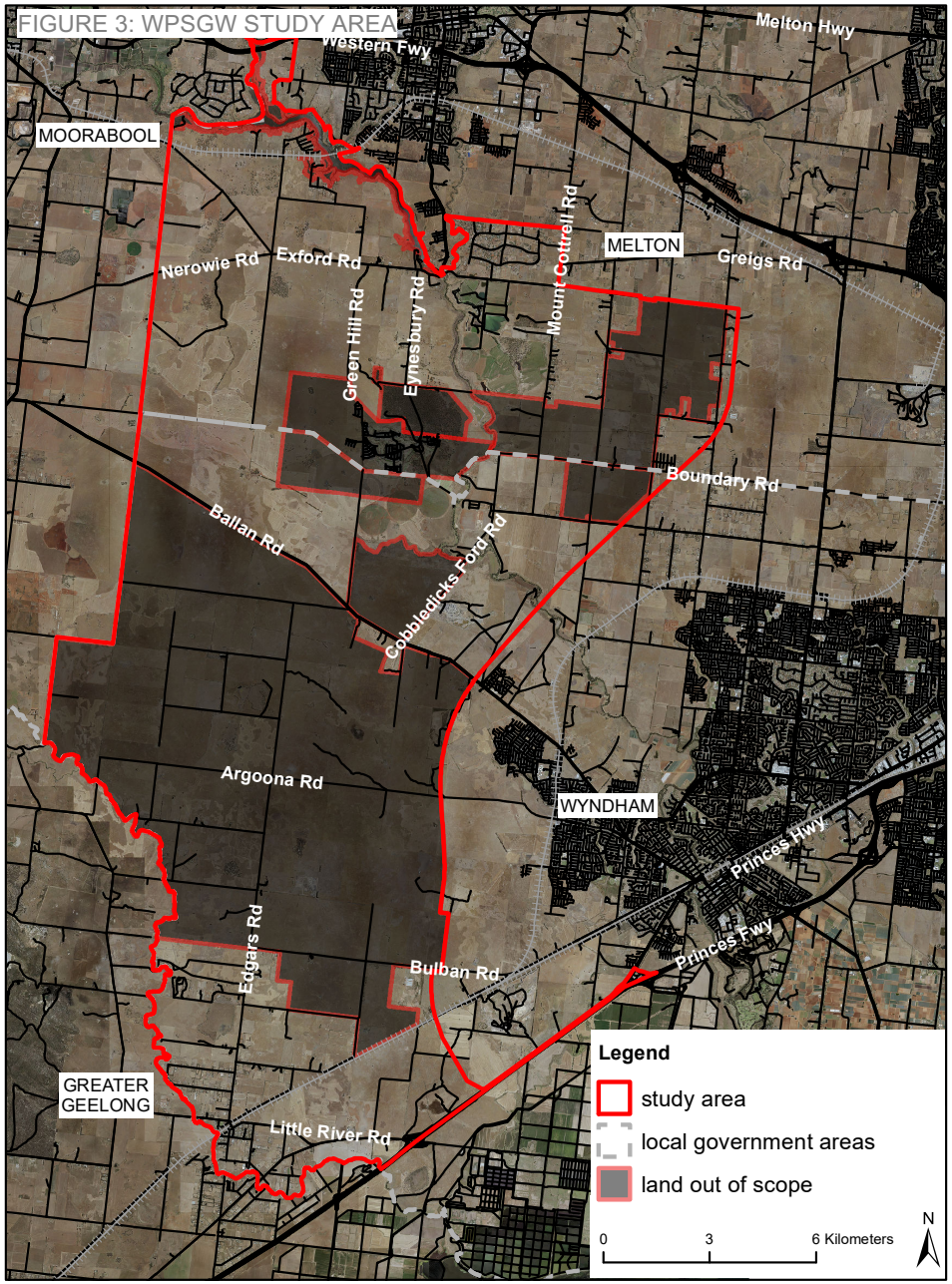
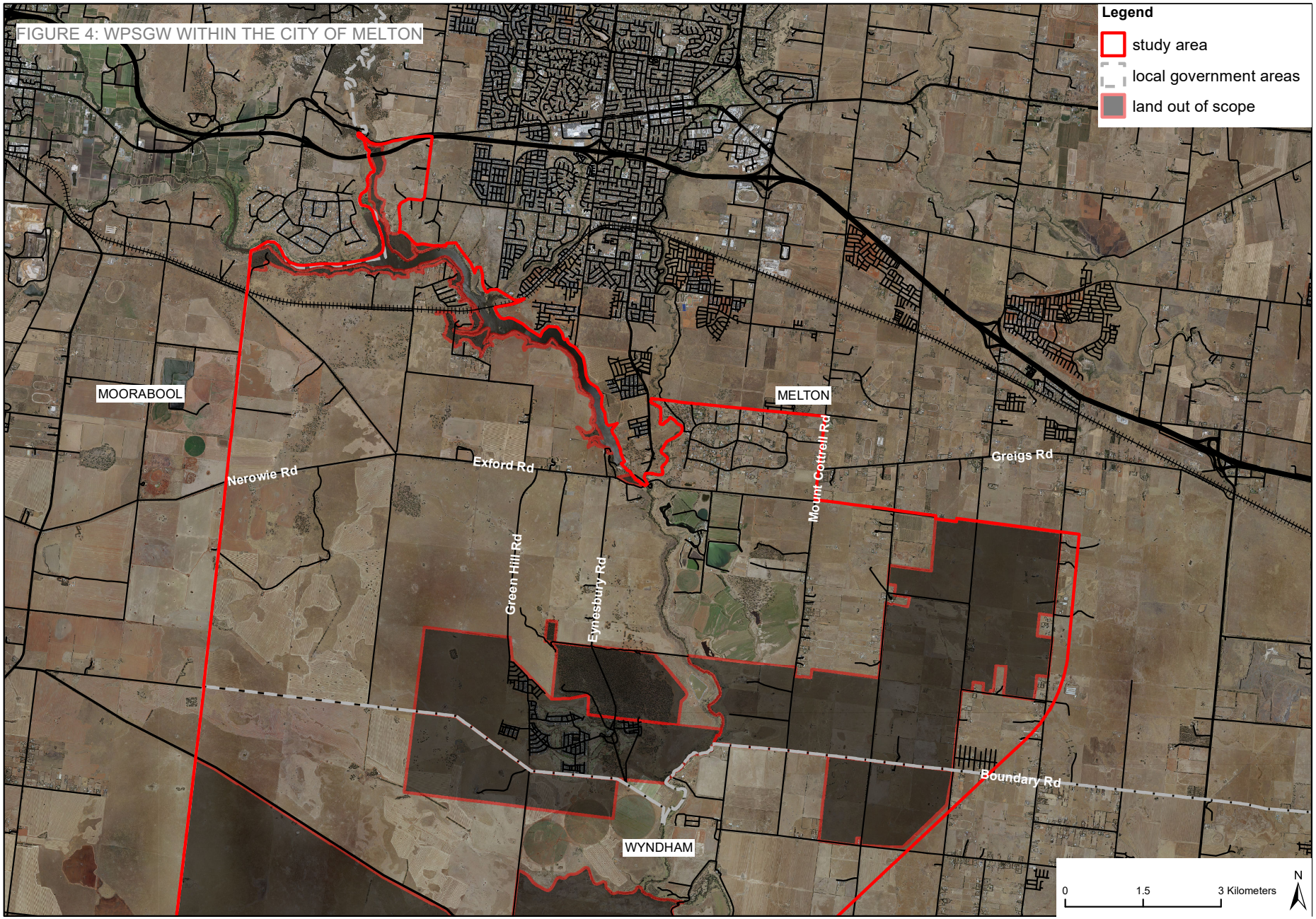


FIGURE 4: WPSGW WITHIN THE CITY OF MELTON



2 Context

This section provides a brief description of the WPSGW regional context to provide an overview of the key influences on the study area from a wider perspective. Key elements of the regional context are shown in Figure 6.

2.1 REGIONAL CONTEXT

It is around 30 kilometres via the M1 and Western Freeway from Melbourne's central business district to the eastern boundary of City of Melton. The core township of Melton was originally established, along with Sunbury, as a 'satellite' town to metropolitan Melbourne. The urban area of the City of Melton currently comprises two separate parts the township of Melton itself, and the eastern corridor which forms the edge of metropolitan Melbourne. The eastern corridor area comprises the rapidly growing suburbs of Caroline Springs, Burnside and Hillside among others.

The City of Melton is part of the Western Growth Corridor and Sunbury Growth Corridor, key growth areas of Melbourne. The Western Growth Corridor (Figure 5) identifies that the majority of the area between the eastern corridor and the Melton township will be developed for residential purposes, with key centres of activity located at Toolern, where a new railway station will be provided, and at Rockbank, Rockbank North, Plumpton and south of the Melton Highway. Expansion of the Diggers Rest township is part of the Sunbury Growth Corridor.

Diggers Rest In addition, large areas of land have been identified for employment uses in the south-east of the municipality at the eastern edge of the existing Melton township, and near the junction of the Melton Highway and Plumpton Road where the proposed Outer Metropolitan Ring will be accessible. Implementation of the Masterplan for Avalon Airport will expand passenger, freight and technical aviation operations as well as retail and commercial development.

The natural environment of the broader region is dominated by the Victorian Volcanic Plains, a vast ecosystem stretching across to the South Australian border. A dominant feature of these plains is a number of volcanic formations, such as Mount Cottrell, which can be seen across the grasslands.

The Victorian Volcanic Plains ecosystem is dominated by grasslands, which have been extensively modified since white settlement and are substantially compromised, with the original environment only remaining in small pockets. These small pockets remain under threat and are host to threatened fauna species such as the striped legless lizard, Golden Sun Moth, and Growling Grass Frog. Threatened flora species also exist with populations of Spiny Rice Flower, and Large Fruit Groundsel, occurring in a number of locations[2]. The major waterways of Werribee River and Toolern Creek are biodiversity corridors that provide important habitat and connectivity for species such as the Growling Grass Frog, as well as delivering water for downstream irrigation users.

In 2010, the State Government established the Western Grasslands Reserve to protect Commonwealth listed, critically endangered and threatened species, as well as mitigate any potential impacts of urban development on grasslands removed in the growth corridors. The proposed Western Grassland covers two areas of land (totalling 15,000ha) within the WPSGW,

Land in the Western Grassland Reserves is subject to a Public Acquisition Overlay (PAO), as well as an Environmental Significance Overlay. The reserves will be established by acquisition of properties subject to the PAO. DELWP is the acquiring authority for land in the reserves. The Victorian Government is developing management plans that will be implemented by Parks Victoria. This work is being undertaking separately to the preparation of the WPSGW Management Plan. The Western Grasslands Reserve will therefore not be considered by this Background Report other than the interface with the surrounding green wedge land.

[2] Australian Government (2011) Nationally Threatened Ecological Communities of the Victorian Volcanic Plain:
Natural Temperate Grassland &Grassy Eucalypt Woodland. A guide to the identification, assessment and management of nationally threatened ecological communities Environment Protection and Biodiversity Conservation Act 1999

2.2 ADJOINING MUNICIPALITIES

City of Melton shares municipal boundaries with Macedon Ranges Shire to the north, Hume and Brimbank Cities to the east, the City of Wyndham to the south and Moorabool Shire to the west. Adjacent to City of Melton, Macedon Ranges is essentially rural, with the forested slopes of the Pyrete Range extending into this Shire, and the land to the north-east of City of Melton being primarily used for rural residential uses.

To the west, Moorabool is classified as a peri-urban area. Along the Western Freeway, the township of Bacchus Marsh is close to the boundary with City of Melton and is expanding rapidly. The proposed Parwan Employment Precinct, which includes established intensive agriculture, wastewater treatment and a raceway, is located on the green wedge boundary between Moorabool and City of Melton.

To the south of City of Melton is Wyndham City Council, with which is shares many of the characteristics, being the other core municipality within the Western Growth Corridor. City of Wyndham and City of Melton have a close relationship due to the contiguous growth area and the shared jurisdiction of the WPSGW.

The municipalities of Brimbank and Hume to the east are essentially urban areas where they relate to City of Melton. Where land is not currently used for urban purposes, it forms part of growth corridors. The exception to this is the large area of land affected by Melbourne's Tullamarine Airport, Airport Environs overlay which extends into City of Melton.

The Western Freeway runs through City of Melton (east to west) and provides a key connection between Melbourne and Ballarat. The Calder Freeway runs north-south and provides a key connection between Mildura and Bendigo to the north-west and Melbourne to the south east, as well as forming the eastern boundary of the municipality. A rail corridor also runs alongside the Calder Freeway, providing rail access to Diggers Rest.

Also important to note is the alignment of the proposed Outer Metropolitan Ring (OMR) and E6 Transport Corridor on the eastern boundary of the WPSGW.

2.3 IMPLICATIONS, ISSUES AND OPPORTUNITIES

Implications, issues and opportunities raised by the analysis of the regional context that should be considered in the development of the WPSGW Management Plan include:

- Appropriate interfaces between existing and future urban areas and the green wedge
- Impacts of increased population growth and urban development adjacent to the green wedge
- Impacts of key infrastructure such as the proposed Outer Metropolitan Ring.

FIGURE 5: WESTERN GROWTH CORRIDOR

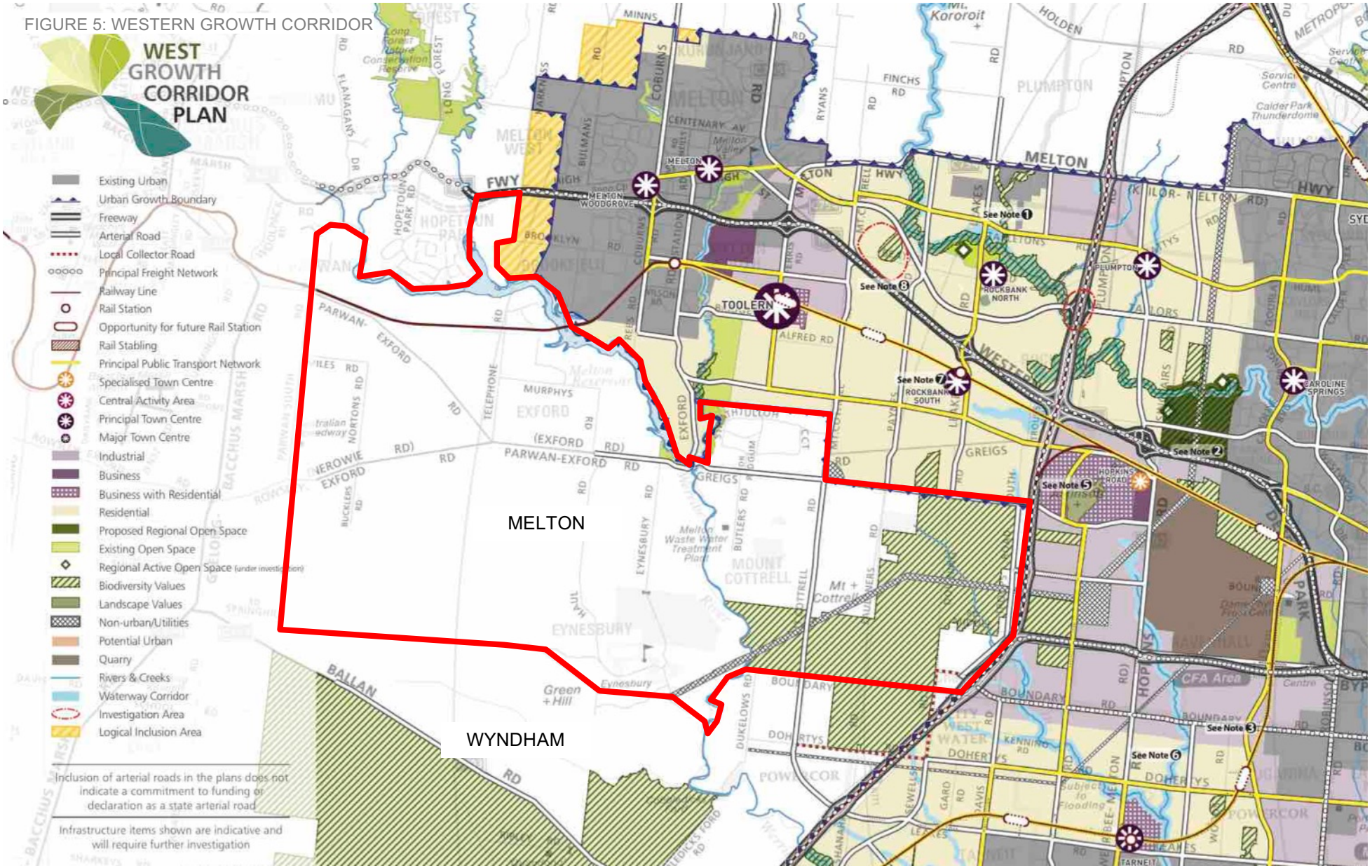
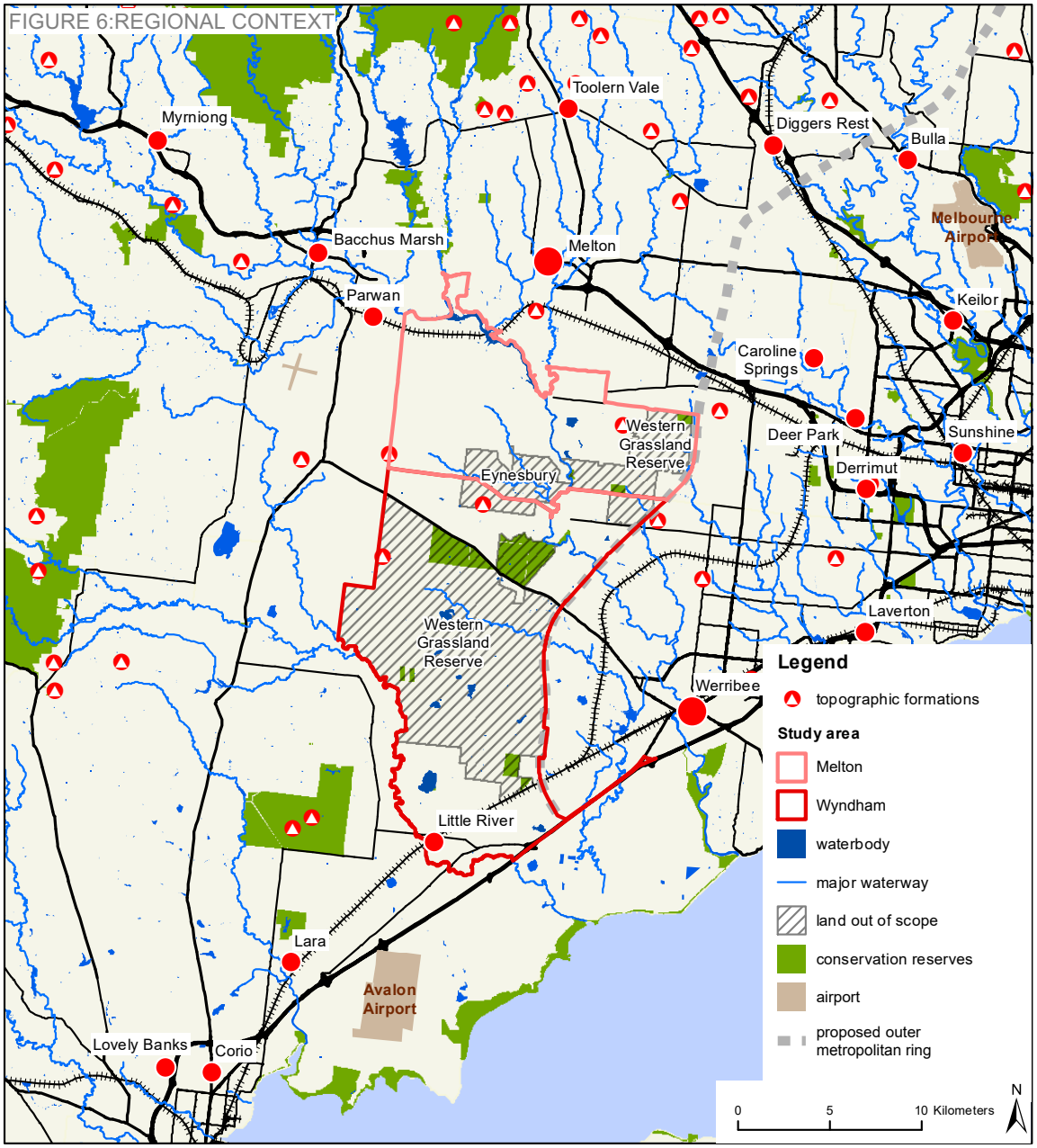


FIGURE 6:REGIONAL CONTEXT



3 Policy and Strategic Context

Management of the WPSGW is subject to a suite of legislative and policy instruments, including Federal and State legislation and local government policies and strategies. This section provides an overview of the legal and policy framework that applies to the WPSGW.

