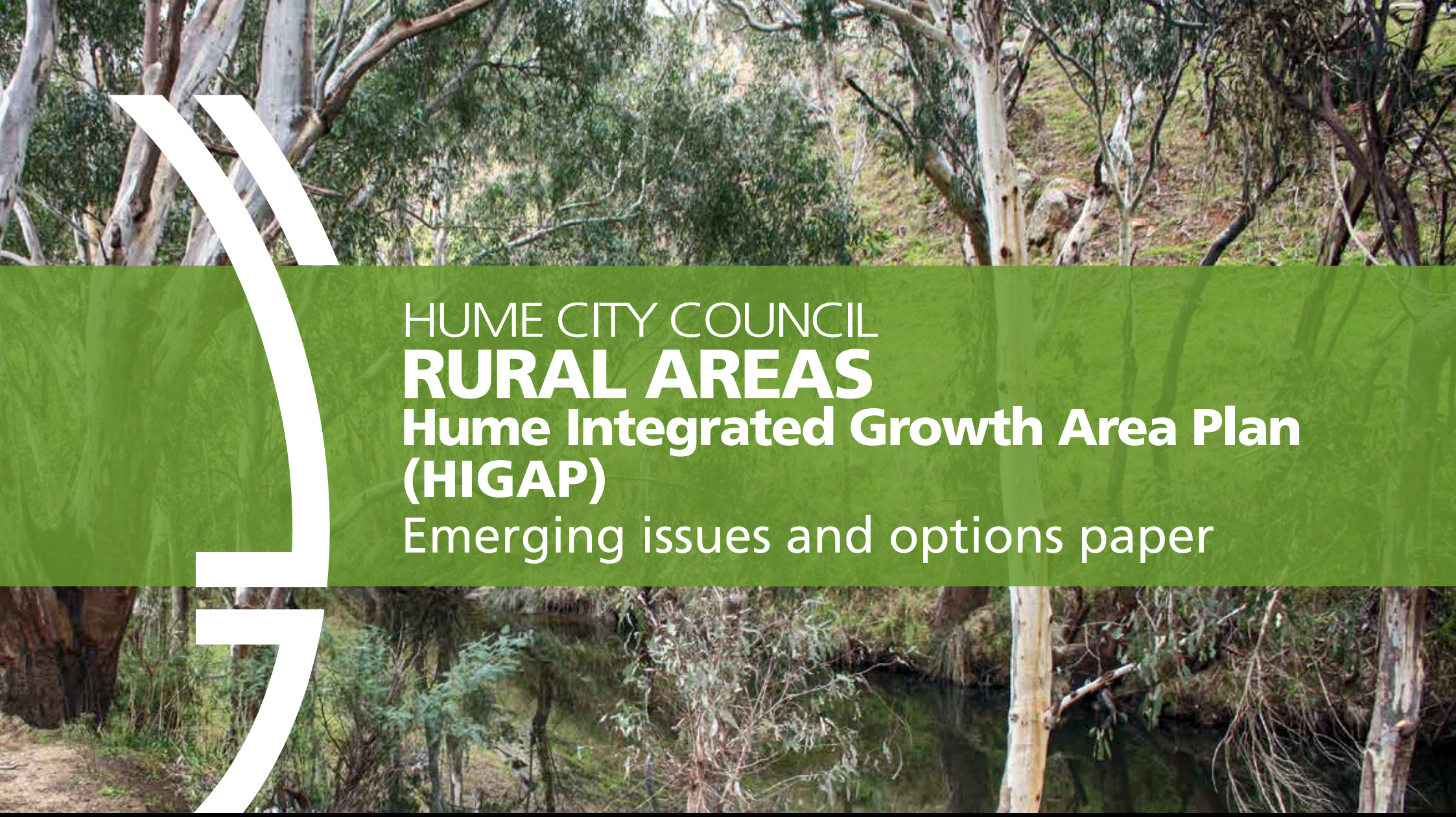

HUME CITY COUNCIL

RURAL AREAS

Hume Integrated Growth Area Plan (HIGAP)

Emerging issues and options paper

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Acknowledgement

Hume City Council respectfully acknowledges that the land that is the subject of this study is the traditional land of the Marin Balug named group of the Woi Wurrung people who form part of the Kulin Nation.

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1. Introduction

1. Introduction

The rural areas in Hume encompass approximately 250 square kilometres of land, or 50%, of the total land area of the municipality. These areas feature significant cultural, landscape and biodiversity assets. Planning for these areas was last comprehensively carried out through the 1993 Shire of Bulla Rural Areas Plan, which sought to maintain the rural areas as they were. In the last 20 years however, there have been changes to the community and their expectations, changes to how these areas are being used, as well as changes to the Urban Growth Boundary and to State Policy for rural areas.

These changes are creating new pressures for land use change, new development and new infrastructure including: proposals for the management of fill, proposals for private schools, proposals for places of assembly/churches, and increased traffic volumes on rural standard roads. These pressures are particularly pronounced at the rural/urban interface.

These changes also create opportunities for the rural areas, particularly around protection, enhancement and increased community access to high quality landscape areas and economic development. Population change in metropolitan Melbourne, particularly to its north and west, has increased the local catchment for tourism and rural lifestyle uses.

To better manage these pressures and realise these opportunities, an up-to-date set of objectives and policies for the planning of the rural areas is required. The need for a proactive and comprehensive Council plan and vision for the rural areas was also identified as a key theme in a rural forum hosted by Council in 2013.

While the strategy will largely relate to land use planning, it also includes a consideration of a range of other actions which may improve the sustainable management of the land and appreciation of the areas cultural and landscape values.

The Rural Hume Integrated Growth Area Plan (Rural HIGAP) project is committed to finalising a strategy to address these issues and manage this change over the next 30 years.

1.1 Strategic Objectives

The following strategic objectives set the criteria to measure the strategic options for the rural areas.

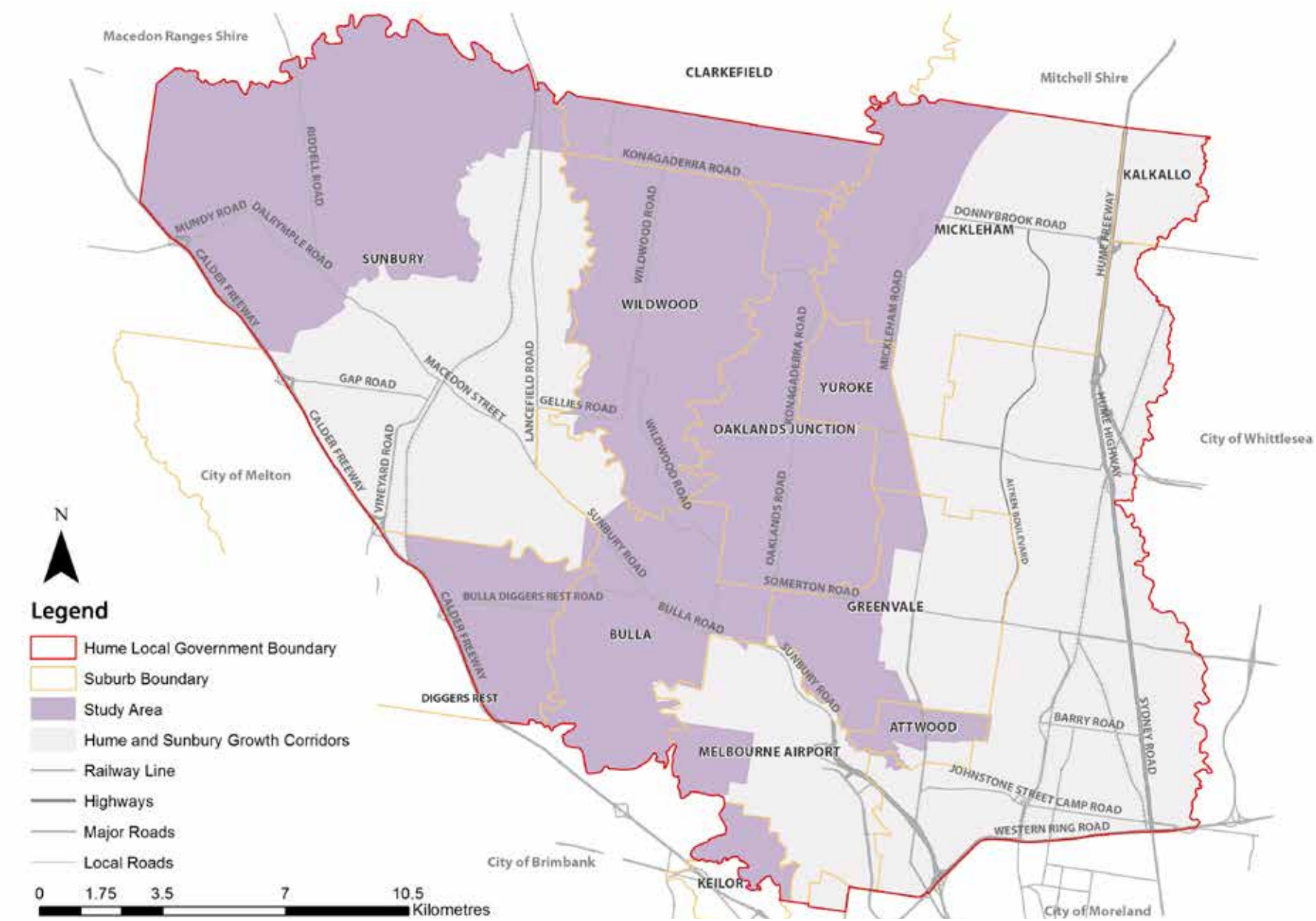
Rural HIGAP Strategic Objectives

- Ensure the long term resilience of Hume's rural areas in its local and regional context
- Recognise rural landowners as the caretakers of the land and support them to sustainably manage the land.
- Strengthen and promote Hume's unique landscape, environmental, cultural and recreational values.
- Support a conservation and recreation open space network accessible to the community.
- Encourage and support a wide range of economic opportunities and activities that complements the rural areas.
- Facilitate transport and infrastructure networks that support changes in and around the rural areas.
- Ensure that the planning framework supports the Rural HIGAP Strategic Vision and Objectives.

1.2 Study Area and Project Scope

The project will consider all land outside of the urban growth boundary (UGB) excluding Melbourne Airport as shown in Figure 1 below. This area is predominantly zoned Green Wedge, but also includes small areas of Green Wedge A Zone (semi-rural) and Special Use Zone (i.e. quarries) and encompasses the localities of Wildwood, Diggers Rest, Oaklands Junction, Yuroke, parts of Mickleham, Greenvale and Sunbury, Clarkefield and the Keilor area behind Melbourne Airport.

Figure 1: Study Area



The township of Bulla represents a small, isolated pocket of existing urban development enclosed by the Green Wedge Zone. It's interface with the rural area and relationship to the proposed Outer Metropolitan Ring Road (OMR), Bulla Bypass and the Melbourne Airport are pertinent issues to be considered by Council. There is also a lack of current policy direction for the Bulla Township. As such, the Township has been included within the scope of this project.

1.3 Project Stages

The purpose of Rural HIGAP is to provide a vision for the rural areas and guide planning, infrastructure provision and Council investment over the next 30 years. When complete, it will outline what the changes will look like, and what infrastructure and actions are required to be undertaken over the coming years by Council, State Government and others.

The project will be delivered in four stages as illustrated in Figure 2 below.

Figure 2: Rural HIGAP Project Stages

To help inform and shape the Emerging Options paper Council distributed a survey to landowners, residents and businesses in the rural areas. The survey sought the views of Hume's rural community members to better understand the different expectations and aspirations of the rural community. The key findings of this survey are provided in Appendix 1.

Background work has also been undertaken to understand current policy and controls that apply in the rural area (refer Appendix 2). Studies have also informed the following aspects of this Paper:

- Economic constraints and opportunities for sectors that include agriculture, extractive industries, tourism and commercial activities.
- A visual and landscape assessment to understand the landscape character and aesthetic values of the rural areas.
- An assessment of the Cultural landscape values as they relate to Aboriginal heritage to identify the known and likely areas of cultural heritage value.
- A traffic modelling study to understand current and future road traffic issues and needs.

This Emerging Issues and Options paper provides a context to discuss current issues and the future potential of the rural areas. Community feedback from this Paper will help inform the draft strategy.

Further consultation will also occur as part of Stage 3 of the project where the community will have the opportunity to respond to the draft Rural HIGAP strategy prior to the strategy being finalised and adopted by Council.

2. Context

2. Context

2.1 State, Regional and Local Role of Hume's Green Wedge

The green wedges are a long standing state policy objective and within recent State Policy, including Plan Melbourne 2017-2050, have maintained clear planning principles for their management.

Hume's green wedge is of State Significance for its role in protecting the Melbourne Airport flight paths and its 24 hour curfew free status. The green wedge comprises all rural land within the municipality.

The green wedge supports many native flora and fauna species and vegetation communities that are listed under both National and State biodiversity protection law. The green wedge also supports two National Parks: Organ Pipes and Woodlands Historic Park and are the headwaters of one of Melbourne's most important waterways, the Maribyrnong River.

The Green wedges provide a regional and local role in providing materials and services to the urban areas. These areas sit between the Sunbury and Hume growth corridors and their road network provide local and regional connections.

Equine activity centred around the Woodlands Historic Park is growing in intensity and importance with the opening of the Inglis Thoroughbred Sales in 1994 and the Living Legends facility in 2006.

The land within the green wedge also provides lifestyle living opportunities close to Melbourne Airport and Metropolitan Melbourne.

Bulla Township provides a community centre for the southern parts of the municipality with local commercial and recreation services.

2.2 Demographic Snapshot

At the time of the most recent census in 2016, the rural areas of Hume were home to 3,390 residents, which represents a decrease of around 90 persons on the 3,480 persons recorded in 2011. This declining population is likely to continue and overall the population level will not change significantly in the future.

The socio-economic profile of the rural areas differs from the wider Hume area and resembles the Greater Melbourne profile in terms of weekly incomes over $1250, Australian born population (refer Table 1). The rural areas have a high level of owner occupied dwellings and very low level of rental properties. Almost 75 per cent of the rural population are couple families with and without children and there are lower levels of one parent and lone person households compared to the Hume Local Government Area and Greater Melbourne (refer Table 1).

Table 1 : Socio-Economic Profile, Hume Rural Areas, Hume City Council and Greater Melbourne

Category	Hume Rural Areas (%)	Hume (LGA) (%)	Greater Melbourne (%)
Share of persons with a weekly income of $1250 or more	24.0%	16.1%	24.9
Share of Population Australian born	69.3	35.8	63.8
Tenure Type			
Owned Outright	47.1	26.4	31.2
Owned with a mortgage	39.9	45.4	36.8
Rented	9.2	24.6	30.2
Other	3.7	0.6	1.8
Household Type			
Couple family with no children	29.6	20.0	24.2
Couple family with children	43.5	45.6	35.4
One parent family	8.5	14.2	10.6
Other family	4.3	1.3	1.5
Lone person household	12.4	16.6	23.2
Group household	1.7	2.3	5.0

The Hume rural areas have a higher proportion of older residents than Hume and Greater Melbourne, in particular for seniors (ages 70-84 years, empty nesters and retirees (60-69 years) and older works and pre-retirees (ages 50-59 years) (refer Table 2).

Table 2 : Age Cohorts 2016

Service age group (years)	Hume Rural Areas (%)	Hume (LGA) (%)	Greater Melbourne (%)
Babies and per-schoolers (0 to 4)	3.6	7.9	6.4
Primary schoolers (5 to 11)	8.3	10.3	8.5
Secondary schoolers	8.2	8.3	6.7
Tertiary education and independence (18 to 24)	8.4	10.3	10.0
Young workforce (25 to 34)	8.5	15.7	16.3
Parents and homebuilders (35 to 49)	19.4	20.7	21.1
Older workers and pre-retirees (50 to 59)	15.3	12	11.9
Empty nesters and retirees (60 to 69)	17.1	8.3	9.3
Seniors (70 to 84)	9.9	5.6	7.7
Elderly aged (85 and over)	1.0	1.0	2.0
TOTAL	**100**	**100**	**100**

The population of Hume City is forecast to grow to over 308,040 by 2031. For the rural areas, the population is forecast to decline to 3,240 by 2031, accounting for 0.1 per cent of the population of the municipality.

Under current policy and controls the majority of population growth for Hume will occur in areas that are located inside the UGB indicating that there will be little change to the rural population.

2.3 Wider Context

Melbourne's Green Wedges

Melbourne's green wedges are the non-urban areas immediately outside the Urban Growth Boundary and sit between Melbourne's urban growth corridors. The green wedge areas were originally set aside in the 1970s to conserve rural areas and significant natural features and resources. As discussed at Section 3.1, Melbourne's green wedges are protected under the Planning and Environment Act 1987 and through State wide planning policies.

There are 12 designated green wedge areas spanning 17 municipalities that collectively form a ring around the city (refer Figure 3). The character and role of the green wedges is diverse with forested and agricultural landscape character in the Yarra Valley, lightly wooded undulating plains to Melbourne's north and the open basalt grasslands of Melbourne's west.

The Hume green wedge is between the Hume and western (Melton) growth corridors, and are fully contained within the 'Sunbury green wedge.' This also includes a small area of green wedge land within the City of Brimbank. Hume's green wedges are never more than 6km from the nearby urban areas of Sunbury and the Hume Growth corridors.

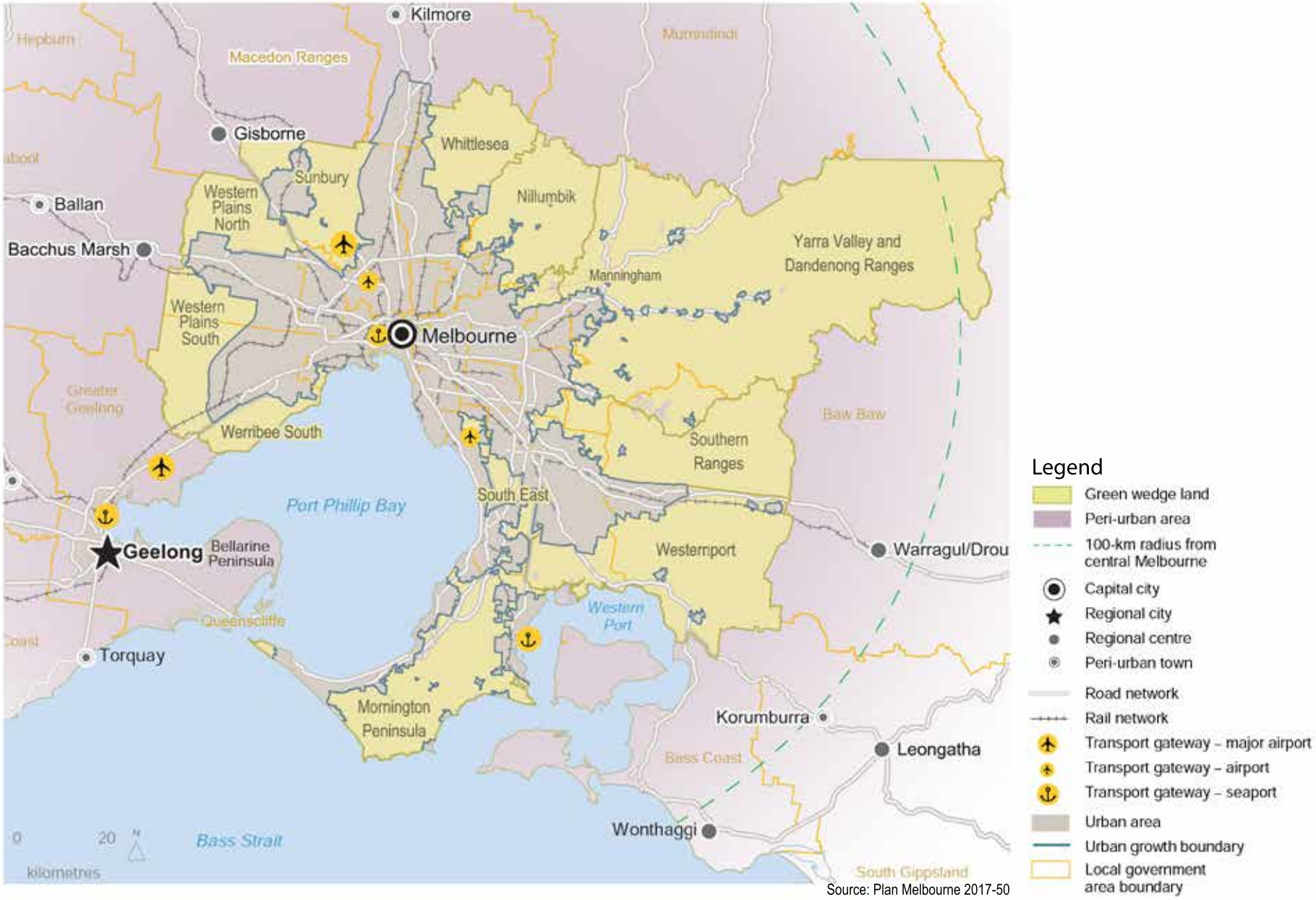
Adjoining Municipalities

Hume's rural areas adjoin Mitchell and Macedon Ranges municipalities to the north and east, Melton to the south-west and Brimbank to the south. The policies and planning controls of these adjoining municipalities create subtle but distinct land use and subdivision patterns adjacent to Hume.

The north boundaries of Hume adjoin the rural interfaces of Macedon Ranges and Mitchell Shire which have a mix of Farming, Rural Conservation and Rural Living zones. The purposes of these zones place a different emphasis on land use outcomes including agriculture, environmental management or lifestyle residential uses. In each of the zones however, 40 hectares is the minimum lot size for subdivision and as of right dwelling land use. These consistent minimum lot size controls are evidenced in the pattern of large lots and the open farmland context across the rural areas of Mitchell and Macedon Ranges and the adjoining areas of Hume.

The development pattern to the east and north-east of Hume is fragmented by rural living areas established in Macedon Ranges Shire in the 1970s. Lot sizes are generally between four and eight hectares. The rural living development of Macedon Ranges has a more developed hobby farm character with regular spacing of dwellings, outbuildings and established gardens. The larger lots on the Hume side of the boundary provide a more open landscape of undeveloped paddocks, hilltops and broad acreage. The wide and dramatic escarpment of Jacksons Creek and the wide road reserve of the Calder Freeway create a boundary and a sense of visual separation that reduce the visible character of the different land uses between the Macedon Ranges Shire and Hume City.

Figure 3: **Melbourne's Green Wedges**



Source: Plan Melbourne 2017-50

Hume's Green Wedge and Green Wedge A areas to the south of Sunbury adjoin the Cities of Melton and Brimbank. The Calder Freeway provides a boundary to Melton. Large lots have been maintained in the green wedge areas of Melton on either side of Holden Road. The flatness of this area along with the larger lots (generally over 40ha) emphasise its open cropping landscape. The alignment of the Outer Western Ring Road has been nominated and would run south-west to north-east through the area. In addition, much of the land is affected by the Melbourne Airport Environs Overlay which maintains the current subdivision pattern and has implications for development of sensitive uses.

The Jacksons Creek and Maribyrnong River form a section of boundary between Hume and Brimbank. The green wedge area of Brimbank is a relatively narrow slither of land between the valley of these creeks and the Calder Freeway. Land in this area is zoned either Rural Conservation, Green Wedge or Public use zones. The most western sections are in Public zones and include the Organ Pipes National Park and Keilor Golf Club. Further east are areas of Rural Conservation or Green Wedge Zone. These areas are used for cropping, low levels of market gardening, hobby farm/ lifestyle properties and a private school campus. In this area, the Calder Freeway forms part of the UGB to Metropolitan Melbourne with the established residential suburbs of Keilor and Taylors Lake to the south of the Freeway.

3. Policy context

3. Policy context

The following planning and regulatory framework contain relevant objectives with incorporated strategies to achieve planning outcomes in the rural areas within the municipality. Council must work within this framework when developing policies and guidelines for the rural areas.

3.1 Planning Legislation

State Legislation – Planning and Environment Act 1987

Part 3AA- Metropolitan Green Wedge Protection

Part 3AA of the Planning and Environment Act 1987 establishes protective procedures for metropolitan green wedge land. Part 3AA affects proposals for planning scheme amendments that affect the land outside the UGB and the location of the UGB. Authorisation from the Minister for Planning is required to prepare an amendment to a metropolitan fringe planning scheme that would:

- amend or insert a UGB; or
- amend or insert a provision that relates to or affects green wedge land. This includes the effect of altering or removing any controls over the subdivision of any green wedge land to allow the land to be subdivided into more lots or into smaller lots than specified in the planning scheme.

In addition Part 3AA requires ratification by both houses of the State Parliament to amend subdivision controls that apply to land in the green wedge.

State Planning Policy Framework (SPPF)

A number of State policies provide direction for Hume's rural areas, principally under Clause 11.06-7 Green Wedges. This Clause sets an objective:

To protect the green wedges of Metropolitan Melbourne from inappropriate development.

Strategies to achieve this objective include:

- Ensure strategic planning and land management of each green wedge area to promote and encourage its key features and related values.
- Support development in the green wedge that provides for environmental, economic and social benefits.
- Consolidate new residential development within existing settlements and in locations where planned services are available and green wedge area values can be protected.
- Plan and protect major state infrastructure and resource assets that serve the wider Victorian community, such as airports and ports with their associated access corridors, water supply dams and water catchments and waste management and recycling facilities.
- Protecting important productive agricultural areas such as Werribee South, the Maribyrnong River flats, the Yarra Valley, Westernport and the Mornington Peninsula.
- Support existing and potential agribusiness activities, forestry, food production and tourism.
- Protect areas of environmental, landscape and scenic value such as biodiversity assets, national and state parks, Ramsar Wetlands and coastal areas.
- Protect significant resources of stone, sand and other mineral resources for extraction purposes.
- Provide opportunities for renewable energy generation.

Local Planning Policy Framework LPPF)

Currently, Local policy supports:

- Protection of rural conservation, natural resource, heritage and landscape features (Clause 21.01-2 Municipal Profile).
- Sustainable and economically viable land management practices and rural businesses. (21.02-4 Urban Structure and Settlement)
- Environmental Sustainability (Clause 21.08-2 Natural Environment and Environmental Risk).

Further to Subclause 21.02-4 Non-Urban Land sets out the following Objective and strategies:

Objective:

- To protect the role and enhance the viability of Hume's non–urban areas.

Strategies:

- Ensure the green wedge retains a physical separation between the Hume Corridor and Sunbury.
- Support rural activities that provide for the sustainable and economical management of non-urban land
- Discourage the use of non-urban land for urban land uses that would be better located and supported within the Urban Growth Boundary
- Discourage small lot excisions and the construction of more than one house on allotments in the rural areas unless it can be demonstrated that there is a link with an established rural enterprise on the land.
- Discourage small lot excisions and the construction of more than one house on allotments in the rural areas unless it will assist in the protection of biodiversity values or an identified heritage site.
- Ensure any future planning of land north west of Sunbury recognises erosion and land management issues and the native vegetation and visual qualities of the area.

Other policies provide support for protection of biodiversity, landscape features and character, as well as heritage and cultural significance.

3.2 Planning Scheme Controls

Zones

The existing zoning of the rural areas is illustrated at Figure 5.

Clause 35.04 Green Wedge Zone

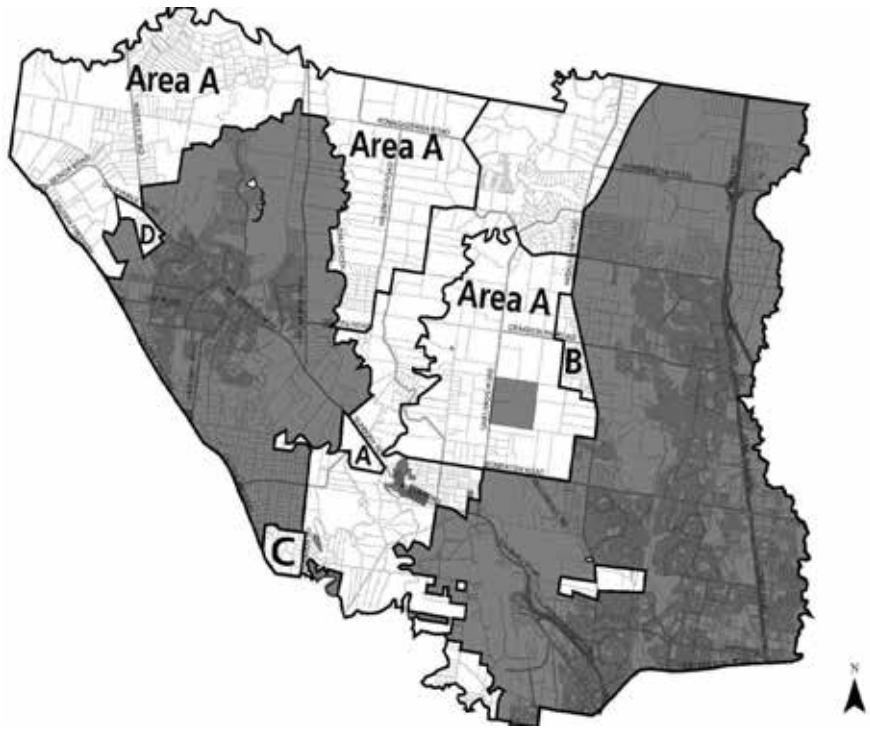
The Green Wedge Zone (GWZ) occupies the majority of land within the scope of Hume's rural area, with the purposes of:

- Providing for the use of land for agriculture.
- Recognising, protecting and conserving green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.
- Encouraging use and development that is consistent with sustainable land management practices.
- Encouraging sustainable farming activities and provide opportunity for a variety of productive agricultural uses.
- Protecting, conserving and enhancing the cultural heritage significance and the character of open rural and scenic non-urban landscapes.

A schedule to the GWZ limits the use of land for rural residential living by setting requirements for minimum subdivision size. Figure 4 correlates to the following requirements for minimum subdivision size:

- Area A: 80 hectares
- Area B: 12 hectares
- Area C: 8 hectares
- Area D: 6 hectares.

Figure 4: Land in Green Wedge Zone Clause 35.05 Green Wedge Zone

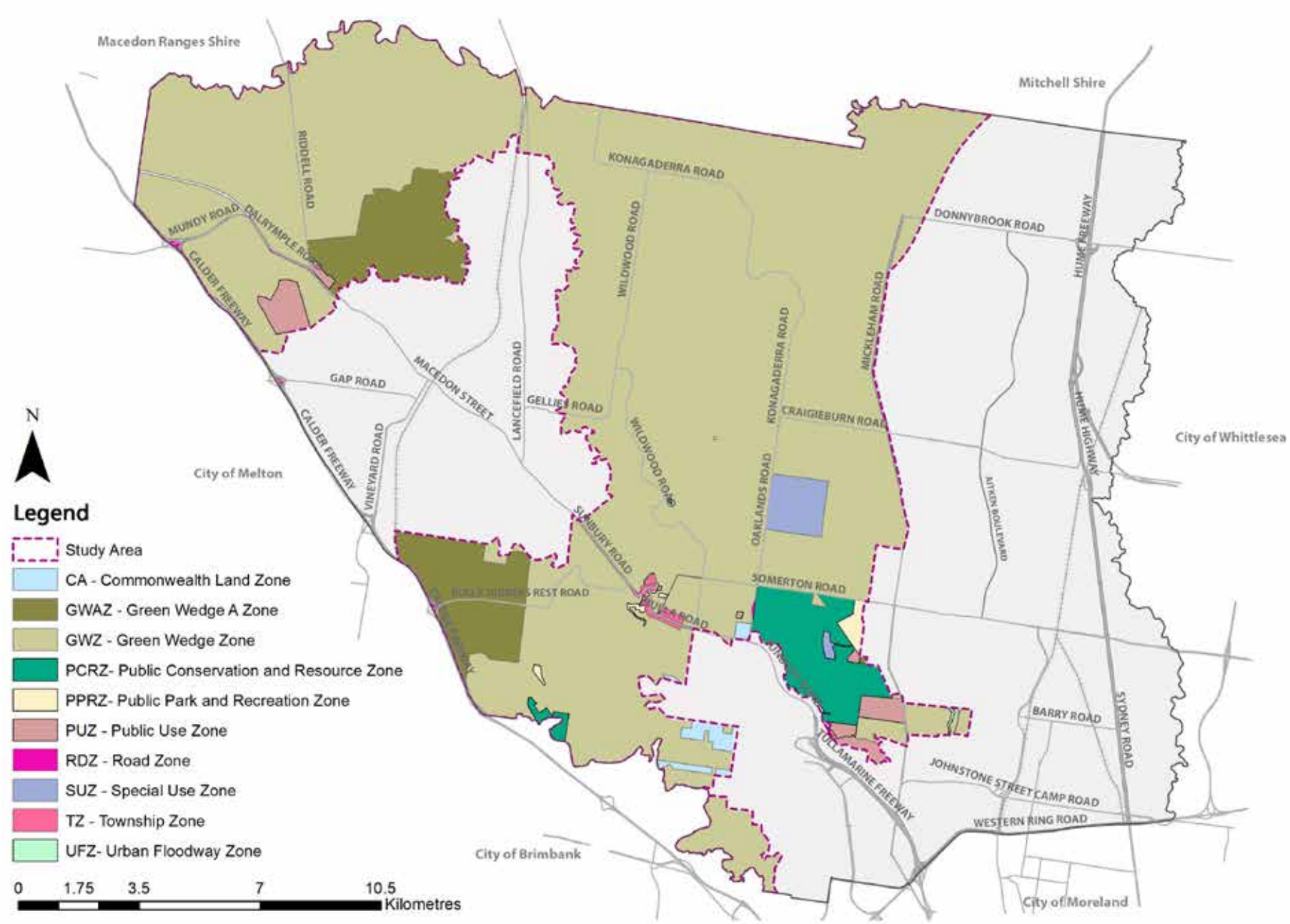


The Green Wedge Zone A (GWZA) is applied in the western region of the municipality to the north and south of Sunbury. Only the GWZA area south of Sunbury is within the scope of this project as the areas to the north of Sunbury are included in the urban growth boundaries.