3.1 LEGISLATION

Management of the WPSGW is subject to Federal level Acts which require the protection of endangered species, as well as State level legislation to protect heritage and to ensure orderly planning.

A more comprehensive list of relevant legislation is provided in the following thematic chapters. The following is a summary of the key matters:

- *Environment Protection and Biodiversity Conservation Act:* the key piece of environmental legislation that enables the Australian, State and Territory governments to provide national environment and heritage protection and biodiversity conservation. It requires Federal approval of any actions which may impact on matters considered nationally significant.
- *Planning and Environment Act*: sets out the framework for planning within Melbourne and is implemented though the Melton Planning Scheme, discussed in more detail in the following sections.
- *Local Government Act*: provides the legal framework for local governments to enact policies such as the City of Melton's Environment Enhancement Policy.
- *Victorian Heritage Act*: the key piece of legislation that protects identified heritage places. There are two levels of protection that exist under this act; State level important sites which are then considered by Heritage Victoria, and more locally significant sites, which are considered by the relevant Responsible Authority.
- *Aboriginal Heritage Act*: recognises aboriginal heritage and sets in place a framework for undertaking cultural heritage assessments in areas identified as being potentially significant to local indigenous groups.
- *Aboriginal and Torres Strait Islander Heritage Protection Act:* provides an additional framework for protection of indigenous heritage at a Federal level.
- *Catchment and Land Protection Act*: defines roles and responsibilities and regulates the management of noxious weeds, pest animal and protection of land and establishes the Catchment Management Authorities who seek to manage water resources and preserve, enhance and protect water catchments.
- *Flora and Fauna Guarantee Act*: establishes a regulatory structure for the conservation of flora and fauna in Victoria. The FFG Act provides for the protection of native species and the preparation of Action Statements to protect the long-term viability of these values.
- *Water Act:* sets in place the legislative framework for management of water within the Victorian context, including relevant matters such as the protection of waterways.

3.2 STATE PLANNING POLICY

The *Planning and Environment Act* is applied within Victoria through the State Planning Policy Framework, Local Planning Policy Framework and the Victoria Planning Provisions.

The State Planning Policy Framework (SPPF) is common to all planning schemes in Victoria. The overarching theme of the SPPF is *'to provide for the fair, orderly, economic and sustainable use and development of land'* and identifies a number of key objectives, the most relevant of which is *'to provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity'* (Clause 10). The following state policies are also considered relevant to the WPSGW and the Green Wedge Management Plan will need to have regard for these matters.

- Clause 11 – Open space: The policy focuses on open space planning and management. It assists with the creation of a diverse and integrated network of public open space commensurate with the needs of the community and provides for the long term management of public open space.
- Clause 11.06-7 – Green wedges: The policy seeks to protect the green wedges of metropolitan Melbourne from inappropriate development by ensuring the strategic planning and land management of each green wedge area to promote and encourage its key features and related values. It seeks to protect important productive agricultural areas and areas of environmental, landscape and scenic value.
- Clause 11.06-8 – Open space network in Metropolitan Melbourne: The policy seeks to strengthen the integrated metropolitan open space network and ensure that open space corridors are protected and enhanced. This includes the Kororoit Creek and Toolern Creek Regional Parks.
- Clause 12.01 – Biodiversity: The policy assists with the on-going protection and conservation of biodiversity, which includes the retention and the preservation of areas with native vegetation and animals. It also seeks to manage and control pest plants and animals. This policy seeks to achieve a

net gain in the extent and quality of native vegetation by protecting areas with important biodiversity value through the application of appropriate land use planning strategies.

- Clause 12.04 – Significant environment and landscapes: The policy assists with the protection and conservation of environmentally sensitive areas, and landscapes and significant open spaces that contribute to character, identity and sustainable environments.
- Clause 13.05 Bushfire: The policy assists with strengthening community resilience to bushfire by applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard and assessing the risk to life, property and community infrastructure from bushfire at a regional, municipal and local scale. It also requires consultation with the relevant fire authority early in the strategic and settlement plan making process and identifies a number of matters that must be considered when planning for, or expanding an existing settlement in an area at risk of bushfire.
- Clause 14.01 – Agriculture: The policy assists with the ongoing protection of productive farmland which is of strategic significance at a local and/or regional scale. It seeks to encourage and promote sustainable management of agricultural land.
- Clause 14.02 – Water: This policy assists with the on-going protection and restoration (where possible) of catchments, waterways, water bodies and ground water. The policy seeks to protect and enhance water quality by ensuring that water resources are managed in a sustainable manner.
- Clause 14.03 – Resource exploration and extraction: The policy encourages the exploration and extraction of natural resources in accordance with acceptable environmental standards and to provide a planning approval process that is consistent with the relevant legislation. It seeks to protect the opportunity for exploration and extraction of natural resources where this is consistent with overall planning considerations and application of acceptable environmental practice and to provide for the long term protection of natural resources in Victoria.
- Clause 15.03 – Heritage: The policy assists with the conservation of places of heritage significance. It seeks to identify, assess and document places of natural and cultural heritage significance as a basis or their inclusion in the planning scheme and to provide for the protection of natural heritage sites and man-made resources and the maintenance of ecological processes and biological diversity.
- Clause 17.03 - Tourism: The policy seeks to encourage tourism development to maximise the employment and long term economic, social and cultural benefits of developing the State as a competitive domestic and international tourism destination.
- Clause 19.03-5 – Waste and resource recovery: The policy seeks to avoid, minimise and generate less waste to reduce damage to the environment caused by waste, pollution, land degradation and unsustainable waste practices. It seeks to establish new sites and facilities to safely and sustainably manage all waste and maximise opportunities for resource recovery. It encourages facilities for resource recovery to maximise the amount of resources recovered and encourages waste generators, resource generators and resource recovery businesses to locate in close proximity to enhance sustainability and economies of scale.

3.3 LOCAL PLANNING POLICY FRAMEWORK

The Local Planning Policy Framework (LPPF) provides specific guidance and controls for the use and development of land from a local perspective. These policies are developed by local government as they have an intrinsic understanding and insight into the key issues, opportunities and constraints within their municipality.

The LPPF must have regard to the objectives of SPPF and must not contradict these policies. In this context, if there is a conflict or contradiction, the SPPF takes precedence.

The Local Planning Policy Framework is broken into two main sections. The first section (Clause 21) provides both an overview of the municipality and a framework for the future development and growth. This framework is supported by a number of objectives and strategies. The second section of the LPPF (Clause 22) contains local policies. These are provided where there is a need for additional guidelines or parameters which apply to particular types of development of areas within the municipality. Restructure and update of Clause 21 of the Melton Planning Scheme is the subject of a planning scheme amendment that will shortly be placed on public exhibition.

The following local policies are relevant to the study area.

Clause 22.09 – Eynesbury Station Policy - Enable the continued use of Eynesbury Station for productive agriculture; Ensure the integrated environmental management of Eynesbury Station as a whole. Facilitate the productive reuse of water from Surbiton Park Treatment Plant. Maintain and improve the water quality of Werribee River.

- Support the development of an innovative residential and recreational community at Eynesbury Station based on principles of environmental, social and economic sustainability.
- Provide opportunities for the reuse of water from Surbiton Park Treatment Plant primarily in connection with the agricultural and recreational components of Eynesbury Station.
- Provide opportunities for the diversification and intensification of agriculture.

- Incorporate best practice in all aspects of design, agricultural practice and environmental management, which includes control of pest plants and animals, stormwater management and the management of key environmental assets.
- Implement the vision and philosophy identified in the Eynesbury Station Incorporated Plan, September 2001.Strategies and plans.

Clause 22.10 Stores and outbuildings policy - Ensure that the siting, design and scale of outbuildings and stores respects the character of an area; Ensure that the design and siting of outbuildings and stores does not have a detrimental impact upon visual amenity and the natural landscape; Ensure that the amenity of nearby and neighbouring properties are not unduly affected by the use or development of outbuildings and stores. Encourage the appropriate siting, external finishing and use of stores and outbuildings.

Clause 22.14 – Dry stone walls - Encourages the conservation and repair of dry stone walls. Generally discourages the demolition of dry stone walls in the Heritage Overlay. Encourages the retention, reuse and recycling of stone and dry stone walls. Ensure new development is sympathetic and seeks to conserve and enhance dry stone walls.

3.4 ZONES

Zoning provides a framework to guide the use and development of land. Land uses are separated into three categories:

- Section 1 is 'as of right' with no permit required,
- Section 2 uses are allowed but require a permit, and
- Section 3 uses are prohibited.

Zoning also identifies additional permit triggers and provides decision guidelines (in addition to the broader decision guidelines that can be found at Clause 65 of all Victorian planning schemes) that the Responsible Authority must consider when assessing an application.

The following provides an outline of the zones as they are currently applied within the study area. This zoning is shown in Figure 7.

Green Wedge Zone

The Green Wedge Zone is the dominant zone within the study area. The purpose of the zone is to promote sustainable land management, protect biodiversity and heritage and promote uses consistent with rural landscape. To this end a range of uses are permitted or prohibited within the area.

In addition to the use of the land, the zone also controls the minimum subdivision size. Within the study area the schedule has divided land into two categories. The majority of the land is in schedule A, while the land within the Strathtulloh Estate is in Schedule B (See Figure 7).

Subdivision in areas covered by Schedule A is guided by the following:

- The number of lots into which the land may be subdivided is to be calculated using the following formula: N=A/20.
- Where N (rounded down) is the number of lots that can be created and A is the area of the land in hectares.
- The subdivision must comprise one large primary lot. The secondary lots must be at least 1.0 hectares and must be no larger than 5.0 hectares.
- An agreement under Section 173 of the Act must be entered into with the owner of each lot created which ensures that the land may not be further subdivided under this provision.

This allows small lots of between 1 and 5ha to be created while retaining a larger lot for agriculture.

Within the area covered by Schedule B, the minimum subdivision size is 12ha.

Public Use Zone 1

The purpose of the Public Use Zone 1 (Service and Utility) is to recognise public land use for public utility and community services and facilities and associated uses that are consistent with the intent of the public land reservation or purpose. The zone has been applied to the Melton Reservoir, Werribee River and the Melton Recycled Water Plant operated by Western Water.

Special Use Zone 1

The Special Use Zone (Schedule 1) has been applied to two discrete areas to the east and west of the Melton Recycled Water Plant to recognise or provide for the use and development of land for earth and energy resources industry.

Public Park and Recreation Zone

The Public Park and Recreation Zone has been applied to the Lozzbert Reserve at the intersection of Greigs Road and Exford Road on the Werribee River and to the Mt Cottrell Recreation Reserve on Faulkner Road.

Rural Conservation Zone

The Rural Conservation Zone applies to land adjacent to the Werribee River and has a minimum subdivision size of 40ha.

3.5 INTERFACE ZONING

The zoning at the interfaces of the study area will also influence what occurs within the study area, and the types of pressures which could be expected in adjoining areas. In particular the following zones which interface within the study area are relevant considerations.

Rural Conservation Zone

The Rural Conservation Zone applies to the Western Grasslands Reserve to provide for the protection of the significant environmental values associated with the *EPBC* listed grasslands.

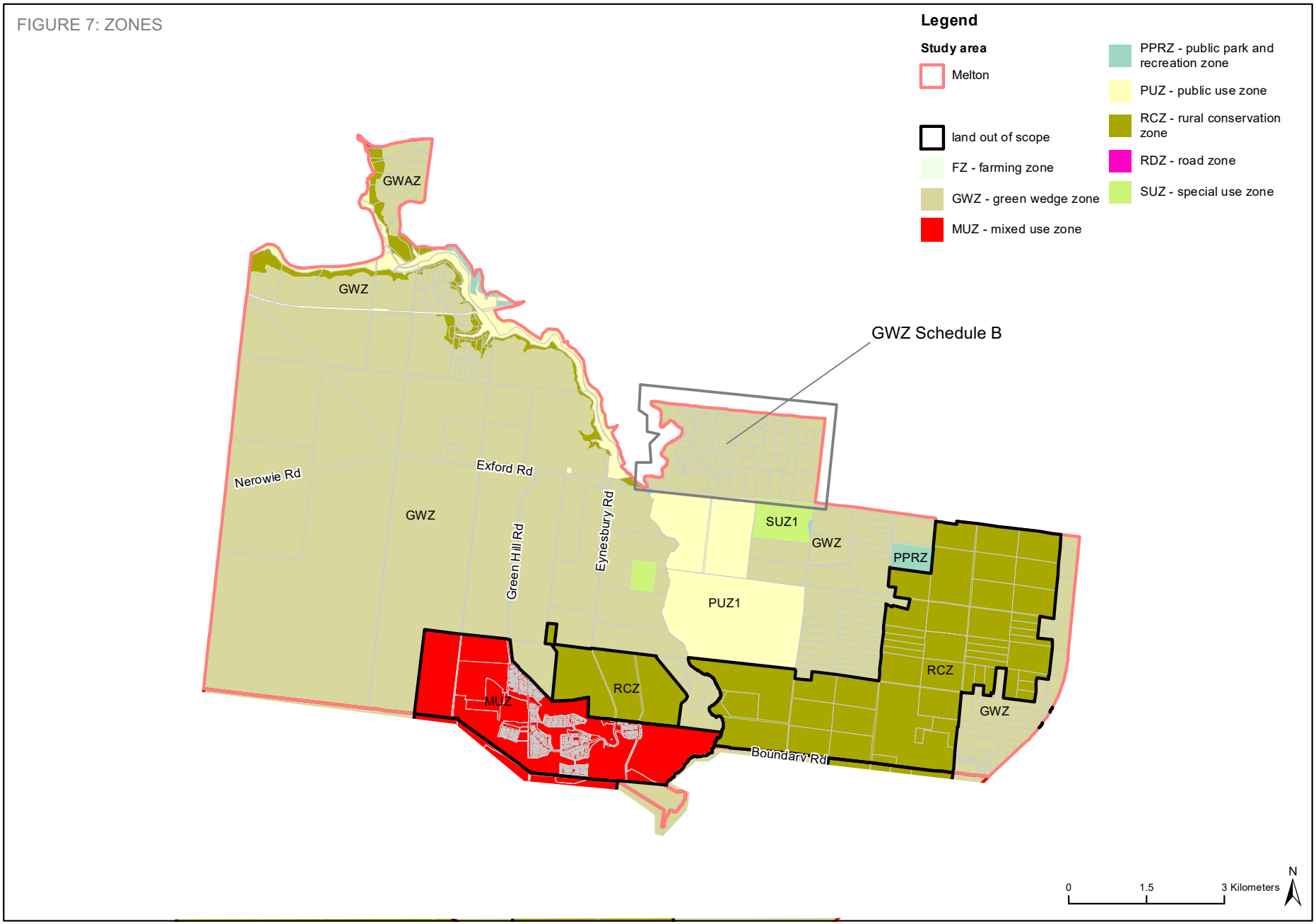
Urban Growth Zone

The Urban Growth Zone affects all land to the east and north of the study area. These areas will be developed in the future to accommodate standard urban development, primarily of a residential nature, in accordance with relevant schedules. Where the UGZ abuts the study area, intensive development can be expected, with associated pressures on the adjoining land.

Mixed Use Zone

The Mixed Use Zone has been applied to the township of Eynesbury. Eynesbury is a master planned community which when fully developed, will host around 4,500 dwellings as well as commercial, retail and community services.

FIGURE 7: ZONES



3.6 OVERLAYS

Overlays controls support the underlying zoning of the land and provide additional levels of controls primarily around built form and site responses to particular characteristics of the land. An Overlay may trigger assessment of a permit application where this may not be required through the zoning of the land.

The following is a brief summary of the overlays that apply to land within the study area (Figure 8, Figure 9).

Environmental Significance Overlay (ESO)

This overlay identifies areas where the development of land may be affected by environmental constraints and to ensure that development is compatible with identified environmental values. There are four schedules to the ESO within the study area recognising particularly environmental values including:

- Schedule 1 – Remnant woodlands, open forests and grasslands
- Schedule 2 – Wetlands, waterways and riparian strips
- Schedule 3 – Western Grasslands Reserves – Applies to the proposed Western Grasslands Reserves
- Schedule 4 – Grasslands within the Werribee Plains Hinterland – Applies to land within the Victorian Volcanic Plains Bioregion
- Schedule 5 and Schedule 6 Rural Conservation Zone Area – Applies to the proposed Western Grasslands Reserve

Significant Landscape Overlay (SLO)

The SLO identifies significant landscapes and seeks to conserve and enhance the character of significant landscapes. Schedule 1 - Volcanic hills and cones has been applied to Mt Cottrell.

Heritage Overlay (HO)

Numerous sites with the study area have been identified by the Heritage Overlay. The purpose of the overlay is to conserve and enhance heritage places of natural or cultural significance and ensure that development does not adversely affect the significance of heritage places.

3.7 INTERFACE OVERLAYS

Overlays at the interface of the study area will also influence what occurs within the study area. The following overlays which interface the study area in Melton are relevant considerations.

Incorporated Plan Overlay (IPO)

The IPO identifies areas which require the where the form and conditions of future use and development to be shown on an incorporated plan before a permit can be granted to use or develop the land. IPO Schedule 1 has been applied to Eynesbury Station and sets out permit requirements in accordance with the Eynesbury Station Incorporated Plan.

Development Plan Overlay (DPO)

The DPO identifies areas which require the form and conditions of future use and development to be shown on a development plan before a permit can be granted to use or develop the land. DPO Schedule 6 has been applied to the Eynesbury Station requiring a development plan to be prepared, consistent with the directions of the Eynesbury Station Incorporated plan, prior to the development of the land.

Public Acquisition Overlay (PAO)

The PAO identifies land which is proposed to be acquired by a Minister, public authority or municipal council for a public purpose and to ensure that changes to the use or development of the land do not prejudice the purpose for which the land is to be acquired. The PAO has been applied to land identified for the Western Grasslands Reserves (PAO5) and the Outer Metropolitan Ring and E6 Transport Corridor (PAO3, PAO6).

Restructure Overlay (RO)

The RO identifies old and inappropriate subdivisions which are to be restructured. RO Schedule 1 has been applied to the Rosedale Estate Chartwell.

FIGURE 8: OVERLAY S

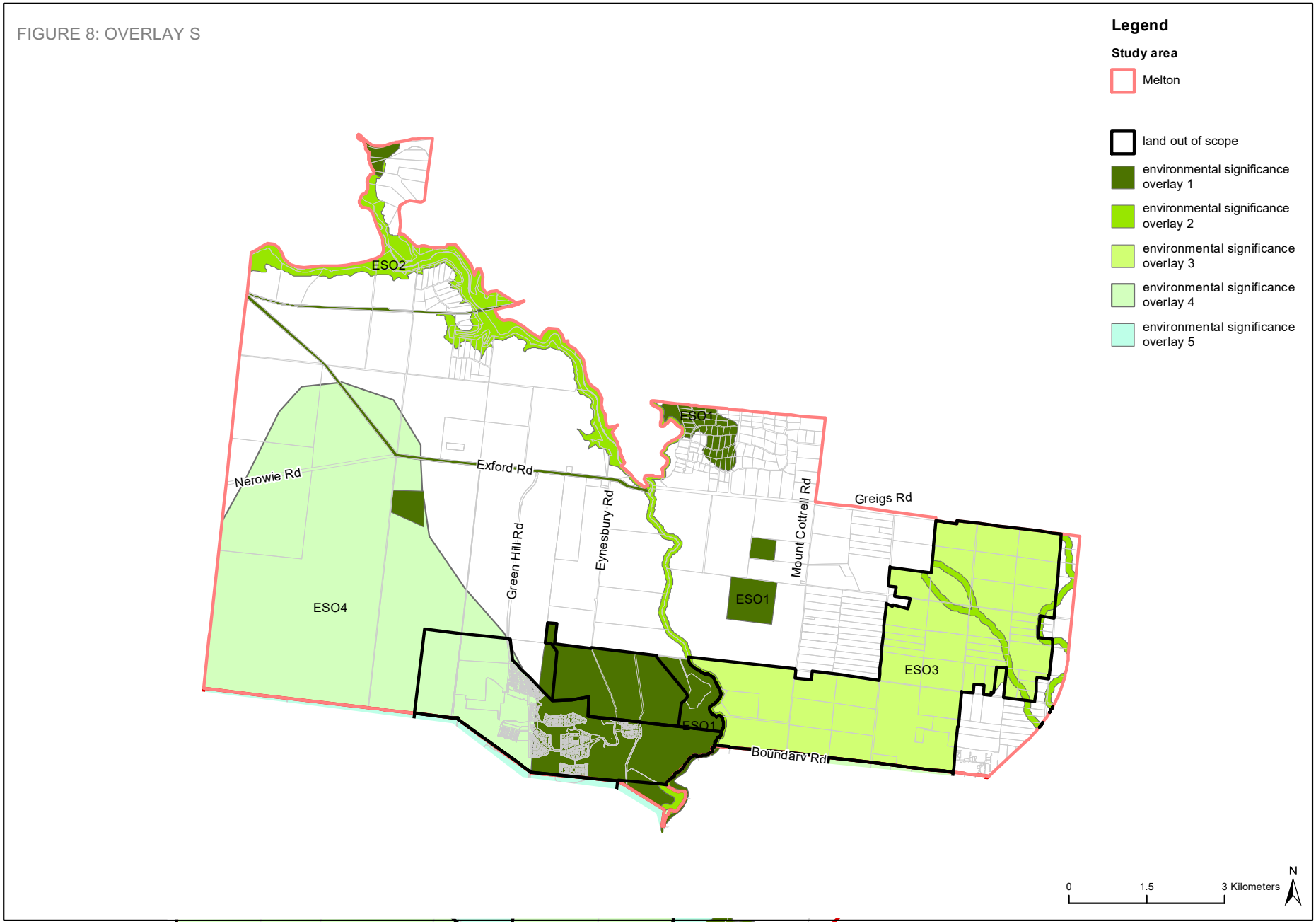
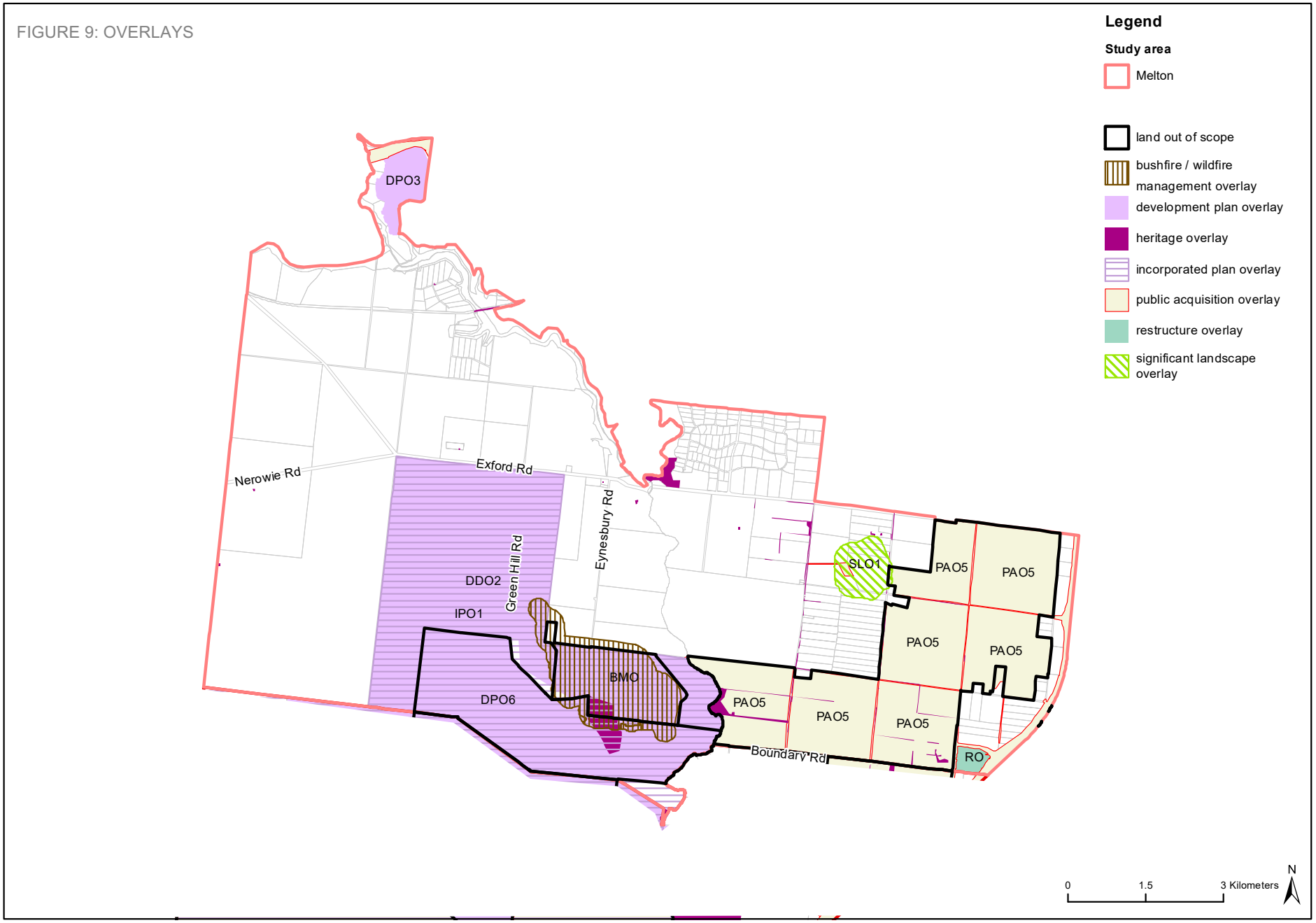


FIGURE 9: OVERLAYS



3.8 STRATEGIES AND PLANS

There are a number of strategies and plans that will either directly or indirectly influence land use and development in the WPSGW.

Urban Growth Boundary[3]

As Melbourne has grown and expanded, particularly over recent decades, there has been erosion of the extent of the green wedges established by the Hamer government. As a result of some relatively significant losses of green wedge land, the Victorian government introduced a legislated urban growth boundary (UGB) in 2002. The purpose of the UGB is to restrict urban development within the boundary thus preserving and protecting the green wedge. As a legislated UGB, expansion requires approval from both the upper and lower houses of the Victorian Parliament. The same legislation that introduced the UGB also introduced the Green Wedge Zones to ensure the specific characteristics and objective of the green wedges was reflected in decision-making, where previously this land had utilised a suite of rural or other zones as appropriate.

Plan Melbourne 2017-2050

While the new UGB was intended to provide certainty at the rural - urban fringe, expansions and logical inclusions to the UGB between 2002 and 2012, applied pressure to the green wedges. The refresh of Plan Melbourne reaffirms the importance of Melbourne's green wedges and sets out objectives and outcomes that will need to be considered in the development of the WPSGW Management Plan. Features, assets and industries that should be prioritised over land uses include:

- Biodiversity assets
- Existing and potential agribusiness activities, forestry, food production and tourism
- Major state infrastructure and resource assets, including water supply dams and water catchments and waste management and recycling facilities
- Renewable energy sources such as wind and solar farms
- Extractive industries
- Recreational resources, which contributes to public health outcomes for all Victorians.

The Plan states that planning for green wedges should:

- Define and protect areas that are strategically important to the metropolitan area and the state, for the environment, biodiversity, landscape, open space, water, agriculture, energy, recreation, tourism, environment, cultural heritage, infrastructure, extractive and other natural resources
- Protect and manage the value of green wedges consistent with green wedge management plans
- Avoid development in locations where there is risk to life, property, the natural environment and infrastructure from natural hazards such as bushfire and flooding
- Accommodate additional housing and employment in established towns that have the capacity for growth
- Provide for non-urban breaks between urban areas.

The Plan sets out the following desired outcomes for green wedges:

- Environmental and biodiversity assets - Protect and enhance environmental and biodiversity assets, such as coastal areas, wetlands, rivers and creeks, forests and grasslands.
- Landscape and open space - Protect significant views, maintain non-urban breaks between urban areas, and conserve the cultural significance, tourism appeal and character of scenic rural landscapes.
- Water supply catchments - Manage and protect catchments (including Special Water Supply Catchments), groundwater, water infrastructure and storages, and waterways to improve water quality, protect the environment and provide a reliable and secure water supply. Minimise any negative impacts from sedimentation or water pollution on the Port Phillip and Western Port coastal ecosystems.
- Natural hazards - Avoid development in areas that are subject to high risk from bushfire or flooding and inundation so as to minimise potential risk to life, property and the environment. Recognise, understand and prepare for the projected impacts of climate change and rising sea levels. Avoid significant land disturbance, reduce the occurrence and impact of soil erosion and salinity and manage potentially contaminated land.
- Agricultural land - Protect agricultural land from incompatible uses, maintain farm size, promote the continuation of farming and provide a secure long-term future for productive and sustainable agriculture.
- Recreation - Provide land for a range of open space functions to meet community needs for active and passive recreation and for protection of the environment.
- Tourism - Facilitate sustainable year- round tourism, and new tourism development (including diverse attractions, accommodation and eating establishments) that maintains the integrity of the natural environment, provides social benefits for communities and visitors and contributes to local economies.
- Cultural heritage - Provide for the protection and management of sites of Aboriginal and post–European settlement cultural heritage to ensure that links with the past are preserved for present and future generations to appreciate. A wide range of cultural-heritage assets are found in buildings, structures, scattered relics, trees and gardens,

[3] Victorian State Government (2017) Plan Melbourne 2015-2050

landscapes and geological formations, archaeological and fossil sites and areas associated with historical events.

- State-significant infrastructure - Protect regionally significant assets such as metropolitan landfills), wastewater management facilities, industrial areas and related odour and safety buffers, airports and flightpaths. Provide opportunities for renewable energy generation.
- Mineral, stone and sand resources - Protect designated mineral, sand and stone resources for future extraction to ensure a continuous supply of construction material.
- Economy - Maintain a strong, dynamic economy and employment base by building on the comparative advantages in agriculture, timber, transport, tourism, education, manufacturing, the service industry and commerce.
- Population, settlements and local infrastructure - Manage the growth and sustainable development of green wedge townships and settlements, having regard for their distinct character and environmental and servicing constraints. Create socially sustainable communities and support an active community working towards reducing greenhouse gases and responding to climate change. Protect and enhance the existing character, presentation and form of towns, including their main road entrances.
- Rural living - Manage rural living to prevent negative impacts on agriculture, biodiversity and landscape values.
- Transport and accessibility - Provide a high-quality road and rail transport network with a range of sustainable, efficient, accessible and affordable transport options that readily connect neighbourhoods, workplaces, community facilities, services and enable people to participate in community life. Facilitate improvements to transport networks and facilities that support tourism, such as airports.
- Planning and governance - Facilitate integrated and balanced forward planning, involving all agencies, and having regard to the needs and aspirations of current and future generations.

Western Growth Corridor Plan

The Growth Corridor Plans: Managing Melbourne's Growth[4] sets out the broad land use framework that will guide the future planning and development of new precincts in the western growth corridor. Implementation is anticipated to increase the population capacity of the western region from 377,000 to 479,000, jobs capacity from 164,000 to 202,000 and dwelling capacity by 136,000 to 170,000.

Precinct Structure Plans

Growth in the Western Growth Corridor is being planned and delivered through precinct structure plans. Five structure plan precincts in Melton have a direct interface with the WPSGW:

- Toolern
- Mt Atkinson and Tarneit Plains
- Rockbank
- Rockbank South
- Chartwell East.

Three structure plans have been completed and provide for an estimated 125,475 new residents: Toolern (55,000), Mt Atkinson and Tarneit Plains (22,400) and Rockbank (22,200). Development of precinct structure plans for the remaining two precincts: Rockbank South and Chartwell East are proposed for the future.

Each precinct structure plan provides detailed future land use plans including identifying land for townships, activity centres, industrial, commercial, residential uses and transport and community services.

[4] Growth Areas Authority (2011) Growth Corridor Plans: Managing Melbourne's Growth

3.9 CITY MELTON

The City of Melton Council and Well Being Plan sets out an overarching vision describing how Council sees the development of the City in years to come:

A Thriving Community Where Everyone Belongs.

Themes that support achievement of the vision include:

- A proud, inclusive and safe community
- A thriving and resilient natural environment
- A well planned and built City
- A strong local economy and a lifelong learning City
- A high performing organisation demonstrating leadership and advocacy.

Strategies and plans that will assist in achieving the vision and relevant to the WPSGW are listed here and discussed in further detail in the relevant sections of this Background Report:

- Economic Development and Tourism Strategy
- Investment Attraction Strategy
- Environmental Plan
- Melton Significant Landscape Features Strategy
- Melton Open Space Plan
- Dry Stone Walls Study (Vol 1 and 2)
- Werribee River Shared Rail Strategy.

3.10 ISSUES & OPPORTUNITIES

Implications, issues and opportunities raised by the analysis of the context that should be considered in the development of the WPSGW Management Plan include:

- Legal requirements to protect and enhance habitat for identified flora and fauna
- Need to ensure consistency with the State Planning Policy Framework and Plan Melbourne
- Leverage tourism and recreation opportunities and connections arising from Precinct Structure Plans.

4 Governance and Management

In addition to the legislation and planning controls which provide the framework for land use and development decisions within the green wedge, there are a number of other practices and programs which influence the current conditions of land within the study area. This includes programs run by City of Melton and community activity. While the WPSGW Management Plan is primarily a land use and development plan, it also considers a range of other actions which may improve the sustainable management of the land.

4.1 CITY OF MELTON

City of Melton commenced the Environmental Enhancement Program in 1994. The Program provides rural landholders with a financial incentive in the form of a rate rebate to undertake environmental improvement works in their property. The Program targets land degradation problems including noxious and environmental weeds, pest animals and erosion as well as sustainable land management and biodiversity enhancement such as protecting and enhancing native vegetation. Eligible landholders are issued their Annual Rates Notice with the rebate already granted which is retained by undertaking approved works.

Council also supports other environmental programs including

- Environmental grants to support community groups
- A range of environment education programs.

Melbourne Water and the Port Phillip and Westernport Catchment Management Authority also deliver a number of environmental programs in the area including Waterwatch, Frogwatch and Valuing Our Volcanic Plains.

4.2 COMMUNITY ACTIVITY

A number of community groups are also actively involved in the protection and enhancement of environmental values in the WPSGW including the Pinkerton Landcare and Environment Group, Truganina Landcare Group and the Parwan Landcare Group.

4.3 ISSUES & OPPORTUNITIES

Implications, issues and opportunities raised by the analysis of the governance and management that should be considered in the development of the WPSGW Management Plan include:

- The continued role of the Environmental Enhancement Program in improving land management
- Role of community groups in maintaining land and improve biodiversity outcomes
- Coordination between agencies and groups which provide funding for improving land management and biodiversity outcomes
- Coordination of the outcomes sought through the WPSGW Management Plan and those of other agencies such as Melbourne Water and the Port Phillip and Westernport Catchment Management Authority.

5 Landscape

The section of the report addresses the natural attributes that underpin the landscapes of the WPSGW. An understanding of the landscape features will inform measures to protect and enhance the scenic amenity of the study area and the economic and social benefits that they provide. Figure 10 summarises the matters relating to the WPSGW landscape.

5.1 TOPOGRAPHY

The WPSGW has a distinctive topography comprising the gentle rolling topography of the volcanic plain rising up to the volcanic hills to punctuate the landscape and are visible from long distances and deeply incised river gorges[5].

Mount Cottrell is a low lava cone resting on a broad lava shield formed by the radial eruption of numerous thin fluid lava tongues. The site is of state geological significance due to the unusual structures at the bluff and crater and the extent of the radial flows, producing a very broad lava shield. This is the most massive of the Werribee Plains volcanoes and one of the largest shield volcanoes in Victoria[6].

Distinctive and dominant landscape features outside the study area are Mount Kororoit, Mount Atkinson and the You Yangs.