The purposes of the GWZA include:

- To provide for the use of land for agriculture.
- To protect, conserve and enhance the biodiversity, natural resources, scenic landscapes and heritage values of the area.
- To ensure that use and development promotes sustainable land management practices and infrastructure provision.

Figure 5: **Planning Scheme Zoning**



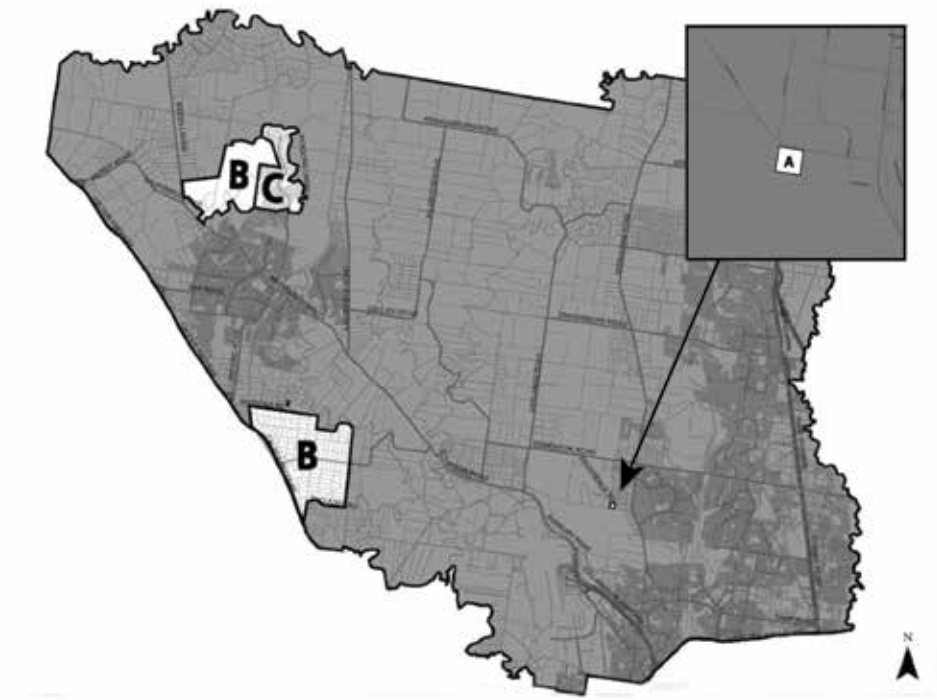
- To protect, conserve and enhance the cultural heritage significance and the character of rural and scenic non-urban landscapes.
- To recognise and protect the amenity of existing rural living areas.

Minimum subdivision sizes are applied to three areas as illustrated on Figure 6.

- Area A: 8 hectares
- Area B: 6 hectares
- Area C: 1 hectare

The purpose of the GWZA, in contrast to the GWZ that focuses on the protection of agricultural assets, is to allow for residential land uses compatible with green wedge values. This is achieved through the smaller minimum subdivision sizes and the prohibition of uses such as all non-rural industry and intensive animal husbandry allowed within the GWZ. The GWZA is typically applied to land that is located on the periphery of, or in between, rural townships.

Figure 6: Areas of Green Wedge Zone A land subject to minimum subdivision size



Overlays

A range of overlays throughout the rural areas of the municipality operate together with the zone requirements listed above. Overlays allow Councils to determine the type of development that occurs and are generally used to respond to a specific local issue or set of issues, such as an environmental concern or flooding. Figures 7 and 8 illustrate the location of overlays applying in Hume's rural areas.

Particular provisions

Clause 45.08 Melbourne Airport Environs Overlay

A significant portion of Hume's rural area is occupied by the two schedules to the Melbourne Airport Environs Overlay (MAEO). The MAEO denotes areas where a high number of aircraft movements occur at their loudest noise level. The purpose of this Overlay is to regulate use and development that would otherwise be permitted under the zone that applies to the land given high level of aircraft noise.

The green wedge plays a significant role in providing a protective buffer between Melbourne Airport and the surrounding urban and rural landscape. It restricts development in areas of frequent aircraft movement, and limits the existing and potential impacts to the natural environment, biodiversity, heritage and rural landscapes.

Clause 57 Metropolitan Green Wedge Land

Clause 57 was introduced into the Victorian Planning Scheme in 2003 prior to the introduction of the Green Wedge Zones. The intention of Clause 57 was to provide further controls on the use and subdivision of land outside the UGB and to facilitate the transition to new Green Wedge Zones. While Clause 57 still applies to the GWZ and GWZA areas in Hume, the requirements of the Clause either duplicate or are less restrictive than those in the Green Wedge Zones.

Figure 7: **Planning Scheme Overlays**

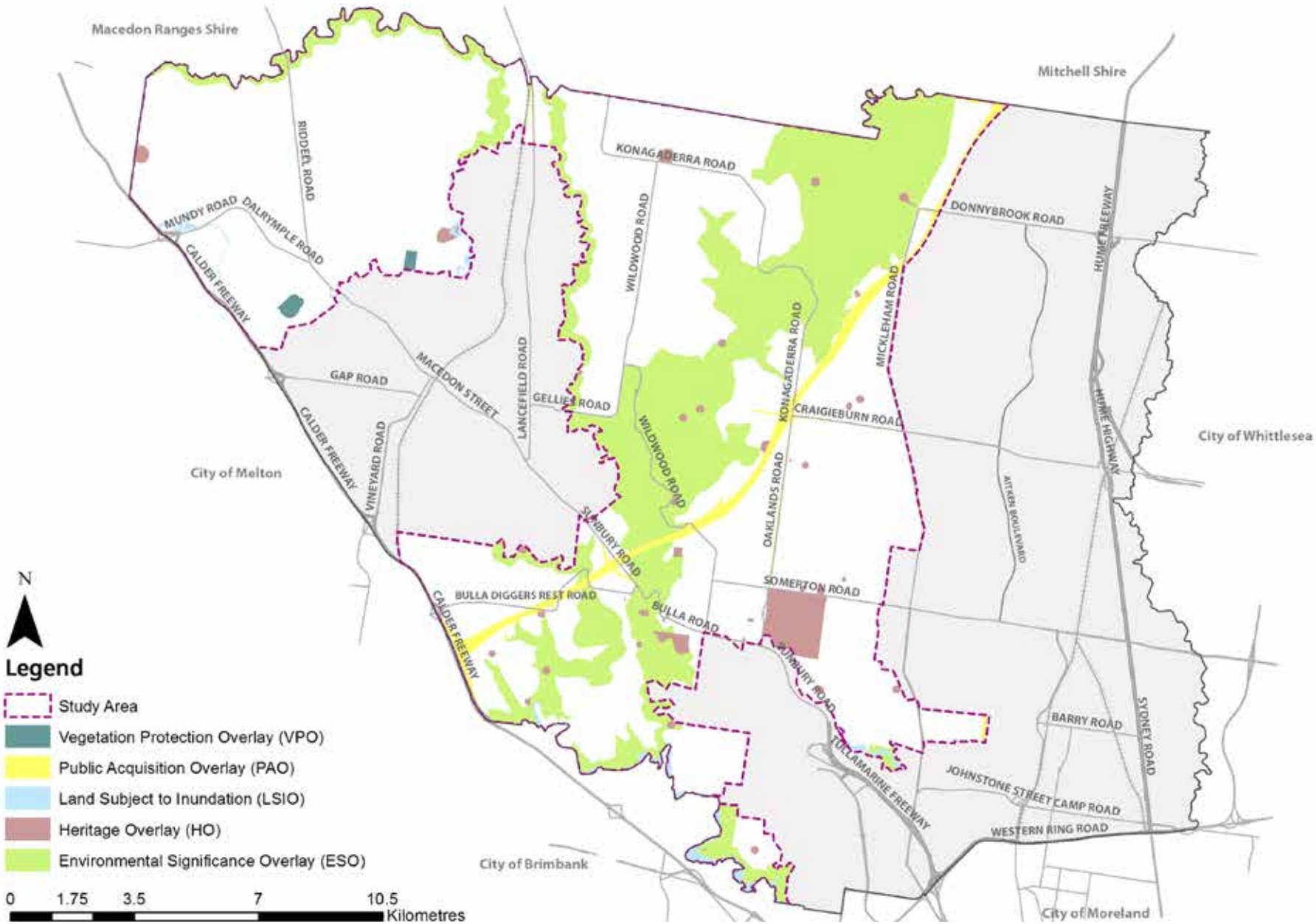
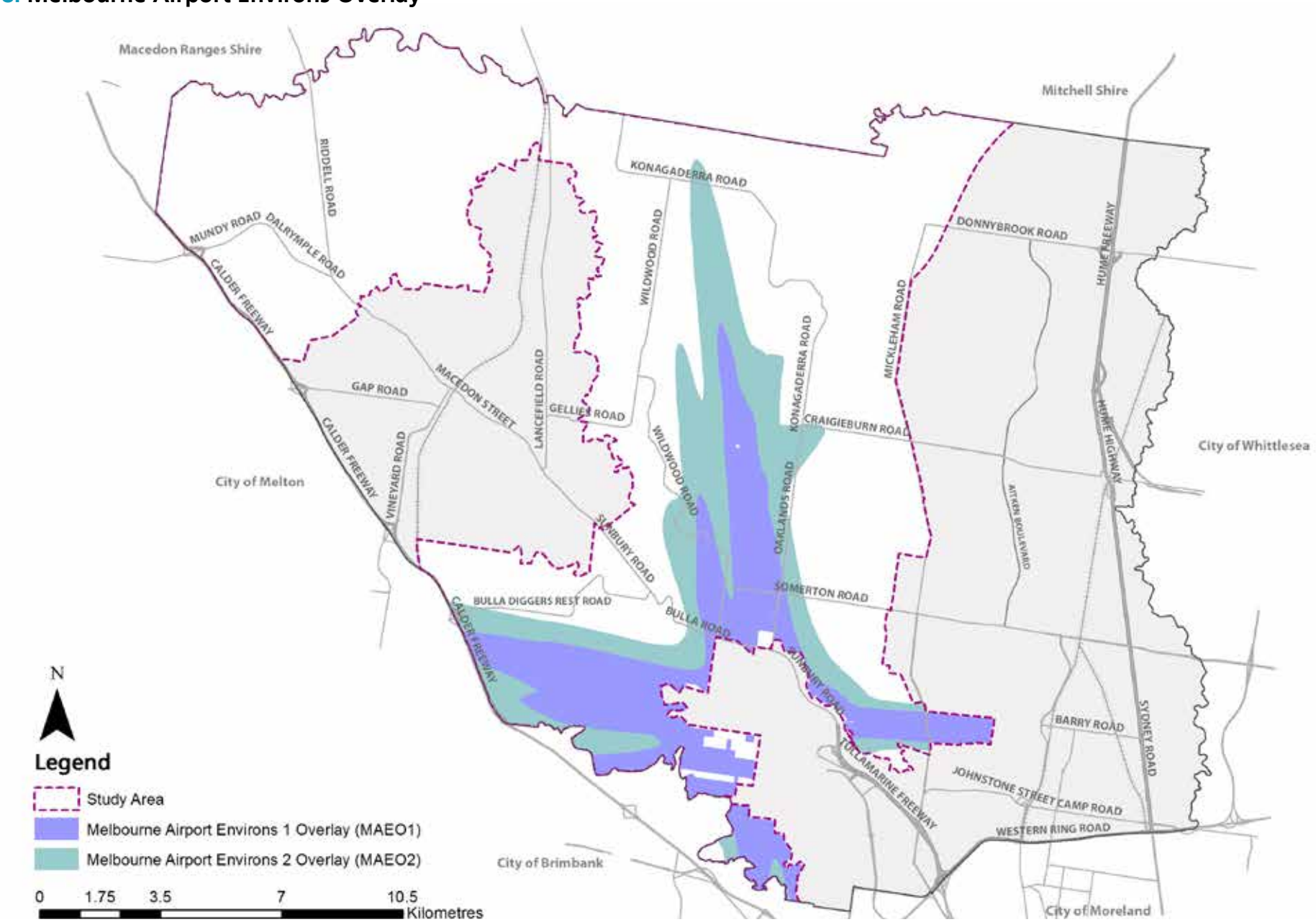


Figure 8: **Melbourne Airport Environs Overlay**



4. Management programs and assistance

4. Management programs and assistance

4.1 Support for rural landowners

4.1.1 Federal and State Government programs and initiatives

The National Landcare Program is a Federal Government initiative to address nationwide problems such as:

- Loss of vegetation
- Soil degradation
- The introduction of pest weeds and animals
- Changes in water quality and flows
- Changes in fire regimes.

It is jointly administered by the Department of Agriculture and Water Resources and the Department of the Environment and Energy and includes a range of measures to support natural resource management and sustainable agriculture and to protect biodiversity.

Within the Department of Economic Development, Jobs, Transport and Resources, Agriculture Victoria works with industry and on research, development and extension to improve production; connects the sector with international markets; supports industry development; and maintains effective biosecurity controls. Resources, such as technical guidance and data, are provided as well as direct assistance through grants, awards and workshops. For example, current opportunities include Food Innovation Voucher Stream; Food Source Victoria grants and scholarships; scholarships for young people (aged under 35 years).

4.1.2 Hume City Council programs and initiatives

Council is committed to ensuring that the City's natural heritage, environment and rural spaces are protected, enhanced, maintained and valued. Council supports and invests in a range of programs and projects that support the rural community to manage land sustainably, including:

- field days and workshops
- fauna monitoring
- technical assistance, newsletters and other resources
- the Conserving our Rural Environment grant program, and
- the Agricultural Land Use Rebate (ALUR).

The Conserving our Rural Environment grant program aims to conserve and improve rural land and the natural environmental assets on private property. This is achieved by providing funding for on-ground environmental works, capacity-building activities and community engagement initiatives to landowners and environmental community groups. The eligibility criteria for these grants are:

- Landowners with property larger than 0.4 hectares that is zoned: Green Wedge, Green Wedge A, Rural Living and Farming.
- Landowners with property identified as conservation within the Biodiversity Conservation Strategy for Melbourne's Growth Corridors and environmental community groups such as Landcare are also eligible to apply.

The Agricultural Land Use Rebate supports investment in sustainable agricultural land use and sustainable land management activities by providing approved rebate applicants with an annual discount on the general rate for eligible properties. This is available to owners of land greater than 2 hectares and utilising a minimum of 50% of land for agriculture. A review of the rebate program and eligibility criteria is in progress and expected to be finalised by end of 2018.

4.1.3 Community/Landcare groups

Sunbury Landcare, Clarkefield and District Landcare, Upper Maribyrnong Landcare and more recently Riddells Creek Landcare are Landcare groups made up of local residents. These Landcare Groups undertake planting and weed control works on private properties. Some groups run field days and periodic workshops. Hume is committed to supporting these groups through the Conserving our Rural Environment grant program.

Hume is home to a number of Groups such as Friends of Emu Bottom and Holden Flora Reserve Groups, who undertake a range of environmental activities on public land including vegetation enhancement works and bird monitoring programs. The groups are supported through Council's Urban Biodiversity Program.

5. Issues analysis

5. Issues analysis

This section discusses the wide range of issues affecting the rural areas, including its:

- Overarching challenges such as climate change, urban pressures and landowner expectation.
- Changing agricultural role.
- Residents and visitors enjoyment.
- Infrastructure role and needs.
- Movement network.
- Environmental values.
- Heritage and landscape values.

The options follow on from the discussion of each issue. The options provided represent a sliding scale of change that could occur within the rural areas, beginning with a 'no change/maintaining the status quo' option to options that suggest greater change and diversification within the rural areas. These options are not intended to be exhaustive but rather provide a range of approaches to generate discussion and responses from the community. The community will be invited to indicate which options they would prefer to support or outright reject or come up with alternative options to address the issues affecting the rural areas over the next 30 years.

5.1 Overarching challenges

5.1.1 Protection of Melbourne Airport

Melbourne Airport is located in the south west corner of Hume's rural areas. The Airport is located on crown land controlled by the Commonwealth Government. It is bordered by Hume's rural areas on its northern, eastern and western boundaries (Figure 1, page 2).

Melbourne Airport is one of Victoria's key strategic assets and economic drivers. During the 2016-2017 financial year, the Airport processed 34.9 million passengers making it the second largest airport in Australia. Projections show approximately 40 million people a year are expected to use the airport by the end of the decade. During this time the airport also handled approximately 290,000 tonnes of inbound and outbound air freight, accounting for approximately 30 per cent of Australia's air freight market. Agricultural exports make up around 80 per cent of the air freight volume exported from Melbourne, so growth in international routes opens up more opportunities for Victorian farmers to sell into new markets, in greater volumes.

The Airport is also one of the state's largest employment destinations. Employment at the Melbourne Airport precinct is forecast to grow to 29,000 by 2031 with a high percentage of workers likely to be Hume Corridor and Sunbury residents. Much of this employment growth will be directly related to the operation of Melbourne Airport and the airlines. It will also include jobs in businesses (particularly related to the transport of freight) on the land immediately around Melbourne Airport.

The growth of Melbourne Airport provides many opportunities for Hume residents and businesses, including significant employment opportunities. It may also provide opportunities for businesses within Hume's rural areas that service 'in and out' business trips and general tourism that would benefit from a semi-rural or environmental setting, such as accommodation or conference facilities teamed with agricultural or outdoor recreation (e.g. golf courses).

The noise from aircrafts and increased traffic on roads surrounding the airport are some of the key challenges of the airport's operation.

The importance of Melbourne Airport to the economy of Victoria and the convenience of Melbourne depends upon the continued curfew-free operation of the airport. The Melbourne Airport Master Plan 2013 states the importance of Hume's green wedge to the airports' continued operation. In particular, safeguarding the current role of the green wedges, and restricting inappropriate land uses in these areas is important in ensuring the ongoing protection of the curfew free status. As such, any alterations to the Urban Growth Boundary or increases of residential development allowed within aircraft noise affected parts of the green wedge is seen to jeopardise the current functioning of the airport. These interests are also protected through planning controls, such as the Melbourne Airport Environs Overlay, which is discussed at Section 3.2 – Planning Scheme Controls.

5.1.2 Climate Change

A number of impacts resulting from climate change are likely to have a detrimental impact on biodiversity and land use in Hume. These include haphazard and extreme weather conditions (eg. storms, flooding), increased frequency and intensity of drought and bushfires, reduction in water availability and new and emerging pest weeds and animal species.

One of the greatest challenges for ecosystems in the face of rapid climate change will be the short timeframe in which species and communities will have to adapt. The greatest potential for these impacts will be on:

- Flora and fauna which are reliant on specific water quality and quantity.
- Species with small population sizes.
- Species whose habitats have become limited, fragmented and isolated.

Similarly, land use may need to adapt or change based on evolving climate, access to water and increased bushfire risk and frequency. Investment in agribusiness will need to factor in climate change risk and explore contingency infrastructure sources such as recycled water, on-site energy production and crop diversity.

5.1.3 Pressures on Green Wedge Areas

Green wedges are the rural and natural areas of land located outside the metropolitan UGB and which separate Melbourne's urban growth corridors. While the green wedges are set aside as non-urban land in the Hume Planning Scheme, green wedges can be subjected to intense pressures to be developed for urban uses and experience agricultural decline or change as a result of urban influence and land valuation. They have potential to provide recreational experiences for nearby urban communities in natural and open environments (eg. Horse trails, cycling routes, golf, picnic areas). They can also support more formal visitor experiences such as conference facilities, restaurants and short term accommodation.

The potential for higher order land uses and land speculation results in:

- A more challenging context for existing agricultural and extractive industries.
- Increased land prices;
- Land use conflict;
- Further pressure to subdivide landholdings;
- Absentee land owners;
- Need for off farm income to finance management of property; and
- Poor land management.

There is also likely to be pressure for the green wedge to accommodate State infrastructure to support metropolitan Melbourne.

In commenting on Melbourne's green wedges Plan Melbourne commits to:

- Locking in an urban boundary as crucial.
- Securing the future use of green wedges and peri-urban areas for agriculture and agri-business, biodiversity, recreation and open space, tourism, heritage and landscape conservation.
- Protecting significant water and sewerage assets.

5.1.4 Landowner Expectations

Landowners have consistently expressed their expectations to be able to subdivide and develop their rural properties. Whilst this view is not unanimously held by residents, it has been a persistent view and is driven by significant expansion of the UGB on nearby land, difficulties of viable farming and managing land and a ready market for further urban land or small hobby farm land close to urban centres.

As a principle, planning is driven by the proper and efficient use of land for the benefit of the wider community rather than individual landowner expectations.

Strategic planning plays an important role in clarifying the opportunities and long term role for land. Policy development then provides the statutory mechanism to manage these outcomes. Importantly, political commitment and policy based decision making is crucial for consistency and transparency.

5.1.5 Urban Growth Boundary

The UGB provides the extent for Melbourne's future urban growth and is shown at Figure 3. The UGB is located to the south of the rural area and borders the rural area to the east.

Proximity to the UGB and metropolitan Melbourne has resulted in greater pressure to include rural land within the UGB and develop it for urban uses, particularly where this land directly abuts the UGB. It has also resulted in land-use conflict, further pressure to subdivide landholdings, poor land management due to absentee landowners and land banking resulting in increased land prices and rates. Recent landowner surveys identified landbanking as a major and growing issue. Where land is held in anticipation of a non-rural land use there is a greater likelihood of neglect and poor land management increasing weed infestations, fuel and fire risk and an unsightly impact.

Community submissions to the Discussion Paper also identified growing industrial activity in the rural areas also resulting from proximity to metropolitan Melbourne. This has resulted in an increase of heavy traffic on rural roads and the growth in storage of industrial and trade vehicles.

Three rural areas were previously considered for inclusion within the UGB by the Logical Inclusions Committee in 2011 (refer Table 3 below). The inclusion of these three parcels was not supported by the Minister for Planning when the UGB was subsequently changed in 2012 for the reasons summarised in Table 3.

Table 3: Areas considered by the Logical Inclusions Committee 2011

Logical Inclusion Area	Response in Logical Inclusions Advisory Committee Report
Greenvale West - Land to the west of Mickleham Road	Should not be included in the UGB as part of this process, but may merit further consideration as part of a later review.
Attwood land - Approximately 335ha of land on the east and west side of Mickleham Road	Should not be included in the UGB as part of this process, but may merit further consideration as part of a later review following a planning study
Sunbury South - Approximately 900ha between the current UGB, the Calder Freeway, the proposed OMR and Jacksons Creek	Should not be included in the UGB as part of this process, but may merit further consideration as part of a later review following resolution of issues related to the optimal use of Melbourne Airport.

Following the Logical Inclusions process of 2011, the Sunbury and Hume HIGAP projects undertook further work on the three areas. Hume HIGAP provides a list of requirements and challenges that need to be addressed should the Greenvale West and Attwood land again be considered for inclusion in the UGB. The matters include retaining areas of remnant grassland and woodland and an expansion of Woodlands Historic Park. This criterion is provided for at Appendix 3.

Sunbury South is also identified within Sunbury HIGAP as 'future urban land' to be utilised for residential and employment purposes.

Plan Melbourne has identified that a permanent UGB around Melbourne will be maintained to contain Melbourne's outward growth. It has committed to locking in the UGB to enhance Melbourne's green wedges and to secure their future use for agriculture and agri-business, biodiversity, recreation and open space, tourism, heritage and landscape conservation.

Future Options – Overarching Challenges

Melbourne Airport:

1. Ensure that land use and development protects the airport's curfew free status and is compatible with the operation of Melbourne Airport in accordance with the Melbourne Airport Master Plan.
2. Explore potential for tourism and business opportunities within the rural areas that support the airport.

Climate Change

1. Continue to support rural landowners through agricultural programs (Caring for our Rural Environment and the Agricultural Land Use rebate).
2. Explore the viability of alternative agriculture and land uses in response to anticipated climate change, and how Council can support them.

Pressures on Green Wedge

1. Maintain the rural areas as they currently are.
2. Recognise that Hume's rural areas are dynamic and will experience change.
3. Manage change in a proactive and sustainable way to conserve the values of the rural areas.

Landowner Expectations

1. Maintain the existing statutory and policy controls.
2. Provide clarity on the long-term role and associated opportunities for the rural areas, to manage expectations and reduce speculation.
3. Explore changes to the statutory and policy to allow new opportunities and activities in the rural areas.

Urban Growth Boundary

1. Recognise the current UGB as a fixed boundary.
2. Develop criteria to advocate for change to the UGB, reflective of the criteria within Hume HIGAP and either:

   a) React to State Government processes; or

   b) Proactively advocate to State Government.

5.2 Agriculture

5.2.1 Cropping and Grazing

The rural areas of Hume have a historic context of agricultural activity, relating predominantly to broad acre grazing and cropping activities, as well as market gardening and viticulture activity. This history of agricultural activity in the rural area extends back to the early 1840s, when land was settled by Europeans for pastoral activity. In the last 30 years, there has been a significant decline in farming activities and supporting infrastructure and services, with a shift towards lifestyle farming and rural living.

Broad acre grazing and cropping however, still remain the most prevalent commercial agricultural activity, which is generally pursued on larger consolidated land parcels. Prominent localities in the rural area for these activities include land located immediately east of Diggers Rest, land north of Yuroke and Wildwood Junction, and land located to the north of Sunbury in the area of Gisborne South and Clarkefield (See Figure 9 Lot size and Distribution).

Productivity of broad acre cropping and grazing is relatively low due to the regions low rainfall, which results in shorter growing seasons. The impacts of climate change, soil erosion and poor quality, rocky soils further contributes to the challenges of continuing cropping and grazing practices. In addition, lot sizes influence the viability of cropping and the fragmented subdivision pattern of the rural area limit the potential for broad acre cropping.

In a number of locations in the rural area, broad-acre cropping and grazing activities appear to be in decline. Larger paddocks have been identified to have become dis-used and weed infested. This was particularly apparent for some grazing land located east and south-east of Diggers Rest.

Land and farm management has become increasingly difficult as rural land owners struggle to crop and rely on brought in feed. There are also shortages of stock water and rainfall, and a lack of access to recycled water. The purposes of livestock/animal husbandry have shifted and sheep/cattle grazing have been adopted by landowners to solely manage properties. The role of local roads has also affected movement of agricultural vehicles such as tractors, harvesters and livestock trucks. The expectations of other road users are frustrated by the size and slow speed of these agricultural vehicles.

Agricultural property sales published by the Valuer-General's Office (Table 4, page 30), highlights the lesser role Hume plays in agricultural activities compared to neighbouring rural-based municipalities north of metropolitan Melbourne. The median sale price and median sale price per hectare were significantly higher in Hume than in other municipalities. These land values reflect that the proximity of Hume's rural areas to Melbourne's metropolitan areas is valued higher than that of its productive attributes in terms of agriculture, grazing or other rural activities.

Figure 9: **Lot Size and Distribution**

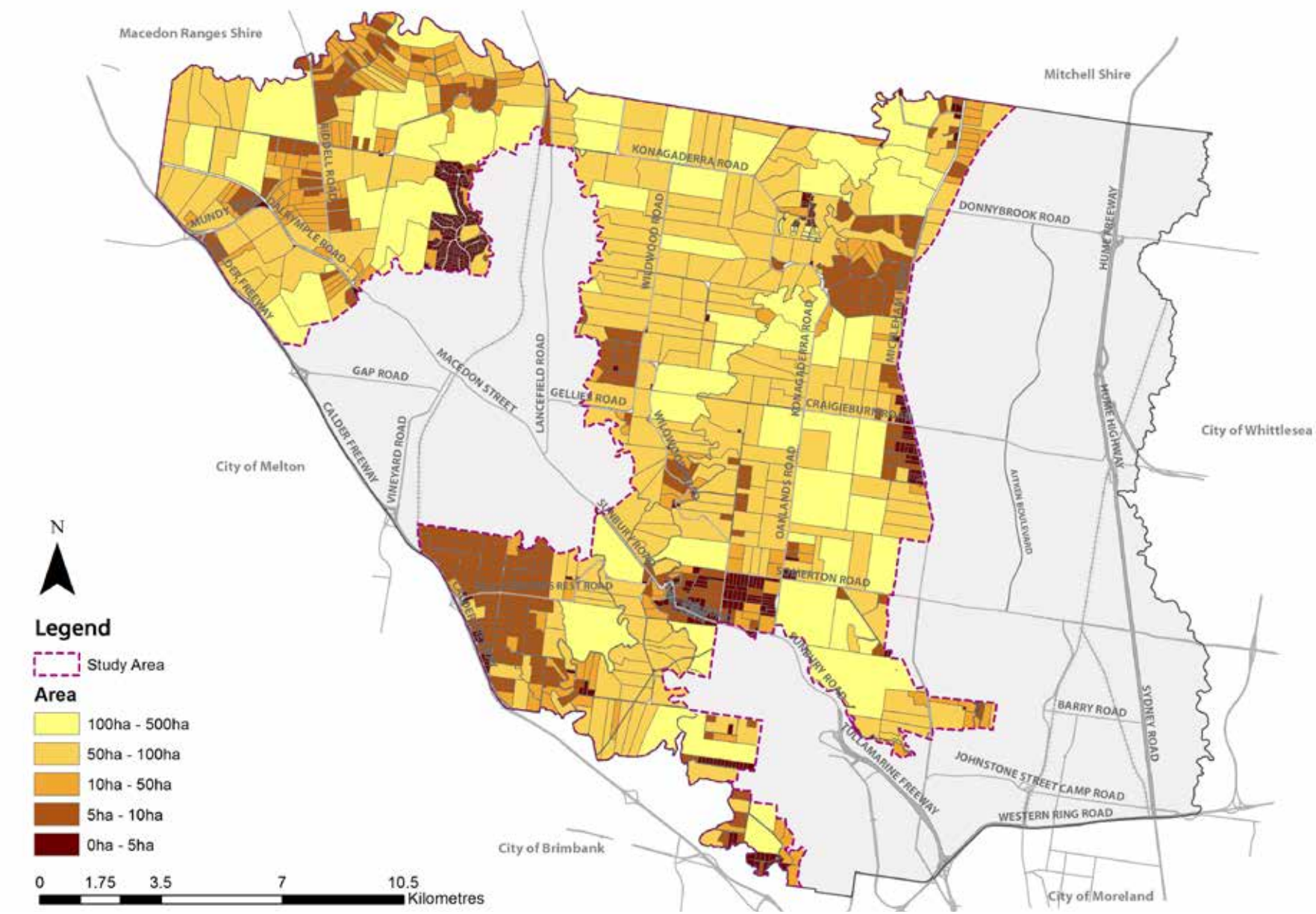


Table 4: Property Sales Statistics for Hume and Nearby Municipalities, 2016 (DELWP, 2016)

	Hume	Murrindindi	Mitchell	Macedon	Nillumbik
Total Number of Rural Property Sales	13	100	85	55	4
Details of Mixed- Farming/ Grazing sales:					
Number of Mixed Farm/ Grazing Sales	13	74	46	48	4
Median Sale Price	$1.21m	$0.54m	$0.47m	$0.69m	$0.84m
Median Price per Ha	$31,600 /ha	$20,200 /ha	$10,700 /ha	$13,500 /ha	$20,080 /ha
Median Block Size	40.3ha	41.3ha	44ha	37.8ha	40.6ha

5.2.2 Horticulture

Horticulture in Hume consists of viticulture activities spread throughout the rural area, market gardening and olive growing on a small to moderate scale.