5.2 TREE COVER

The tree cover of study area has been substantially reduced since European settlement. Remaining tree cover is associated mostly with the riparian zones of the Werribee River and Eynesbury Bushland Reserve

5.3 CREEKLINES

Deeply incised creeklines are a distinctive feature of the grasslands of the Western Plains. The Werribee River corridor is a significant gorge formation and the riparian areas and escarpments along the Werribee River are a major natural feature of the region. The river corridor also has an extensive history of aboriginal occupation, with middens and burial sites recorded along the waterway. A small section of the lower reaches of the Toolern Creek is within the study area.

5.4 GRASSLANDS

In addition to their environmental significance, (discussed in Section 7) the grasslands of the Western Plains also contribute to the distinctive landscape character of the WPSGW. Highpoints within the grasslands provide sweeping view of Melbourne's cityscape to the east, Port Phillip Bay and Corio Bay to the south and the You Yangs to the West.

5.5 LANDSCAPE

The study area falls into the Western Volcanic Plain landscape character type[5]. These plains are stony rises, old lava flows, volcanic cones and old eruption points which together create a unique visual landscape. The plains are interrupted by volcanic cones. Native grasslands and most trees are associated with the waterways. Shelterbelt planting, rural-style fencing and dry stone walls are common along property frontages and paddock edges. Farm houses and outbuildings are scattered throughout, with a smaller subdivision pattern occurring on the perimeter of the townships. Rocks are often grouped into piles in paddocks in an attempt to clear the land and make it more arable for farming.

Sites of landscape significance include Volcanic hills and cones and Waterways.

Volcanic Hills & Cones

The volcanic plain is punctuated by dormant volcanic cones which rise up from the surrounding landscape. Of these, Mount Cottrell is the most prominent in the study area. Despite their relatively low elevation, they are visible from long distances and provide points of interest within the open plains. Visible throughout the municipality, the cones create a high level of contrast and visual interest in the landscape. These cones are iconic features of local significance that are scarce due to their topographic variation, unusual in the local context.

Waterways

Watercourses are incised across the volcanic plain as well-defined valleys or deep gorges. Forested river corridors are a highly visible feature of the volcanic plains, creating a backdrop to the surrounding open and expansive countryside. Where waterway settings are cleared, the topography of the waterway is a highly distinctive feature of the landscape. Cleared volcanic plains give way to vegetated valley walls or exposed rock faces.

Mount Cottrell

Mount Cottrell (205m AHD), is one of the best examples of a lava shield volcano in Victoria and is one of the most striking volcanoes close to Melbourne. This dormant volcano has a classic profile formed by lava erupting in a radial fashion. The lava flows on its western side are most discernible. Its summit provides panoramic views in all directions, including views to the You Yangs, Mount Macedon and Melbourne's CBD[5].

[5] Planisphere (2016) Significant Landscape Features Study
[6] http://vro.agriculture.vic.gov.au/dpi/vro/portregn.nsf/pages/pp_eruption_points_cottrell

The Significant Landscape Overlay has been applied to Mount Cottrell in recognition of its importance. It is also one of the most visible features of the study area.

Viewsheds and viewpoints

Important views[7] into and through the study area visible from the public realm include:

- 360^{O} views across the grasslands from Mount Cottrell to the surrounding region, including Port Phillip Bay, Corio Bay, Melbourne CBD and the You Yangs to the West
- View of Mount Cottrell from surrounding roads including Greigs Road and Mount Cottrell Road
- Views towards the Pyrete Range and Mount Cottrell from Exford Road
- View along Werribee River from Exford Road.

Viewing corridors which traverse this landscape[5] include:

- Exford Road
- Eynesbury Road
- Mount Cottrell Road
- Nerowie Road.

5.6 ISSUES AND OPPORTUNITIES

Implications, issues and opportunities raised by the analysis of the landscape that should be considered in the development of the WPSGW Management Plan include:

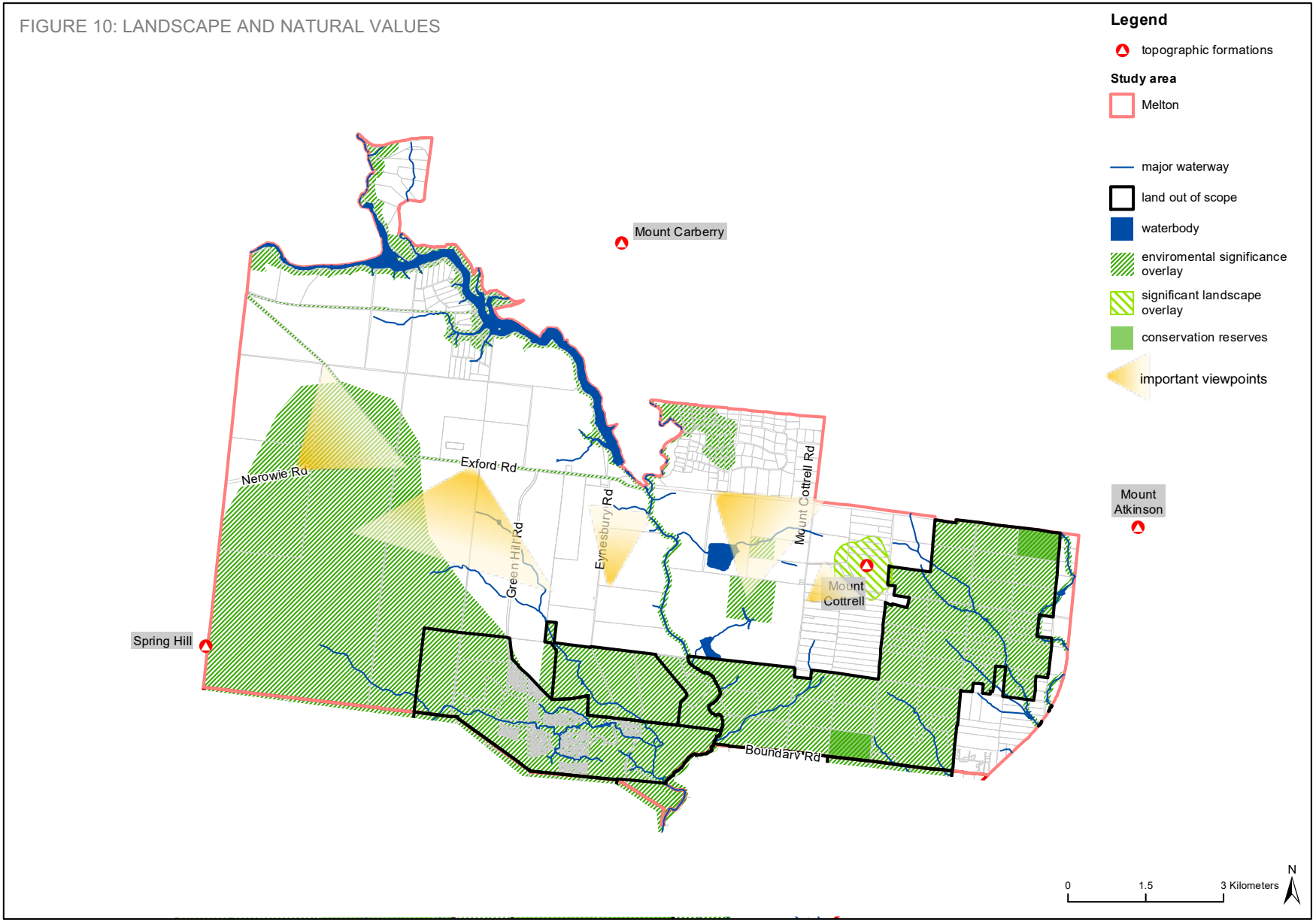
- Value and visibility of the landscape of the grasslands plains and volcanic hills
- The role of the incised corridor of the Werribee River as a defining element of the landscape
- Limited tree cover across the study area
- Recognition of key views including panoramic view across the study area from Mount Cottrell, Exford Road and Greigs Road.

[7] Agriculture Victoria (2007)

Photo: Werribee River Exford Road. RMCG 1.2.2018

Photo: Open plains, Exford Rd RMCG 20.9.2017

FIGURE 10: LANDSCAPE AND NATURAL VALUES



6 Land Use

This section of the report outlines the existing land uses, recreation and economic activities within the study area, including consideration of the capability of the land for agriculture. Figure 14 identifies the location of the primary land uses in the study area.

6.1 LEGISLATIVE CONTEXT

Legislation relevant to land use in the WPSGW includes:

- *Planning and Environment Act*: sets out the framework for planning within Melbourne and is implemented though the Melton Planning Scheme, discussed in more detail in the following sections.
- *Catchment and Land Protection Act*: defines roles and responsibilities and regulates the management of noxious weeds and pest animals, protection land and establishes the Catchment Management Authorities who seek to manage water resources and preserve, enhance and protect water catchments.

6.2 STRATEGIC CONTEXT

Plans and strategies that will influence land use in the study area are briefly summarised here.

Western Corridor Growth Plan

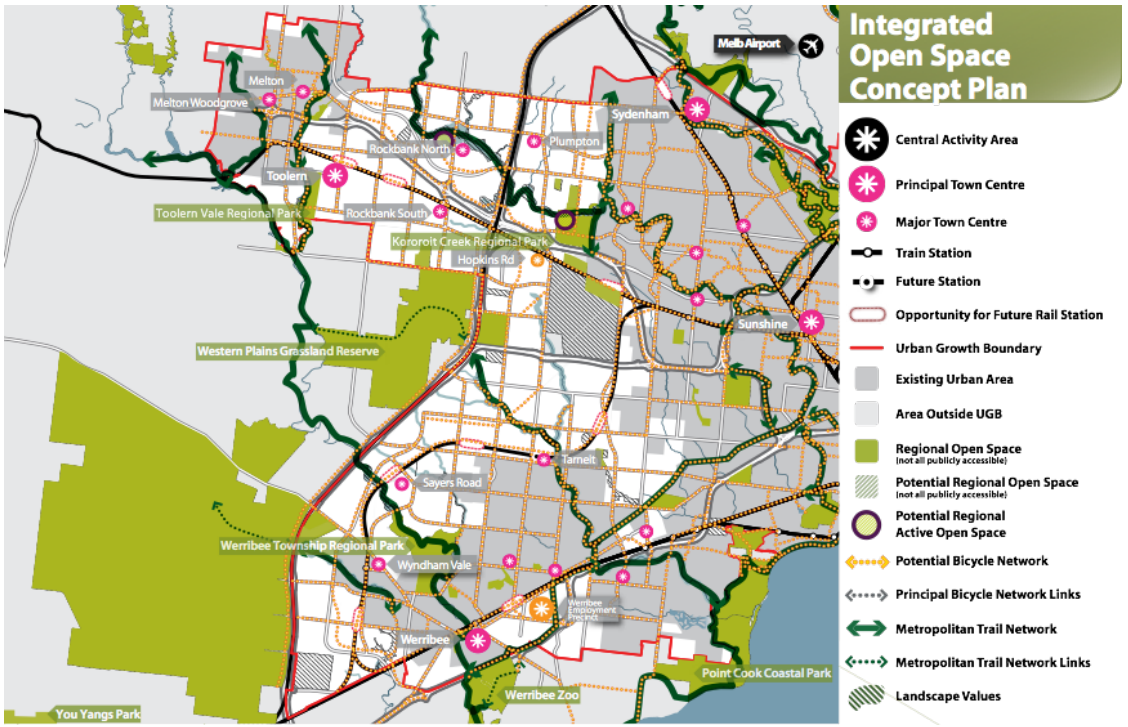
The Western Corridor Plan includes an Integrated Open Space Concept Plan (Figure 11) which proposes a number of recreational opportunities in or adjacent to the WPSGW including:

- Toolern Creek Regional Park
- Linkages to the Metropolitan Trail Network.

Economic Development and Tourism Plan

The Plan provides an overview of the key information relating to tourism and economic development in City of Melton and presents a vision and strategic direction for the next 16 years[8].

FIGURE 11: INTEGRATED OPEN SPACE CONCEPT PLAN



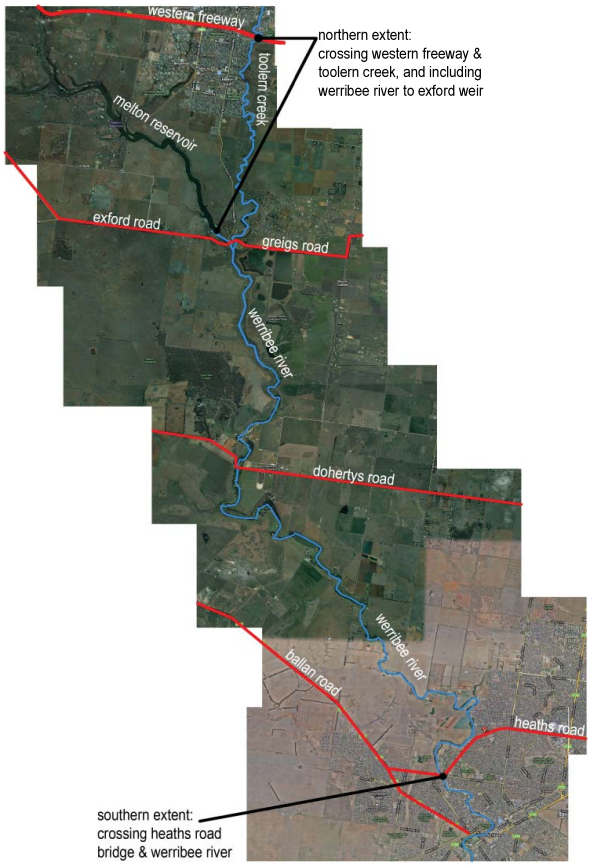
Werribee River Shared Trail Strategy[9]

This long-term planning and design strategy will establish an open space corridor along the Werribee River and provide opportunities for natural, cultural, recreational and tourism activities (Figure 12).

[8] Melton City Council (2014) *Economic Development & Tourism Plan 2014 – 2030*. Melton City Council, Victoria.

[9] Hansen Partnership (2013) Werribee River Shared Trails Strategy

FIGURE 12: PROPOSED WERRIBEE RIVER TRAIL



6.3 AGRICULTURE

Historically, City of Melton was a highly profitable and successful producer of grains and livestock[10]. In recent years, however, a number of factors (including declining commodity prices, high land prices, land speculation and encroachment) have combined to reduce the profitability of these pursuits and farming has declined throughout the City. Within the WPSGW, commercial scale agriculture has contracted to the western parts of the study area where there are number of large broadacre cropping and grazing properties[11].

In 2010/11, the value of agricultural commodities produced in City of Melton totalled $8.3million (0.7% of the value of commodities produced in Melbourne region) with most of this from poultry production ($5.4million) and crops ($1.5million).

6.4 AGRICULTURAL CAPABILITY

Mapping of the capability of soils for irrigated agriculture (Figure 13) within the study area was undertaken as part of a wider soils study investigating options for irrigated agriculture.. The mapping shows that the capability ranges from Class3+4 which are good to fair for irrigated cropping and grazing and hardier horticultural crops to Class 5+6 (low yielding pastures and some crops or unsuitable for agriculture). Note that the map does not cover the entire study area, but provides an indication of the land capability that is expected outside the mapped areas

The major constraint for agriculture is the extent of surface rock across the basalt plains and poorly draining soil. In some locations where there is an absence of rock, such as in the north western parts of the study area or paddocks that have been cleared of rock, extensive cropping of grains and pasture improvement has been undertaken. Pastures on land with substantial surface rock comprise mainly native grass species. These can be successfully and productively grazed with appropriate management practices.

The Werribee River provides water for irrigation primarily to farms outside the study area in the Bacchus Marsh and Werribee South Irrigation districts.

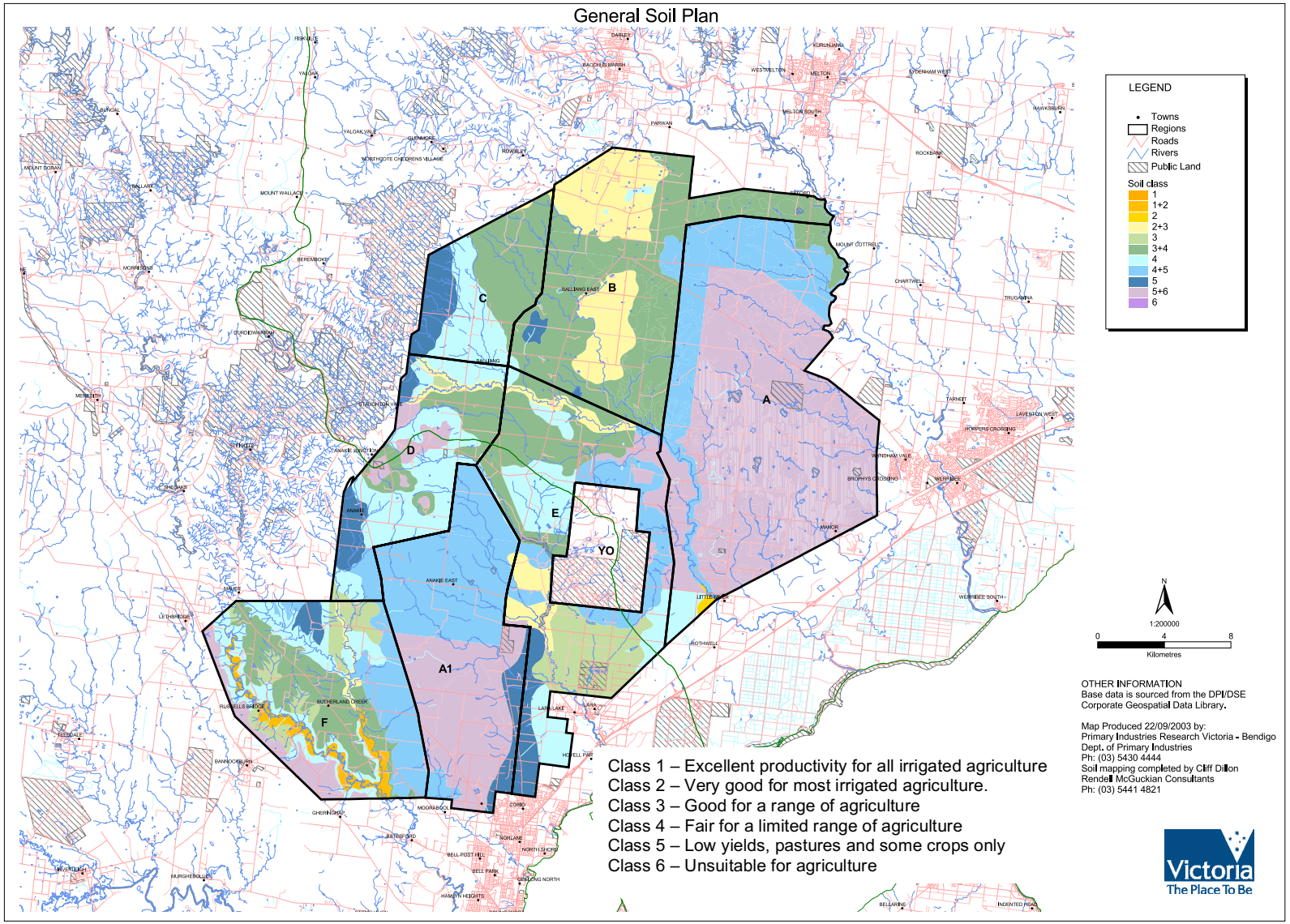
Western Water's Surbiton Recycled Water Plant produces Class C water which is used (around 7ML/day in the summer months) for production of pastures and summer crops such as maize on adjoining paddocks. Population growth in the area is likely to result in an increase in treated wastewater available for reuse.