The proximity of the rural areas to the Melbourne Wholesale Fruit, Vegetable and Flower Market in Epping (Figure 10), as well as a significant catchment of potential employees (noting that intensive horticulture can be labour-intensive), are factors that lend support to the establishment of intensive horticulture activities , for example Western Plains Flora and Bulla Mushrooms. The advantage of being in proximity to Victoria's largest produce trading centre minimises costs associated with logistics. For example, White Button and Swiss Brown Mushrooms produced at the Bulla Mushrooms facility in Diggers Rest (where the company has some 60 workers on-site) are sold at Melbourne's Wholesale Market.

Horticultural activity however, faces challenges with natural resource allocation and supply in terms of gas, electricity and alternative water sources.

Keilor Market Gardens

The Keilor Market Garden area exists along the Maribyrnong River within both the Hume City Council and City of Brimbank (Figure 11). Market gardening within Hume has been undertaken over many generations on the higher-order alluvial soils along the Maribyrnong River valley, north of Keilor and south-west of Melbourne Airport. In recent times however, operations have declined due to limited water allocation for irrigation as well as land use conflict associated with increased housing and urban development in the area. Currently, crops and production is managed year to year dependent on these conditions and access to water.

Figure 10: **Proximity of rural areas to Melbourne Wholesale Market, Epping**

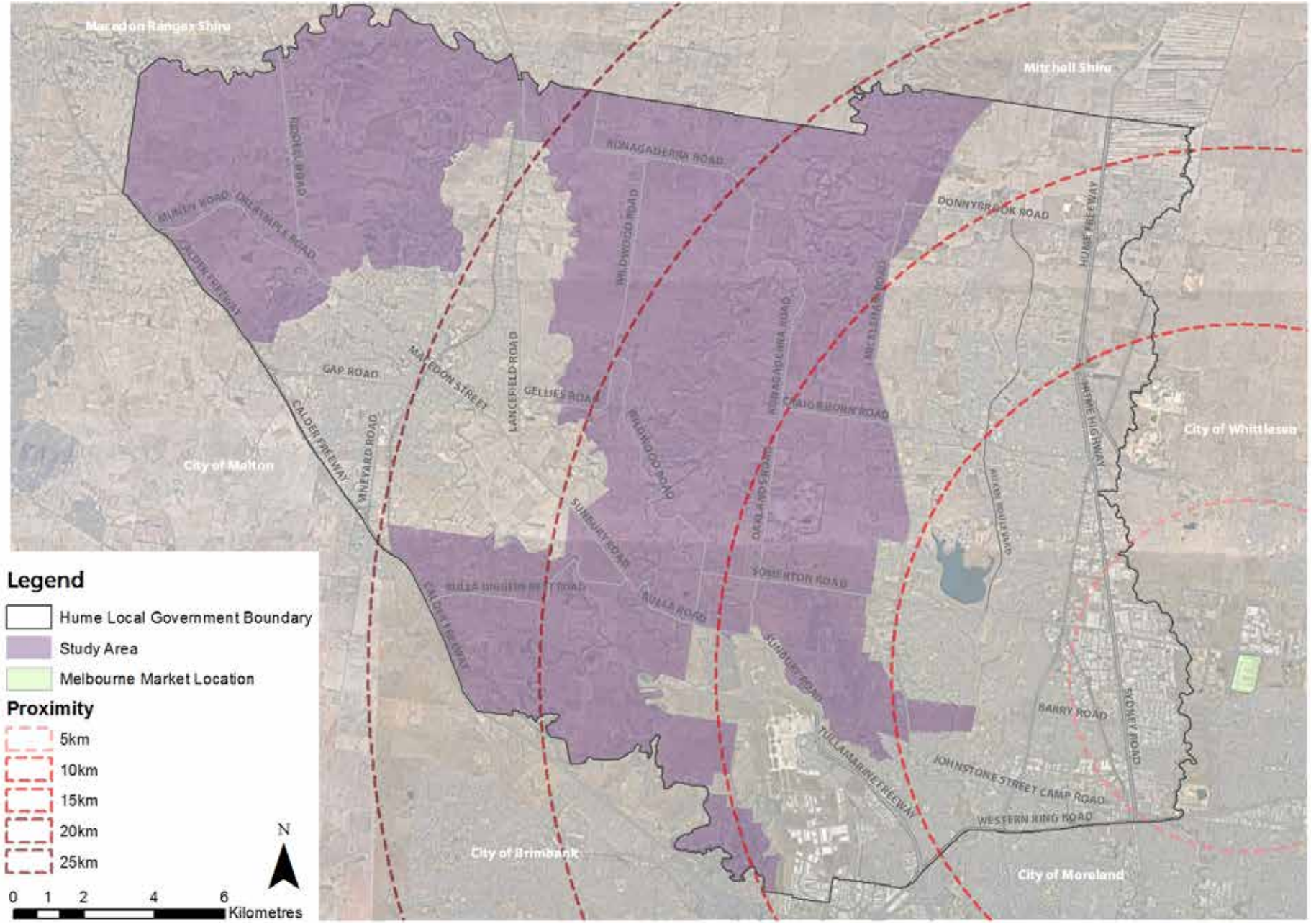
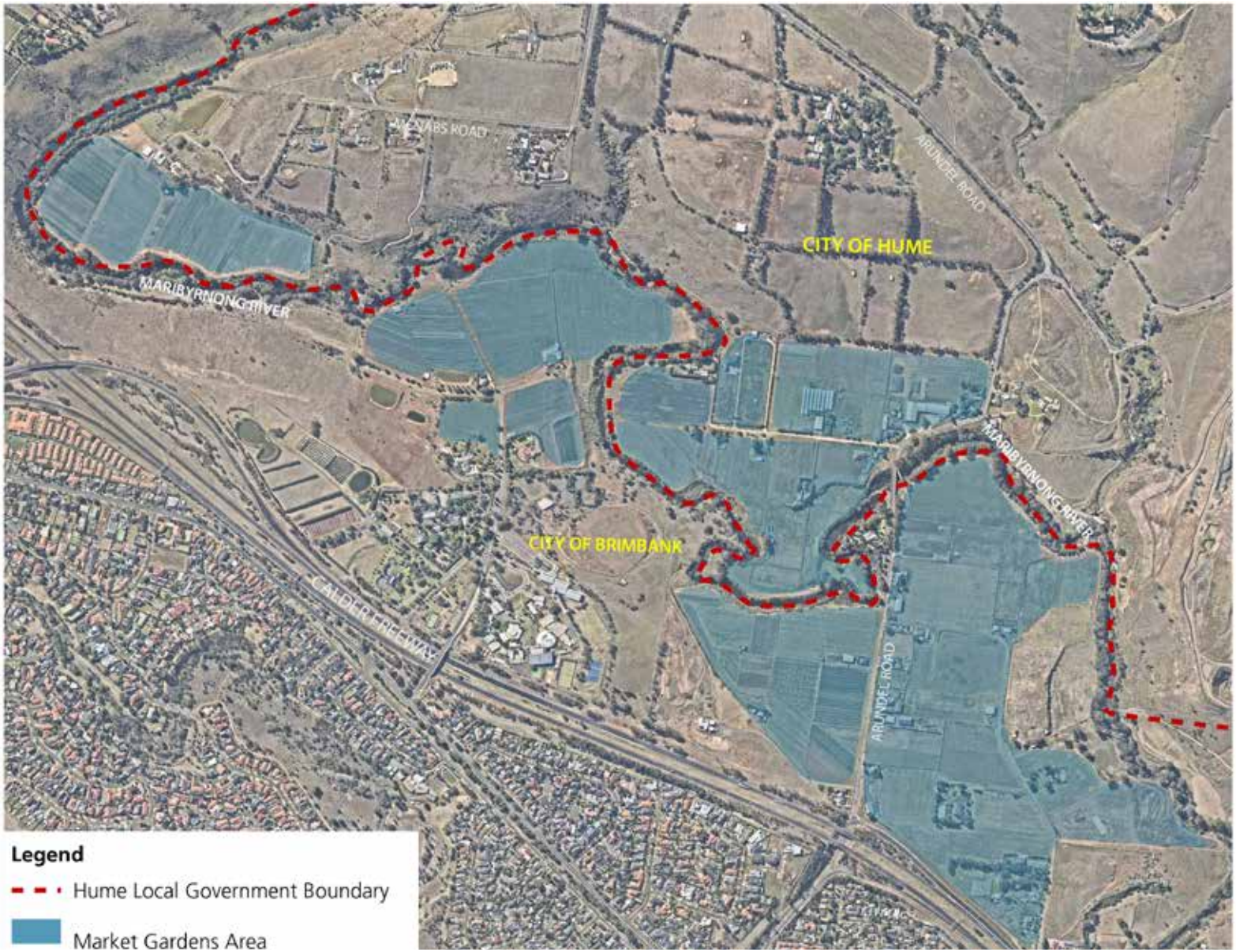


Figure 11: **Keilor Market Gardens**



5.2.3 Viticulture

Viticulture is also a notable agricultural activity in the rural areas, with several wineries and vineyards scattered throughout the rural areas. These wineries and vineyards are shown in Figure 12, and include Arundel Estate, Wildwood Winery, Yuroke Vineyards, Marnong Estate, Longview Creek Vineyard, Ray-Monde Deux and Pitruzella Estate (which also contains a significant olive grove). A number of other vineyards are located in close proximity to the rural areas, these include Goona Warra Vineyard, Craiglee Vineyard, and Roomba at Mt Aitken.

Successful viticulture activity is highly-sensitive to environmental attributes of specific sites, such as the soil type, drainage and prevailing climatic conditions of the area. Accordingly, it is highly common for vineyards to be clustered in specific regions or localities which, over time, develop profiles that can be leveraged for tourism visitation and to capture broader wine sales.

The concentration of wineries, combined with the proximity of the area to a growing population catchment, provides opportunities for coordinated wine related events and promotion.

5.2.4 Equine

Equine uses are common in the Hume's rural areas, particularly on smaller allotments ranging in size between 5-10ha. This stems from the area's strong history associated with the equine industry, which extends back to the mid-1840s when private race meetings were held at Woodlands Homestead. Equine uses are located in areas that include Wildwood, Oaklands Junction, Diggers Rest and land to the north of Sunbury Township. A number of significant equine uses are also clustered around the Woodlands Historic Park, including Inglis Horse Stud and Living Legends (refer Figure 12).

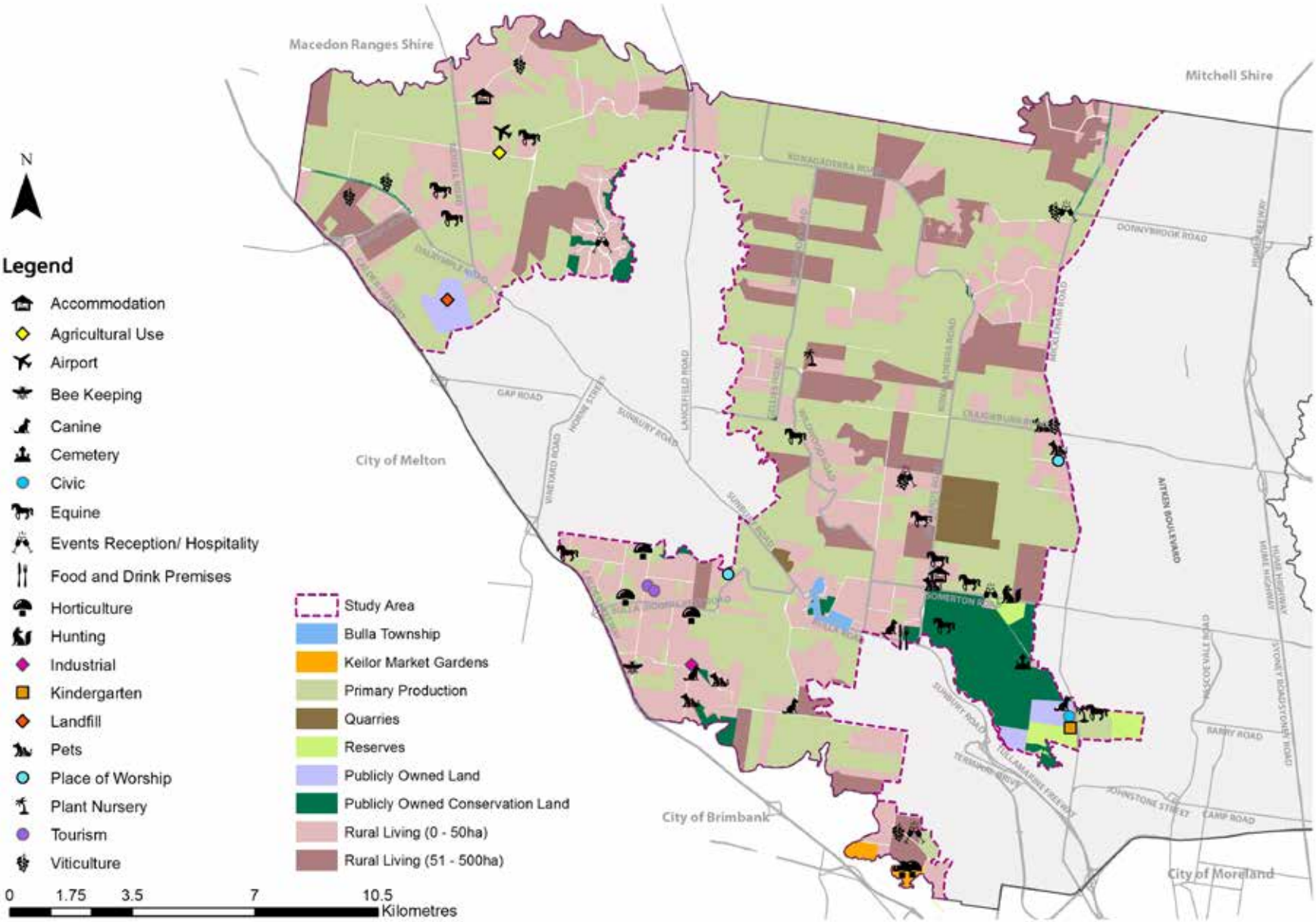
The range of equine related uses currently occurring in the rural areas includes:

- Horse agistment.
- Horse training.
- Pony clubs and riding schools.
- Equestrian centres and facilities.
- Horse studs.
- Inglis Horse sales.
- Tourism/visitation generating equine ventures (e.g. Living Legends).

Hume has a number of attributes that make it well suited to equine and related uses and this presents an opportunity within the rural areas to further promote and encourage the establishment of such uses. These attributes are:

- Accessibility to the metropolitan Melbourne population catchment. This is beneficial in terms of attracting patronage for the rural area's pony clubs, riding schools, agistment facilities, and equine tourism ventures.
- Availability of mid-sized lots (between 5ha and 50ha), which appears to be the optimal size range for equine related economic activities.

Figure 12: **Existing land uses**



- The rural area's close proximity to metropolitan Melbourne, key thoroughbred racing locations of Flemington and Moonee Valley, as well as regional Victoria via the Hume or Calder Freeways. This means that the area is well-located to service the wider horse racing industry in terms of providing agistment and training facilities.

Interviews carried out for the *Square Pegs in Green Wedges Landholders and Natural Resource Management in Melbourne's Rural Hinterland* (Department of Primary Industries [DPI] and Port Phillip and Westernport Catchment Management Authority [PPWCMA], 2008) however, found that lifestyle horse owners are often poor land managers due to overstocking, poor pasture management and poor weed control.

This group may also be less motivated by financial incentives. Other assistance associated with whole farm planning and horse wellbeing (including appropriate stocking rates, pasture management and associated weed management) is of most benefit to this group (for example the initiatives of the not for profit Horse SA group).

As a guide, the recommendations of the Healthy Land, Healthy Horses (A guidebook for small properties) prepared by Rural Industries Research and Development Corporation for the Australian Government in 1998, set a carrying capacity of 3-4 horses (450kg average) on 5 hectares of paddock. This is based on an average rainfall of 500mm, which is slightly higher than the rural areas which has an average rainfall of 485mm.

5.2.5 Emerging and Innovative Agricultural Activities

Historically, various traditional agricultural activities have dominated the rural areas of Hume. With landowners contending with a range of challenges mentioned in Section 5.1 of this paper however, the decline in traditional agricultural activity is apparent. These challenges, coupled with factors such as projected population growth and increase in food consumption, result in a greater demand and competition for agricultural resources. Simultaneously, minimising the impacts of agricultural practices on biodiversity and the environment, as well as the conservation of landscape values is significant in achieving environmentally sustainable outcomes.

Innovative solutions to food production, consumption and distribution are a result of these complex and dynamic challenges within the agricultural industry. In the past, organic and health food production was considered a niche market. This has now evolved to become an expanding industry that rivals conventional food production methods. This change has come from a shift in consumer attitudes to food production and consumption, and consumer education on health risks and environmental safeguarding.

Emerging agricultural activities exist within the municipality, these include alternative distribution networks of food and the re-localisation of food. These emerging activities result in shorter food supply chains that reduce the distance between producers and consumers. This also helps develop a relationship between consumers and suppliers. Additionally, this has a positive impact on the local economy, as well as provides social benefits to the community. Examples of these activities include farmers markets and nurseries, which offer direct to consumer sales.

Gaps in the emerging agricultural activities within Hume include the lack of schools, training facilities and services, both within the municipality and wider region, that would typically assist in the succession and prolonged productivity of farms. Other gaps include a diverse range of facilities such as breweries, wineries and nurseries which offer 'farm-to-table' services and direct to consumer sales.

Future Options – Agriculture

1. Manage the status quo by supporting existing operations and sectors.
2. Explore opportunities in suitable locations to assist and enhance existing operations as well as foster emerging agricultural uses.
3. Manage agriculture as a non-viable activity that will continue to decline in productive output and function more as a hobby or secondary project for landholders.

5.3 Living and Visiting

5.3.1 Housing and small rural lots

Housing in the green wedges is either on agricultural properties or within clusters of small lot (2-10 hectares) subdivisions. Large landholdings of greater than 40ha have been retained through the central, northern and north-western parts of the municipality. These landholdings generally incorporate dwellings associated with a farming land use.

From the 1970s through to the 1990s pockets of rural living development ranging from 2 to 10 hectares were created throughout Hume's green wedge (refer Figure 12, page 34). Generally these subdivisions occurred in areas with good road access and level terrain. There are more than 15 locations of small lot subdivision within green wedge areas. Individual lots within these areas have been developed for lifestyle living /hobby farm.

Many rural living areas in Hume are sited close to creek corridors and in some cases, these developments step down the valley escarpments. This pattern of development has created management issues, such as erosion from excavated development sites and along roads, and difficulties in managing pests and weeds on steeply sloping land and isolated creek lines.

Oaklands Park is an example of a cluster subdivision from the 1990s that demonstrates a unique approach to development. A total of 81, one to three acre lots were created around communal recreational facilities adjoining a shared common farm (occupying approximately 75% of the total land area). Residential development was located above the valley ridgeline, with shared ownership and management responsibility for the sloping land down to the creek.

Current planning scheme controls, including the introduction of Green Wedge legislation in 2003 and the MAEO, has prohibited further small lot subdivision and has constrained development in areas of frequent aircraft movement. Under these controls, further housing may only be allowed in areas where it is required for agriculture or similar activity and minimum lot sizes are set between 6 and 80 hectares (see Figure 4 and 6). There is limited potential to further subdivide land in Hume's rural areas under these controls.

Part 3AA of the Planning and Environment Act 1987 sets out protections for the green wedge land that require both Houses of State parliament to ratify changes to the subdivision controls, Council's role is therefore limited to advocating for changes to the subdivision controls.

The broad division between genuine farming interests and lifestyle activities is typical of Melbourne's green wedges. The DPI and the PPWCMA investigated this issue in 2008. Their objective was to gain an understanding of how the personal values of property owners were able to support or hinder improved natural resource management.

The report *Square Pegs in Green Wedges Landholders and Natural Resource Management in Melbourne's Rural Hinterland* surveyed 1000 landowners in Melbourne's green wedges. The report found that more than 50% of rural landowners are motivated by lifestyle factors including amenity, environmental and horse related interests.

These property owners provide both a threat to the harmony of rural lands and a benefit or opportunity concluding that:

Working with lifestyle landholders presents unique challenges due to their large numbers, diversity, and their somewhat higher rate of land turnover. They also often lack experience in land management. However they often bring other skills and perspectives to an area, such as marketing or business management skills, off farm income or free time (e.g. retirees).

They may also hold Natural Resource Values NRM values that are more compatible with some NRM objectives (e.g. conservation), and are reportedly more open to the new land management regimes promoted by government agencies compared to generally more experienced commercial farmers.

Importantly, the report recognised that these different motivations may require a tailored approach, for example Landcare projects or groups could recognise the different needs and interests of commercial rural land owners and lifestyle landowners .

5.3.2 Bulla Township

Bulla is a small residential community in the Township Zone located on Deep Creek in the south of Hume. At the 2016 census there were approximately 675 residents (246 dwellings) in the Bulla State Suburb Code which includes the Bulla township and surrounding areas bound by Gellies Road, Lancefield Road, Sunbury Road, Emu Creek, Bulla Diggers Rest Road, Jacksons Creek, Deep Creek, Oaklands Road, Somerton Road and Wildwood Road, where it connects back to Emu Creek.

The township has been relatively unchanged over the past few decades, due to existing constraints and associated planning controls, such as unconnected sewerage. It is affected by noise from the nearby Melbourne Airport and most of the area is covered by the MAEO. The areas around the creek are covered by the Environmental Significance Overlay Schedule 1 (Rural Waterways and Environs). As such, limited change is anticipated for the township.

The area bound by Sunbury Road, Green Street, Bourke Street and Rawdon Street make up the small town centre in Bulla Township. This area is developed with a mixed use business incorporating petrol station, convenience store/post office and a convenience restaurant fronting onto Sunbury Road. Next door is the Black Horse hotel/ motel/drive in bottle shop complex also fronting Sunbury Road and extending through to Green Street. The Bulla Produce Saddlery is also located within this precinct on the corner of Bourke and Green Street.

Bulla has generous areas of public land, which include active sporting facilities, the Deep Creek valley and escarpments and conservation areas. The Bulla Reserve, that has a sports centre, including a football ground and tennis club, sits on top of the Deep Creek escarpment in Green Street. The reserve also houses the Jack McKenzie Community Centre, Bulla Hill model train open to the public on the third Sunday of the month alongside a Bohemian themed market also operating on the third Sunday of most months. The area to the west of the Bulla Reserve, including a steep escarpment down to Sunbury Road, is Council owned land that includes the unmade Quarry Road track along Deep Creek. On the west side of Sunbury Road the Trap Street Reserve sits on the flats of the Deep Creek providing a shady picnic area. School Road Reserve is another large reserve west of Sunbury Road managed for its biodiversity values.

The Alistair Clark Memorial Rose Garden is located on the corner of Green Street and Sunbury Road and houses an important public collection of the surviving Alistair Clark rose breeds. It has regular open days in Spring that attract between 200-450 visitors and is regularly visited by community groups and horticultural enthusiasts throughout the year.

The Calabria Club in Uniting Lane east of Bulla Township has regular cultural events and is available for functions. It incorporates the Bulla Exhibition Centre where dog events are held throughout the year.

5.3.3 Visitors and Tourism

Hume has some significant attractions for visitors including Living Legends, wineries and natural recreation features in the rural areas. There are also numerous lesser known attractions such as Animal Land Children's Farm in Diggers Rest and Sunbury Paintball off Riddell Road. In broad terms, the range of tourism activities include:

- Restaurants and cafes
- Functions and events facilities
- Accommodation
- Wineries.

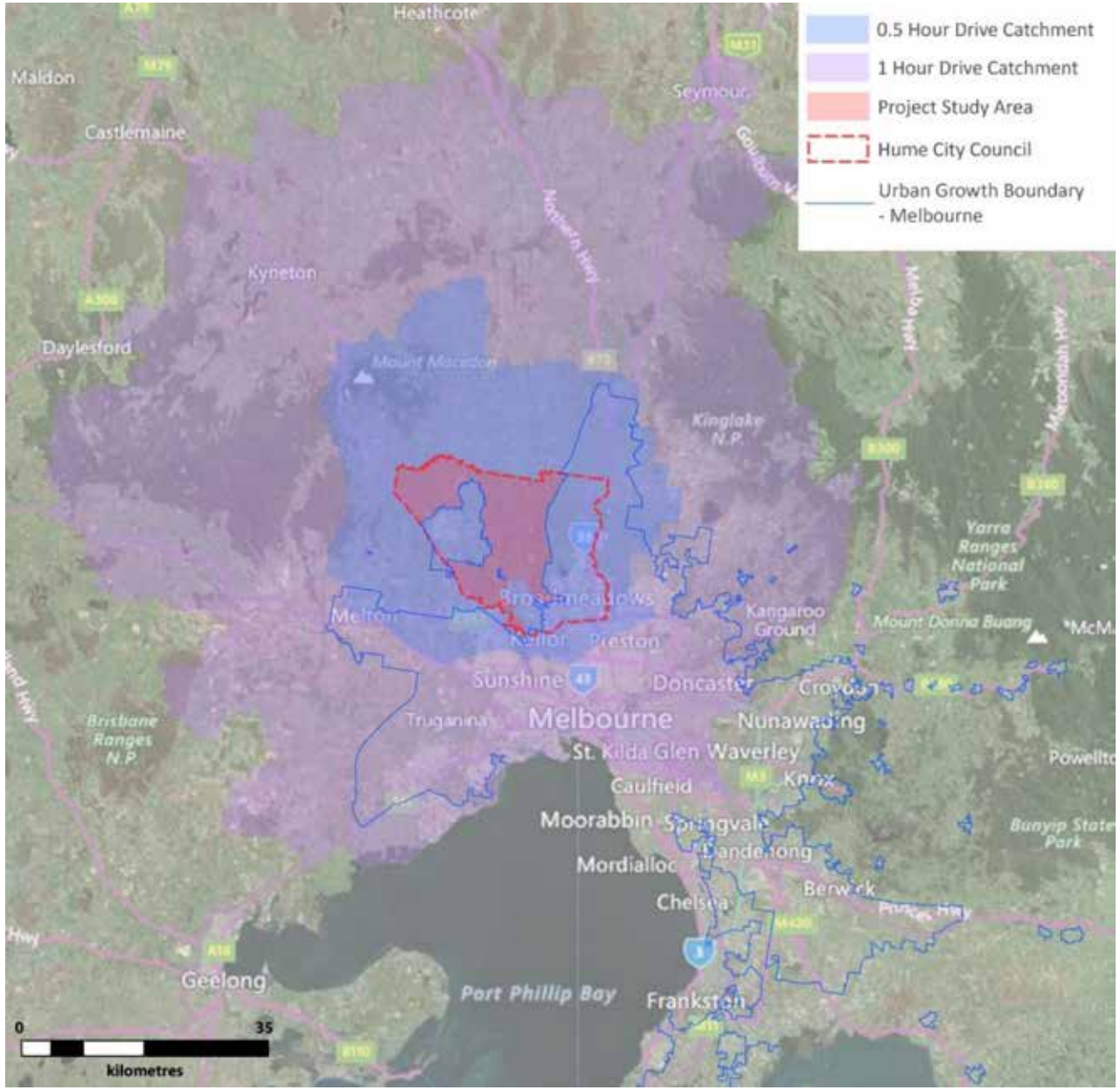
Importantly, Hume is well located to build visitor interest in its rural areas. The area is adjacent to Melbourne Airport as well as existing and developing residential areas. It is highly accessible to Melbourne's Central Business District (CBD) and the inner and middle-ring suburbs via the Metropolitan Ring Road, the Hume Freeway and the suburban railway network. Furthermore, Hume's location on the northern edge of Melbourne also means the municipality is in proximity to parts of regional Victoria.

From the centre of the rural areas, the municipality is accessible to around 582,000 residents within a 30-minute drive, and some 2.9 million residents within a 60-minute drive, as shown in Figure 13. As development expands to the north and west of Melbourne, this population catchment will significantly increase. This accessibility will further expand when the Outer Metropolitan Ring Road (OMR) becomes operational.

The high accessibility of the rural areas means they are well placed to attract visitors. It also provides an opportunity for further expansion of the visitor attractions available within the rural areas as well as existing attractions.

The rural area's significant natural values and visual landscapes also provide an opportunity for visitor attractions that capitalise on these natural features, such as cafes and restaurants, wineries, event facilities and day spas. There is also potential to promote public 'viewing areas' of key significant landscapes for the local community and visitors. The utilisation of tools, such as interpretative information that describes the pre-contact and post-contract history of the place, links to artwork and education about the significance of the landscape and how it is being protected are also being considered.

Figure 13: **Population Catchments - 30 and 60 minute drive**



However, the Green Wedge and Green Wedge A zoning of land within the rural areas may constrain the development of some opportunities. This is because some uses, such as restaurants, function centres, and accommodation must be used in conjunction with other uses such as:

- Agriculture
- Outdoor recreation facilities (i.e. a golf course)
- Natural systems (i.e. where land is in its natural state and is used to preserve areas of aesthetic or cultural significance)
- A rural industry
- A winery.

Both the GWZ and GWZA allow a bed and breakfast to be established without a planning permit within the following parameters:

- Must be part of a dwelling.
- The bed and breakfast must be run by a resident of the dwelling.
- Can accommodate up to 10 persons away from their normal place of residence.
- At least 1 car parking space must be provided for each 2 persons able to be accommodated

This represents an opportunity for land owners within the rural areas to capitalise on the visitor economy without the need to have an agricultural use already established on the land.

5.3.4 Recreation Values

Recreation can be either active, involving activities such as horse or bike riding, or passive where a place is enjoyed for its features and values, such as relaxing or walking in a park or reserve.

A number of parks and reserves are available for passive recreation in the green wedge, including Woodlands Historic Park, Organ Pipes National Park and a range of smaller reserves.

The green wedge supports active recreation in public at Greenvale Recreation Reserve and Woodlands Historic Park. Horse riding, dirt bike riding and paintball facilities are some of the active recreation opportunities available on private land serving local communities and the wider metropolitan area.

Previous community feedback has supported improving the recreational values of the green wedge, by improving open space linkages and connections and the development of habitat corridors.

Future Options – Living and Visiting

Living

1. Continue to allow housing only under current planning controls.
2. Investigate opportunities to create smaller lots by subdivision of existing 6 – 10 hectare lots in suitable locations.
3. Investigate potential areas for rural living cluster subdivision containing smaller lot sizes in suitable locations.

Bulla Township

1. Maintain existing uses in the Township.
2. Prepare a structure plan or equivalent for the Township that explores the integrated development concentration of commercial activity, housing density, pedestrian links and open space.

Visitors and Tourism

1. Continue to allow tourism opportunities under the current planning controls.
2. Explore potential for new tourism opportunities in the rural areas.
3. Increase Council's role in promoting and supporting tourism, agriculture and events in the rural areas.

5.4 Infrastructure and Resources

5.4.1 Energy

Energy is an important resource to our everyday lives. A 500kV transmission powerline meanders through the eastern parts of Hume's rural areas from just north of Bardwell Avenue and generally following Deep Creek through Oaklands Junction, Wildwood, Bulla and Diggers Rest. It connects into the South Morang Terminal Station to the east and the Sydenham Terminal Station to the west, covering a distance of approximately 70 km. This leads to the Moorabool-Heywood-Alcoa Portland No. 1 line owned by SP Ausnet supplying power to the Alcoa aluminium smelter in Portland. At Heywood, the line has an interconnector to import power from Victoria into South Australia at 650MW.

With the need for reliable, sustainable and affordable energy becoming a growing issue, renewable energy connecting into the electricity grid, such as large scale solar facilities and waste to energy from existing landfill operations, could be an opportunity for the rural areas. Wollert landfill currently captures approximately 85% of the total methane gas generated on site to produce enough electricity to power 10,000 homes.

5.4.2 Water

Sustainable land uses in the rural areas rely on water for domestic uses as well as commercial and agricultural land uses. Access to water has a major impact on land use options and viability. Agricultural uses require a consistent and reliable water source. Hume has low rainfall comparative to other peri-urban areas. This results in the creeks in the rural area being generally low except during peak rainfall periods and filling dams throughout the year is a challenge.

Reticulated water is not available in the rural areas, with the exception of the Bulla township area where reticulated water is provided by Western Water.

Managing water supply and need is a challenge for individual properties. A range of factors will determine the water availability and requirements such as livestock and stocking rates, rainfall, storage and pumping options. Water availability will continue to influence land use options in the rural areas. The most common options include one or a combination of the following:

- Rainfall collected off roof into tank
- Catchment runoff into dam
- Pumping from creek to header tank
- Accessing groundwater.

Previous research found most landholders use a combination of water sources, including dams and tanks or tanks and bores. The bore water is restricted to use for livestock drinking, as it is universally found to be high in mineral content and often saline. A large number of landowners rely on access to creek water, where livestock drink directly from waterways.

Drought periods have significantly impacted on water availability. Recently, intensive horticulture on properties in the Keilor market gardens area has declined or discontinued.

Recycled Water

As outlined above, the security of Melbourne's water supply remains an issue and recycled water opportunities are being explored across Melbourne. There are currently 94 km of recycled water pipelines across the Western Water region and each recycled water plant has a scheme to supply recycled water. The Sunbury – Melton scheme is the longest at approximately 50km in length and supplying 53 customers with Class B recycled water (Western Water, 2010).

The Riddells Creek Waste Treatment on Sutherlands Road, Riddells Creek provides Class C recycled water to a small number of customers. These customers use the water for fodder crops and sports grounds.

An existing water treatment plant is located adjacent to Jacksons Hill in Sunbury. The treatment plant currently produces Class 'B' recycled water with plans to develop Class A capability. Class A is the highest quality of recycled water and can be provided to domestic residential customers for toilet flushing and outdoor uses or to commercial or industrial uses. Class B recycled water is restricted to commercial and agricultural uses such as public parks, golf courses, wineries and pasture and fodder crops for grazing animals managed in accordance with current EPA guidelines. These guidelines prohibit Class B recycled water for human food crops grown close to the ground and consumed raw, such as lettuce, spinach and cabbage and root crops consumed raw, such as carrots, beetroot, onion and radish.

An upgrade to the Sunbury Recycled Water Plant is currently underway to increase its treatment capacity by 56% to 9.2 million liters per day. The project is expected to be complete in 2018.

5.4.3 Extractive Resources

Extractive resources are critical to a growing community with products used in housing, commercial and industrial buildings and key infrastructure. Quarrying activity plays an important role for Melbourne's green wedges, providing material for the growth and development of the metropolitan area and wider economy.

The rural areas have three quarries operating in the Sunbury Road/ Bulla area.

Holcim Quarry has been operating at 290-310 Oaklands Road, Oaklands Junction since 1990 and employs around 60 people. The quarry extracts high quality Granite and Hornfels reserves for use in nearby development, particularly for road construction.

Operating since the 1970s, a quarry at 175 Loemans Road, Bulla extracts mudstone and basalt. A crushing plant creates larger spaldings from these materials.

The Hi-Quality quarry is located adjacent to the rural areas at 600 Sunbury Road, Sunbury. It includes a combined quarry, landfill and the composting facility (Veolia). Whilst this facility is not within the green wedge, the buffers that apply extend into properties in the green wedge on Gellies and Wildwood Roads to the north and Sunbury Road to the east.

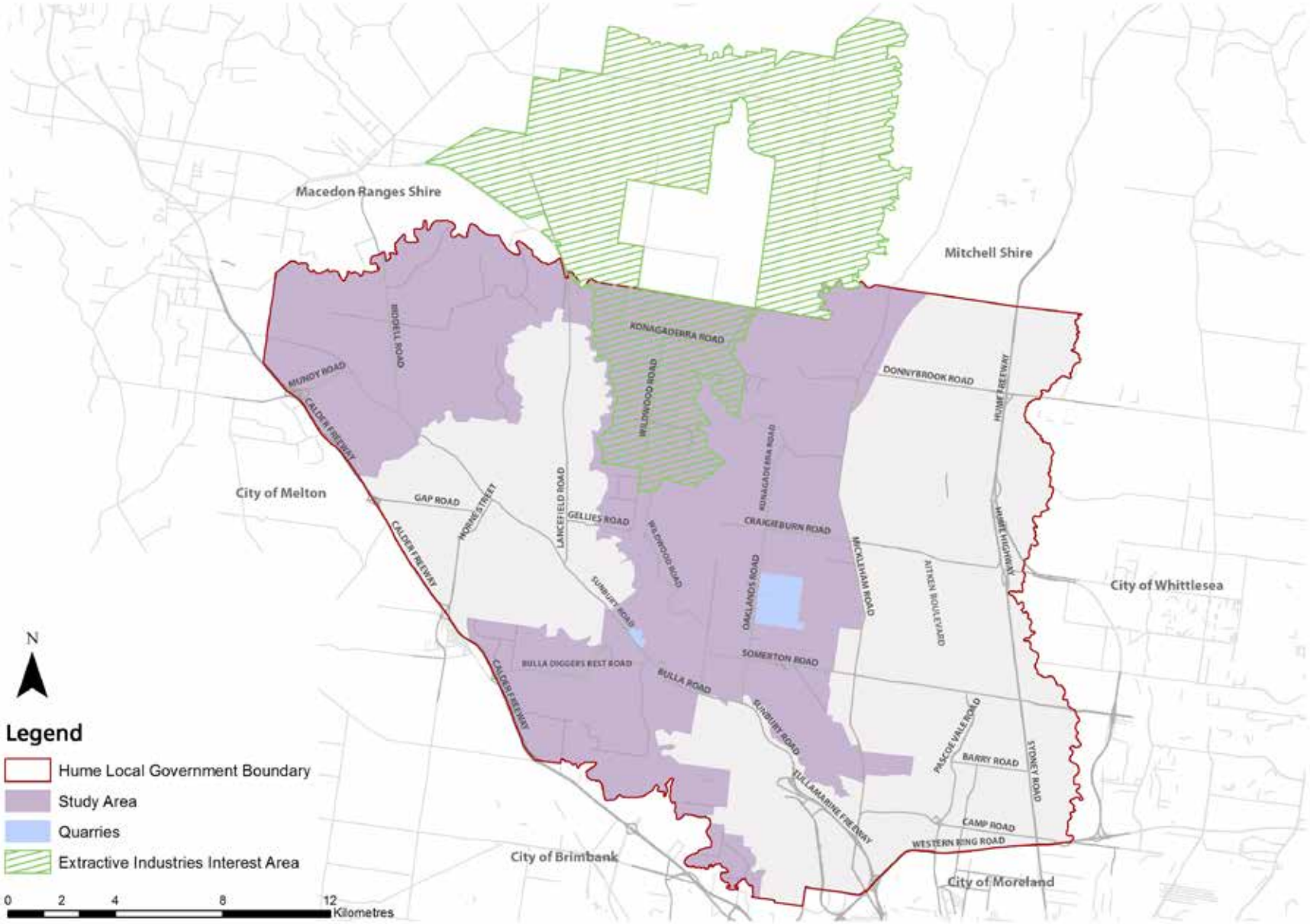
The State Government has designated large areas of Wildwood and Clarkefield as an Extractive Industry Interest Area (EIIA) 884010 (refer Figure 14). Test boring in this area indicates a thick basalt or hard rock of low secondary mineral content to considerable depth. The area covered by the EIIA is generally flat, poor farming land and isolated from significant view corridors. The Deep Creek and Emu Creek valleys however, create an impediment for large haulage trucks moving material from the area. Any future quarry activities would require further investigation into the resources available, as well as approvals from State and local government.

Development in Hume will put the municipality in the top 5 consumers of extractive resources to 2050. The majority of demand will come from roads and other infrastructure in new suburbs; residential, commercial, industrial and institutional building; the M80 upgrade; works at Melbourne Airport; and the OMR.

State government policy has recognised that the planning framework needs to make adequate provision for quarrying as a potential land use. The failure to protect extractive resources could impact the economy, requiring increased transportation of quarried materials, which would also increase the costs of supply for end-users.

The impacts of quarrying activities include increased noise, dust, vibration and traffic movements. Some of these impacts can be managed by maintaining buffers to the activity. In considering extractive industry proposals it is important to consider buffers as well as the site's remediation and the end use of the land to protect the community and provide them with a clear expectation for the area.

Figure 14: **Extractive Industry Interest Areas**



5.4.4 Waste Management

Hume City Council operates the Riddell Road Waste and Recycling Transfer Station on the outskirts of Sunbury within the Study Area. This centre provides a service to urban and rural properties and accepts municipal solid waste from the Sunbury area and surrounding municipalities in addition to household waste, hard waste and green waste from residents. The site has capacity to expand its function to accommodate the future waste management needs of Hume and potentially the wider metropolitan area. A growing demand for composting facilities to minimise stored landfill could have viability in the short to medium term.

A privately operated land fill operates from 500 Sunbury Road, Bulla. The landfill accepts waste from private sources such as building demolition and development industry and has a licence to accept asbestos sheeting for disposal.

The Hi-Quality/Veolia landfill and composting facility at 600 Sunbury Road, Sunbury opened in 2013. This facility provides a metropolitan role for disposal of general and organic waste. It is located within the UGB and is shown as future industrial land in the proposed Sunbury South Precinct Structure Plan.

Littering is an offence uunder Victoria's Environment Protection Act (EPA) 1970. Illegal dumping of household items such as mattresses and household rubbish along roadsides and in reserves is a significant issue for the community. It has negative impacts on the environment and appearance of the rural areas. Council undertakes the removal of reported illegal litter and enforces breaches of the Environment Protection Act.

Historically, land in the green wedge may have been utilised for informal fill and dumping. For example, car bodies, tyres and organic debris were dumped in gullies and clean fill from development sites has been spread over large areas. These activities have legacies of potential contamination and soil instability. Sensitive uses and construction may be vulnerable where historic activities of land have left a legacy of contamination or unstable fill.

5.4.5 Waste

With the increase in greenfield development in and around Hume, there have been increased issues associated with the illegal dumping of clean fill material within the rural areas. Clean fill material includes waste clay, soil and rock, generated through the excavation of greenfield development sites. Historically, land in the green wedge has been used for the informal disposal of this fill, as well as the dumping of refuse, such as car bodies, tyres and organic debris.

The illegal, and previously unregulated, dumping of clean fill material result in environmental degradation through an increase of pollution and sediment loads in the creeks and waterways, alterations of hydrological flows, increased risk of erosion and landslips, and damage to native vegetation and faunal habitats. Additionally, indirect impacts associated with the trucks using rural roads to transport the material include amenity issues, increased traffic, safety hazards and road damage.

To address these issues Council amended the Hume Planning Scheme in 2014 to require a planning permit for the receipt, importation, stockpiling or placement of more than 100 cubic metres of fill within the GWZ and GWZA. Conditions are placed on subdivision planning permits requiring clean fill to be appropriately disposed of and increased enforcement and compliance action from Council have also been employed to reduce illegal dumping.

There are currently a number of permitted clean fill sites that operate within the green wedge. However the capacity of these approved sites to manage the issue, and the ongoing suitability of this type of disposal to the overall liveability of the green wedge, is unknown.

Future Options – Infrastructure and Resources

1. Allow existing facilities to consolidate and expand on established sites only and protect these sites with appropriate buffers.
2. Manage an increase in facilities by supporting existing facilities, exploring sites for additional infrastructure facilities and planning for the needs of new and potential facilities (eg. road and energy needs).
3. Restrict expansion of existing and new facilities and quarries.

5.5 Movement

This chapter provides an overview of the current and future traffic and transport issues in the rural areas and sets out the performance of the existing rural road and transport network. It also helps identify the traffic impact of the future urban growth in the Hume Corridor and Sunbury as well as impacts from the delivery of significant road projects in Hume's rural areas.

5.5.1 Existing Road and Transport Network

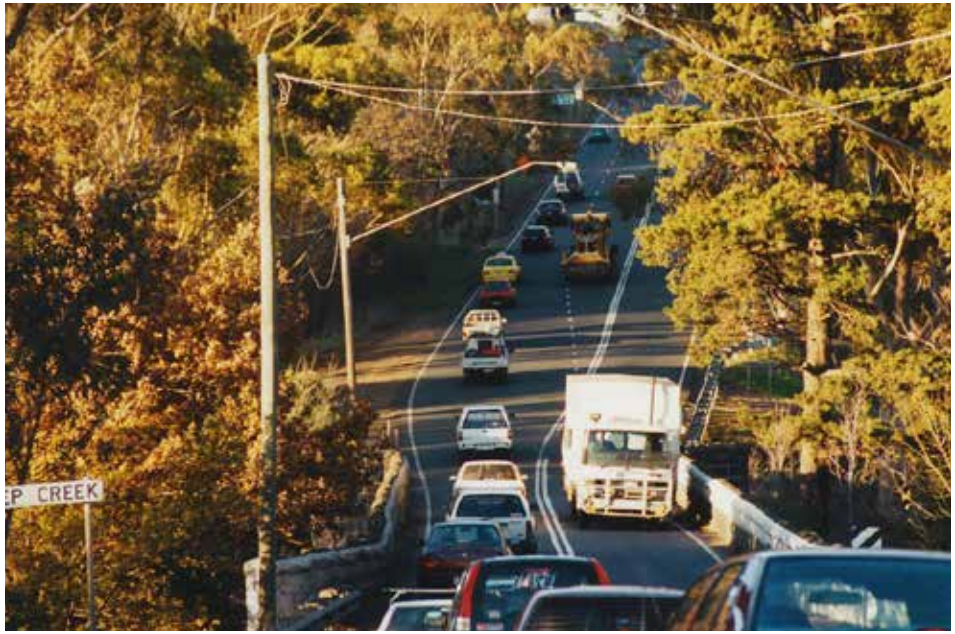
The existing road hierarchy within the rural areas is described as follows:

Arterial roads: Calder Freeway, Riddell Road, Lancefield Road, Sunbury Road, Somerton Road (part) and Mickleham Road are arterial roads.

Arterial roads are managed by VicRoads and play a regional function; their primary purpose being to provide for the movement of goods and people. Arterial roads have a two lane, line–marked road pavement except for the Calder Freeway which is a four lane divided road.

Major roads: Dalrymple Road, Gellies Road, Wildwood Road, Konagaderra Road, Oaklands Road, Bardwell Drive, Somerton Road (part) Craigieburn Road West, Mundy Road, Racecourse Road., Bulla-Diggers Rest Road and Bulla Road (part) are connector roads.

Major roads are managed by Council and have the principal function of providing safe movement of local traffic to and from the arterial road network and for main local road trips. Major roads are sealed roads with two lane road pavements. Major roads also provide cycling opportunities for both commuter and recreational riders. Sunbury Road provides a commuter route between Sunbury and the east. The major roads around Oaklands Junction, particularly Konagaderra and Wildwood Roads, are growing in popularity for recreational road cyclists.



Local roads : The remaining roads are local roads.

Local roads are managed by Council and have the main function of providing entry to abutting properties and facilities. Local roads are often unsealed roads or sealed roads with a reduced pavement width.

Current Traffic Volumes and Road Network Performance

In 2017, Council undertook traffic counts at 42 locations throughout the rural areas, and the observed daily two-way traffic volumes throughout the rural road network are shown in Figure 15.

The highest traffic concentration and congestion occurs in the main rural arterials where the network forms three 'gateways' to the rural areas as follows:

- At Riddell Road, east of the Sunbury town centre, where all traffic movements between the rural area and the Calder Freeway and Riddell Road corridors are concentrated (17,500 vpd);
- At Melbourne-Lancefield Road, which provides a continuous route between the rural areas and regional areas to the north as far as the Great Dividing Range (15,500 vpd); and
- The area surrounded by Somerton Road, Oaklands Road, Wildwood Road and Sunbury Road. This area forms a bottleneck for most traffic movements between the rural area and the rest of metropolitan Melbourne (13,400 to 16,800 vpd).

Acceptable daily volumes for local roads is up to 200 vehicles per day and 2000 to 5000 vehicles per day for collector roads. The local and collector/distributor roads are carrying traffic well within their capacities.

Current Public and Active Transport Network

The only public transport service that operates in the rural area is the bus route 479 that runs between Airport West Shopping Centre and Sunbury Train Station via Melbourne Airport. This bus service runs once per hour during weekdays and twice per day on weekends and public holydays.

There are no bicycle and pedestrian facilities provided in the rural roads. Woodlands Historic Park offers a variety of walking and cycling trails for recreational purposes.

5.5.2 Planned State-Wide Road Projects

There are three significant road projects to be delivered in the rural area. Figure 16 shows the location and details of these projects.

There will be significant changes in the rural road network and access to rural properties in the vicinity of these projects. Although the timing for the delivery of these projects is still unknown, their current status is discussed below. An overview of their potential impacts can be found in the next section.

Figure 15: 2017 Daily Two Way Traffic Volumes (vehicles per day)

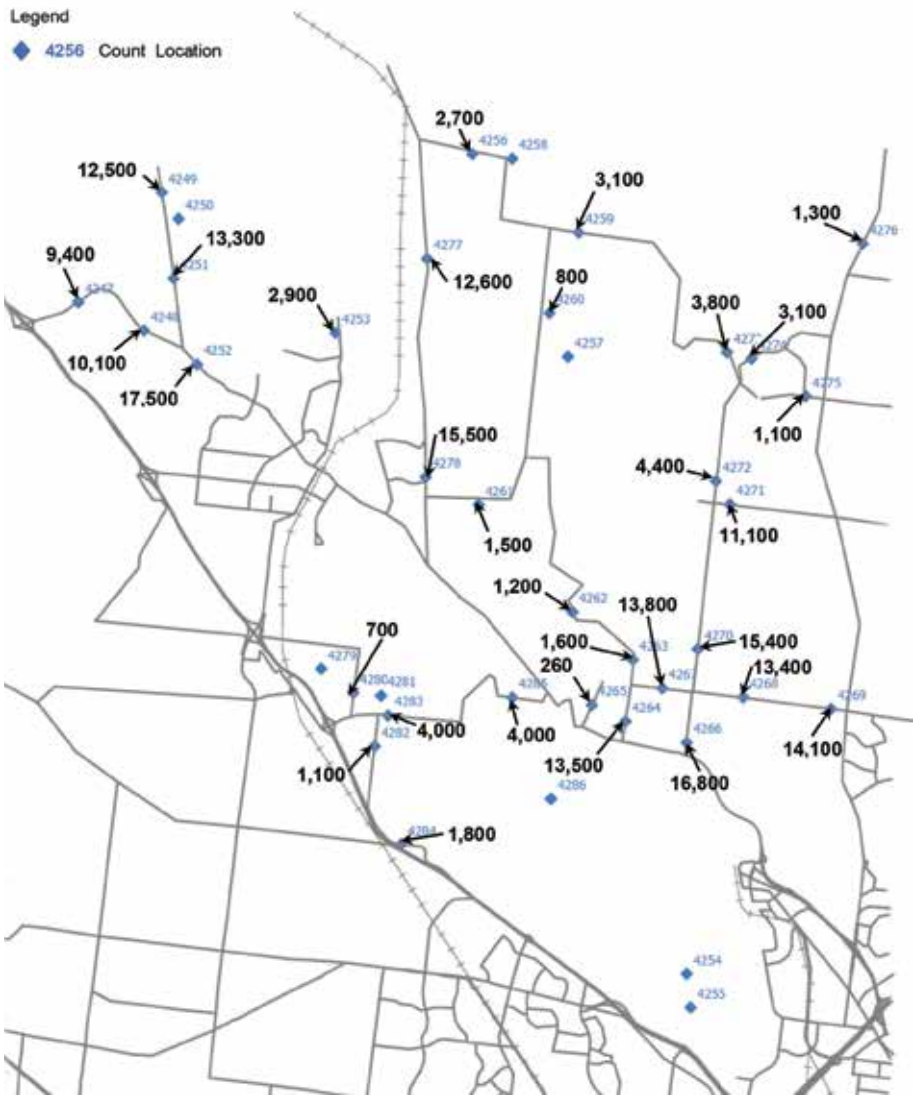
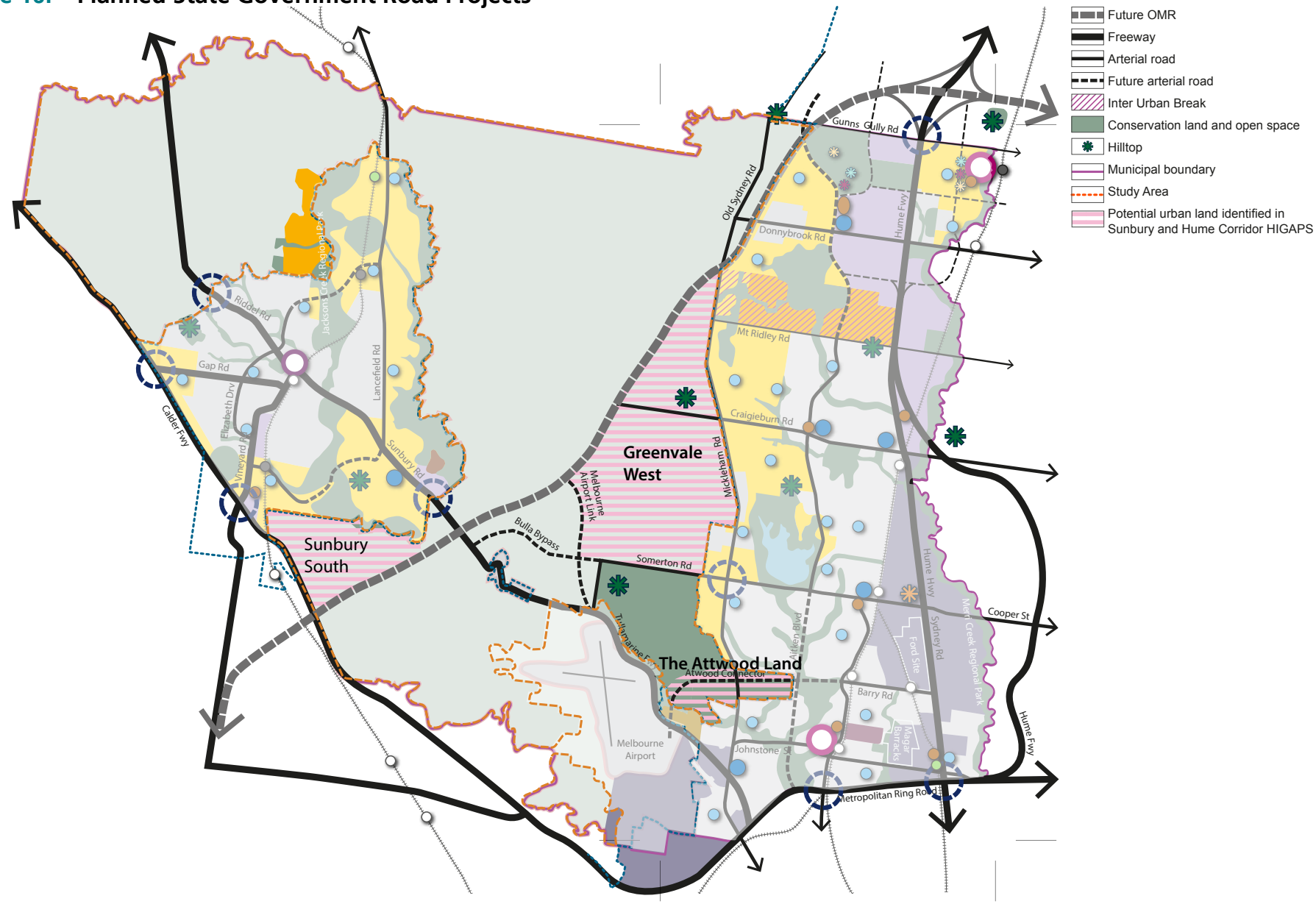


Figure 16: Planned State Government Road Projects



Outer Metropolitan Ring Road - OMR

The OMR Transport Corridor between west of Werribee and Kalkallo is planned to allow for a freeway standard road, capable of being upgraded ultimately to four lanes in each direction (with appropriate auxiliary lanes), together with four railway tracks in the median for interstate freight and high speed passenger trains. The ultimate road development will include freeway to freeway and freeway to arterial road access points, via grade separated interchanges.

In Hume, the OMR will connect to Sunbury Road at Bulla-Diggers Rest Road, the future Airport Link road, Craigieburn Road at Konagaderra Road, Donnybrook Road at Mickleham Road and Aitken Boulevard (west), as shown in Figure 17.

Bulla Bypass

Congestion through the Bulla Township is likely to increase with the expected future population growth in Sunbury and the need for people to access jobs at Melbourne Airport and other industrial areas in the Hume Corridor.

The Bulla bypass is a planned road project to be delivered by the State Government. The bypass would support increased future traffic volumes in the region and provide an improved connection from Melbourne Airport to the city's north and west. The Bulla Bypass will also assist in addressing safety issues on Sunbury Road associated with the roads sharp curves and steep grades, and the narrow bridge crossing Deep Creek.

A preferred alignment for the Bypass was supported by an Independent Panel in May 2015. This alignment begins east of Oaklands Road on Somerton Road in Greenvale and extends west along Somerton Road with widening to the north, across Deep Creek valley, and connecting with Sunbury Road, west of Bulla. The Bulla Bypass design included provision for a 6 lane arterial road that will connect to the Airport Link and the OMR. The alignment was not supported by the Minister for Planning due to its direct impact on a number of properties.

Figure 17: Future Connections and Impacts of the Outer Metropolitan Road

Legend

- Connection
- No Connection
- Road Realignment
- Proposed Roads
- Arterial Road
- Study Area

	Changes
1	Calder Freeway would pass under the OMR and allow all traffic movements.
2	Bulla-Diggers Rest Road realigned along the north-western side of the OMR.
3	Bulla- Diggers Rest Road will provide no direct connection to the OMR.
4	Sunbury Road would pass over the OMR and allow all traffic movements.
5	Wildwood Road, would pass under the OMR.
6	Melbourne Airport Link would provide direct connection to the OMR.
7	Craigieburn Road would pass over the OMR and allow all traffic movements.
8, 9	Oaklands Road and Konagaderra Road would be realigned on either side of the OMR to join with Craigieburn Road.
10	Mt Ridley Road would pass over the OMR.
11	Mickleham Road would pass over the OMR.
12	Donnybrook Road would pass under the OMR and allow all traffic movements.
13	Aitken Boulevard (E14) would directly connect to the OMR.
14	Gunns Gully Road would be constructed through to Old Sydney Road and would provide no direct connection to the OMR.

Source: VicRoads

Airport Link

The Melbourne Airport Link is a future State Government road project that would link the Melbourne Airport and the OMR. Its alignment extends north from the Tullamarine Freeway, where it connects to the future proposed Outer Metropolitan Ring Transport Corridor.

The proposed Melbourne Airport Link will include provision for a 6 lane freeway.

This project will be delivered in two stages: first between Sunbury Road and Somerton Road, and then between Somerton Road and OMR.

5.5.3 Future Road Network

Traffic modelling provides an estimate of road performance in the future using computer software to analyse changes in population distribution and road networks. Traffic and transport modelling discussed in this chapter has been undertaken using the Victorian Integrated Transport Model (VITM). VITM is a strategic demand model developed by the State Government based on predicted traffic volumes. It is the default transport model used for transport planning and impact assessment associated with all sizeable land use and infrastructure projects in Victoria.

Future-year networks were created for the standard VITM forecasting years of 2021, 2031 and 2046. The following sections describe the impact that future urban growth in Sunbury and the Hume Corridor as well as the impact of major road projects such as the OMR and Bulla Bypass on rural roads in the three forecasting years as indicated by the modelling results.

Road Network at 2021

In 2021, the most significant increases in traffic are expected on Somerton Road, just west of Mickleham Road. This appears to be caused by development of land in the Greenvale and Mickleham areas.

Relatively large increases are also expected on Bardwell Drive and Old Sydney Road. This growth reflects the increasing demand generated by on-going development in the northern sections of the Hume growth corridor. These roads, despite large percentage increases, will still operate well within capacity.

With minimal changes to road infrastructure and ongoing development in the Sunbury and Hume growth areas, by 2021 congestion is expected to worsen at the identified congested roads at the Riddell Road, Melbourne-Lancefield Road and the Somerton/Oaklands/Wildwood and Sunbury Roads ‘gateway’ to the rural area.

Road Network at 2031

By 2031, three major road infrastructure projects are assumed to be completed: the Bulla Bypass, duplication of Somerton Road between Mickleham Road and Oaklands Road and the Melbourne Airport Link to Somerton Road.

The most significant impact of these projects will be on the abutting road network where traffic will be diverted to the new roads, resulting in significant decreases in traffic on Wildwood Road and Oaklands Road south of Somerton Road. The new roads will create additional demand on Somerton Road east of Oaklands Roads, which is forecast to experience the greatest traffic increase of any of the rural roads.

Due to the continuing development of the Hume and Sunbury growth areas, the rural roads in the northern sections of the study area will also experience significant traffic growth, especially on Old Sydney Road and the Konagaderra Road-Bardwell Drive route. Despite the relatively large level of growth in percentage terms, these roads are expected to operate within acceptable levels-of-service.

Modelling indicates the new road infrastructure tends to worsen conditions at the intersection of Somerton Road and Oaklands Road. The section of Oaklands Road north of Somerton Road is expected to remain heavily congested.

The Riddell Road and Melbourne-Lancefield Road approaches to the rural area will experience high congestion levels. The rural local road network is anticipated to otherwise perform well in 2031.

Road Network at 2046

By 2046, it is expected that the OMR will be fully operational and that the duplication of Melbourne-Lancefield Road will be completed.

Comparing the 2046 traffic forecasts against those for 2031, the greatest increases in traffic will occur on:

- Melbourne-Lancefield Road (north of Sunningdale Avenue) at around 14,700 additional vehicles per day;
- Craigieburn Road (east of Konagaderra Road) at around 7,200 additional vehicles per day; and
- Konagaderra Road (all sections between Melbourne-Lancefield Road and Bardwell Drive) at around 5,500 additional vehicles per day.

Road congestion in 2046 will be concentrated in the rural arterial approaches: Riddell Road, Melbourne-Lancefield Road and Somerton Road. In addition, the increase in population within the Sunbury and Hume growth areas along with changes to the road network will create deteriorating levels-of service at Craigieburn Road, due to its interchange with the OMR; and along Konagaderra Road, due to increasing trip interchanges between the Hume and Sunbury growth areas.

Future Options – Movement

1. Maintain the existing road infrastructure to its current width and standards.
2. Prepare a rural road strategy that defines the priority of future road planned projects to provide an advocacy basis to State and Federal governments.
3. In addition to planned road projects, explore the need for additional new road connections or upgrades.

5.6 Environment

5.6.1 Biodiversity

Fauna

Native fauna are an integral component of Hume's natural heritage and are important to the function of healthy ecosystems. In addition to having environmental value, fauna also provide a number of social and economic benefits to the community, including being a source of aesthetic appreciation for residents and supporting local tourism.

The Hume Fauna Study 2004 collated all vertebrate species records from the Atlas of Victorian Wildlife maintained by the DSE (now the Department of Environment, Land, Water and Planning) and local sightings recorded by Council. The study concluded that 266 species had been recorded in Hume, across a total of 7,478 sightings. Of these sightings, 11 were of the Swift Parrot (Endangered under the Environment Protection and Biodiversity Conservation Act 1999(EPBC Act) and Threatened under the Flora and Fauna Guarantee Act 1988 (FFG Act)). 49 of the sitings were of the Growling Grass Frog (Vulnerable under the EPBC Act 1999 and Threatened under the FFG Act 1988).

Since 2004, 387 additional fauna sightings have been reported to Council by Hume residents and Council staff. This has included 17 Growling Grass Frog sightings and two Swift Parrot sightings. The Atlas of Victorian Wildlife records 115 additional sightings in Hume.

Council manages four sites that provide habitat for threatened fauna species. These species include the Golden Sun Moth, which is listed as Critically Endangered under the EPBC Act 1999 and Threatened under the FFG Act 1988, and the Growling Grass Frog. Where these species occur, Council's management approach is in accordance with legislative requirements.

The Deep Creek supports populations of the Yarra Pygmy Perch, which is listed as Threatened under the FFG Act 1988 and Vulnerable under the EPBC Act 1999. Emu Creek is also likely to support this species (Melbourne Water Corporation, 2007).

Native Vegetation

The majority of Hume resides within the Victorian Volcanic Plain Bioregion, an area that contains only 15.6% of its original vegetation cover, making it the most cleared bio-region in Victoria (VEAC, 2010). This situation is reflected in Hume, with only 16% (8,121 hectares) of original native vegetation remaining in fragmented patches across the landscape. Of this, 87% (7,080 hectares) is considered endangered (PPWCMA, 2009) refer to the Ecological Vegetation Classes (2005) at Figure 18.

Prior to European Settlement, all of Hume's 504 square kilometres had been covered in native vegetation classified into a number of different plant communities or Ecological Vegetation Classes (EVCs). The most dominant EVCs in Hume were the Plains Grassland and Plains Grassy Woodland communities, which occupied the basalt plains (Figure 19). These communities, of which only scattered remnants now remain, form part of the 'Critically Endangered' Natural Temperate Grasslands and Grassy Eucalypt Woodlands of the Victorian Volcanic Plains listed under the EPBC Act 1999. They also have a Bio-regional Conservation Status of 'Endangered'.