Photo: Canola near Exford RMCG 20.10.2017

Photo: Horses Tarneit. RMCG 1.2.2018.

[10] Melton City Council (2013) *Melton Planning Scheme – Clause 22.08 – Rural Land Use Policy*. Melton City Council, Victoria.
[11] Port Phillip and Westernport Catchment Management Authority (2008) Square pegs in green wedges

FIGURE 13: AGRICULTURAL CAPABILITY[12]



[12] C Dillon (2003) Target soils for the Balliang Recycled Water Project

6.5 URBAN AREAS

While not in the study area, the township of Eynesbury directly interfaces the WPSGW in City of Melton. Eynesbury is located on the boundary of City of Wyndham and City of Melton and currently has a population of around 2,300. When fully developed, the area will host around 4,500 dwellings as well as commercial, retail and community services.

6.6 RURAL RESIDENTIAL

There are two forms of rural residential development in the study area. Firstly, contained rural living estates comprising relatively small lots such as Strathtulloh Estate in the north and Arandt Road Exford. Secondly, *ad hoc* rural living and hobby farming on larger lots. The latter is the dominant land use in the eastern parts of the study area and agriculture, mainly livestock grazing or equine activities is generally minor and ancillary to rural lifestyle.

Planning permits in the study area have been primarily for extensions and alterations to existing dwellings, sheds and outbuildings and some new dwellings.

6.7 COMMUNITY

A primary school is located on Exford Road.

6.8 TOURISM

Tourism contributes 2.1% to the local economy and 573 local jobs with the highest proportion of those jobs in retail trade and accommodation and food services[13]. Overall there is not a significant amount of tourism activity occurring in the study area. Those tourism activities that do exist include:

- The Dry Stone Walls Driving Trail[14], a 90km journey that passes eight areas of significant examples of dry stone walling. The trail includes sites in the vicinity of Mount Cottrell, and includes sites along Mt Cottrell Road, Boundary Road and Greigs Road.
- The Eynesbury Heritage Trail at Eynesbury.
- Parks and reserves, such as Werribee River.

6.9 RECREATION

Recreational uses can be separated into two categories. Active recreation is generally an organised sporting event with teams and umpires, for example a football or cricket match. In contrast, passive recreation is non-consumptive and include activities like walking, cycling and wildlife observation.

There are a number of open spaces in the study area that provide for recreation[15]:

- Exford Reserve is a 1.3ha local passive open space located on the bank of the Werribee River
- Toolern Creek Linear Reserve

There are no future open space parcels proposed for development in the study area.

Active recreation

The majority of active recreational facilities are located outside the study area, and within the settlements of Melton and Caroline Springs.

The Melbourne Runabout and Speedboat Club are located on the Werribee River at Exford. The Werribee River provides for recreational opportunities such as bird watching, kayaking and fishing.

The Eynesbury Golf Course is located within the Eynesbury estate.

Passive recreation

Opportunities for passive recreation within the study area include:

- Melton Reservoir (also known as Exford Weir) is located south of Melton on the Werribee River. It is a popular area for swimming, picnicking and fishing.
- Opportunities for recreation along the Werribee River are generally confined to settlements, with few formal walking tracks and facilities available elsewhere along the river. The Werribee River Streamside Reserve is located on the eastern banks of the river, opposite Eynesbury, however there appears to be limited infrastructure to support community recreation.
- Grey Box Forest at Eynesbury offers opportunities for walking and cycling.
- Mount Cottrell Nature Conservation Reserve offers opportunities for walking and nature observation.

Implementation of the Werribee River Shared Trail Strategy will increase opportunities to experience and access the Werribee River and improve connections to features with the Study Area such as Eynesbury township.

6.10 LAND USE ISSUES

The dumping of waste and rubbish, such as furniture, building materials, garbage etc. within the study area is impacting the environment and amenity of the area. There have been a few approvals for legal fill sites to accommodate soil from construction activity but there is also a significant amount of dumping of illegal fill. This is a serious issue within the study area and is expected to continue with development of further residential estates in proximity to the green wedge[16].

Land speculation is also an issue. The Port Phillip and Westernport Catchment Management Authority report

[13] Melton City Council (2014) *Economic Development & Tourism Plan 2014 – 2030.* Melton City Council, Victoria.

[14] http://www.melton.vic.gov.au/Out-n-About/Discover-the-City-of-Melton/History-and-heritage

[15] Melton City (2016) Open Space Plan 2016 – 2026 Background Report

[16] Hansen Partnership (2013) Western Plains North Green Wedge Management Plan Background Report

on green wedges, Square Pegs in Green Wedge, noted that within Melbourne's western green wedges, this was likely to be the major reason for owning land within the area. This has significant implications for achieving sustainable land management regimes within the area given that maintenance of the land could be seen as contrary to the aims of such speculation[16]

6.11 LOT SIZE AND LAND OWNERSHIP

Figure 15 identifies the prevailing pattern of lot sizes in the study area. Apart from clusters of small lots associated with Strathtulloh Estate and rural living areas on Arandt Road and Mount Cottrell Road, lots are mostly larger lots, between 100 and 3,000ha. Most lots are held as single tenements in separate ownership.

The lot pattern aligns closely with land use. Smaller lots are used being for rural living and hobby farming, while larger lots and holdings are used for agriculture.

The standards of land management of some of the larger holdings particularly in the eastern parts of the study area, however, suggest that they are not being operated as commercial agricultural enterprises.

6.12 IMPLICATIONS, ISSUES AND OPPORTUNITIES

Implications, issues and opportunities raised by the analysis of land use that should be considered in the development of the WPSGW Management Plan include:

- Impact of land speculation and encroachment on agriculture
- Opportunities associated with the beneficial reuse of recycled water
- Opportunities for additional recreational activities
- Impacts of poor land management, such as inadequate pest plant control, on agriculture, environmental values and visual amenity
- Enforcement of illegal practices including dumping of rubbish and illegal fill.

Photo: Rural living Strathtulloh Estate RMCG 1.2.2018

Photo: Rubbish dumping RMCG 1.2.2018

FIGURE 14: LAND USE

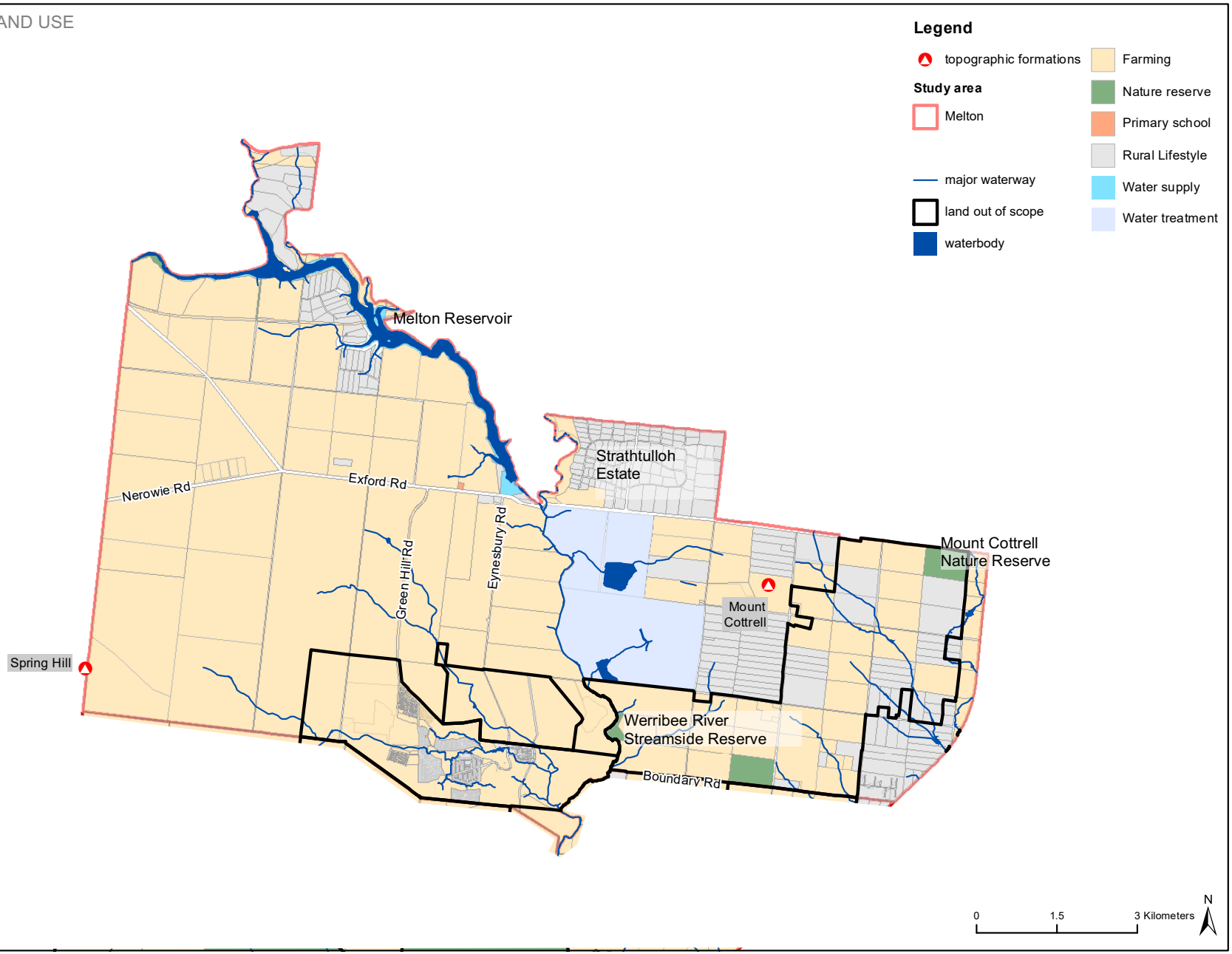
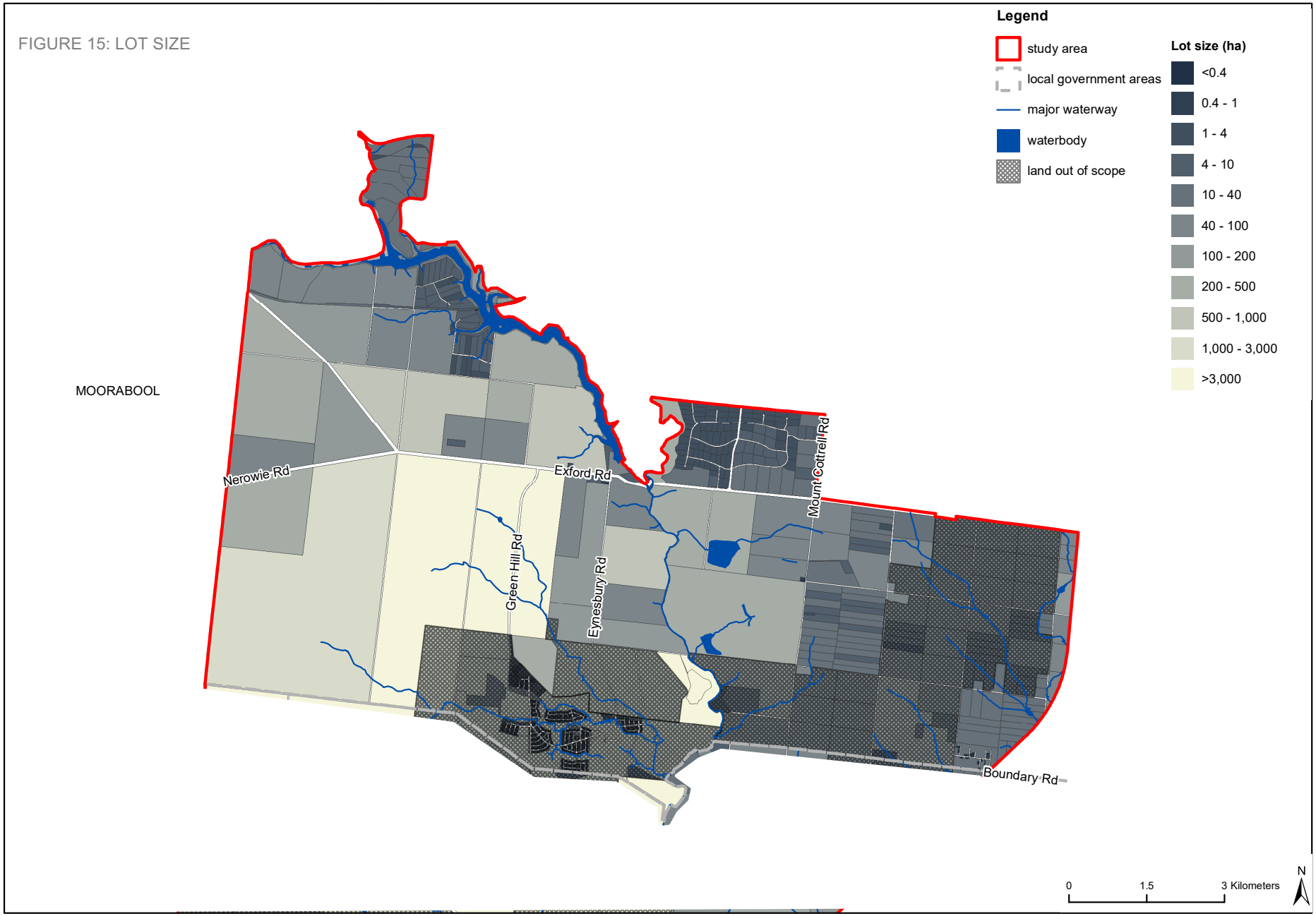


FIGURE 15: LOT SIZE



7 Environment

This section provides an overview of the geography and climate of the WPSGW and an inventory of the biodiversity assets within the study area. The key environmental values are presented in Figure 17.

7.1 LEGISLATIVE CONTEXT

Legislation relevant to biodiversity and conservation management in the WPSGW includes:

- *Environment Protection and Biodiversity Conservation Act* the key piece of environmental legislation that enables the Australian, State and Territory governments to provide national environment and heritage protection, and biodiversity conservation. It requires Federal approval of any actions (i.e. project, development, undertaking, activity, or series of activities) which may impact on matters considered nationally significant.
- *Catchment and Land Protection Act* provides a framework for the integrated management and protection of catchments in Victoria. The Act encourages community participation in the management of land and water resources particularly through the Catchment Management Authorities (CMAs) and provides a system of controls on noxious weeds and pest animals.
- *Flora and Fauna Guarantee Act* the key legislation for the conservation of threatened flora and fauna species and communities in Victoria and for the management of potentially threatening processes. It provides for the preparation of Action Statements for listed species and communities.
- *Water Act* sets in place the legislative framework for management of water within the Victorian context, including relevant matters such as the protection of waterways.
- *Planning and Environment Act* provides a framework for planning the use, development and protection of land in Victoria including Metropolitan Green Wedge Protection (Part 3AA). The Act provides for the conservation of rare and threatened species and plant communities in Victoria, through reference to the Victorian Native Vegetation Framework in the State Planning Policy Framework Provision. The primary goal of the Native Vegetation Framework is a reversal, across the entire landscape, of the long-term decline in the extent and quality of native vegetation, leading to a Net Gain[17].
- *Country Fire Authority Act* – establishes the Country Fire Authority and responsibilities of landholders and authorities in the control of the prevention and suppression of fires in country areas.

7.2 STRATEGIC CONTEXT

The biodiversity values within the WPSGW have been the focus of agency and community efforts over recent years. Management plans and programs have been developed that aim to address biodiversity threats with management activities either underway or proposed. Strategies that focus on environmental protection and enhancement are summarised here.

City of Melton Environment Plan

The Plan is Council's key document for guiding planning, decision-making and activities that impact on the local environment. Under the 'Natural Environment' theme, actions have been identified around increasing connectivity, management of conservation reserves, improved waterway management, improved stormwater quality, supporting landholders and increasing community capacity in sustainable land management.

Werribee River Environmental Water Management Plan

The Water Management Plan was prepared by Melbourne Water and details the environmental flow requirements to maintain and improve the environmental values of the Werribee River.

Werribee River Biolink Action Plan

The Biolink Action Plan prepared by Lead West, identifies key environmental assets and outlines a program of priority works to protect and buffer these assets and restore links along the Werribee River to improve connectivity, ecosystems processes and resilience. The Plan builds on the findings of the Werribee Plains Biodiversity Connectivity: Resilience of Natural Assets and Systems to Climate and Urbanisation report.

The **Strategic Bushfire Management Plan: West Central**[18] addresses strategic bushfire management on public land in the WPSGW area. **Fire Operations Plans** prepared by the Department of Environment, Land, Water and Planning in conjunction with the Country Fire Authority detail plans to undertake fuel reduction burns in line with the directions of the strategic Bushfire Management Plan

7.3 CLIMATE AND CLIMATE CHANGE

The City of Melton, including the WPSGW, experiences a temperate climate, similar to other areas surrounding Melbourne. Weather patterns are generally associated with high-pressure systems that move in a general west

[17] DNRE (2002) *Victoria's Native Vegetation Management. A Framework for Action*, Department of Natural Resources and Environment, Melbourne.

[18] Department of Environment, Land, Water and planning (2015) Strategic Bushfire Management Plan West Central

to east latitudinal direction. The close proximity to Bass Strait and the Southern Ocean can cause a moderate oceanic effect on climate compared to adjoining regions of Victoria further north[19].

Generally, summers are warm to hot, with average maximum temperatures of 25-27°C. Between March to May, rainfall is expected as the 'autumn break', followed by a mild to cool winter with potential frosts. Average maximum temperatures in winter range from 12-14°C[19].

The WPSGW lies in a rain shadow of the Otway Ranges and is part of the driest area south of the Great Diving Range in Victoria[20]. Average annual rainfall for City of Melton is 487mm. Significant rainfall can occur at any time of year, with sporadic seasonal patterns. The months of September, October and November are the wettest months on average, with the winter months being driest on average[21] (Figure 16)

However, the local climate is changing. The average annual air temperature across the Port Phillip and Westernport region (of which the WPSGW is located in the west of this region) has increased by 0.8°C to 1.0°C over the last century and more rapidly since 1960. High-confidence predictions show further temperature rises of similar magnitude by 2030. By 2050, cold years could be warmer than most of the region's current climate's warm years[19].

A general reduction in average annual rainfall has been observed since the mid-1970s, with rainfall losses most pronounced in autumn-winter. Predictions for rainfall losses are less certain but general and progressive losses in winter-spring rainfall are expected to continue. Soil moisture and catchment runoff are confidently predicted to decline; driven largely by changes to rainfall and evapotranspiration. Such changes in climate are likely to affect most aspects of the local environment, including exacerbating existing pressures[19].

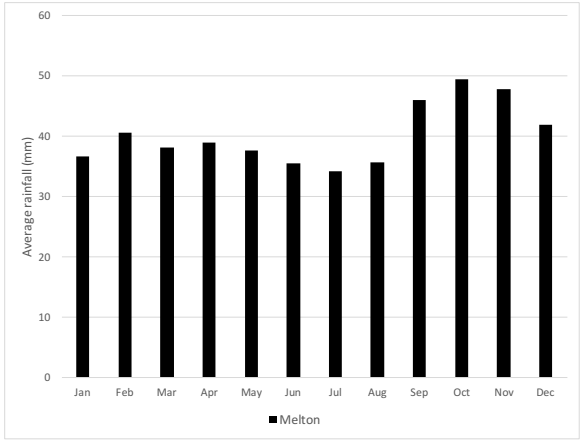
[19] Climate Change in the Port Phillip and Westernport Region, accessed December 2017 from http://www.nrmclimate.vic.gov.au/regional-cma-information/266/
[20] http://www.epa.vic.gov.au/~/media/Publications/698.pdf accessed 22.3.208
[21] Bureau of Meteorology 2017, Monthly rainfall statistics for Melton, all years of data, retrieved 18 December 2017, Australian Government.

7.4 GEOLOGY

The WPSGW occurs within the Victorian Volcanic Plain Bioregion, which extends westward of Melbourne to almost the South Australian border[22]. Across much of this landscape, numerous, thin, basalt lava flows (several metres thick) have formed the dominant geological land surface[40]. The Western Plains Geomorphological Unit, in which the WPSGW lies, is defined by volcanic derived plains with poorly developed drainage and shallow regolith[23]. Mount Cottrell is the single volcanic eruption point that has been identified for the Melton precinct of the WPSGW and is of geological State significance, with many other eruption points located within the wider region[24]. The basalt flows from topographical features such as Mount Cottrell contribute to define the drainage pattern of local waterways. The influence of geology on topography and natural features in the WPSGW is discussed in Section 5.

[22] Cochrane, G. W., Quick, G. W. and Spencer-Jones, D. 1999, Introducing Victorian Geology, Geological Society of Australia, Melbourne.
[23] Victorian Resources Online. 2017, Port Phillip and Westernport Landform Information, accessed December 2017 from http://vro.agriculture.vic.gov.au/dpi/vro/portregn.nsf/pages/pp_gmu_pdf/$file/PortPhilipWesternPort_GMU_map.pdf
[24] Rosengren, N. (date unknown), Eruption Points of the Newer Volcanic Province of Victoria – Inventory and Evaluation of Scientific Significance, prepared for the National Trust of Australia (Victoria) and Geological Society of Australia (Victorian Division), accessed December 2017 from http://vro.agriculture.vic.gov.au/dpi/vro/portregn.nsf/pages/pp_eruption-points-melbourne-map

FIGURE 16 AVERAGE MONTHLY RAINFALL AT MELTON[25]



7.5 BIODIVERSITY

Victorian Volcanic Plain Bioregion

The Victorian Volcanic Plain (VVP) covers 2.3 million hectares in south-west Victoria (approximately 10 percent of the state), extending from Craigieburn in the east to Portland in the west and from Colac in the south to Clunes in the north[40]. It is one of only 15 biodiversity hotspots in Australia and the only hotspot in Victoria, making it an area of state and national biological significance[26].

The fertile basalt soils of the VVP supported predominantly a grassland ecosystem, with trees and shrubs either absent or restricted to watercourses, swamps or rocky hills and slopes bordering the plains[40]. The pre-European settlement native vegetation in the VPP is expected to have been:[40]

- Grasslands
  - Open native grassland on poorly drained, heavier soils.

[25] Bureau of Meteorology www.bom.gov.org.au accessed December 2017
[26] City of Melton. 2017, City of Melton Environment Plan 2017-2027, Melton, Victoria.

- In areas with fertile soils and good summer/spring rainfall, grassland communities dominated by Kangaroo Grass (*Themeda triandra*) with high biomass and fast summer growth rates.
- In drier areas with basalt soils, grassland communities dominated by spear (*Austrostipa* spp.) and wallaby (*Rytidosperma* spp.) grasses.
- A diverse mix of native herbs (e.g. daisies, lilies and orchids) and climbers between grass tussocks maintained through Aboriginal burning.

- Woodlands
  - A mosaic of grasslands and woodlands, with woodlands occurring on well-drained, fertile soils e.g. undulating plains with a diversity of Eucalypt species.
  - On volcanic hills and rises with drier and shallower soils, a transition from Eucalypts to she-oaks (*Allocasuarina* spp.).
  - In areas with deeper alluvial soils (e.g. waterways and floodplains), tall Eucalypt woodlands with a sparse mid-storey of tall shrubs (e.g. *Acacia* spp., *Bursaria spinosa*) and grassy understorey (including herbs and rushes).

Since about 1840, agriculture has been a dominant feature of the bioregion resulting in the modification of most native vegetation. For example, in most areas introduced pasture grasses have replaced native species, with remnant vegetation mostly confined to narrow linear strips along roadsides and railways or in areas not suitable for cultivation. Consequently, compared to other bioregions, the VVP exhibits a low floral species diversity[40].

Native vegetation

Native vegetation is often described in terms of plant communities i.e. populations of different plant species that are commonly found together. In Victoria, these native plant communities have been grouped into Ecological Vegetation Classes (EVCs). An EVC is one or more plant communities that occur in similar types of environments and have similar ecological information (e.g. life form, reproduction). Historically, the study area contained large areas of Plains Grassland (EVC 132), Plains Woodland/Plains Grassland Mosaic (EVC 693) and Plains Grassy Woodland (EVC 55). The EVCs in aquatic areas included Floodplain Riparian Woodland (EVC 56) along the Werribee River and patches of Plains Grassy Wetland (EVC 125)[27].

Less than one percent of native vegetation in the study area remains[27]. It is now limited to patches of the endangered Plains Grassy Woodland and Plains Grassland EVCs. These remaining areas of native grassland provide significant habitat that supports the local grassy ecosystem including reptiles, ground dwelling birds and predatory birds[27].

Of the plant communities protected under the national *EPBC Act*, it is possible that the Critically Endangered Natural Temperate Grassland of the Victorian Volcanic Plain occurs in the area. In addition, the Western (Basalt) Plains Grassland, which is protected under the Victorian Flora and Fauna Guarantee Act 1988, may also be present.

Grasslands

Temperate grasslands and grassy woodlands such as those found in the WPSGW, are among the most under-represented ecosystems in Australia's conservation estate and are recognised nationally as among the most threatened vegetation types. The Natural Temperate Grassland for example is one of Victoria's most threatened and fragmented ecosystems. These ecological communities provide habitat to several nationally and state-listed threatened species.

[27] Primary Industries Research Victoria (PIRVic) 2007, *Melton Environmental Atlas*, prepared for Melton Shire Council.

Grasslands and grassy woodlands were formerly extensive on the Victorian volcanic plain but now comprise mostly small, highly fragmented remnants in a landscape that has been largely cleared for agriculture.

Less than five per cent of the original extent of the Natural Temperate Grassland remains, although patches in good condition are likely to constitute less than one per cent. Most known remnants are small and any patches require recovery efforts because they are so degraded, due to weed and feral animal invasion and loss of native biodiversity, that their capacity to maintain ecosystem function is impaired[28].

The grasslands of the Western Grassland Reserve will constitute the world's largest remaining concentration of Volcanic Plains Grasslands and will protect some of Victoria's most endangered ecosystems[29]

Waterways

The study area lies within the Werribee Catchment. The river is highly regulated to manage water supply for urban and industrial activities, irrigators in Bacchus Marsh and Werribee and environmental purposes.

The lower Werribee River (reaches 2 and 3) provides the main aquatic habitat in the local area. This section of the Werribee River was in moderate condition in 2010 with good flows and physical form, but moderate water quality, aquatic life and riparian health[30]. This is an improvement from its poor condition in 2004 and very poor to poor condition in 1999. No wetlands have been identified in the study area[31].

The Melton Reservoir at Exford was constructed to supply irrigators in Werribee and has a capacity of around 14,364ML. While boating is not permitted on the

[28] A guide to the identification, assessment and management of nationally threatened ecological communities Environment Protection and Biodiversity Conservation Act 1999 (2011) Commonwealth of Australia
[29] http://www.leadwest.com.au/Melbournes-West/Liveability-and-Sustainability-in-Melbournes-west/Western-Grasslands accessed 22.3.2018
[30] Index of Stream Condition assessments by Victorian State Government.
[31] http://www.ppwrcs.vic.gov.au/interactive-map/

reservoir, the surrounding reserve is used by visitors for picnics and fishing.

Significant flora and fauna

The Victorian Biodiversity Atlas identifies many significant species that have been recorded in the study area. This includes six nationally significant species (listed under the EPBC Act 1999) and 63 species of State significance (FFG Act 1988 and/or DSE Advisory List) (Table 1).

7.6 CONSERVATION ESTATES

There are a number of conservation reserves within the study area. Management activities for these reserves are part of separate planning processes and are outside the scope of the WPSGW Management Plan. They are included here for context and to highlight opportunities to improve linkages between the conservation estates and activities in the green wedge:

- Proposed Western Grassland Reserve
- Eynesbury grey box woodland.

7.7 BUSHFIRE

Bushfire is the main natural risk facing people and the environment in the WPSGW. Flooding, salinity and soil erosion are common natural hazards but are generally there is a low risk of occurrence in the study area.

Landholders have responsibilities to ensure their properties are free of fire hazards that may put the lives and property of others at risk. This may include preparing fire breaks and removing or reducing fuel loads.

The Strategic Bushfire Management Plan: West Central notes bushfires that start in the grasslands on days of extreme fire danger will move fast and respond quickly to wind changes. The fire behaviour could be erratic and threaten nearby communities.

Some threatened species occurring in grasslands (such as Sunshine Diuris, Small Golden Moths Orchid and Button Wrinklewort) rely on regular fire for survival, to reduce the biomass of other competing species in the area but are threatened by bushfires that are too-intense or widespread.

The strategy highlights the importance of striking the right balance between managing bushfire risk and maintaining or improving ecosystem resilience. In the WPSGW this will comprise:

- Bushfire moderation - fuel management to reduce the speed and intensity of bushfires, either close to towns or as they spread through the landscape
- Landscape management - fuel management to reduce fuel hazard and improve ecosystem resilience.

Increased residential development adjoining the WPSGW will increase the number of people at risk from bushfire within the green wedge. The risk of bushfire will increase under future climate scenarios and from fire arson as the population in the surrounding region increases.

7.8 PEST PLANTS AND ANIMALS

The management of pest plants and animals in the peri-urban interface is a difficult challenge. Incursion of Weeds of National Significance, namely Serrated Tussock (*Nassella trichotoma*) and Chilean Needle-Grass (*Nassella neesiana*) and others is widespread across the basalt plains of western Melbourne area. These weeds are largely unpalatable to stock, difficult to control once established and invade pastures following soil disturbance and over stocking. The weeds reduce the productivity of land for agriculture, invade native vegetation including significant grasslands and significantly increase management costs. Other weeds that are well established in the WPSGW include:

- Artichoke thistle (*Cynara cardunculus*)
- African Boxthorn (*Lycium fercoissimum*)
- Blackberry (*Rubus rubiginosa*)
- Prickly pear (*Opuntia stricta*).

Pest animals in the WPSGW, include foxes, feral cats and rabbits. Rabbits destroy native habitat and destroy crops and pastures. Foxes and feral cats, along with domestic cats and dogs, disturb and kill wildlife and livestock. Populations of foxes and feral cats in particular thrive in the area with ready feed sources and poor land management practices. Poison baiting and shooting are the most widespread and cost effective control methods for species such as foxes, feral cats and rabbits, but these methods are inappropriate or unsafe in close proximity to people and urban development. Domestic cats and dogs may also ingest poison baits laid for foxes.

7.9 OTHER RISKS AND HAZARDS

Floodplain areas are in low-lying lands located near waterways (such as rivers), where water flows during flood periods. Floodways generally comprise the most hazardous parts of the floodplain and are often associated with fast flowing floodwater and/or areas of relatively deep flooding. Werribee River water flow is regulated by a number of storages top supply urban centres and irrigators. This has a significant impact on flood risk. Flood risk mapping for the reaches of the Werribee River within the study area demonstrates the risk is low and relatively confined due to the incised river corridor[32]. The risk of wind and water erosion and salinity discharge were low to very low within the study area[32].

7.10 DATA & INFORMATION GAPS

The following knowledge gaps were identified in preparing this draft background report:

- A current distribution map of significant species i.e. those listed under EPBC Act 1999, FFG Act 1988

[32] Agriculture Victoria (2007) Melton Environmental Atlas

or on the Advisory List of Rare or Threatened Plants and Animals in Victoria.

- The presence and distribution of plant communities protected under the EPBC Act 1999 (e.g. Natural Temperate Grassland of the Victorian Volcanic Plain) or Flora and Fauna Guarantee Act 1988 (e.g. Western (Basalt) Plains Grassland).

7.11 IMPLICATIONS, ISSUES AND OPPORTUNITIES

Implications, issues and opportunities raised by the analysis of the environment that should be considered in the development of the WPSGW Management Plan include:

- Protection and enhancement of remaining native vegetation. Priority locations to promote ecological connectivity have been identified in the Werribee River Biolink Action Plan
- Continued management and reduction in pest plant and animal species
- Working with the local community to reduce littering and illegal dumping of waste
- Balancing reducing risk of bushfire to urban populations and maintaining environmental values.

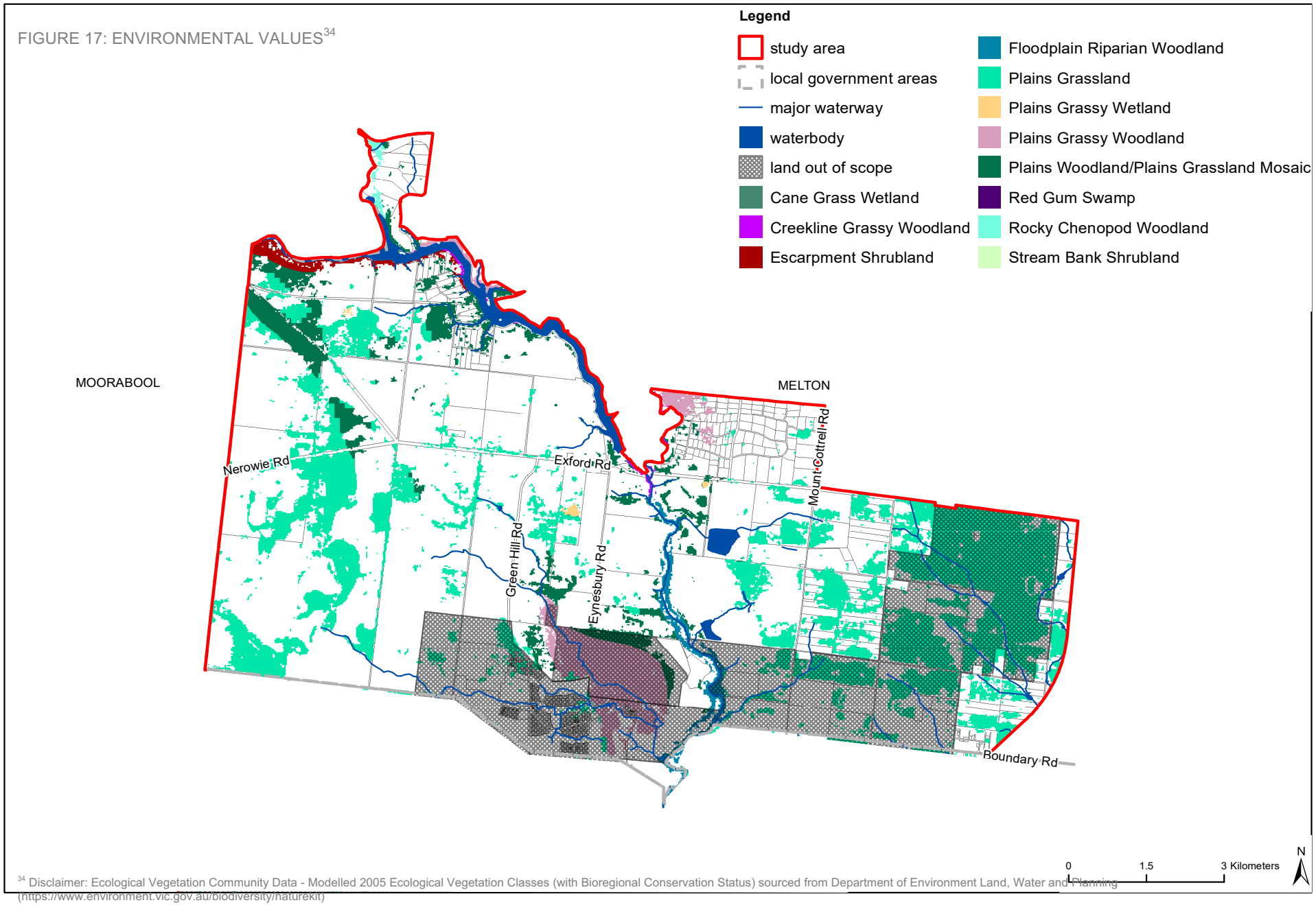
The following knowledge gaps were identified in preparing this draft background report:

- A current distribution map of significant species i.e. those listed under EPBC Act 1999, FFG Act 1988 or on the Advisory List of Rare or Threatened Plants and Animals in Victoria.
- The presence and distribution of plant communities protected under the EPBC Act (e.g. Natural Temperate Grassland of the Victorian Volcanic Plain) or FFG Act (e.g. Western (Basalt) Plains Grassland).
- Identification of EVCs in wetland areas as per the 1994 mapping – only a small number of these wetland areas have EVC classifications in existing documentation, with some mapped as Wetland Formation (a generic mapping unit[33]).