Figure 18: 2005 Ecological Vegetation Classes

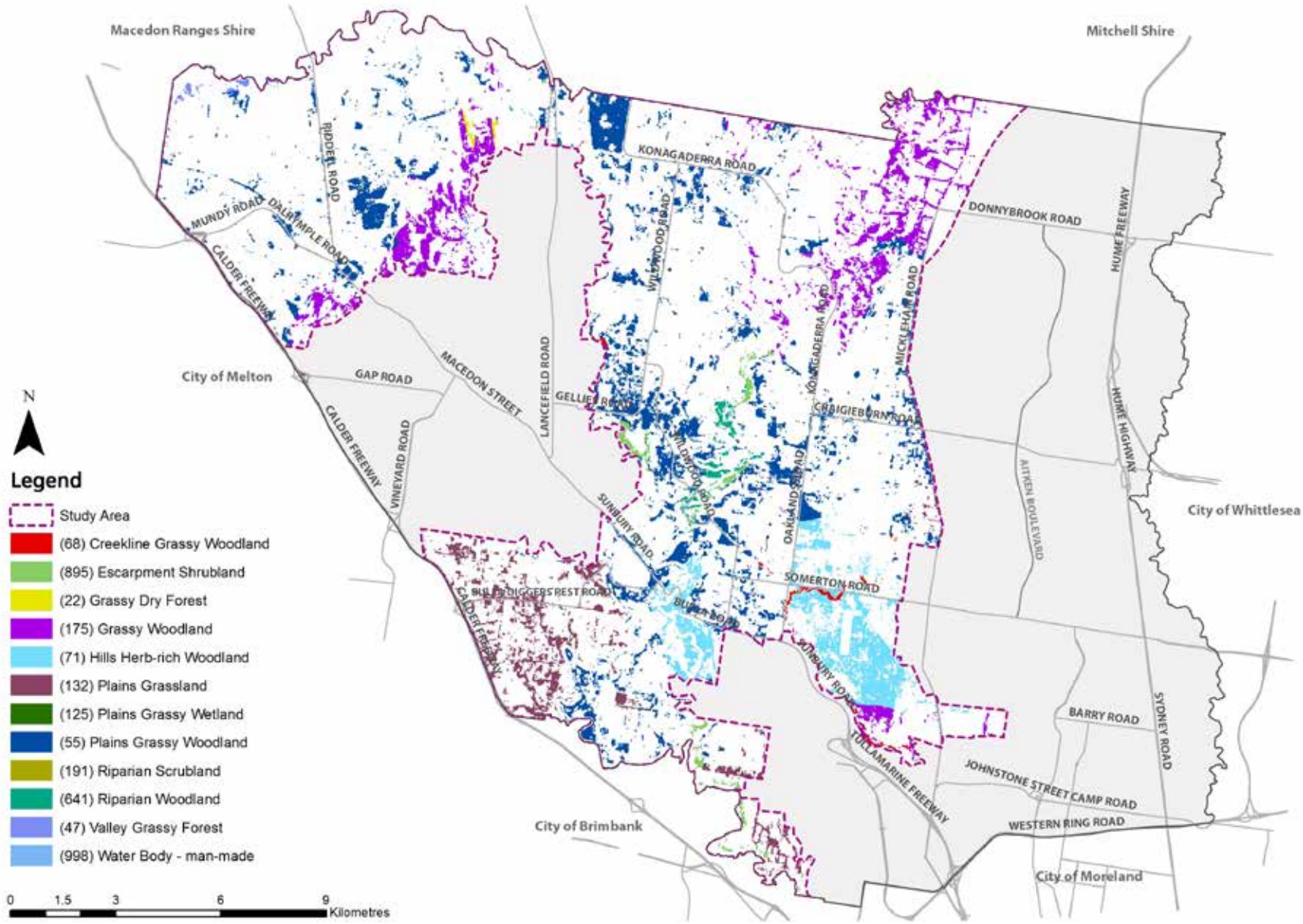
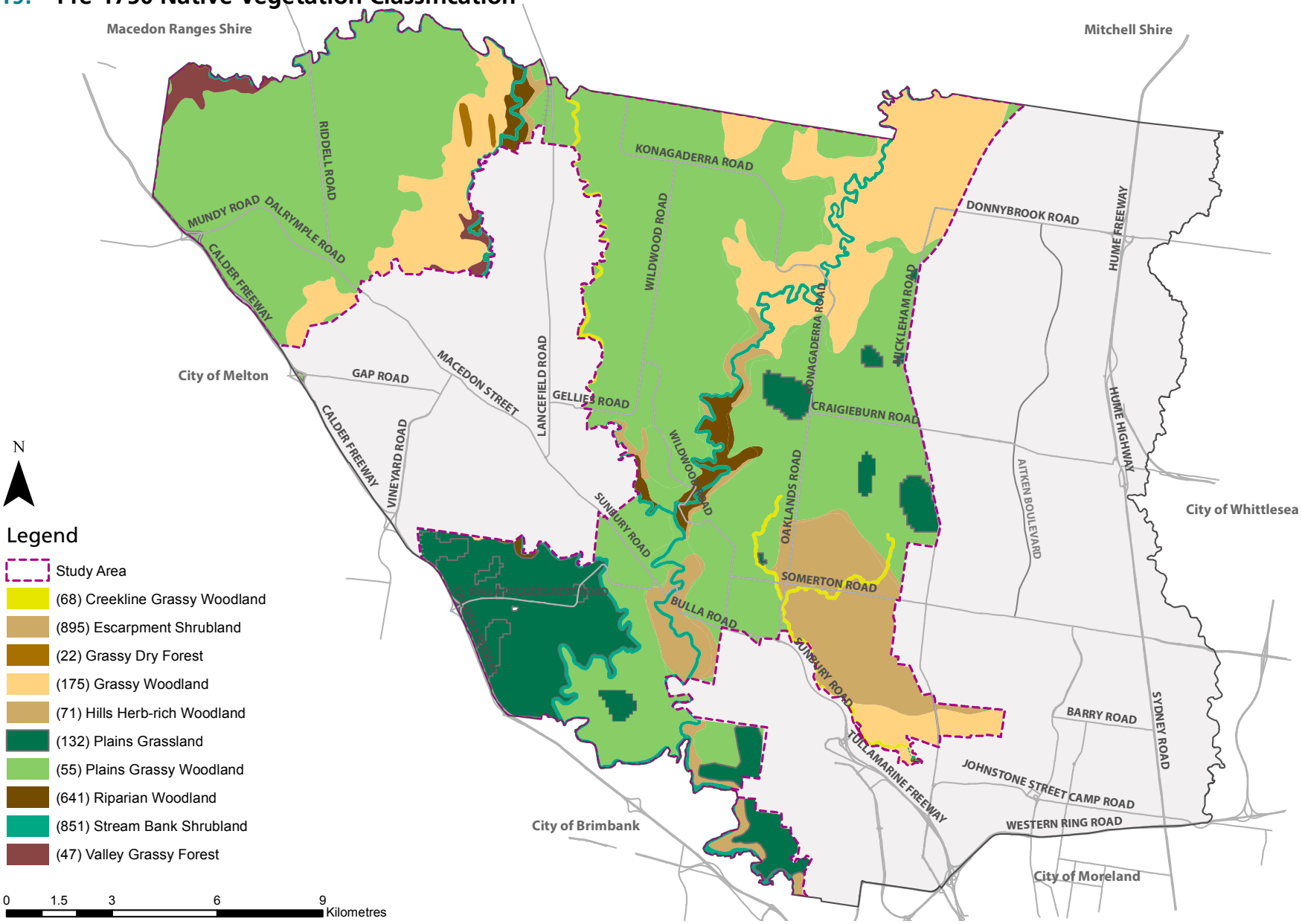


Figure 19: Pre-1750 Native Vegetation Classification



At January 2011, Council had the responsibility for managing 78 sites of conservation significance across 60 Council-owned reserves, 10 roadsides and two Crown land reserves in Hume (Figure 20).

Council also manages the habitat of threatened flora species, including Matted Flax-Lily (Dianella amoena), which is listed as 'Endangered' under the EPBC Act 1999, and is on the 'Threatened' List under the FFG Act 1988. This species inhabits 12 sites managed by Council and is a high management priority.

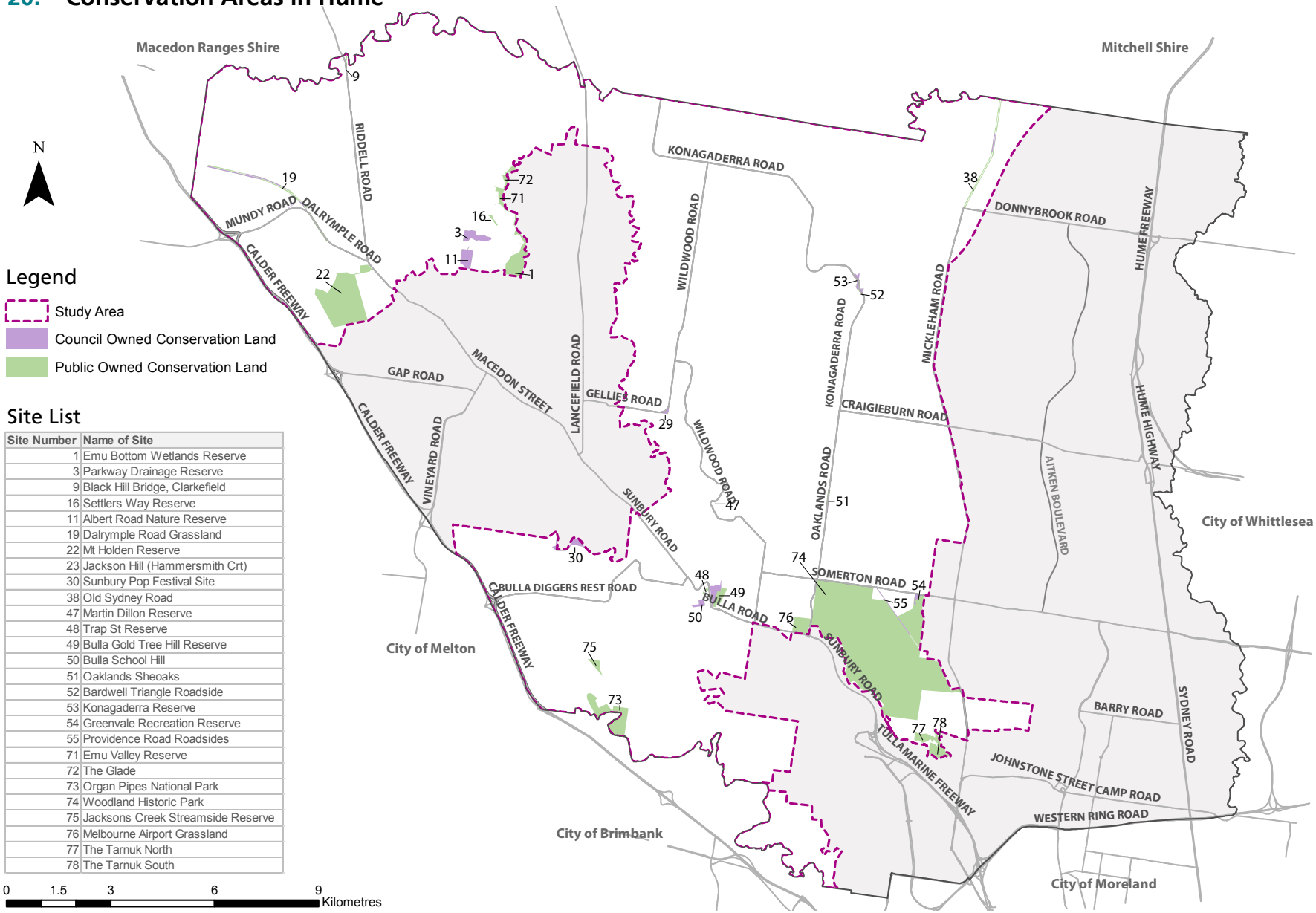
The majority of Hume's remnant vegetation however, occurs on privately-owned rural land. This includes extensive areas of grassy woodland, grasslands, riparian and escarpment vegetation. Council currently supports rural landholders to manage these assets through incentives such as the Conserving our Rural Environment grant program, Valuing our Volcanic Plains grant program and Agricultural Land Use Rebate.

Hume's major waterways, including the Jacksons, Deep, Emu, Moonee Ponds and Merri Creeks form habitat corridors between significant areas of remnant vegetation. These corridors are important to ecological connectivity and may assist in the movement of native vegetation and fauna areas across the landscape.

Council is currently preparing a Landscape Connectivity Study which will identify how to improve the protection of core patches of remnant vegetation and how to provide increased ecological connectivity in these areas. This study will help Council focus its conservation efforts to achieve the best outcomes for biodiversity in Hume.

In addition, over 1,500 hectares of remnant vegetation in Hume occurs on Crown land and public authority land managed by agencies such as Parks Victoria and Melbourne Water. Although Council does not generally manage Crown and public authority land set aside for conservation, the role that this land plays in facilitating broader vegetation and ecological connectivity should not be ignored, particularly where it links to other remnant vegetation on Council-managed or private land.

Figure 20: Conservation Areas in Hume



Site List

Site Number	Name of Site
1	Emu Bottom Wetlands Reserve
3	Parkway Drainage Reserve
9	Black Hill Bridge, Clarkefield
16	Settlers Way Reserve
11	Albert Road Nature Reserve
19	Dalrymple Road Grassland
22	Mt Holden Reserve
23	Jackson Hill (Hammersmith Crt)
30	Sunbury Pop Festival Site
38	Old Sydney Road
47	Martin Dillon Reserve
48	Trap St Reserve
49	Bulla Gold Tree Hill Reserve
50	Bulla School Hill
51	Oaklands Sheoaks
52	Bardwell Triangle Roadside
53	Konagaderra Reserve
54	Greenvale Recreation Reserve
55	Providence Road Roadsides
71	Emu Valley Reserve
72	The Glade
73	Organ Pipes National Park
74	Woodland Historic Park
75	Jacksons Creek Streamside Reserve
76	Melbourne Airport Grassland
77	The Tarnuk North
78	The Tarnuk South

Source: Hume Natural Heritage Strategy 2011-2015

5.6.2 Waterways

Hume lies predominantly within two catchments; the Maribyrnong (approximately 60% of Hume) and the Yarra (approximately 40%). A third catchment, the Werribee, has its upper reaches in Hume via the Kororoit Creek, west of Sunbury (Figure 21).

The creeks of the Maribyrnong catchment area (Figure 22), including Jacksons, Emu and Deep Creeks, are deeply incised into the landscape and, as a result, they form spectacular cliffs and escarpments. These creeks meet south-west of Melbourne Airport to form the Maribyrnong River.

The condition of Hume's major waterways (Table 5) varies. Melbourne Water, the responsible agency for waterways in the Port Phillip and Westernport region, measures the condition of streams through an Index of River Condition (IRC) and concludes that Hume's major waterways have poor or moderate overall condition (Melbourne Water Corporation, 2007).

Key threats to water quality of waterways that have been identified in the rural areas are:

- Sediment and nutrient export as a result of agricultural activities
- Waterway degradation associated with uncontrolled stock access to waterways and erosive nature of soils
- Illegal filling and dumping
- High traffic volumes
- Limited native vegetation cover in catchments
- Poor on-site waste and stormwater management.

A number of Council-managed reserves are adjacent to waterways. To protect and enhance these waterways, including their environments and water quality, Council undertakes revegetation and weed control. In addition, Council and Melbourne Water provide grants to assist rural landholders to revegetate their creek frontage.

Council uses planning scheme controls, such as Environmental Significance Overlays (ESOs), to provide additional protection to waterways. ESOs currently cover the majority of the Jacksons, Deep and Emu Creeks.

Table 5: IRC for Hume's major waterways (Melbourne Water Corporation, 2007)

Waterway	Water Quality	Aquatic Life	Habitat & Stability	Vegetation	Flow	Overall Condition
Jacksons Creek	Good	Good	Moderate	Poor	Poor	Poor
Deep Creek (lower)	Good	Good	Excellent	Moderate	Moderate	Moderate
Emu Creek	Moderate	Good	Good	Moderate	Poor	Moderate

Figure 21: Waterway Catchments and Creeks

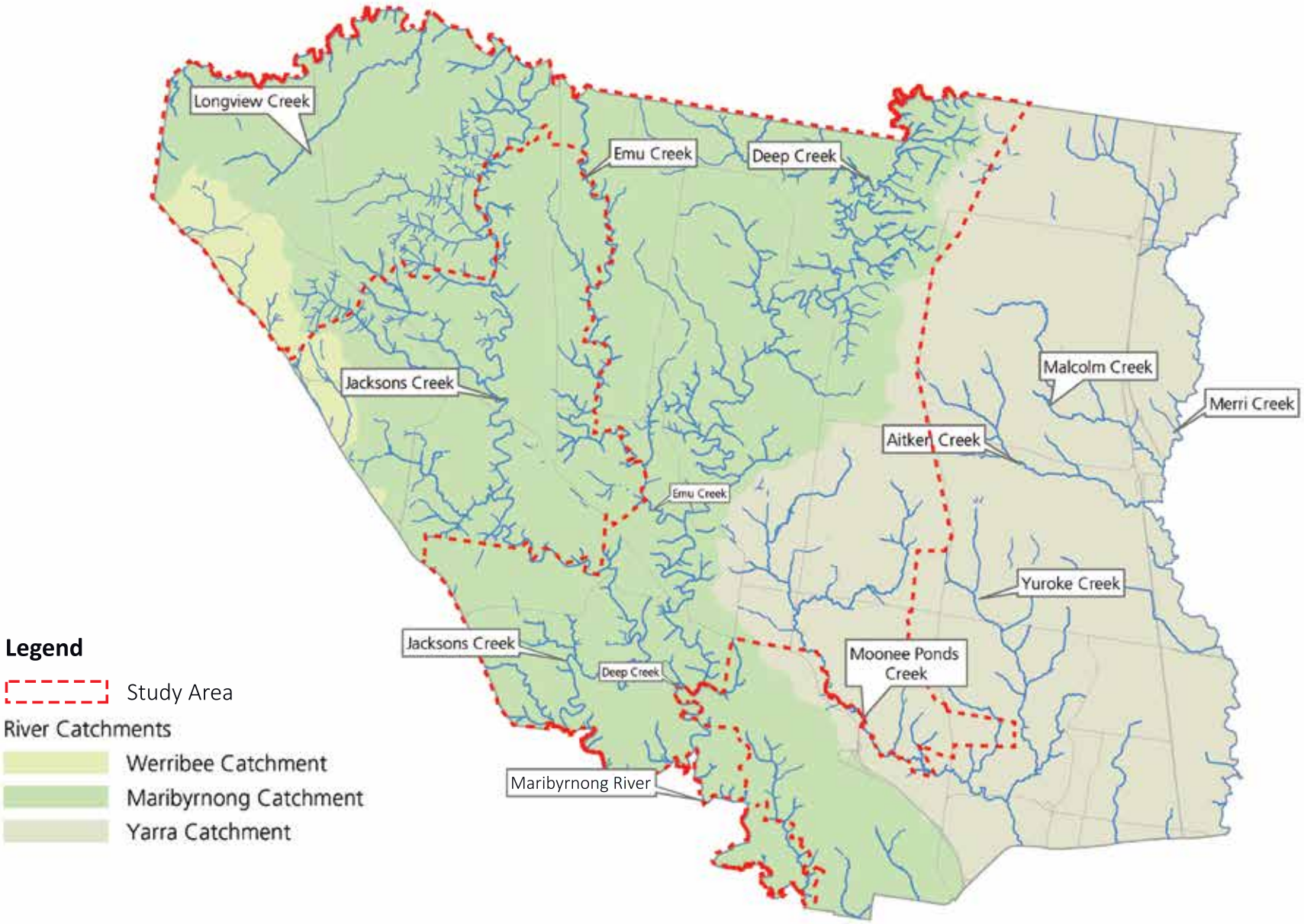
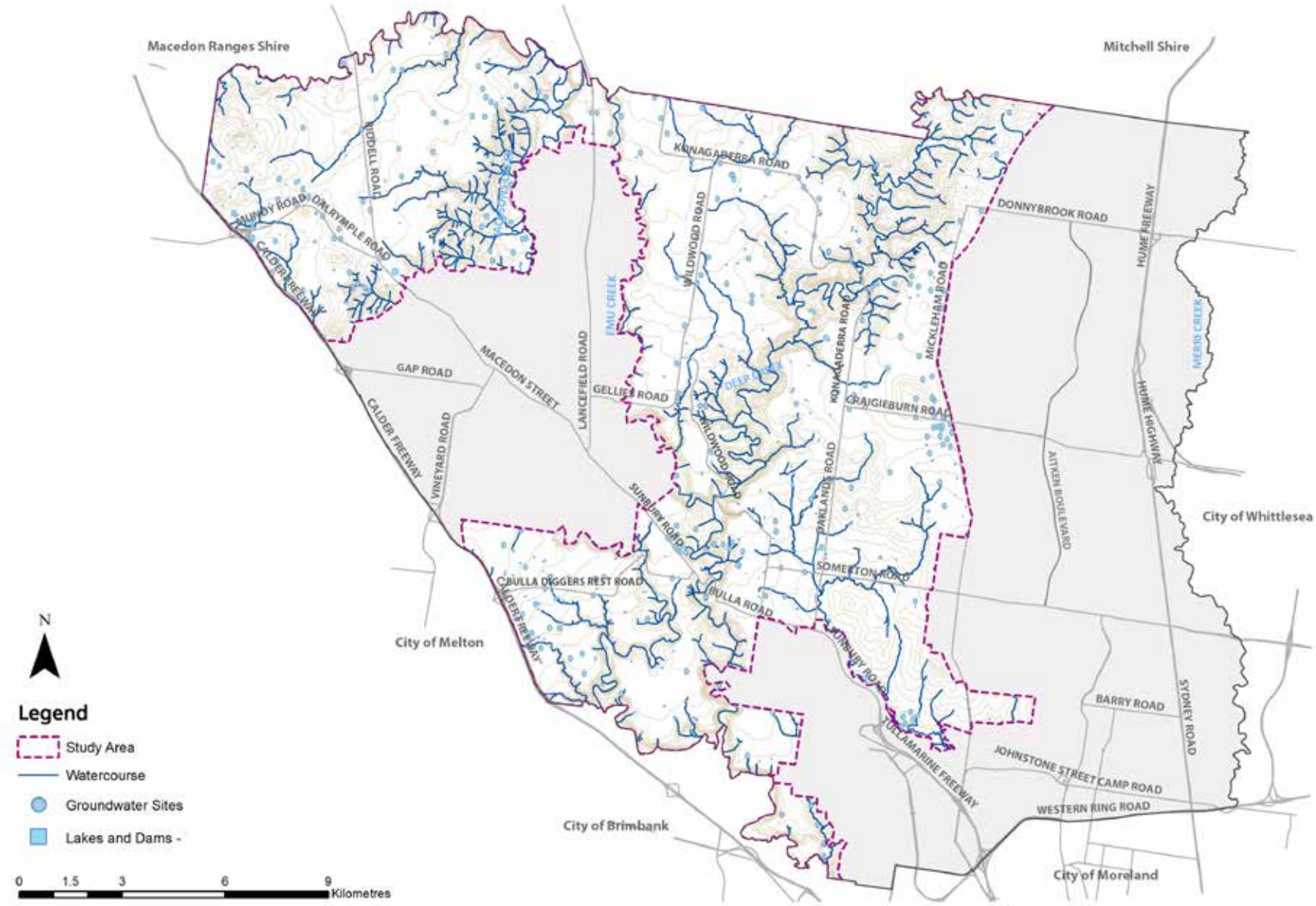


Figure 22: Topographical and hydrological features



5.6.3 Land Management

Rainfall

Much of Hume's landmass falls within a rain shadow (an area of land that receives lower rainfall due to its proximity to a mountain range). In Hume the rain shadow is cast by the Macedon Ranges.

From 2005 to 2016 average rainfall at Konagaderra measured 483mm and Bulla 483mm (Melbourne Water rainfall data). The State-wide average rainfall is 660mm, while intense agricultural areas in west Gippsland around Warragul receive over 1000mm.

Climate change is likely to result in reduced amounts of rainfall, but an increasing number of extreme rainfall events. Essentially, while overall rainfall will be less than average, Hume is likely to experience more extreme stand-alone events. Recent research by the CSIRO has found that "the intensity of heavy rainfall events is projected to increase in every season in all Southern Slopes regions [which includes Hume City Council], even those where mean rainfall is projected to decrease."

Extreme events like floods, winds, droughts and bushfires are also becoming more frequent and intense under climate change.

Pest Plant and Animal Management

Pest plants and animals are a significant environmental and economic issue in Hume.

European Rabbit (Oryctolaus cuniculus), European Hare (Lepus europaeus), Red Fox (Vulpes vulpes) and feral cats (Felis catus) are the most serious pest animal species in Hume. The impact of these pests on agriculture and the environment include:

- Destroying pasture, crop and plant communities including critical stages of native vegetation regeneration.
- Causing soil erosion and associated sedimentation of waterways which in turn impacts on water quality.

- Destroying native fauna directly or by competing for food and habitat.
- Predator numbers (of foxes and feral cats) are sustained by prey populations (of rabbits) increasing pressure on native fauna populations.

Under the Catchment and Land Protection Act 1994 (CALP Act) land owners have a responsibility to take all reasonable steps to prevent the spread of, and as far as possible eradicate, established pest animals from their land.

Wallis, P.J., Harwood, A., Leith, P., Hamilton, L., Bosomworth, K., Turner, S.L., Harris, R.M.B. and Bridle, K. (2015) Southern Slopes Information Portal Report: Climate change adaptation information for natural resource planning and implementation

Inglis, J., Whittaker, S., Dimitriadis, A., & Pillora, S. (2014) Climate adaptation manual for local government: embedding resilience to climate change).

Council runs a pest animal control program that aims to reduce the impacts of rabbits on Council-managed land across Hume City. The program combines a number of different control methods to achieve maximum results such as warren fumigation, rabbit-proof fencing, baiting and harbour removal using licensed contractors. Council grant programs are available to fund pest animal control and to encourage landowners to work together, as an area-wide program has greatest long term impacts and minimises the opportunities for animals to move into safe harbour.

Small populations of goat and deer are present in the Jacksons Creek and Emu Creek areas. These large herbivores cause environmental and habitat degradation through overgrazing on native vegetation, soil damage, contamination of waterways and can also spread infectious diseases to local livestock.

Pest plants or weeds are defined by four categories under the CALP Act 1994: State Prohibited; Regionally Prohibited; Regionally Controlled; and Restricted. Weeds are categorised according to the level of infestation in a catchment area and the threat that the weed poses to an area.

Weeds have a detrimental impact on the economy. Council has prepared a list of priority weeds in consultation with the community. These have been prioritised based on detrimental impact on the economy, environment, human health and amenity values of Hume's rural areas. Generally, weeds are extremely invasive dominating native and pasture areas, have limited value as stock feed, reduce the quantity and quality of fodder and may be poisonous to livestock.

Detailed factsheets including identification, distribution, legislative classification and management control recommendations are provided for each of the following priority weeds:

- African Boxthorn
- Apple of Sodom
- Artichoke Thistle
- Bathurst Burr
- Blackberry
- Boneseed
- Briar Rose
- Cape Tulip
- Chilean Needlegrass
- Fierce Thornapple
- Galenia
- Gorse
- Paterson's Curse
- Prairie Ground Cherry
- Serrated Tussock
- Texas Needlegrass
- Thistles (Artichoke, Golden, Saffron, Spear and Variegated)

Council offers the Agricultural Land Use Rebate to eligible landowners. The rebate is a financial incentive in the form of a rate rebate in return for landowners undertaking works that address land degradation issues including weed and pest animal control.

Kangaroo Management

Eastern Grey Kangaroo numbers fluctuate in Hume's rural areas. Their numbers can rapidly multiply as a result of ideal conditions with abundant feed and water sources. The development of new residential areas also displaces resident kangaroo populations who seek alternative habitat in surrounding green wedge areas. While it is widely recognised that kangaroos are an important part of Victoria's natural ecosystems, there are situations where they pose a risk to the local community. Issues such as traffic accidents, attacks on people and domestic animals, impacts on the agricultural economy and biodiversity may require management of kangaroo populations. The impact of kangaroo populations being forced from urban development areas into the green wedge is currently being addressed through the use of Kangaroo Management Plans. However Council has concerns about the effectiveness of these plans.

Fire

The topography and vegetation of Hume's green wedge areas create risk for fast moving grassfires. These risks are complicated by the proximity of urban areas that interface with open grasslands and the challenging landscape of wide creek valleys. Hume's rural areas have a history of fires including the Mickleham fire in 2014.

Management of fire risk is an important consideration in the location and management of publically accessible activities in the green wedge. Managing the interface between properties is important to protect adjoining properties particularly where rural areas directly adjoin urban development. Land management, including grazing, assists in managing the threat of fire. Conversely, poor land management and underutilised land can increase fuel loads adding to the risk of fire for the rural areas.

Road access, including multiple access options and road quality, is a key factor to facilitate fire services access and resident egress in emergency situations.

Council undertakes a range of fire risk management actions including slashing roadsides, grading bare-earth firebreaks, mowing parks and reserves, planned burns and working with landowners to meet their fire management responsibility. Design of roads, including the grade of batters and strategic breaks in safety barriers, is an important consideration to ensure access is available for fuel management and firefighting.

All areas of the green wedge are included in Designated Bushfire Prone Areas, with the exception of the Holcim quarry in Oaklands Road. Any building application for a dwelling on land in a Designated Bushfire Prone Area must be accompanied by a Bushfire Attack Level assessment to determine if specific siting and construction standards are required.

Bushfire Management Overlays (BMOs) may also be applied under the Planning Scheme. Currently, there are no areas covered by the BMO in Hume. In response to recommendations made in the 2009 Victorian Bushfires Royal Commission, the State Government has announced its intention to update its BMOs and has identified a number of small areas within the green wedge considered to be exposed to extreme bushfire risk. The State Government updated the mapping for the Bushfire Management Overlay in all planning schemes across Victoria in October 2017.

Future Options – Environment

1. Maintain current support.
2. Develop additional programs and control mechanisms.
3. Explore new mechanisms to protect landscape, water, and biodiversity.
4. Reduce Council's role in land management on non-Council land and require landowners to take a more proactive approach in land management.

5.7 Cultural and Landscape Values

5.7.1 Aboriginal Cultural Heritage

This section provides a history of Aboriginal culture and life in Hume's rural areas based on anecdotal recordings of early European settlers and archaeological evidence. It incorporates the findings of an Aboriginal cultural heritage assessment undertaken by Biosis consultants that provides both a linear story of pre-European land use and an analysis of known and likely Aboriginal sites of significance in the study area. Importantly, this work provides a contemporary base for managing potential pre-contact heritage sites, values and areas of archaeological sensitivity in a rural context and into the future as the role of the green wedge changes.

Aboriginal History

The Hume rural areas are a part of the traditional country of the Marin Balug named group which was one of several named groups making up the Woi wurrung group who lived here for tens of thousands of years.

Prior to European colonisation, the Victorian landscape was delineated by socio-dialectical groups who shared a common language and who as a group identified as owning particular areas of land, with individually owned tracts of country. This was a system of spatial organisation based on land tenure (Clarke I., 1990).

The Woi wurrung Aboriginal group held land north of Melbourne and were one of several groups making up the Kulin Nation. The groups forming the Kulin Nation shared similarities in speech, initiation, burial practice, kinship, marriage ties and religious beliefs (Barwick 1998, Clarke I, 1990).

The Marin Bulag group gathered numerous food resources from Jacksons Creek, Deep Creek and their tributaries. The trapping of eels and species fish with weaved baskets or the hunting of them with barbed spears was common practice. The hunting of various species of waterfowl and birdlife as a food resource was also practiced.

Fishing was carried out with hooped nets made from fibre to catch crayfish, yabbies and fish, and while cross line nets strong below the water to catch schools of fish. Emus and kangaroos were hunted using strategically coordinated groups driving the animals towards nets. Hunting of waterfowl and fishing made use of canoes crafted from tree bark. Grubs and large ants was another food resource. Records of early settlers describe large quantities of Murnong (Yam daisy) a starch rich tuber being harvested in the area.

Permanent European settlement of the area occurred progressively from the 1830's, ending the traditional lifestyle of its Aboriginal peoples. They lost access to traditional lands and waterways, hunting grounds were reduced and traditional food sources disappeared. Hunger, conflict, and the introduction of new diseases, to which the Aboriginal People had no immunity, led to a rapid decline of their population and to the loss of their lands. Knowledge of Aboriginal people comes from occasional accounts by early settlers, official records and recordings of ethnographic accounts.

An early account of the Sunbury Area describes Aborigines harvesting large quantities of Murnong, the starch rich tuber which formed a staple part of the Victorian Aboriginal diet (Batey 1907; Frankel 1991:112).

In 1840 Robinson recorded the Marin balug clan at George Evans Buttlejork station at Emu Bottom three miles north of Sunbury on Jacksons Creek. E. S. Parker, the Assistant Protector of Aborigines, established a station for supplying food and blankets to Aborigines at the Tarrawait depot in 1839-40 in this area. This was also known as 'Jackson's Creek (temporary) Protectorate Station' (AAV Aboriginal Historic Places Inventory No. 5.1-7).

In the 1860s a series of reserves were established across Victoria and Aboriginal people were more vigourously compelled to move to these reserves. Forty Kulin people together with John and Mary Green settled at Coranderrk which was declared an Aboriginal reserve of 2300 acres in June 1863. Coranderrk reserve grew and attracted Aboriginal people from the five Kulin nation language groups, including the Marin Bulag throughout the 1860s. There is limited direct evidence of Aboriginal people in the Sunbury area in the nineteenth century Registered Aboriginal Places.

A search of the Victorian Aboriginal Heritage Register (VAHR) in July 2017 established that about 240 Aboriginal places occur within the rural areas. Low density artefact distributions are the dominant place type, followed by similarly high numbers of artefact scatters, as well as earth features and scared trees. The majority of Aboriginal places within the rural areas are located along creek lines such as Jacksons Creek, Emu Creek and Deep Creek. Some artefact scatters and low density artefact distributions are also found at some distance, up to 2 kilometres from a natural water source. These are often considered to be representative of Aboriginal exploration of the landscape.

Table 6: Types of Aboriginal places in the rural areas

Aboriginal place type	Frequency (n)	Relative frequency (%)
Low density artefact distribution	293	45.9
Artefact scatter	284	44.5
Earth Feature	22	3.4
Scarred tree	22	3.4
Quarry	9	1.4
Object collection	3 0.	4
Stone feature	2	0.3
Aboriginal Ancestral Remains (Burial)	1	0.1
Aboriginal Cultural Place	1	0.1
Total	**637**	**100.0**

As well as the Aboriginal places tabled above, there are a series of particularly rare, and scientifically and culturally significant site types within, or directly adjacent to, the rural areas. These consist of the Sunbury Ring 4 (VAHR 7822-0143) and the Keilor Archaeological Site (VAHR 7822-0010). The Keilor Archaeological site consists of a series of overlain Late Pleistocene and Holocene alluvial terraces, and is considered as one of the most intensively investigated areas of Victoria (Tunn, 2006, p. 17). The alluvial terraces were found to contain human remains (the "Keilor Cranium"), animal bones and hearth features dating to between 25,000 and 30,000 years before present (Canning, 2010, p. 27) .

The significance of the Sunbury Rings has been described as follows:

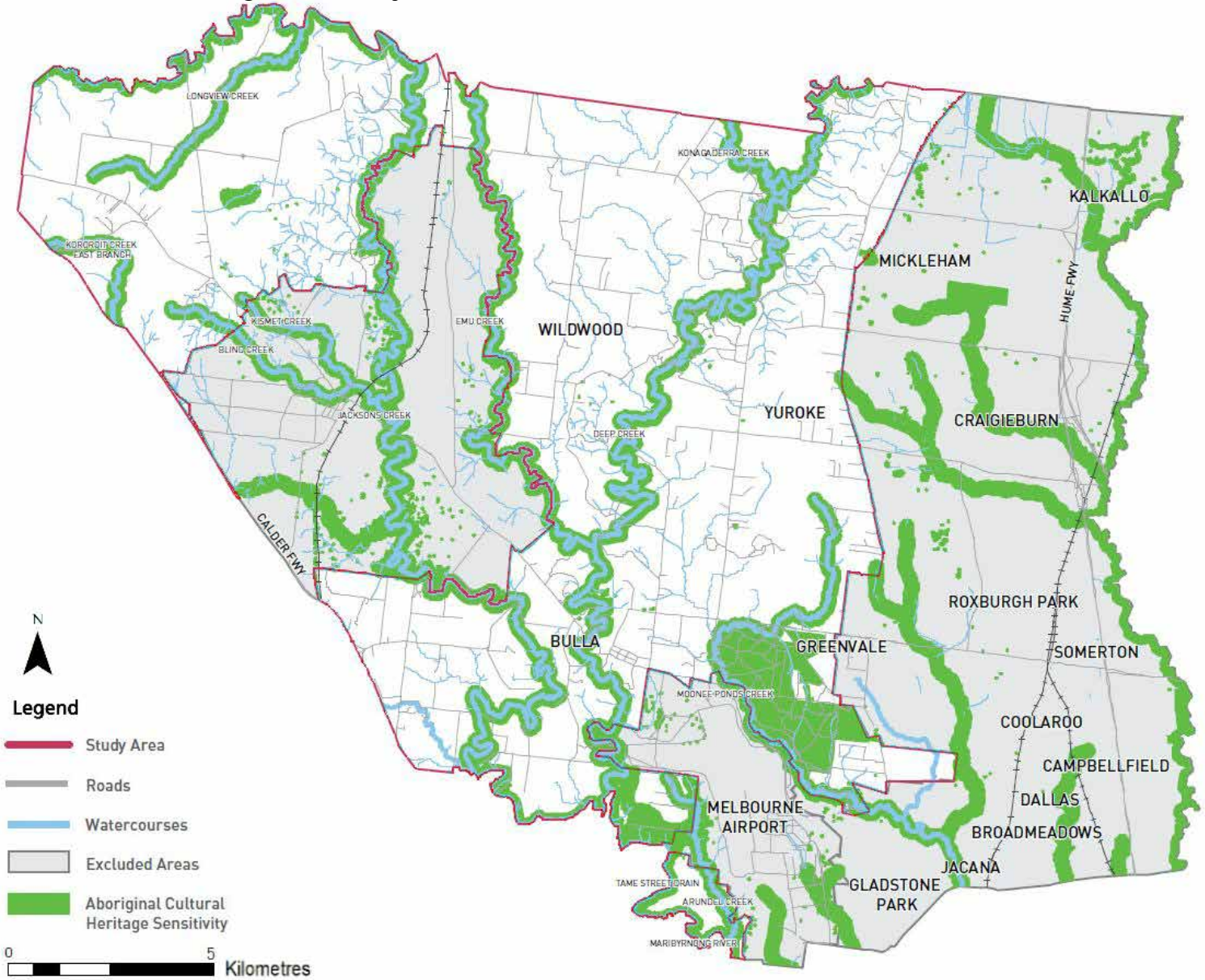
"The five earth rings in the Sunbury area are exceptional aboriginal cultural and archaeological sites in Victoria. Only one other similar site is known to exist elsewhere in Victoria... It has not been possible to confirm the function or significance of the Sunbury Rings from ethnographic or historical sources. The earliest recording and publications regarding the rings dates only to the late 1970s, despite there being a relatively rich enthohistorical record for the Sunbury area.

However, the Sunbury area has a significant Aboriginal cultural history that suggests that the area was an important regional area for Aboriginal clan gathering for several reasons. Sunbury was described as the headquarters of the Marin balug clan; it is recorded as hosting large gatherings of people; corroborees are recorded to have been held near Emu Bottom station; stockpiles of murrnong were seen that indicated large gatherings of people; Bungerim, headman of the Marin, was a man of considerable status, which gave him influence beyond his own clan group through his control of the Mt. William quarry; and the first Aboriginal Protectorate Station in the district was located in Sunbury. It is reasonable, therefore, to assume that the rings played an important part in the cultural life of Aboriginal people in the area in the period prior to European settlement." (Vines 2001)

Areas of Cultural Heritage Sensitivity / Predictive Modelling

There is very little evidence of past Aboriginal activity or events in the Study Area that can be directly associated with specific locations. The state-wide application of 'areas of cultural heritage sensitivity' in the Aboriginal Heritage Regulations has given statutory status to recorded Aboriginal places and surrounding land and land within 200 metres of named waterways, as well as some areas of Park, such as Woodlands Historic Park (refer to Areas of Cultural Heritage Sensitivity in Figure 24).

Figure 24: Areas of Cultural Heritage Sensitivity



Biosis Consultants prepared a spatial predictive model for Aboriginal heritage in the study area which overlays four main datasets based on:

- proximity to natural water sources
- existence of remnant vegetation
- slope classes
- local high points.

These features were determined based on known patterns of Aboriginal activity and land use discussed in background literature, studies and archaeological reports.

The results of this modelling confirm the importance of waterways as the primary focus of Aboriginal occupation and therefore also the locations of significant archaeological remains. The study also found that archaeological materials have been concentrated in specific locations such as the narrow alluvial flats, escarpment edges and promontories above the rivers and creeks. In particular, locations on the inside of tight bends of rivers and creeks tend to have some of the largest concentrations of Aboriginal artefacts. Other examples of both archaeological and cultural significance are the high points with long views across the landscape, including the tops of volcanic cones, stony rises and other hilltops. These high points would have provided a vantage point to observe long distances in relatively flat areas and provide dry ground in winter. Concentrations of artefacts are likely around locations of specific cultural and economic activities, such as stone quarries and river crossing points where routes converge across the landscape.

These features have been used to define areas of archaeological potential and have been represented in a predictive modelling map (Refer to Figure 25). The mapping shows increasing levels of sensitivity based on modelling and also shows known sensitive locations based on analysis of previous archaeological studies and reports.

Hume's rural areas are relatively undisturbed and likely to retain surface and subsurface Aboriginal cultural heritage. The predictive modelling can assist future planning in the rural areas to ensure development respects and conserves Aboriginal cultural heritage values.

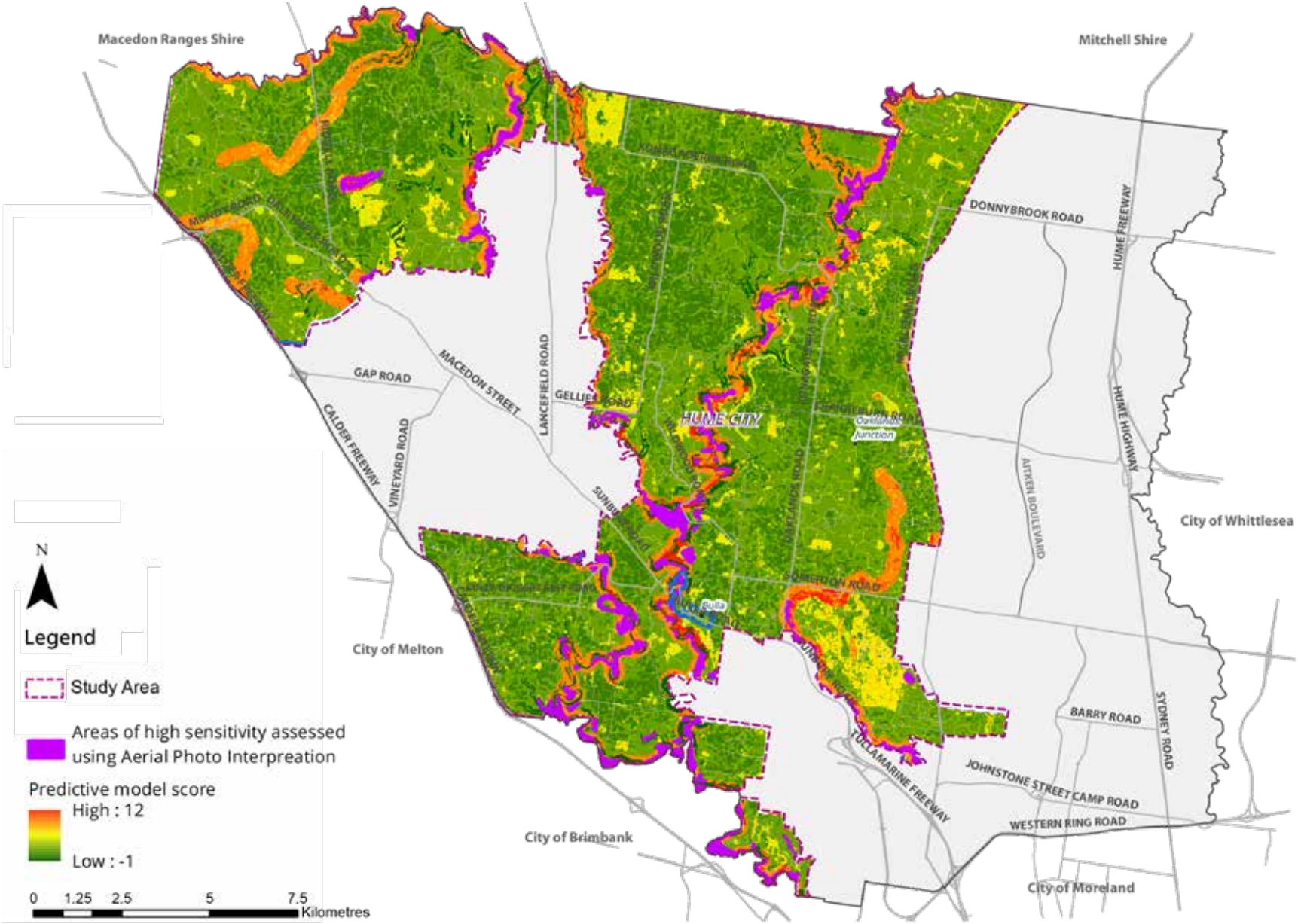
5.7.2 Post contact Heritage

John Aitken, George Evans and other Tasmanian explorers arrived to the area in 1836 and chose the Sunbury area as a place to take up land for permanent settlements. The well grassed and watered open plains of the area meant it was well suited for sheep, and pastoralism played a key role in the initial post-contact development of the area. In the 1840s, most of the area was occupied by sheep and farming began to emerge around the Oaklands Road area with the establishment of the Woodlands homestead in 1843 and also within the Bulla area (Moloney 1998). It wasn't until the 1850s however, where the gold rushes created a demand for food and employment, that farming became a dominant use of the land, and land ownership within the area increased (Moloney 1998).

Of particular importance during this period was the establishment in 1857 of what has become to be known as the 'Keilor Market Gardens'. The Keilor Market Gardens are of regional historical significance as an expression of the early and long-lived farming practices adapted to the richer soils of the river terraces and their association with the beginnings of irrigated horticulture in Victoria. David Milburn, who settled in the valley in 1857, is credited with beginning the market gardens and establishing one of the first irrigation systems in Victoria using a hand pump to draw water from the Salt Water River (Maribyrnong River).The farms within the market garden area also have long links with local families and the pattern of houses and farm buildings reflect the original population distribution (Heritage Council Victoria, 1999).

By the 1860s however, many farmers were forced to leave their properties due to the collapse in the prices of crops, overgrazing and inappropriate farming practice impacts on soils and the decimation of crops by drought.

Figure 25: Predictive Modelling for Aboriginal Cultural Heritage Values



The development of a successful commercial wine industry in Sunbury in the early 1860s and of other industries in the pre-1860s, such as quarrying and the processing of agricultural products, also contributed to the further development of the area.

It wasn't until the early 1900s that the population of the area experienced a dramatic increase with the advent of new farming techniques, the break-up of large pastoral land holdings and the transformation of much of the land to mixed-use farming (Moloney 1998).

Significant historical events that have occurred in the area throughout the twentieth century include the building of Melbourne Airport in 1970, the Sunbury Pop Festival, and the establishment of both the Organ Pipes and Woodlands Historic Park in 1972 and 1981 respectively. The Woodlands Historic Park has significant cultural and environmental values as it provides a glimpse into the landscapes and wildlife seen by European settlers in the 1840s and includes the 150-year old Woodlands Homestead.

The Sunbury Pop Festival, which was held in Bulla from 1972 to 1975, was a music festival that ran on the Australia Day long weekend. The festival attracted up to 45,000 patrons and included performers such as Billy Thorpe and the Aztecs, Queen, Deep Purple and AC/DC. Whilst the festival was billed as 'Australia's Woodstock' it had broader cultural significance as signalling the end in Australia of the hippy peace movement of the late 1960s and the beginning of the reign of pub rock.

This rich and diverse cultural heritage is evident in the number of heritage sites within the rural area such as bridges, ruins of bluestone cottages, flour mills, pastoral homesteads, wineries and sites associated with the explorations of John Batman in the 1800s. The importance of these sites is reflected in the inclusion of a number of these sites on the Victorian Heritage Register and/or affected by Council's Heritage Overlay. The Heritage Overlay (HO) seeks to conserve and enhance heritage places of natural or cultural significance and to ensure development does not adversely affect the significance of heritage places.

The last comprehensive review of heritage places within the municipality was undertaken in 2003 and an update may be required to comprehensively identify heritage sites and to better protect dry stone walls and important landscapes.

5.7.3 Landscape Values

Hume's rural areas have a unique landscape and scenic quality, stemming from the volcanic geology its pre-European form. This created a landscape dominated by flat volcanic plains which are punctuated by volcanic hilltops or cones and incised rivers. The volcanic geology of the area has a large influence on the landscape values of the area. In the flat landscape, volcanic cones and hills become prominent features and can be seen from distant vantages. The Jacksons Creek, Emu Creek and Deep Creek cut deep incisions through the flat landscape from north to south merging into the Maribyrnong River on the southern boundary of Hume. These creek corridors have striking escarpments, often spanning over 2km in width. The wide valleys have been sculpted with soft undulations by a fine network of tributary creeks, particularly in the south and eastern areas of the green wedge. These valleys are freely visible from the local road network and public land.

In the central and eastern part of the green wedge, remnant indigenous woodland and scattered trees are an important element of the landscape character (refer to Figure 26). Large expanses of Box Woodland are present in the central areas with an almost contiguous link from the Emu and Deep Creek confluence to Woodlands Heritage Park. Plains Grassy Woodland is also present in patches on the upper plains and hills to the east of Deep Creek.

Ethos Urban consultants prepared the Visual and Landscape Assessment for Hume's Rural areas in December 2017 to provide a detailed understanding of the landscape character and aesthetic significance found in Hume's rural areas. Through this work a state-wide standard has been set that define landscape values into Landscape Character Types, Significant Landscape and Key Viewing corridors.

Landscape Character Types

Landscape character is defined as the interplay of geology, topography, vegetation, water bodies and other natural features combined with effect of land use and built development. Two character types were identified in Hume (refer to Figure 27):

1. **Western Volcanic Plains Character Type**
2. **Woodland Ridges, Slopes and Valleys Character Type**

The Western Volcanic Plains Character Type comprises vast basaltic plains with scattered stony rises, volcanic cones and steeply incised creek lines. These plains extend across western Victoria beyond the South Australian border. In Hume this landscape is largely flat other than the interrupting cones and creek lines with long views to the horizon or distant rises underneath broad skies. These flats are punctuated at points by the low rises of the volcanic of Red Rock, Crowe Hill, Deverall Hill, Fitzgerald Hill and Mount Holden.

The steeply incised valleys of the narrow creek lines within this landscape character type reveal themselves dramatically as the elevation falls from the consistent level of the surface of the plains and opens views along the creek corridors.

When viewed from within these narrow valleys, the top of the ridges and valley edges form a prominent and clean edge defining the limit of the plains' surface above.

The western and central parts of the rural areas are dominated by the Western Volcanic Plains landscape character type that sits above the escarpments of the Jacksons and Deep Creeks.

It is typified by long views across the grassy pastures and therefore any development becomes prominent in the landscape and affects patterns of viewing. The open landscape provides long views to the volcanic cones which are largely free of development at this point.

The Woodland Ridges, Slopes and Valleys Character Type is typified by wide valleys sculpted with soft undulations by a fine and complex network of creeks and tributaries. These broad openings within the surrounding plains have striking escarpments, often spanning over 2km in width.

Figure 26: Significant Landscape Categories

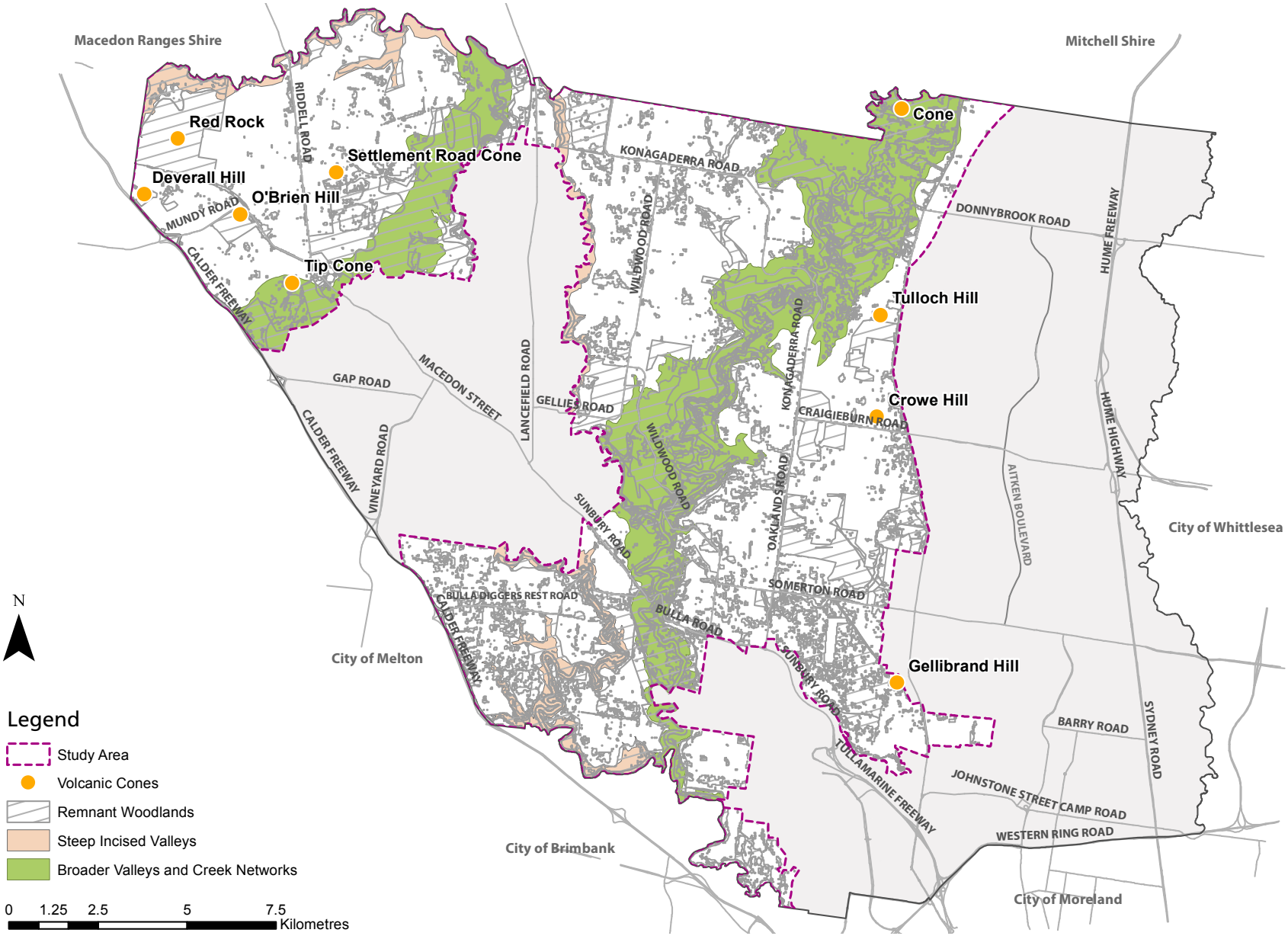
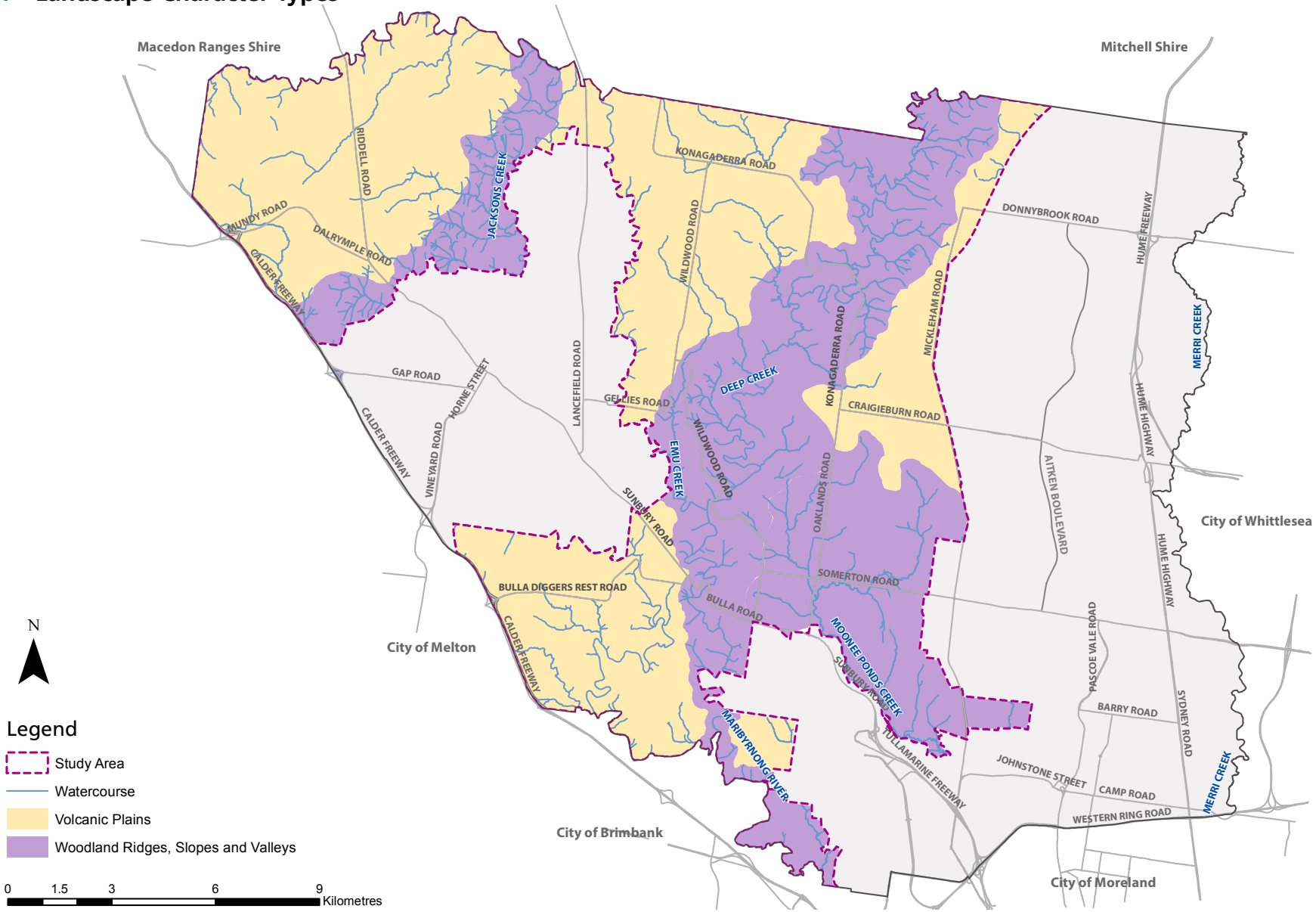


Figure 27: Landscape Character Types



Within the valleys the ancient geology underlying the wider basalt plains is expressed through a more undulating topography, exposed cuttings, and also the areas of remnant woodland and shrub land established in the more fertile soils of the valley floors.

Within this landscape, a pattern of filtered views through the remnant River Red Gum and Grey Box woodlands, particularly around Wildwood and Oaklands Junction provide a visual difference to the open plans and steep escarpments.

Both the remnant vegetation and the steep escarpments make this landscape vulnerable to impacts from inappropriate development and land management. In particular, weed invasion, soil degradation and erosion.

Significant Landscape

The study acknowledged the area is typified by a largely flat landscape with dramatic highs and lows. This was divided into four categories of landscape significance (refer Figure 26):

1. Volcanic Cones – Nine dormant volcanic cones punctuate the volcanic plains of the rural areas: clustered in the west rural area and running north-south near the eastern boundary of the area.
2. Steep, Incised Valleys - Steep incised valleys of Jacksons Creek, Longview and Emu Creek are key features in the north and north-west parts of the rural area; these create deep incisions and well defined valleys, gorges and escarpments.
3. Broader Valleys and Creek Networks - Complex tributary systems of Deep Creek, Jacksons Creek and Kismet Creek create broad, fertile valleys up to 2km wide.
4. Remnant Woodlands - Remnant woodland provide park like appearance providing a distinct contrast to the open plains in form and colour.

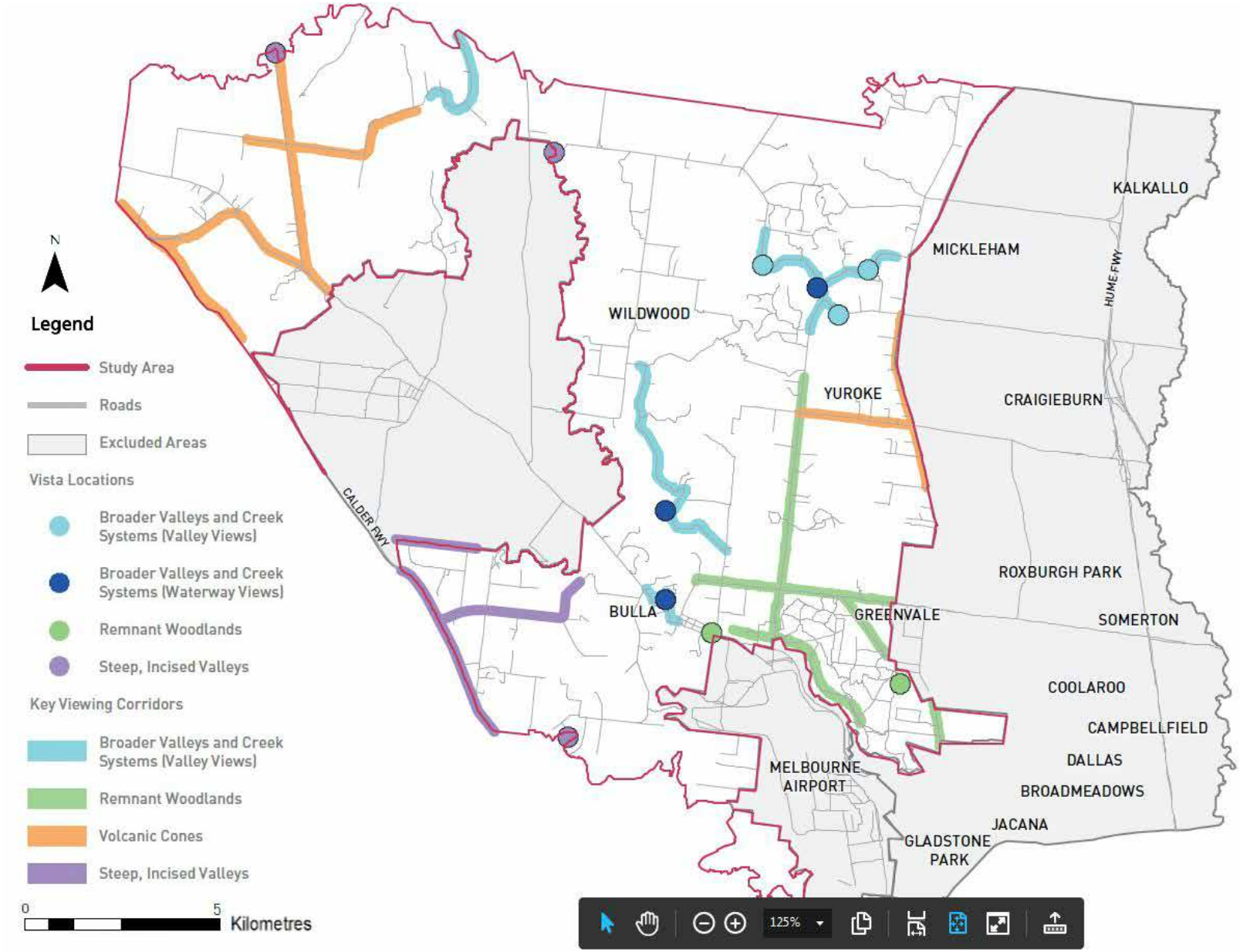
Generally these features were considered to be of high local significance except for the Broader Valleys and Creek Networks which were acknowledged as having a more regional significance in the north-western metropolitan region.