Photo: Mount Cottrell, RMCG 1.2.2018

[33] DELWP, Generic Wetland EVC Lookup Table, accessed January 2018, https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks

FIGURE 17: ENVIRONMENTAL VALUES[34]



[34] Disclaimer: Ecological Vegetation Community Data - Modelled 2005 Ecological Vegetation Classes (with Bioregional Conservation Status) sourced from Department of Environment Land, Water and Planning (https://www.environment.vic.gov.au/biodiversity/naturekit)

TABLE 1: SIGNIFICANT SPECIES IN THE CITY OF MELTON WPSGW

COMMON NAME	SCIENTIFIC NAME	YR OF LAST RECORD	COUNT OF SIGHTINGS	EPBC ACT 1999	FFG ACT 1988	ADVISORY LIST*
National Significance						
Macquarie Perch	*Macquaria australasica*	1930	7	Endangered	Listed	Endangered
Growling Grass Frog	*Litoria raniformis*	1988	5	Vulnerable	Listed	Endangered
Superb Parrot	*Polytelis swainsonii*	1881	1	Vulnerable	Listed	Endangered
Swift Parrot	*Lathamus discolor*	1990	3	Critically Endangered	Listed	Endangered
Striped Legless Lizard	*Delma impar*	1990	1	Vulnerable	Listed	Endangered
Golden Sun Moth	*Synemon plana*	2014	128	Critically Endangered	Listed	Critically Endangered
Small Golden Moths	*Diuris basaltica*	2011	6	Endangered	Listed	Endangered
Spiny Rice-flower	*Pimelea spinescens subsp. spinescens*	2015	4	Critically Endangered	Listed	Endangered
State Significance						
Eastern Snake-necked Turtle	*Chelodina longicollis*	1990	1			Data deficient
Emu	*Dromaius novaehollandiae*	2010	1			Near threatened
Little Button-quail	*Turnix velox*	2011	2			Near threatened
Red-chested Button quail	*Turnix pyrrhothrax*	1974	2		Listed	Vulnerable
Plains Wanderer	*Pedionomus torquatus*	1974	1		Listed	Critically endangered
Pied Cormorant	*Phalacrocorax varius*	2006	2			Near threatened
Common Sandpiper	*Actitis hypoleucos*	1990	1			Vulnerable
Latham's Snipe	*Gallinago hardwickii*	1997	1			Near threatened
Australian Bustard	*Ardeotis australis*	1911	1		Listed	Critically endangered
Brolga	*Grus rubicunda*	1989	1		Listed	Vulnerable
Royal Spoonbill	*Platalea regia*	2006	3			Near threatened
Eastern Great Egret	*Ardea modesta*	1999	3		Listed	Vulnerable
Nankeen Night Heron	*Nycticorax caledonicus hillii*	1987	2			Near threatened
Australasian Shoveler	*Anas rhynchotis*	2012	21			Vulnerable
Freckled Duck	*Stictonetta naevosa*	1991	2		Listed	Endangered
Hardhead	*Aythya australis*	2006	19			Vulnerable

COMMON NAME	SCIENTIFIC NAME	YR OF LAST RECORD	COUNT OF SIGHTINGS	EPBC ACT 1999	FFG ACT 1988	ADVISORY LIST*
Blue-billed duck	*Oxyura australis*	2006	8		Listed	Endangered
Musk Duck	*Biziura lobata*	2012	19			Vulnerable
Grey Goshawk	*Accipiter novaehollandiae novaehollandiae*	2006	2		Listed	Vulnerable
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	2008	4		Listed	Vulnerable
Black Falcon	*Falco subniger*	1988	2			Vulnerable
Barking Owl	*Ninox connivens connivens*	1986	2		Listed	Endangered
Masked Owl	*Tyto novaehollandiae novaehollandiae*	1989	1		Listed	Endangered
Major Mitchell's Cockatoo	*Lophocroa leadbeateri*	2004	1		Listed	Vulnerable
Black-eared Cuckoo	*Chrysococcyx osculans*	2004	2			Near threatened
Hooded Robin	*Melanodryas cucullata cucullata*	1999	3		Listed	Near threatened
Crested Bellbird	*Oreoica gutturalis gutturalis*	1988	1		Listed	Near threatened
Grey-crowned Babbler	*Pomatostomus temporalis temporalis*	1987	3		Listed	Endangered
Speckled Warbler	*Chthonicola sagittatus*	2011	20		Listed	Vulnerable
Diamond Firetail	*Stagonopleura guttata*	2011	36		Listed	Near threatened
Fat-tailed Dunnart	*Sminthopsis crassicaudata*	1990	2			Near threatened
Brown Toadlet	*Pseudophryne bibronii*	1990	3		Listed	Endangered
Brown Treecreeper (south-eastern ssp.)	*Climacteris picumnus victoriae*	2014	45			Near threatened
Common Bent-wing Bat (eastern ssp.)	*Miniopterus schreibersii oceanensis*	2016	2		Listed	Vulnerable
Buloke Mistletoe	*Amyema linophylla subsp. orientalis*	2010	12			Vulnerable
Blue Burr-daisy	*Calotis cuneifolia*	2005	1			Rare
Buloke	*Allocasuarina luehmannii*	2010	239		Listed	Endangered
Pale Spike-sedge	*Eleocharis pallens*	2015	5			Poorly known
Clover Glycine	*Glycine latrobeana*	2006	2		Listed	Vulnerable
Rusty Velvet-bush	*Lasiopetalum ferrugineum*	2010	1			Poorly known
Austral Tobacco	*Nicotiana suaveolens*	2008	3			Rare

COMMON NAME	SCIENTIFIC NAME	YR OF LAST RECORD	COUNT OF SIGHTINGS	EPBC ACT 1999	FFG ACT 1988	ADVISORY LIST*
Small Scurf-pea	*Cullen parvum*	2011	2		Listed	Endangered
Fragrant Saltbush	*Rhagodia parabolica*	2010	21			Rare
Rye Beetle-grass	*Tripogon loliiformis*	2008	1			Rare
Black-tip Greenhood	*Pterostylis bicolor*	1996	1			Poorly known
Heath Spear-grass	*Austrostipa exilis*	2012	9			Rare
Half-bearded Spear-grass	*Austrostipa hemipogon*	2006	2			Rare
Slender Tick-trefoil	*Desmodium varians*	2011	10			Poorly known
Black Roly-poly	*Sclerolaena muricata var. muricata*	2010	1			Poorly known
Leprechaun Greenhood	*Pterostylis conferta*	1996	2		Listed	Endangered
Plains Joyweed	*Alternanthera sp. 1 (Plains)*	2010	2			Poorly known
Bacchus Marsh Wattle	*Acacia rostriformis*	2010	1		Listed	Vulnerable
Slender Bindweed	*Convolvulus angustissimus subsp. omnigracilis*	2015	4			Poorly known
Arching Flax-lily	*Dianella sp. aff. longifolia (Benambra)*	2015	14			Vulnerable
Werribee Blue-box	*Eucalyptus baueriana subsp. thalassina*	2010	6			Endangered

* Advisory List of Rare or Threatened Plants and Animals in Victoria

8 Cultural Heritage

This section of the report discusses Aboriginal and post contact cultural heritage values in the study area. Areas of Aboriginal cultural heritage sensitivity and post contact cultural heritage values are shown in Figure 18.

8.1 LEGISLATION

The following is a summary of the main legislation relevant to cultural heritage protection and management:

- *Victorian Heritage Act:* the key piece of legislation that protects identified heritage places. There are two levels of protection that exist under this act; State level important sites which are then considered by Heritage Victoria, and more locally significant sites, which are considered by the relevant Responsible Authority.
- *Aboriginal Heritage Act:* recognises Aboriginal heritage and sets in place a framework for undertaking cultural heritage assessments in areas identified as having topographic features and landforms known to have higher archaeological potential and may be of significance to local indigenous groups. The Aboriginal Heritage Regulations 2007 gives effect to the Act including. prescribing standards and setting out the circumstances in which a Cultural Heritage Management Plan should be prepared.

8.2 STRATEGIC CONTEXT

City of Melton Dry Stone Wall Study (2011)

The *Melton Dry Stone Walls Study* involved a comprehensive survey of dry stone structures and used to guide Council, the local community and the state government on the management and preservation of existing dry-stone structures in the municipality.

City of Melton Heritage Strategy (2017)

The Strategy provides a framework for conservation and monitoring of post-contact heritage including measures to improve identification and documenting of heritage assets, policy protection measures and support for landowners that own or manage heritage places

8.3 ABORIGINAL CULTURAL HERITAGE

Cultural heritage is important to Aboriginal people in reinforcing identity and belonging and important to all Victorians as embodying knowledge connected to place. *Tangible cultural heritage* can be observed in physical evidence in the landscape, including culturally scarred trees, artefact scatters, shell middens, stone grinding grooves, rock art, earth mounds, stone features, stone arrangements and burial/reburial places. A place or landform that has a traditional association (e.g. a creation story) can also be registered as a tangible place under the Act, based on the significance of that landform to Aboriginal people irrespective of whether or not that place has an archaeological component. *Intangible cultural heritage* is reflected through stories about the creation and evolution of features in the landscape and place names.

The waterways are a particularly important landscape feature for Aboriginal people, as a source of livelihood and meeting place. Aboriginal people are likely to have found a rich variety of fish, eels, waterbirds as well as materials and shelter in the City's waterways. It was their practice in autumn to burn the grassy plains to attract game, promoting fresh grass growth for the following season.

Evidence of Aboriginal heritage exists today in the form of scarred trees and stone artefact scatters. Often remaining artefact scatters and sub-surface deposits can be found in close proximity to waterways. This is reflected in the mapping of cultural heritage sensitivity.

8.4 POST CONTACT CULTURAL HERITAGE

The study area has a number of post settlement heritage features including homesteads, stone / blue stone cottages, outbuildings, dams, bridges, parks, farming stations and dry stone walls. These heritage features are an integral part of the study area as they connect residents and visitors to the municipality's post settlement agricultural and grazing past and provide an insight into how life once was. The heritage features assist in creating a historical sense of place for the community and provide key landmarks with the WPSGW. The historical value and importance of these heritage features are protected by the various Schedules to the Heritage Overlay.

The Victorian Heritage Database lists the State's most significant heritage places and objects protected under the *Heritage Act 1995*[35]. An exploration of heritage sites listed on the database around Melton identifies the following sites in the Green Wedge area:

- Staughton's Bridge and Road Cutting, Eynesbury Road, Eynesbury & Spring Hill Road, Melton
- Dry stone wall, Spring Hill Road, Melton South
- Railway Viaduct over Melton Reservoir.

There are also many historical sites that are recorded on the Heritage Overlay.

Dry stone walls

Rocky outcrops and an abundance of fieldstones are characteristic of the landscape in the study area. From the 1850's, settlers cleared the land and used the

[35] Heritage Council Victoria (2017) Victorian Heritage Database. URL: http://vhd.heritagecouncil.vic.gov.au (Accessed 27 December 2017)

stones to build dry stone walls as property boundaries, stock enclosures and other structures. Today, dry stone walls dominate much of the landscape and give the municipality a unique visual character[36].

As demand for rural residential properties and urbanisation changes the way the land is used, the legacy of dry stone walls is threatened. This threat comes from several sources; the disinterest of property owners who do not need walls to serve their original purposes, leading to a consequent lack of maintenance of walls; the theft of readily available stones from roadside walls; and the visual intrusion into broad vistas that is an inevitable part of closer settlement[37].

Dry stone walls are slowly disappearing mainly due to[37]:

- They are privately owned, and property owners are unaware of their role as custodians."
- There is a low level of appreciation in the wider community of the significance of dry stone walls
- Many walls are either left to deteriorate or are demolished in the name of progress.

In order to reverse the decline and preserve dry stone walls and structures across the municipality, City of Melton has introduced *Clause 22.14 Dry Stone Walls* via Amendment C100, into their local planning policy framework which applies to all dry stone walls listed in the Schedule to the Heritage Overlay.

Within the Green Wedge area, a dry stone wall at Spring Hill Road is listed on the Victorian Heritage Database. There are additional dry stone walls that are listed in the Heritage Overlay Schedule that do not appear on the Victorian Heritage Database, such as the Mount Cottrell Dry Stone Wall Precinct.

8.5 ISSUES & OPPORTUNITIES

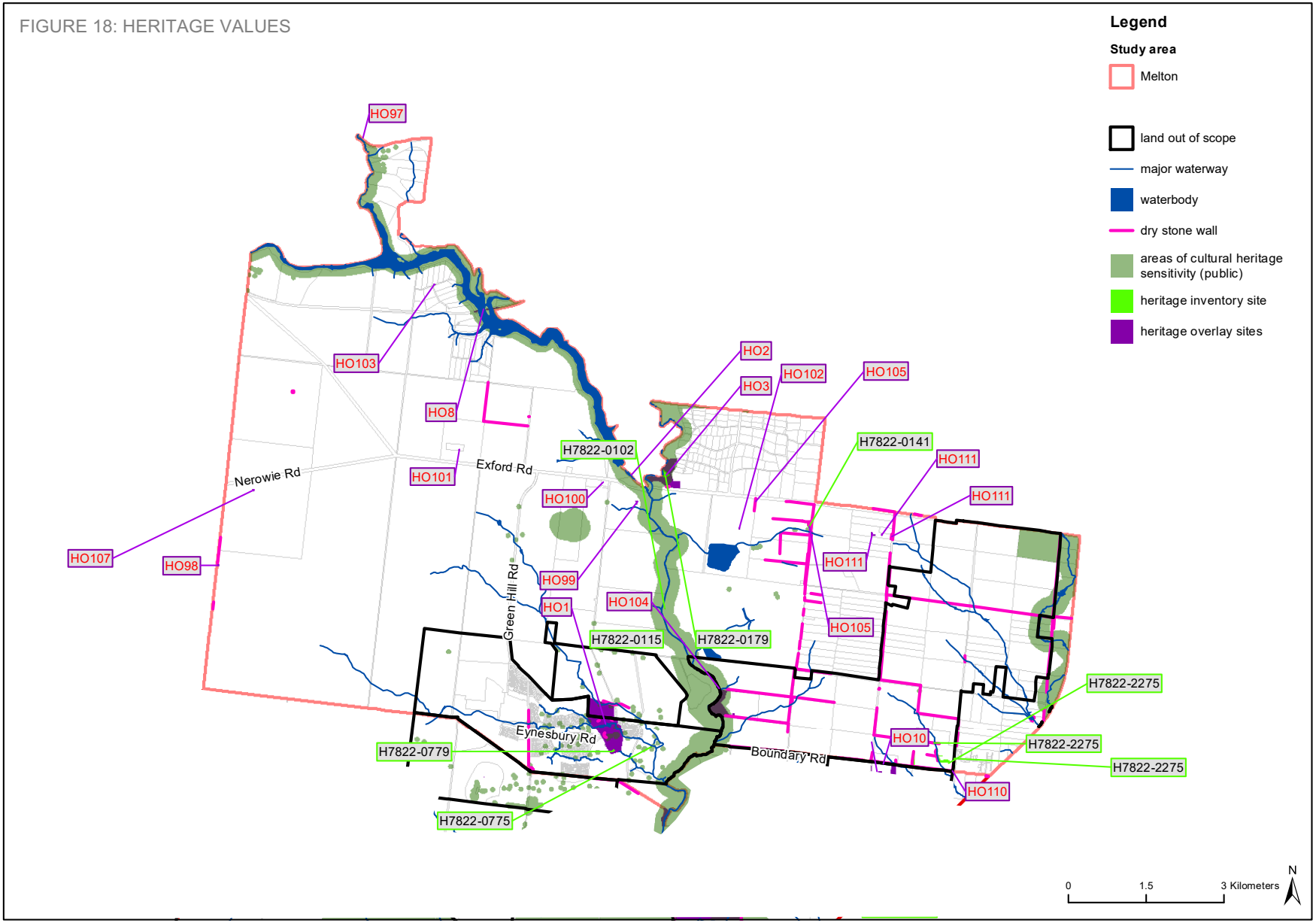
Implications, issues and opportunities raised by the analysis of the heritage values that should be considered in the development of the WPSGW Management Plan include:

- Cultural heritage sensitivity mapping shows areas where there is likely to be Aboriginal cultural heritage values. It is likely that there are many more Aboriginal places in the study area that are yet to be investigated and registered.
- Identification and protection of remaining dry stone walls.

Photo: Dry stone wall RMCG 20.9.2017

[36] Melton Shire (2011) *Melton Dry Stone Walls Study*. Report prepared by Planning Collaborative for Melton Shire Council and the Department of Sustainability and Environment, Victoria.
[37] Melton Shire (2011) *Melton Dry Stone Walls Study*. Report prepared by Planning Collaborative for Melton Shire Council and the Department of Sustainability and Environment, Victoria.

FIGURE 18: HERITAGE VALUES



9 Natural resources and infrastructure

This section identifies the key infrastructure and known resources located within the study area. These range from resources associated with quarrying activity to key pipelines and road alignments, all of which must inform the future management plan. The matters discussed below are also shown on Figure 19.

9.1 LEGISLATIVE CONTEXT

- The *Mineral Resources (Sustainable Development) Act (1990*) provides the legislative framework for the development and regulation of: the mineral exploration and mining industry, including gold, coal, and mineral sands; and extractive industries (quarries) for the extraction of stone resources including gravel, sand, soil, building stone and clay (but does not include fine clay, kaolin or salt).
- *Road Management Act*: establishes a coordinated management system for public roads to promote safe and efficient state and local public road networks and the responsible use of roads.
- *Electricity Safety (Electric Line Clearance) Regulations:* prescribes the standards and practices for management of native vegetation in the vicinity of powerlines.'
- *Occupational Health and Safety Regulations:* prescribes the control of risks associated with major hazard facilities including industrial sites that store, handle or process large quantities of hazardous chemicals and dangerous goods, including petroleum products.
- *Pipelines Regulations:* prescribes the standards for construction and operation of pipelines as well as licensing application matters.

9.2 UTILITIES

Western Water provides water and wastewater services to the study area. Western Water's Surbiton Recycled Water Plant produces Class C water for beneficial reuse on sporting grounds and agriculture and Class A water for domestic use, sporting grounds and open space in nearby townships such as Eynesbury and Toolern Vale.

In addition to water reticulation and treatment facilities, there are a number of other public utilities in the study area including:

- 500Kv transmission line connecting the Moorabool and Sydenham terminals and a 220Kv transmission line between the Geelong and Keilor terminal.
- APA gas pipeline
- Water towers

9.3 EXTRACTIVE INDUSTRIES

There are no active quarries in the study area. There is however extractive industry '*interest areas'* based on the potential occurrence of suitable geological material, suggesting that there is potential for extractive industry development in the future.

9.4 TRANSPORT INFRASTRUCTURE

The road network within any study area is obviously a key part of any infrastructure assessment and the existence of roads is often an influencing factor in relation to where particular land uses choose to establish. Key roads with the study area include Exford Road, Greigs Road, Mount Cottrell Road, Boundary Road and Dohertys Road. These roads will play a greater role in the future as the growth area to the east and north develop. Pressure will also increase on narrower rural roads such as Shanahans Road as through traffic looks to avoid traffic congestion.

The Outer Metropolitan Ring Road on the eastern boundary of the study area may have significant impacts on traffic movement through the study area. The road reservation provides an opportunity to connect Werribee, Melton, Tullamarine, Craigieburn / Mickleham and Epping / Thomastown intersecting with the Ballan Road, Western Highway, Melton Highway, Calder Freeway and the Hume Highway. Planning for the transport corridor provides options for a freeway standard road, capable of up to four lanes in each direction and four railway tracks in the median for interstate freight and high-speed passenger trains between Werribee and Kalkallo and capable of ultimately being a six-lane freeway standard road elsewhere[38]. Interchanges between the OMR and roads that egress the green wedge are proposed for Bulban Road or Kirk's Bridge Road, Ballan Road, Leakes Road / Mount Cottrell Road and Doherty's Road. Construction of the road is unlikely to commence before 2020, and future detailed environmental assessment may result in changes to the final road alignment.