The study also identified many of the key roads in the rural areas provide views and viewing corridors to these significant landscape features (refer Figure 28). In addition, 12 significant vista locations were identified at:

Remnant Woodlands

1. Mt Gellibrand summit
2. The aircraft viewing area at intersection of Oaklands and Sunbury Roads.

Figure 28: Viewing Corridors and Vistas



Broader Valleys and Creek Networks (Valley views):

1. Settlement Road at Childs Road
2. Konagaderra Rd approximately 2km south of Deep Creek Road
3. Bardwell Drive at Parkland Crescent
4. Mt Ridley Road approximately 500m east of Konagaderra Road
5. Wildwood Road at the convergence of Emu and Deep Creeks

Broader Valleys anwd Creek Networks: The crossing of major creeks and the valley floor

1. The brief view from Sunbury Road at Trap Street Reserve
2. Wildwood Road at Martin Dillon Reserve
3. Konagaderra Road at Konagaderra Bridge Reserve

Steep Incised Valleys

1. Riddell Road crossing of Jacksons Creek.
2. Konagaderra Road crossing of Emu Creek.

Future Options – Cultural and Landscape Values

1. Maintain current conservation of areas of significant cultural, heritage and landscape values.
2. Identify and promote cultural and heritage landscape values.
3. Explore additional protection measures of significant landscape features utilising policy and statutory controls.

5.8 Future Options Summary

The policy options coming out of the discussion in this chapter are not intended to be exhaustive but rather provide a range of approaches to generate discussion and responses from the community. The community will be invited to indicate which options they would prefer to support or outright reject or they may come up with alternative options to address the issues affecting the rural areas over the next 30 years.

The scale of change and intervention required to implement the options ranges from winding down, to managing status quo or greater change and diversification. This scale of change and intervention is represented in the table below by the following icons:

reducing the level of support and intervention

business as usual approaches

proactive approaches to manage the pressures on the rural areas

The table also identifies what actions and investment may be required to implement the options, including:

- Financial Resources – including grants and subsidies from Council
- Staff Resources – employing staff to undertake specific activities
- Investigate – further work to research and analyse
- Policy and Statutory Changes – adopting policy positions and implementing into the planning scheme
- Advocate for change – liaising with stakeholders and government agencies to encourage State and federal Government policy direction, investment and statutory changes
- Provide Information – clarify what landowners are able to do on their land as well as their responsibilities
- Nil – where the existing situation requires no change, no action is required

Table 7: Future Options – Level of Change, Action and Investment

OPTIONS	Implications of Options							
	Level of Strategic Action	Financial Resources (Gov)	Staff Resources (Gov)	Investigate	Policy and Statutory Changes	Advocate for change	Provide Information	Nil
Overarching Challenges								
Melbourne Airport								
1. Ensure that land use and development protects the airport's curfew free status and is compatible with the operation of Melbourne Airport in accordance with the Melbourne Airport Master Plan.								✓
2. Explore potential for tourism and business opportunities within the rural areas that support the airport.				✓	✓			✓
Climate Change								
1. Continue to support rural landowners through agricultural programs (Caring for our Rural Environment and the Agricultural Land rebate).			✓	✓				
2. Explore the viability of alternative agriculture and land uses in response to anticipated climate change, and how Council can support them.					✓	✓	✓	
Pressures on Green Wedge Areas								
1. Maintain the rural areas as they currently are.						✓		
2. Recognise that Hume's rural areas are dynamic and will experience change.						✓	✓	
3. Manage change in a proactive and sustainable way to conserve the values of the rural areas.					✓	✓	✓	

Wind-down activity Business as usual proactive approach

OPTIONS	Implications of Options							
	Level of Strategic Action	Financial Resources (Gov)	Staff Resources (Gov)	Investigate	Policy and Statutory Changes	Advocate for change	Provide Information	Nil
Landowner Expectations								
1. Maintain the existing statutory and policy controls.								
2. Provide clarity on the long-term role and associated opportunities for the rural areas, to manage expectations and reduce speculation.								✓
3. Explore changes to the statutory and policy to allow new opportunities and activities in the rural areas.					✓	✓		
Urban Growth Boundary								
1. Recognise the current UGB as a fixed boundary.						✓	✓	
2. Develop criteria to advocate for change to the UGB, reflective of the criteria within Hume HIGAP and either:								
a) React to State Government processes; or								
b) Proactively advocate to State Government.					✓	✓	✓	
Agriculture								
1. Manage the status quo by supporting existing operations and sectors.				✓				✓
2. Explore opportunities in suitable locations to assist and enhance existing operations as well as foster emerging agricultural uses.				✓	✓		✓	✓
3. Manage agriculture as a non-viable activity that will continue to decline in productive output and function more as a hobby or secondary project for landholders.		✓						

Wind-down activity Business as usual proactive approach

OPTIONS	Implications of Options							
	Level of Strategic Action	Financial Resources (Gov)	Staff Resources (Gov)	Investigate	Policy and Statutory Changes	Advocate for change	Provide Information	Nil
Living and Visiting								
Living								
1. Continue to allow housing only under current planning controls.								
2. Investigate opportunities to create smaller lots by subdivision of existing 6 – 10 hectare lots in suitable locations.					✓	✓		
3. Investigate potential areas for rural living cluster subdivision containing smaller lot sizes in suitable locations.					✓	✓		
Bulla Township								
1. Maintain existing uses in the Township.								
2. Prepare a structure plan or equivalent for the Township that explores the integrated development concentration of commercial activity, housing density, pedestrian links and open space.					✓	✓		
Visitor Economy								
1 Continue to allow tourism opportunities under the current planning controls.								
2. Explore potential for new tourism opportunities in the rural areas.					✓			✓
3. Increase Council's role in promoting and supporting tourism, agriculture and events in the rural areas.			✓	✓				

Wind-down activity Business as usual proactive approach

OPTIONS	Implications of Options							
	Level of Strategic Action	Financial Resources (Gov)	Staff Resources (Gov)	Investigate	Policy and Statutory Changes	Advocate for change	Provide Information	Nil
Infrastructure and Resources								
1. Allow existing facilities to consolidate and expand on established sites only and protect these sites with appropriate buffers.						✓		
2. Manage an increase in facilities by supporting existing facilities, exploring sites for additional infrastructure facilities and planning for the needs of new and potential facilities (eg. road and energy needs).					✓	✓		
3. Restrict expansion of existing and new facilities and quarries.		✓				✓		
Movement								
1. Maintain the existing road infrastructure to its current width and standards.								
2. Prepare a rural road strategy that defines the priority of future road planned projects to provide an advocacy basis to State and Federal governments.					✓	✓	✓	
3. In addition to planned road projects, explore the need for additional new road connections or upgrades.			✓		✓	✓	✓	

Wind-down activity Business as usual proactive approach

OPTIONS	Implications of Options							
	Level of Strategic Action	Financial Resources (Gov)	Staff Resources (Gov)	Investigate	Policy and Statutory Changes	Advocate for change	Provide Information	Nil
Environment								
1. Maintain current support.			✓	✓				
2. Develop additional programs and control mechanisms.			✓	✓				
3. Explore new mechanisms to protect landscape, water, and biodiversity.					✓	✓		
4. Reduce Council's role in land management on non-Council land and require landowners to take a more proactive approach in land management.		✓						✓
Cultural and Landscape Values								
1. Maintain current conservation of areas of significant cultural, heritage and landscape values.								
2. Identify and promote cultural and heritage landscape values.				✓	✓			✓
3. Explore additional protection measures of significant landscape features utilising policy and statutory controls.					✓	✓		✓

6. Next steps

6. Next steps

This Issues and Options Paper is the first step in preparing a Strategy for the Hume rural areas. It provides options for the community to review and respond and add to.

Responses to this Issues and Options Paper will be considered in finalising the options later in 2018.

These issues and options will form the basis of the matters for consideration in developing a draft strategy to be discussed with the community in 2019.

Figure 2: Rural HIGAP Project Stages

Appendix 1: Key Survey Findings

A survey of the rural community was undertaken in July to August 2017. The aim of the survey was to:

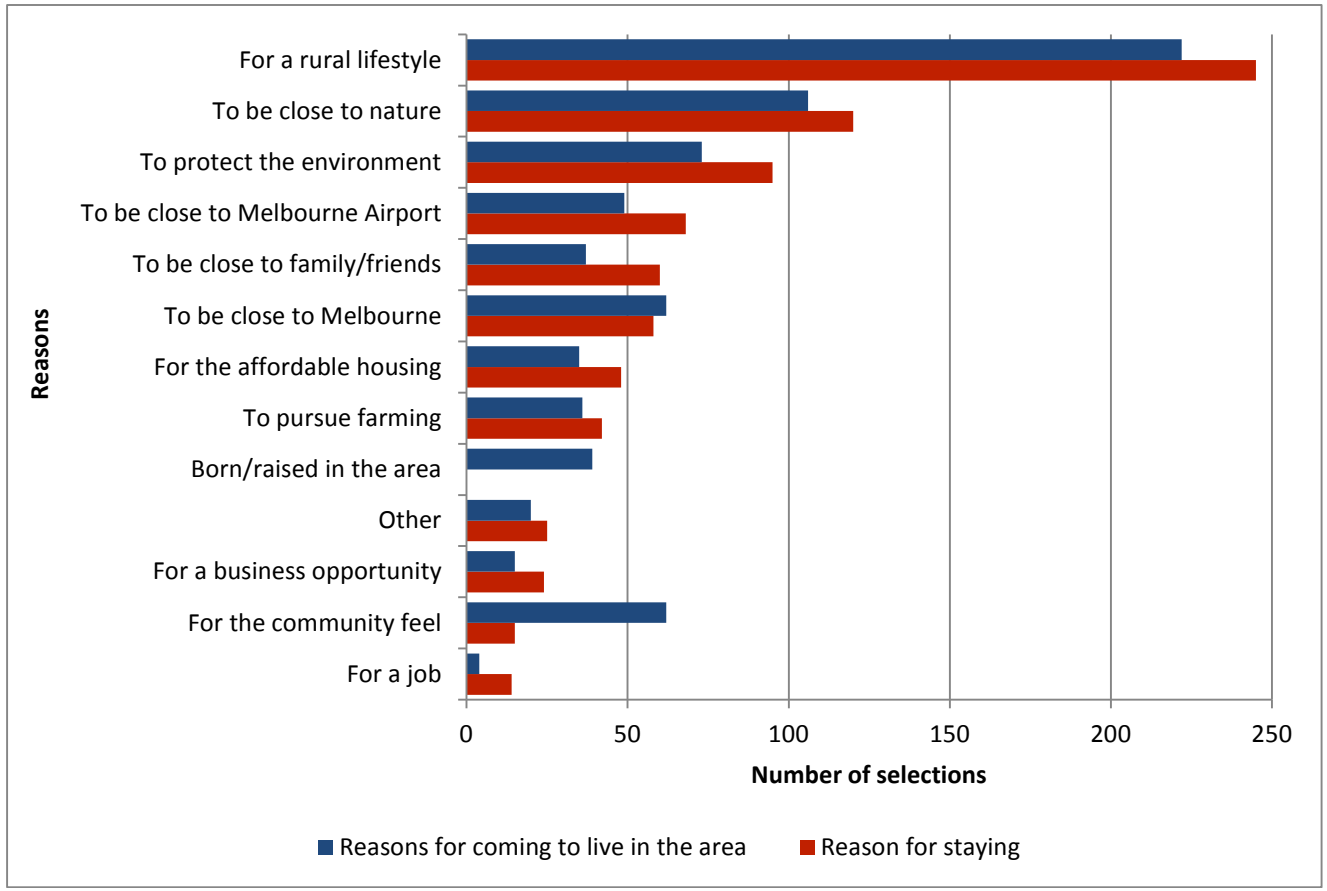
- Understand the different expectations and aspirations of the rural community.
- Provide Council with a greater understanding of the wants and needs of rural community members.
- Understand if and how this differs across the rural areas.

A total of 2,127 surveys were distributed to land owners and occupiers within the rural areas. The survey was also made available online on Council's 'Your Say' consultation webpage. In total, 360 survey responses were received, representing a 17 per cent response rate out of the surveys distributed. Sunbury recorded the highest number of survey responses (123), followed by Bulla (53) and Oaklands Junction (47).

Findings

Nearly 60 per cent of respondents were above 55 years of age. The majority of respondents (54 per cent, or 161 of 300) indicated that they planned to live in the rural areas for more than 20 years. Table 1 provides a breakdown of respondents' reasons for coming to live in the area and reason for staying, with 'for a rural lifestyle' being the dominant reason for both.

Table 1: Respondents' reasons for coming to live in the area and reasons for staying



The highest response rate for property uses was 'rural lifestyle living with no livestock'. This was followed by 'hobby farm' and 'rural lifestyle living with horses for recreational purposes'.

Value of Rural Areas

Over 280 respondents left comments about what they value about where they live. Nearly a third of respondents mentioned valuing the amenity of the rural areas. This included open spaces, fresh air, minimal traffic, housing affordability, no neighbours or suburbs, as well as multiple references to 'peace', 'quiet', 'tranquillity', and 'serenity'. Examples of the amenities valued by respondents included, "the clean air and open space and away from traffic" and "the peace and quiet away from suburbia, the rural environment and the spaces, the open landscape and animals."

Other main values mentioned included the country/rural lifestyle, the surrounding natural environment, and the proximity of the rural area to Melbourne city, Melbourne Airport, transportation (e.g. major roads and rail), in addition to proximity to services and facilities such as schools and shopping centres.

Another value highlighted by the respondents was the connections and relationships with family, friends and the surrounding community.

Some respondents included concerns that what they valued was being diminished or under threat by development. This was, however, contrasted by respondents who wanted more development.

Importance of Green Wedge

Respondents were asked to rank (on a scale of 1 = most important to 5 = least important) the State Government's five main purposes of green wedge areas. 201 respondents provided valid rankings. The top ranked purpose was 'to preserve rural and scenic landscapes' and the least important purpose being 'provide opportunities for tourism and recreation'. Table 2 provides the final rankings provided by respondents.

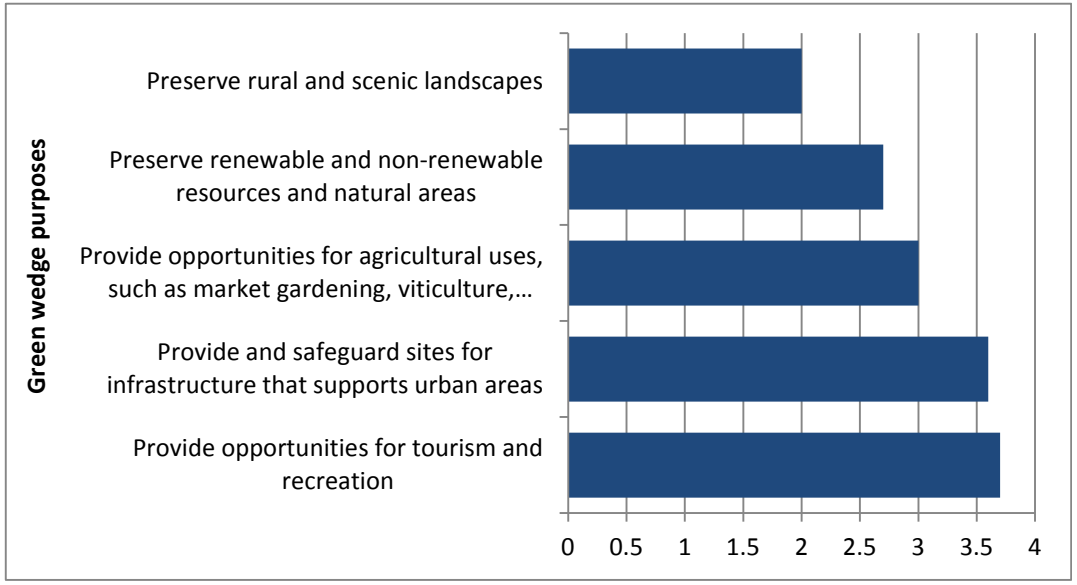
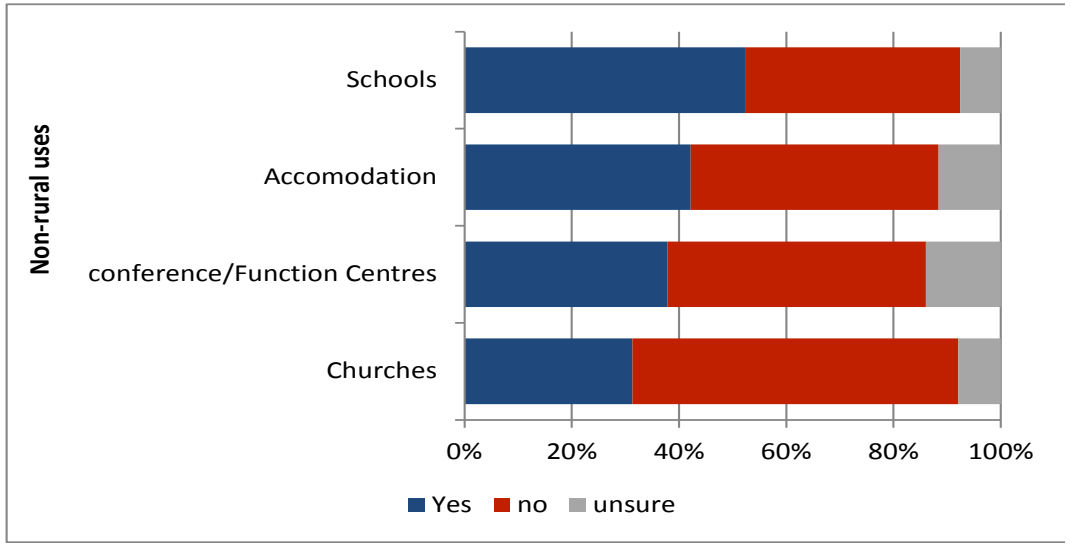


Table 2: Respondents' ranking of green wedge purposes (n=201)

Respondents also stated their agreement ('yes') or disagreement ('no') with recent State Government changes allowing non-rural uses in green wedge areas. This is shown in Table 3. Evident in Table 3 is the limited support for these changes. Schools were the only change to have received more than 50 per cent (52%) agreement.

Table 3: Respondents' agreement/disagreement with recent green wedge changes

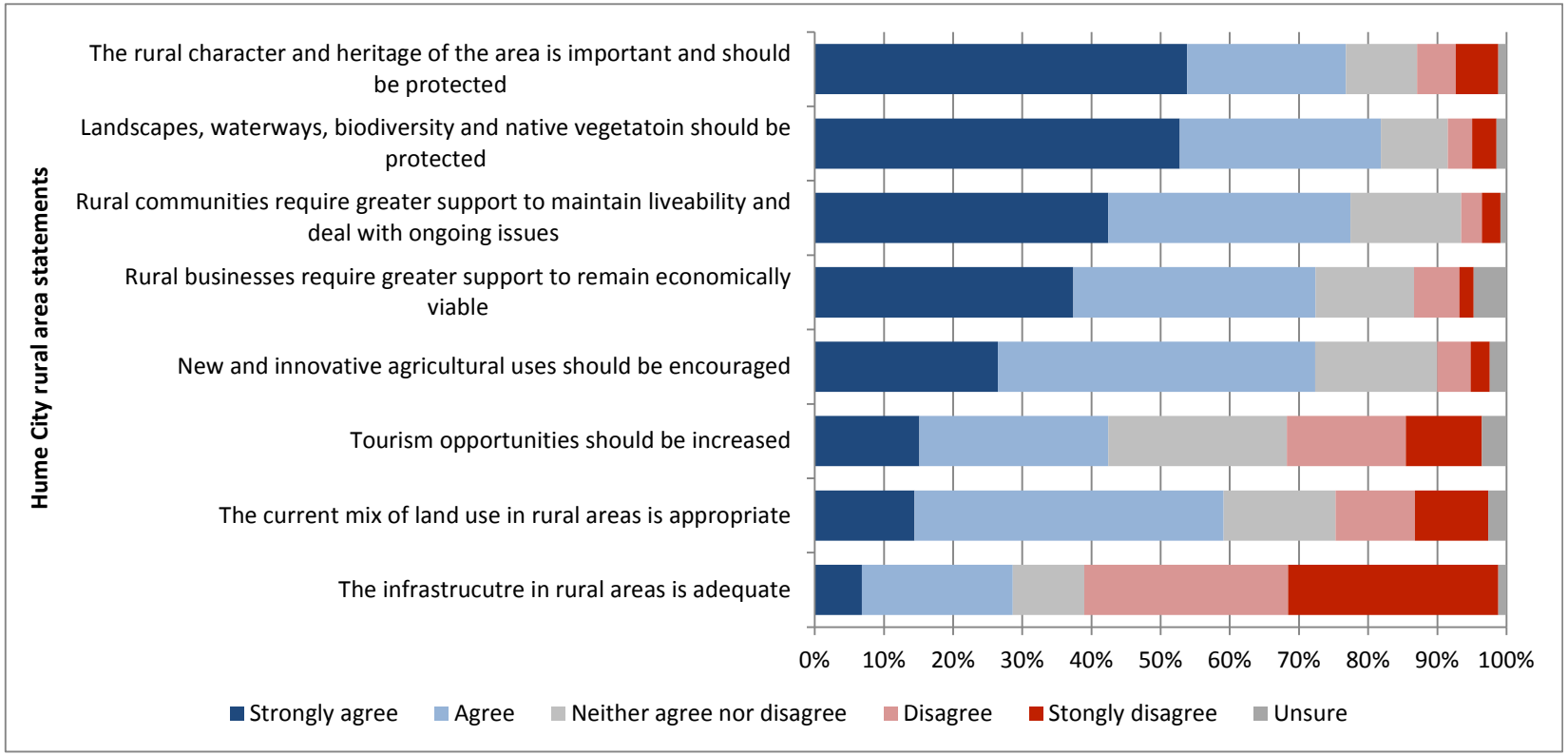


Issues of Importance

Respondents' agreement/disagreement with general statements about the rural areas was strongly supportive of preserving and protecting the rural character, heritage and environment with 77 per cent of respondents in agreement. Similarly 77 per cent of respondents were in agreement that rural communities require greater support to maintain liveability and deal with ongoing issues.

Additionally, respondents expressed desire for more support to communities to maintain liveability and assist businesses to remain economically viable (recording 77 per cent and 72 per cent agreement respectively). Refer to Table 4 for the complete breakdown of respondent's agreement/disagreement with the general statements.

Table 4 : Respondents' agreement/disagreement with general statements about Hume City's rural areas



Respondents were also asked to rate the importance of issues that were raised in previous discussions with the rural community. The results of this are shown in Table 5. Issues of particular importance to respondents were:

- Land management challenges (94 per cent of respondents stated this to be either 'important' or 'very important').
- The impact of increasing rates on managing/maintaining land (85 per cent of respondents stated this to be either 'important' or 'very important').
- Restrictions on subdivision of land and urban development (71 per cent of respondents stated this to be either 'important' or 'very important').

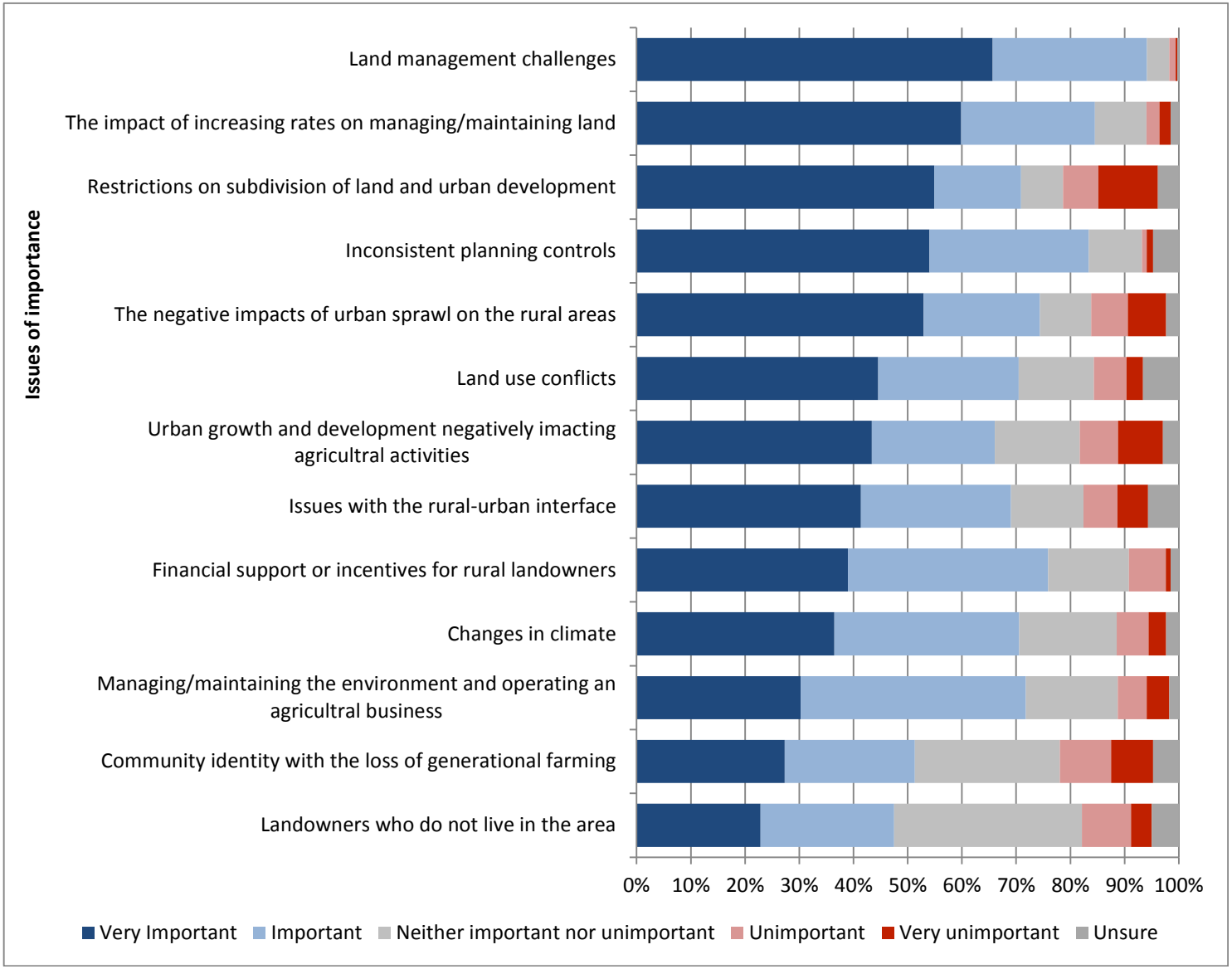
Land owners not living in the area was rated as least important issue by respondents, with only 48% rating this as either 'important' or 'very important'. This issue however, was raised by respondents in later survey comments with regards to the negative impacts of land banking and absentee owners not appropriately managing their land.

Additional issues highlighted by respondents include:

- Insufficient infrastructure (e.g. poorly maintained roads, limited public transport, traffic management, parking and provision of services such as gas and sewerage).
- Illegal dumping of waste on roadsides and private properties.
- Lack of farming viability.
- Property owners not managing their lands appropriately.
- Property rates being too high.

Development of the rural areas was also raised as an additional issue, however there were contradictory viewpoints. Some respondents advocated for more development (over 30 references), while others advocated for either less or no more development (over 40 references).

Table 5 : Issues of importance previously identified by Hume City's rural community



Next 25 years

Three hundred respondents left comments on what they would most like to happen in the rural areas over the next 25 years. Many respondents stated they wanted improved infrastructure, services and facilities that keep pace with the development that was occurring. There was also a desire for the preservation of the current environmental and amenity values and the rural lifestyle. There were mixed views on whether more development should occur. Some respondents stated that they did not want more housing estates and/or urban development and that the rural areas should remain 'as is'.

Respondents who wanted more development provided justification, including the need for affordable housing in Melbourne and surrounds, smaller acreage would result in better land management practices and the unviability of farmland.

Over 270 respondents made statements about what they would least like to happen in the rural areas over the next 25 years. The majority of these comments concerned the detrimental impacts of unconstrained development, such as large/poorly planned housing estates and inappropriate land uses/ commercial developments. There were a small group of respondents however, who were concerned that a lack of development would lead to the rural areas stagnating.

Finally, over 250 respondents identified opportunities for the rural areas over the next 25 years. These opportunities were a mix of increasing housing and development, and retaining the rural feel and lifestyle, while providing the infrastructure and employment to meet growth in a manner that protects the environmental, cultural and heritage values of the area. Emphasis was also placed on the opportunities that small subdivisions (1 to 5 acres) could provide for rural lifestyle and tourism.

Appendix 2: Background

The background context for Rural HIGAP includes a description of the planning and regulatory framework that guides planning for rural and semi-rural areas outside the Urban Growth Boundary and close to airport environs, including Bulla Township. It also discusses the context at a State, Regional and Local level in which the rural areas sit and introduces overarching challenges facing the rural areas.

Planning and Regulatory Framework

The following planning and regulatory framework contain relevant objectives with incorporated strategies to achieve planning outcomes in the rural areas within the municipality. Council must work within this framework when developing policies and guidelines for the rural areas.

Planning Legislation

State Legislation – Planning and Environment Act 1987

Part 3AA- Metropolitan Green Wedge Protection

Part 3AA of the Planning and Environment Act 1987, establishes protective procedures for metropolitan green wedge land. Part 3AA affects proposals for planning scheme amendments that affect the land outside the Urban Growth Boundary and the location of the UGB. Authorisation from the Minister for Planning is required to prepare an amendment to a metropolitan fringe planning scheme that would:

- amend or insert a UGB; or
- amend or insert a provision that relates to or affects green wedge land. This includes the effect of altering or removing any controls over the subdivision of any green wedge land to allow the land to be subdivided into more lots or into smaller lots than specified in the planning scheme.

In addition Part 3AA requires ratification by both houses of the State Parliament to amend subdivision controls that apply to land in the green wedge.

Hume Planning Scheme

State Planning Policy Framework (SPPF)

Clause 11.06 Metropolitan Melbourne

Clause 11.06-4 Place and Identity

Objective: To create a distinctive and liveable city with quality design and amenity.

Strategies:

- Create innovative tourism experiences and encourage investment that meets demand and supports growth in the tourism.
- Respect and protect Melbourne's Aboriginal cultural heritage.
- Strengthen protection and management of green wedge land.

Clause 11.06-6 Sustainability and resilience

Objective: To create a more sustainable and resilient city that manages its land, biodiversity, water, energy and waste resources in a more integrated way.

Clause 11.06-7 Green Wedges

Objective: To protect the green wedges of Metropolitan Melbourne from inappropriate development.

Strategies:

- Ensure strategic planning and land management of each green wedge area to promote and encourage its key features and related values.
- Support development in the green wedge that provides for environmental, economic and social benefits.
- Consolidate new residential development within existing settlements and in locations where planned services are available and green wedge area values can be protected.
- Plan and protect major state infrastructure and resource assets that serve the wider Victorian community, such as airports and ports with their associated access corridors, water supply dams and water catchments and waste management and recycling facilities.
- Protecting important productive agricultural areas such as Werribee South, the Maribyrnong River flats, the Yarra Valley, Westernport and the Mornington Peninsula.
- Support existing and potential agribusiness activities, forestry, food production and tourism.
- Protect areas of environmental, landscape and scenic value such as biodiversity assets, national and state parks, Ramsar Wetlands and coastal areas.
- Protect significant resources of stone, sand and other mineral resources for extraction purposes.
- Provide opportunities for renewable energy generation.

Clause 12 Environmental and Landscape Values

Clause 12.01-1 Protection of Biodiversity

Objective: To assist the protection and conservation of Victoria's biodiversity, including important habitat for Victoria's flora and fauna and other strategically valuable biodiversity sites.

Clause 12.04-1 Environmentally sensitive areas

Objective: To protect and conserve environmentally sensitive areas.

Clause 12.04-2 Landscapes

Objective: To protect landscapes and significant open spaces that contribute to character, identity and sustainable environments.

Clause 13 Environmental Risks

Clause 13.03-2 Erosion and landslip

Objective: To protect areas prone to erosion, landslip or other land degradation processes.

Clause 15 Built Environment and Heritage

Clause 15.03-1 Heritage Conservation

Objective: To ensure the conservation of places of heritage significance.

Clause 15.03-2 Aboriginal Cultural Heritage

Objective: To ensure the protection and conservation of places of Aboriginal cultural heritage significance.

Clause 16 Housing

Clause 16.02-1 Rural Residential Development

Objective: To identify land suitable for rural living and rural residential development.

Clause 18 Transport

Clause 18.04-1 Melbourne Airport

Objective: To strengthen the role of Melbourne Airport within the State's economic and transport infrastructure and protect its ongoing operation.

Local Planning Policy Framework (LPPF)

Clause 21 Municipal Strategic Statement

Clause 21.01 Municipal Profile

Clause 21.01 is broken down into subclauses which describe the context of the municipality and the vision and key influences for the City.