9.5 IMPLICATIONS, ISSUES & OPPORTUNITIES

Some of the key implications and issues raised by an analysis of the natural resources and infrastructure which should be considered in decision-making in the Green Wedge are:

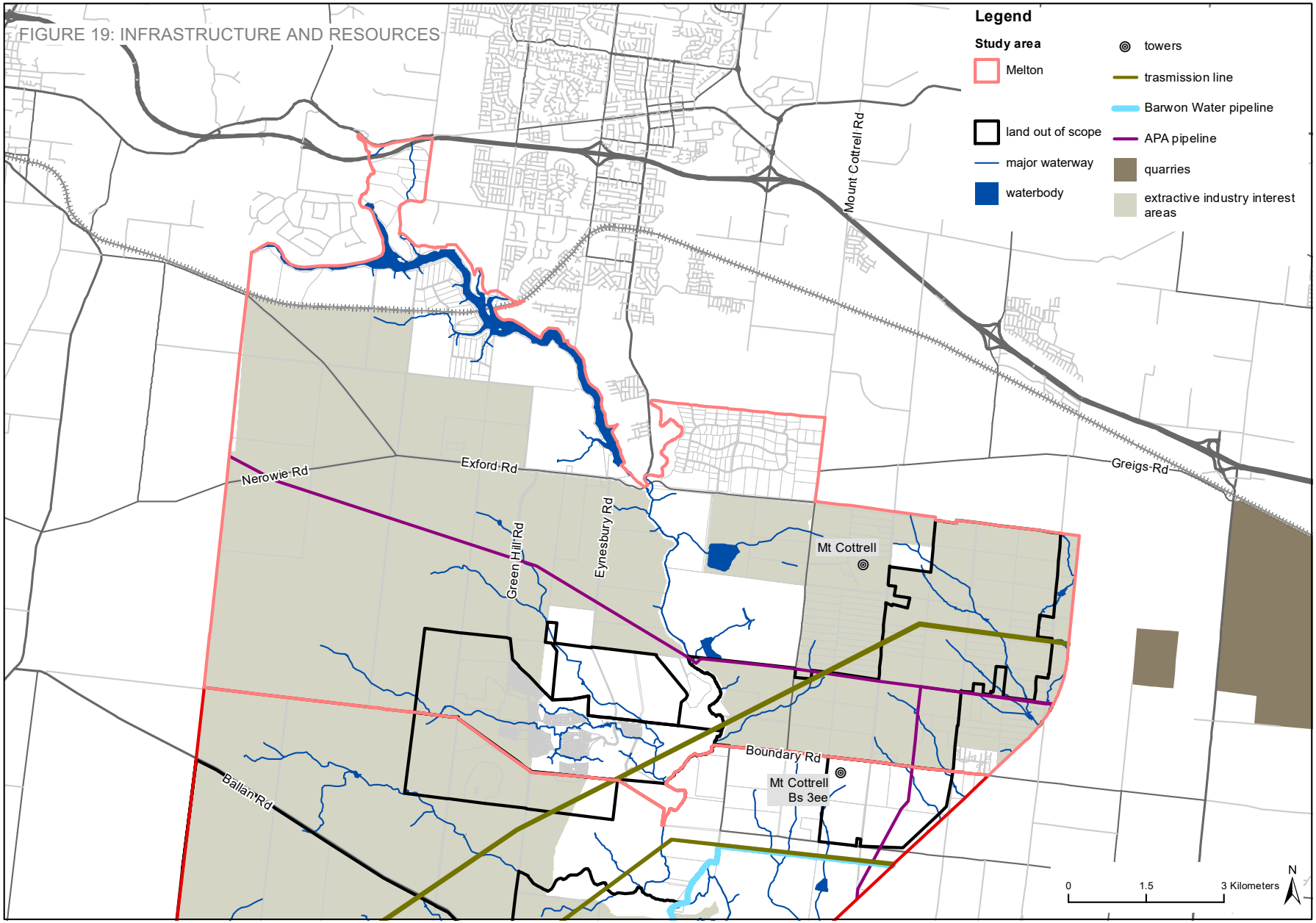
- The need to manage and respond to existing resource extraction, given the purpose of the Green Wedge Zone.

[38] https://www.vicroads.vic.gov.au/planning-and-projects/melbourne-road-projects/outer-metropolitan-ring-e6-transport-corridor accessed 5.02.2018

- The presence of water and other pipelines within the study area.
- The implications of the future construction the Outer Metropolitan Ring Road.
- Pressures and opportunities associated with key road infrastructure.

Photo: Transmission lines RMCG 1.2.2018

FIGURE 19: INFRASTRUCTURE AND RESOURCES



10 People

An understanding of the people who live in the green wedge area will also be valuable and must inform any successful Management Plan. While much information on the residents and people who use the area will be gained through consultation, this section provides a more high level assessment of some of the relevant information.

10.1 DEMOGRAPHICS: RURAL AREAS OF CITY OF MELTON

The following is a brief demographic profile of the Rural Balance in the City of Melton. The Rural Balance comprises the non-urban area of the City of Melton and while the data does not correspond exactly to the study area, it includes all that land and provides an indication of the population characteristics.

Population

The current population of the City of Melton is 149,800 and is located in one of the most rapidly growing urban corridors in Australia[39]. From 2011 to 2016, Rural Balance's population increased by 1,240 people (57.0%). This represents an average annual population change of 9.44% per year over the period[41] and a continuation of the growth trend experienced between 2006 and 2011[40].

Age structure

Analysis of the service age groups of Rural Balance in 2016 compared to City of Melton (Figure 20) shows that there was a lower proportion of people in the younger age groups (0 to 17 years) as well as a lower proportion of people in the older age groups (60+ years). Overall, 15.8% of the population was aged between 0 and 17, and 11.3% were aged 60 years and over, compared with 28.6% and 12.8% respectively for City of Melton.

The largest changes in the age structure (Figure 21) in this area between 2011 and 2016 were in the age groups:

- Young workforce (25 to 34) (+420 people)
- Parents and homebuilders (35 to 49) (+312 people)
- Babies and pre-schoolers (0 to 4) (+132 people)
- Tertiary education and independence (18 to 24) (+118 people).

Household types

Analysis of the household/family types in Rural Balance in 2016 compared to City of Melton (Figure 22) shows that there was a lower proportion of couple families with children as well as a lower proportion of one-parent families. Overall, 38.6% of total families were couple families with children, and 8.4% were one-parent families, compared with 43.4% and 13.2% respectively for City of Melton.

There were a lower proportion of lone person households and a higher proportion of couples without children. Overall, the proportion of lone person households was 12.0% compared to 15.3% in City of Melton while the proportion of couples without children was 28.0% compared to 19.8% in City of Melton.

The number of households in Rural Balance increased by 325 between 2011 and 2016 (Figure 23). The largest changes in family/household types in Rural Balance between 2011 and 2016 were:

- Couples with children (+104 households)
- Couples without children (+100 households).

Income

Analysis of individual income levels in Rural (Figure 24) in 2016 compared to City of Melton shows that there was a lower proportion of people earning a high income (those earning $1,750 per week or more) as well as a lower proportion of low income people (those earning less than $500 per week).

Overall, 4.2% of the population earned a high income, and 21.2% earned a low income, compared with 7.7% and 37.8% respectively for City of Melton.

Employment by industry

An analysis of the jobs held by the resident population in Rural Balance in 2016 (Figure 25) shows the three most popular industry sectors were:

- Construction (140 people or 13.9%)
- Retail Trade (109 people or 10.9%)
- Transport, Postal and Warehousing (97 people or 9.7%).

In combination, these three industries employed 346 people in total or 34.4% of the total employed resident population. By comparison, City of Melton employed 10.1% in Construction; 10.9% in Retail Trade; and 10.4% in Transport, Postal and Warehousing.

The number of employed people in Rural Balance increased by 468 between 2011 and 2016.The largest changes in the jobs held by the resident population between 2011 and 2016 in Rural Balance were for those employed in:

- Health Care and Social Assistance (+63 persons)
- Retail Trade (+57 persons).

[39] Melton City Council (2014) *Economic Development & Tourism Plan 2014 – 2030.* Melton City Council, Victoria.
[40] Hansen Partnership (2013) Western Plains North Green Wedge Management Plan Background Report.

The data suggests that the population of the study area comprises mainly retirees and middle income mainly families with parents that work outside the study area. Children may attend primary school in the study area or access secondary or tertiary education outside the study area.

10.2 IMPLICATIONS, ISSUES & OPPORTUNITIES

Some of the key implications and issues raised by an analysis of the demographics of the study area which should be considered in decision-making in the Green Wedge are:

- The Impacts of increased population growth and urban development adjacent to the green wedge.
- Increased demand for services such as public transport for students and workers and home assistance to facilitate ageing in place.
- Opportunity to improve connections between green wedge residents and services and facilities in nearby towns.

FIGURE 20. AGE STRUCTURE FOR THE RURAL BALANCE COMPARED TO CITY OF MELTON (2016)[41]

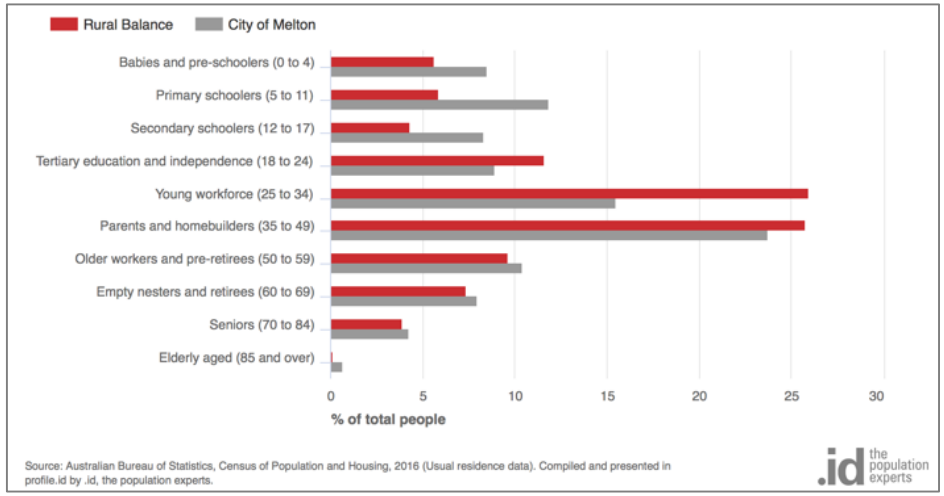
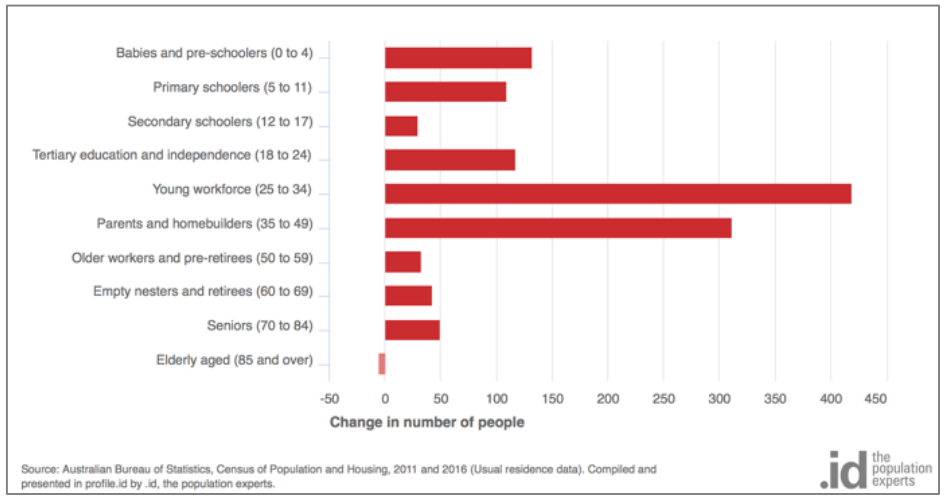


FIGURE 21. CHANGES IN AGE STRUCTURE IN THE RURAL BALANCE (2011 - 2016)41



[41] .id forecasting (2017) Rural Balance – Service age groups. URL: http://profile.id.com.au/melton/service-age-groups?WebID=250&EndYear=2011&DataType=UR (Accessed 27 December 2017)

FIGURE 22. HOUSEHOLD TYPES IN THE RURAL BALANCE (2016)[42]

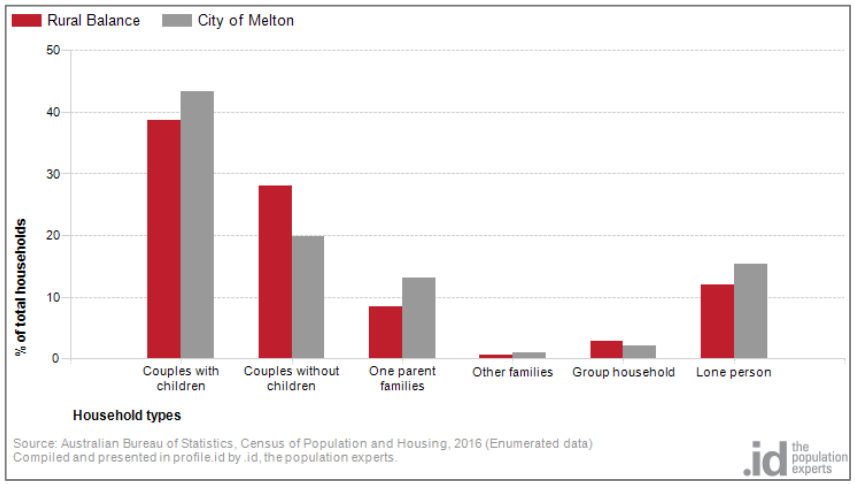
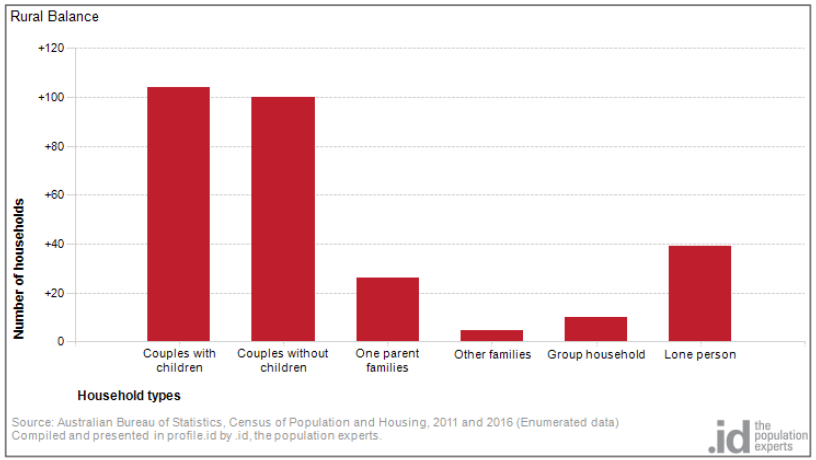


FIGURE 23. CHANGES IN HOUSEHOLD TYPES IN THE RURAL BALANCE (2011 - 2016)[42]



[42] .id forecasting (2017) Rural Balance – Household types. URL: http://profile.id.com.au/melton/households?WebID=250&EndYear=2011&DataType=UR (Accessed 27 December 2017)

FIGURE 24. WEEKLY INDIVIDUAL INCOME IN THE CITY OF MELTON (2016)[43]

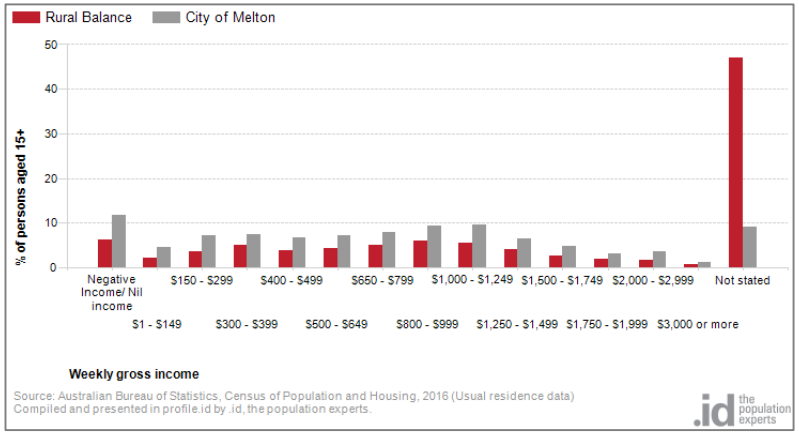
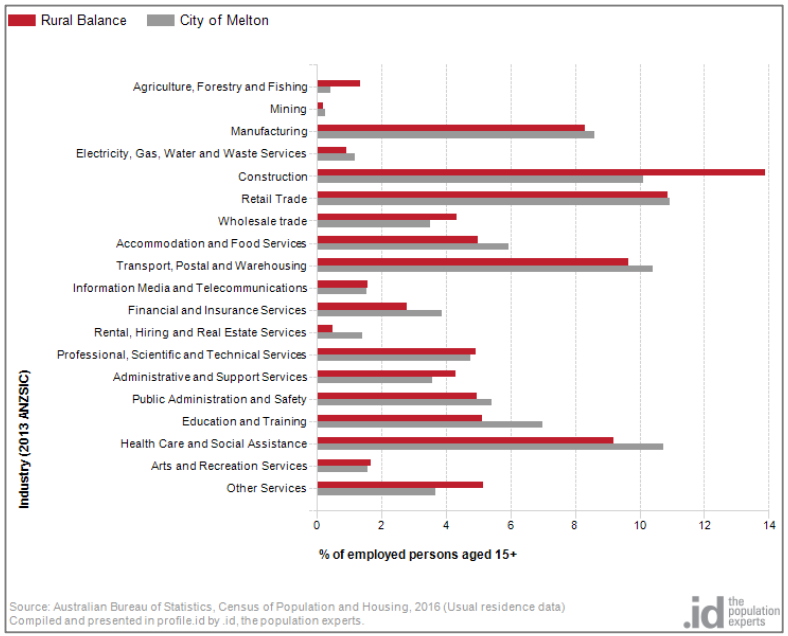


FIGURE 25. EMPLOYMENT BY SECTOR IN THE RURAL BALANCE (2016)[44]



[43] .id forecasting (2017) Rural Balance – Weekly individual income. URL: http://profile.id.com.au/melton/individual-income?WebID=250&EndYear=2011&DataType=UR (Accessed 27 December 2017)
[44] .id forecasting (2017). Rural Balance – Industry sector of employment. URL: http://profile.id.com.au/melton/industries?WebID=250&EndYear=2011&DataType=UR (Accessed 27 December 2017)

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