With regards to Hume's local and regional context, subclause 21.01-1 describes the spatial setting of the municipality which is bound by the Merri Creek, Maribyrnong River, Western Ring Road, Calder Freeway, Jacksons Creek and the foothills of the Macedon Ranges. Substantial tracts of rural land are present throughout the municipality, with the upper reaches of the Maribyrnong River and Moonee Ponds Creek located within the rural and green wedge areas.

Subclause 21.01-2 identifies key issues and influences on land uses within the Hume region, highlighting issues related to non-urban land including, population growth, uncertainty for land owners in terms of rural businesses and farming, and the management of green wedge areas. Protecting areas of environmental and heritage significance and areas of significant landscape. The protection and sustainable use of agricultural land, significant landscape, heritage significance, and protection of the curfew free status of Melbourne Airport were also identified.

Subclauses 21.01- 3 contains an excerpt of the 'Vision' and 'Mission' statement from the Hume City Council Plan 2013-2017:

Vision: Hume City Council will be recognised as a leader in achieving social, environmental and economic outcomes with a common goal of connecting our proud community and celebrating the diversity of Hume.

Mission: To enhance the social, economic and environmental prosperity of our community through vision, leadership, excellence and inclusion

This subclause lists strategic planning aims which influence land use and development in the municipality. These aims provide objectives for both the urban and rural areas and relate to the provision of access and choice to a diverse range of housing, employment and regional facilities; and the provision of necessary major and local infrastructure which support growth and maximise the benefits of change to the community. The subclause also identifies the integration of the built environment with the conservation and protection of Hume's significant biodiversity and landscape values.

Subclause 21.01-3 also articulates spatially the land use and development visions specific for the municipality. This includes areas of significant hilltops, conservation and open space areas and existing and proposed land uses, regional facilities and major transport infrastructure.

Clause 21.02 Urban Structure and Settlement

21.02-2 Hume Corridor

Objective 2: To ensure that the planning for growth in Hume minimises the impact on the environment and heritage.

Strategies:

2.1 Ensure biodiversity, landscape, heritage and waterway values are appropriately considered during the planning process.

2.2 Ensure new development maximises the retention of biodiversity, including scattered trees.

2.3 Protect the significant waterways, conservation and open space areas identified in Figure 2 in Clause 21.01.

2.4 Ensure waterways, conservation and open space areas are well integrated within the built environment and provide for appropriate community access.

Objective 7: To reinforce the role of Melbourne Airport as one of Victoria's key economic assets.

Strategies:

7.1 Support land-use and development within the airport precinct that is consistent with its specialist function as a Transport Gateway.

7.2 Ensure that land use and development protects the airport's curfew

free status and is compatible with the operation of Melbourne Airport in accordance with the Melbourne Airport Master Plan.

21.02-4 Non-Urban Land

Objective: To protect the role and enhance the viability of Hume's non-urban areas.

Strategies:

Ensure the green wedge retains a physical separation between the Hume Corridor and Sunbury.

Support rural activities that provide for the sustainable and economical management of non-urban land.

Discourage the use of non-urban land for urban land uses that would be better located and supported within the Urban Growth Boundary.

Discourage small lot excisions and the construction of more than one house on allotments in the rural areas unless it can be demonstrated that there is a link with an established rural enterprise on the land.

Discourage small lot excisions and the construction of more than one house on allotments in the rural areas unless it will assist in the protection of biodiversity values or an identified heritage site.

Ensure any future planning of land north west of Sunbury recognises erosion and land management issues and the native vegetation and visual qualities of the area.

Objective: To limit the expansion of the Bulla township.

Strategies:

Contain the development of Bulla within the existing township boundary.

Encourage the consolidation of smaller allotments in accordance with the Bulla Restructure Plan.

Support low density rural residential development within the Bulla township.

Clause 21.04 Built Environment and Heritage

21.04-3 Landscape Character

Objective: To ensure development protects significant and unique landscape values which contribute to Hume's character and identity.

Strategies:

Ensure that development adjacent to waterways, conservation and open space areas is sited and designed to protect the conservation and landscape qualities of these spaces and considers the opportunity for improved community access.

Ensure the retention of existing vegetation incorporates the necessary buffers to appropriately manage its ongoing protection.

Objective: To protect significant views and vistas of hilltops, escarpments, ridgelines, and creek valleys and waterways.

Strategies:

Protect the deeply incised creek valleys and escarpments of Jacksons Creek, Emu Creek, Harpers Creek, Deep Creek and Merri Creek and their tributaries.

Ensure that the siting and design development on hillsides responds to contours to minimise its visual impact on the landscape and avoid extensive earthworks which will substantially alter the natural landform.

Objective: To protect and encourage significant roadside vegetation that contributes to Hume's landscape character.

Ensure the upgrade on rural roads to an urban standard retains existing vegetation in the road reserve.

21.04-4 Heritage

Objective: To identify, recognise and protect places of heritage, cultural and social significance.

Strategies:

Ensure that the productive use of non-urban land does not compromise identified heritage values.

Ensure development maintains the visual prominence of historic buildings and local landmarks.

Ensure that additions, alterations and replacement buildings are sympathetic to the heritage place and surrounds.

Ensure that the use and development of heritage places and adjoining land is compatible with and does not adversely affect the significance of the place.

Clause 21.08 Natural Environment and Environmental Risk

21.08-1 Natural Heritage

Objective: To protect, conserve and enhance natural heritage for biodiversity, amenity and landscape character purposes.

Strategies:

Ensure development seeks to preserves the diversity and long term security of terrestrial and aquatic species and their environments.

Ensure development seeks to retain native vegetation, including scattered indigenous trees.

Conserve and re-establish areas of natural habitat where appropriate.

Protect and enhance existing habitat and open space corridors, including waterways, with significant landscape and/or flora and fauna values.

21.08-2 Environmental Land Management

Objective: To improve the land health of the natural environment.

Strategies:

Ensure development avoids, minimises or mitigates the impacts of erosion.

Encourage the appropriate use of protective measures for erosion including geotechnical recommendations, storm water flow and volume measures, and the appropriate use of construction materials, landscaping, watering systems and impervious surfaces.

Encourage the retention of vegetation on erosion prone soils.

Ensure development works avoid, minimise and mitigate the generation of fill.

Ensure recipient sites for large scale fill deliver improvements to the land which generates a net improvement to the natural landscape.

Ensure that the placement of fill on rural land is controlled through an Environmental Management Plan.

21.08-3 Water Quality and Conservation

Objective: To protect water quality and ensure that water resources are managed in a sustainable way.

Strategies:

Ensure land use and development proposals identify and consider their impact on surrounding waterways and have the capacity to manage storm water onsite.

Ensure the siting, design, operation and rehabilitation of landfills minimises impacts on groundwater and surface water.

Clause 22.02 Rural Land Character and Urban Design Local Policy

Clause 22.02 adds further details to Council's approach in the protection of rural land character. It ensures the siting and design of developments protect and enhance the character of the City's rural areas and that significant landscape features are safeguarded from poor design outcomes. Policy sets out a number of urban design strategies including for building siting, development on/near ridges, hillsides and hilltops, and approach roads.

Clause 22.04 Townships Local Policy

Specific content to townships located in the municipality is detailed in Clause 22.04. It contains objectives which aim to preserve and enhance significant natural and cultural heritage features and amenities that contribute positively to the character of the townships. Strategies within this policy specific to Bulla Township state:

Within the Deep Creek valley:

- Access roads and service lines should follow contour lines as far as possible.
- Strong 'architectural statements' and buildings that are not residential in scale are avoided.
- Buildings are sited to maximise the retention of existing remnant vegetation.
- Single-storey or split-level buildings are preferred.

Planning Scheme Controls

ZONES

Green Wedge and Green Wedge A Zones apply to all private land in Hume's rural areas. These zones were applied in May 2004 under Amendment VC23. The zoning pattern is illustrated at Figure 3.

Clause 35.04 Green Wedge Zone

The Green Wedge Zone (GWZ) occupies the majority of land within the scope of the study area, with the purposes of:

- Providing for the use of land for agriculture.
- Recognising, protecting and conserving green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.
- Encouraging use and development that is consistent with sustainable land management practices.

- Encouraging sustainable farming activities and provide opportunity for a variety of productive agricultural uses.
- Protecting, conserving and enhancing the cultural heritage significance and the character of open rural and scenic non-urban landscapes.

Green wedge zones are designed to encourage use and character of land for agricultural purposes in rural areas whilst still supporting a range of social, environmental and economic outcomes. The substantial tract of land within the GWZ provides an opportunity for a variety of farming enterprises and production.

Under the GWZ a planning application may be made for uses such as an exhibition centre, hall, and a function centre or winery. However these uses must also be in conjunction with agriculture, natural systems, outdoor recreation facility or rural industry.

The GWZ also allows for the use of land to be developed into an indoor recreation facility, however it must be for equestrian based leisure, recreation or sport. Places of

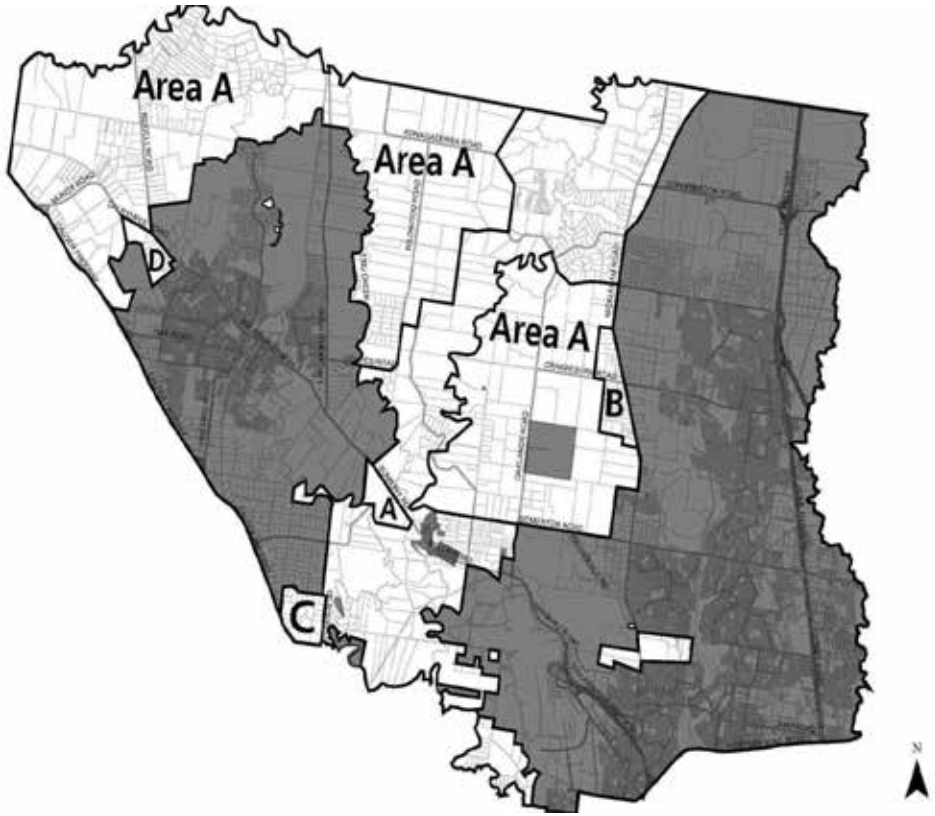
worship, primary and secondary schools may be allowed under this clause subject to planning approval

A schedule to the GWZ limits the use of land for rural residential living by setting requirements for minimum subdivision size. Figure 1 correlates to the following requirements for minimum subdivision size:

- Area A: 80 hectares
- Area B: 12 hectares
- Area C: 8 hectares
- Area D: 6 hectares.

In addition, the schedule to the zone also changes the permit requirements for earthworks so that a permit is required for all land where earthworks involving the receipt, importation, stockpiling or placement of more than 100 cubic metres of fill is proposed to be undertaken.

Figure 1: Areas of Green Wedge Zone land subject to minimum subdivision size



Clause 35.05 Green Wedge Zone A

The Green Wedge Zone A (GWZA) is applied in the western region of the municipality to the north and south of Sunbury. Only the GWZA area south of Sunbury is within the scope of this project as the areas to the north of Sunbury are included in the urban growth boundaries.

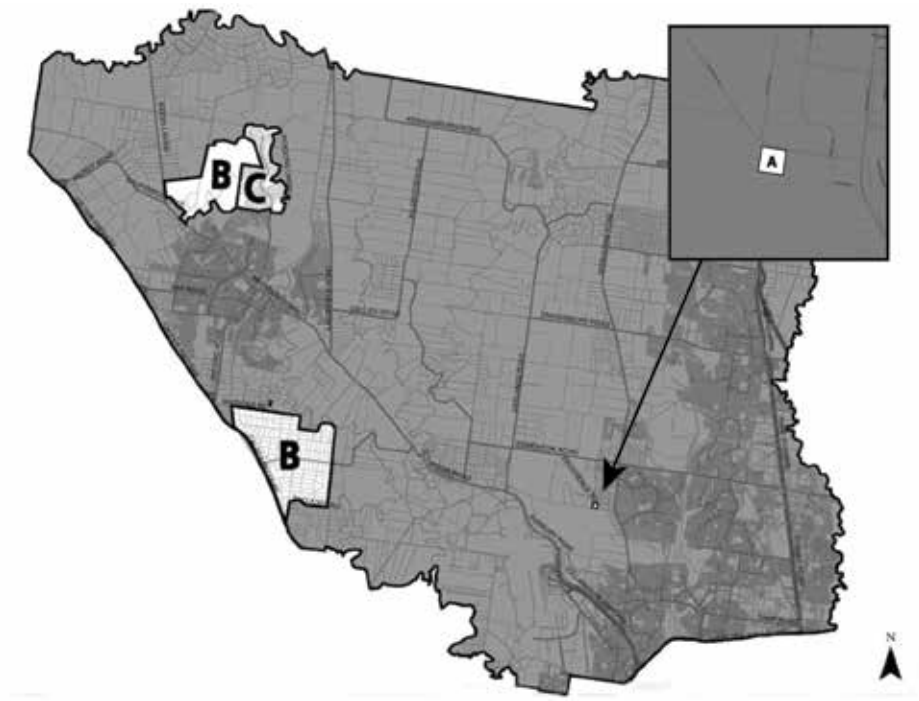
The purposes of the GWZA include:

- To provide for the use of land for agriculture.
- To protect, conserve and enhance the biodiversity, natural resources, scenic landscapes and heritage values of the area.
- To ensure that use and development promotes sustainable land management practices and infrastructure provision.
- To protect, conserve and enhance the cultural heritage significance and the character of rural and scenic non-urban landscapes.
- To recognise and protect the amenity of existing rural living areas.

GWZA is similar to the GWZA as they both recognise and protect non-urban land outside the Urban Growth Boundary UGB and encourage the use of land for agricultural purposes. Amenity impacts on these existing areas are accommodated through a schedule to the zone. These include:

- Changes to requirements for minimum subdivision size, with land identified on Figure 2 below:
  - Area A: 8 hectares
  - Area B: 6 hectares
  - Area C: 1 hectare
- Changes the permit requirements for earthworks so that a permit is required for all land where earthworks involving the receipt, importation, stockpiling or placement of more than 100 cubic metres of fill is proposed to be undertaken.

Figure 2: Areas of Green Wedge Zone A land subject to minimum subdivision size



OVERLAYS

A range of overlays throughout the rural areas of the municipality operate together with zone requirements listed above. Overlays allow Councils to determine the type of development that occurs and are generally used to respond to a specific issue or set of issues, such as an environmental concern or flooding. Figures 7 and 8 (pages 16 and 17) illustrate the location of overlays applying in Hume's rural areas.

Clause 42.01 Environmental Significance Overlay

The Environmental Significance Overlay (ESO) is applied to protect the waterways located in the municipality which present significant visual and geological features of the rural landscape which service important environmental, drainage and recreation functions. These functions contribute to the character, amenity and identity of the region. The overlay is designed to achieve a wide range of environmental objectives aimed to protect and maintain ecological, waterway, recreational, landscape character and heritage values.

Clause 42.02 Vegetation Protection Overlay

The Vegetation Protection Overlay (VPO) is present in the north-western region of the municipality, and is designed:

- To protect areas of significant vegetation.
- To ensure that development minimises loss of vegetation.
- To preserve existing trees and other vegetation.
- To recognise vegetation protection areas as locations of special significance, natural beauty, interest and importance.
- To maintain and enhance habitat and habitat corridors for indigenous fauna.
- To encourage the regeneration of native vegetation.

The VPO protects rare vegetation of the Valley Grassy Forest vegetation community, which includes several species of Eucalypt that are not found anywhere else within the municipality and thus, are regionally significant. The Overlay also recognises and protects the only areas of true Koala habitat in Hume to the north east of Sunbury. Mt Holden reserve and the Sunbury Landfill are also areas which are protected by the VPO.

Clause 43.01 Heritage Overlay

There are a number of heritage places located in the green wedge. The purpose of the overlay is:

- To conserve and enhance heritage places of natural or cultural significance.
- To conserve and enhance those elements which contribute to the significance of heritage places.
- To ensure that development does not adversely affect the significance of heritage places.
- To conserve specifically identified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.

Clause 45.01 Public Acquisitions Overlay

The Public Acquisitions Overlay (PAO3) applies to a band of land over the rural region of the municipality. The PAO3 has been applied to enable land to be acquired in the future for the Outer Metropolitan Ring/E6 Transport Corridor of which VicRoads is the planning authority.

Clause 45.08 Melbourne Airport Environs Overlay

A significant portion of the Green Wedge Zone is occupied by the two schedules to the Melbourne Airport Environs Overlay (MAEO) (refer Figure 8).

The MAEO is designed:

To ensure that land use and development are compatible with the operation of Melbourne Airport in accordance with the relevant airport strategy or master plan and with safe air navigation for aircraft approaching and departing the airfield.

- To assist in shielding people from the impact of aircraft noise by requiring appropriate noise attenuation measures in dwellings and other noise sensitive buildings.
- To provide for appropriate levels of noise attenuation depending on the level of forecasted noise exposure.

The Airport has critical implications for surrounding land uses, in particular sensitive uses that may be most affected by exposure to aircraft noise. The MAEO denotes areas where a high number of aircraft movements occur at the loudest noise level. The purpose of this Overlay is to regulate use and development that would otherwise be permitted under the zone that applies to the land. It ensures that planning permits for land use and development are compatible with the operation of Melbourne Airport, and that the exposure to aircraft noise is limited.

The green wedge plays a significant role in providing a protective buffer between Melbourne Airport and the surrounding urban and rural landscape. It restricts development in areas of frequent aircraft movement, and limits the existing and potential impacts to the natural environment, biodiversity, heritage and rural landscapes.

Schedule 1 of the MAEO identifies areas that are subject to high levels of aircraft noise based on the 25 Australian Noise Exposure Forecast (ANEF) contour. It applies the need for a permit to use land and construct a building or carry out works for a Dwelling and/or Dependent person's unit and restricts the use of a lot to a maximum of one Dwelling and one Dependent person's unit. A permit is also required for a range of uses such as a host farm, place of assembly, restricted recreation facility and veterinary centre. Certain uses including a childcare care centre, education and hospital facilities are prohibited.

Schedule 2 identifies areas that may be subject to moderate levels of aircraft noise based on the 20-25 ANEF contours. This schedule applies the need for a permit to use land for a dwelling, and the development of a single lot for two or more dwellings which must not exceed a density of one dwelling per 300 square metres. A permit is required for uses such as accommodation, childcare and education centres, office and place of assembly.

Clause 44.04 Land Subject to Inundation Overlay

The Land Subject to Inundation Overlay (LSIO) can be found around waterways. The purposes of this overlay are:

- To identify land in a flood storage or flood fringe area affected by the 1 in 100 year flood or any other area determined by the floodplain management authority.
- To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.
- To reflect any declaration under Division 4 of Part 10 of the Water Act, 1989 where a declaration has been made.
- To protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).
- To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.

Clause 57.01 Metropolitan Green Wedge Land

Clause 57.01 is specific to green wedge land which occupies a majority of the rural areas in the municipality. It is designed to protect the agricultural, environmental and cultural heritage values from incompatible uses and development. In addition, Clause 57.01 provides deeming provisions for metropolitan green wedge land.

State and Local Strategies & Plans

Metropolitan strategies

Plan Melbourne 2017-2050

Plan Melbourne 2017-2050 is the current Metropolitan Planning Strategy which provides directions and initiatives specific to Rural HIGAP with regards to agricultural and biodiversity uses in non-urban areas. It places a high emphasis on maintaining the current Urban Growth Boundary and protected the green wedges for its agricultural, natural resource, environmental, cultural and health and well-being benefits to the wider community.

The following directions and policies are most relevant:

- Direction 1.4 – Support the productive use of land and resources in Melbourne's non-urban areas.
- Policy 1.4.2 – Identify and protect extractive resources (such as stone and sane) important for Melbourne's future needs.
- Direction 4.5 – Plan for Melbourne's green wedges and peri-urban areas.
- Policy 4.5.1 – Strengthen protection and management of green wedge land.
- Policy 4.5.1 – Protect and enhance valued attributes of distinctive areas and landscapes.
- Policy 6.1.2 – Facilitate the update of renewable energy technologies. (The policy detail recommends "investigating opportunities for renewable energy initiatives in Melbourne's green wedges and peri-urban areas".)

In addition to these specific Directions and Policies, Plan Melbourne outlines Desired Planning Outcomes for Green Wedges and Peri-Urban Areas, such as:

- Environmental and Biodiversity assets - Protecting and enhancing environmental and biodiversity assets, including rivers and creeks, forests and grasslands. Maintain and enhance the diversity of indigenous flora and fauna habitats and species and achieve a net gain in the quantity and quality of native vegetation.
- 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. Recognised high-value landscape features include open farmed landscapes, sites of geological significance, ranges, hills and ridges.
- Water supply catchments - Manage and protect groundwater and waterways to improve water quality, protect the environment and provide a reliable and secure water supply.
- Natural Hazards - Avoid significant land disturbance, reduce the occurrence and impact of soil erosion and salinity.
- 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. Key agricultural areas include Keilor.
- 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.
- State-significant infrastructure - Protect regionally significant assets such as metropolitan landfills, airports and flightpaths. Provide opportunities for renewable energy generation.

- Mineral, sand and stone resources - Protect 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.
- 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.

Importantly, Direction 2.1 will "manage the supply of new housing in the right locations to meet population growth and create a sustainable city". To achieve this Policy 2.1.1 will:

Maintain a permanent urban growth boundary around Melbourne to create a more consolidated, sustainable city.

Policy 2.1.1 emphasises its interrelationship with other priorities of the Plan which are to:

- Reduce urban sprawl.
- Protect the values of non-urban land opportunities for productive agricultural land and significant landscapes.

Local strategies

Hume Horizons 2040

Hume Horizons 2040 is a community plan that sets out the community's vision for the future. A key objective in this strategy aims to achieve a sustainably built and well maintained city with an environmentally engaged community, through the protection, enhancement and maintenance of the city's natural heritage, environment and rural spaces.

Land and Biodiversity Plan 2015-2019

The Land and Biodiversity Plan 2015-2019 provides an action plan to manage land, heritage and biodiversity within Hume. The plan identifies significant agricultural uses of land in rural areas, with grazing predominantly occupying 85% of rural land. It also identifies a minimum of 30% of native vegetation cover in rural areas which is considered necessary for bird and mammal persistence. The native vegetation cover as of 2015 is 24% and therefore there is currently a shortfall of 6%. Actions have been identified in order to achieve the protection, management and enhancement of these significant aspects.

- Action No. 1: Develop a Landscape Connectivity Plan that identifies existing and potential vegetation corridors, buffers and stepping stones between core habitat areas and barriers to species movement throughout the landscape.
- Action No. 5: Implement the actions of the Environmental Planning Audit 2014, including updating the existing planning mechanisms to protect significant landscapes, features, conservation areas and offset sites.
- Action No. 8: Identify green wedge values and optimal land use options to support a productive and well-managed green wedge.
- Action No. 17: Undertake a heritage study to identify Indigenous cultural heritage sites on Council land and provide recommendations for their protection.

- Action No. 18: Adequately protect and manage cultural heritage sites and ensure they are included in relevant masterplans, management plans, maintenance regimes, and contractor site introductions.

Economic Development Strategy 2030

The Economic Development Strategy 2030 provides a key strategic goal to support existing industries and enterprises to prosper and develop sustainably. It identifies opportunities for rural agri-businesses to develop sustainably and identify other suitable business uses in the rural area. These include uses which align with agriculture, the rural industry and natural systems under the GWZ, such as markets, restaurants, residential hotels and freezing and cooling storage.

An objective in this strategy is to 'Stimulate a Green Economy', and will be implemented by supporting new emerging uses in the green wedge area including the development of sustainable agri-businesses, tourism-related businesses and alternative energy generation.

With reference to the Hume Tourism Strategy 2011-2015, Tourism-related businesses include tours or network of outlets/ direct to public businesses, which provide a hands-on experience; and places of accommodation (i.e. hotels and bed and breakfasts).

Hume Agribusiness Project

The Hume Agribusiness Project was completed in 2013 and includes a comprehensive study on the production activity and capability study of agriculture and agribusiness within the municipality. It details changes in uses, climatic conditions and physical attributes of Hume's rural land which have shaped the shifts in the agribusiness industry over the past 30 years. Findings include the challenges that have arisen over time and resulted in reduced production capacities, low agricultural returns and uncompetitive and unviable agri-businesses.

The project findings also include the trends and issues impacting the future use of rural land, which include:

- weed control;
- water availability and low rainfall throughout Hume City;
- carrying out farming practices living in urban-rural interface areas;
- farm viability, and producing income from agri-business industries;
- lost sense of rural community within rural Hume, including Hume no longer recognised as a rural area by organisations and government departments; and
- planning restrictions and overlays which affect land use activities and restrict agricultural practices.

Tourism Strategy 2011-2015

The Tourism Strategy 2011-2015 identifies strengths, weaknesses and potential opportunities for tourism in the municipality.

The strategy:

- Identifies green wedge planning controls as an inhibitor of some tourism opportunities in Hume, such as accommodation, recreation and hospitality industries.
- Identifies opportunities to improve the tourism potential of the rural area.
- Identifies greater utilisation of Woodlands Historic Park for tourism activity (e.g. wildlife, cycling and Indigenous education).

It aims to:

- Increase awareness of Hume's current and historic aviation heritage. Explore aviation heritage in Hume. Audit and profile aviation events and history. Promote plane spotting vantage points within Hume.
- Hold discussions with Parks Victoria with regards to Woodlands Historic Park and explore partnership opportunities.

Hume Corridor Hume Integrated Growth Area Plan (HIGAP) 2015

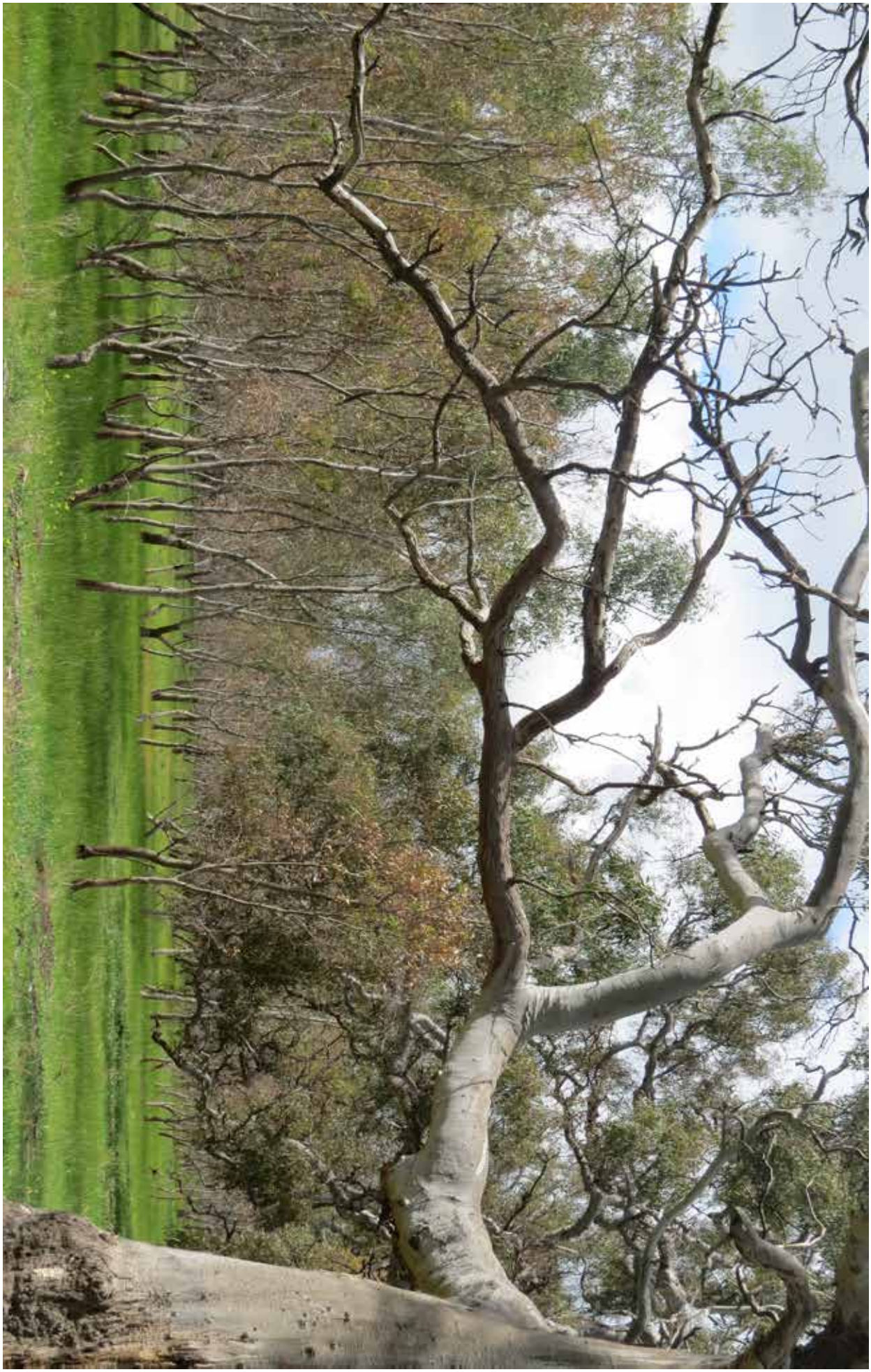
The Hume Corridor Integrated Growth Area Plan is a two-part local strategy containing a spatial strategy and infrastructure and delivery strategy. The plan aims to achieve the objectives set out in Hume Horizons 2040 by implementing policies and strategies which reflect Council's position in land use and infrastructure provision. HIGAP contains sections which outline the changes required to manage growth and deliver the vision. The strategy also aims to identify issues and opportunities the Hume Corridor faces, including the lack of access to a diverse range of jobs, tertiary education, hospital facilities and adequate public transport. HIGAP aligns very closely with The Growth Corridor Plans approved by the State Government in 2012.

In regards to rural areas, HIGAP addresses the UGB and significant natural heritage areas located on the periphery of the Hume corridor. HIGAP aims to protect the land west of Mickleham Road, north of Somerton Road by aiming to support landholders in maintaining viable businesses and continuing to improve natural heritage values. It establishes Council's position on the protection of the UGB, and the restricted changes considered.

Sunbury Hume Integrated Growth Area Plan (HIGAP) 2012

Sunbury HIGAP has a similar format to the Hume Corridor Plan, a spatial strategy accompanied by a delivery and infrastructure strategy. The plan aligns closely with the principles set out in The Growth Corridor Plans mentioned in the previous paragraph. Sunbury HIGAP acknowledges Sunbury's status as a self-contained township, with the ability to absorb the scale of growth proposed by the State Government. The plan aims to manage the growth in the township by establishing strategies which reflect improvements to transport connectivity and large scale health and education facilities.

Within the plan, it is acknowledged that Sunbury is surrounded by rural land occupied by agricultural uses such as wineries and vineyards. In order to maintain and protect the surrounding rural landscape, strategies guiding the future scale, location and form of a diverse range of land uses and development outcomes are addressed. This includes minimising the visual intrusion of new development on Sunbury's landscape by implementing building height controls and setbacks.



Hume City Council

1079 Pascoe Vale Road, Broadmeadows
PO Box 119, Dallas, Victoria 3047
Telephone 9205 2200 Facsimile 9309 0109

Customer Service Centres

Open Monday to Friday
8am–5pm

Broadmeadows
1079 Pascoe Vale Road

Craigieburn
75-95 Central Park Avenue

Sunbury
40 Macedon Street

contactus@hume.vic.gov.au
www.hume.vic.gov.au

HumeLink

Hume City Council's
multilingual telephone information service.
General enquiries: Telephone 9205 2200

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