EnPlan

Mount Alexander Shire Council

Rural Land Study

21 January 2014

Explanation

This document is a Report for the *Mount Alexander Rural Land Study* (Mount Alexander Shire Council Contract M895) that has been prepared with the assistance of community consultation. The study focuses on future land use planning matters. It does not consider day-to-day land management issues or practices for existing land use, such as weed control, soil conservation, cropping practices or stocking rates.

The study considers private rural land. It does not directly consider public land.

The document has been prepared by EnPlan Partners based on consideration of publicly available publications and other available information including consultation feedback received to 1 July 2013. All reasonable effort has been made throughout the document to identify references used, however some 'minor' references may not be identified.

Strong effort has been made to incorporate acknowledgement of the sometimes conflicting community feedback that has been received, particularly regarding the matter of rural subdivision, rural living, and conflict potentials associated with different land uses. This is not made through reference to specific feedback, but through general content.

Maps used in this document are generally at a strategic scale. They cannot be used for consideration of specific sites or properties. The maps provide an indication of what can be expected in an area, rather than a precise description. They should be read with in conjunction with associated text.

Considerable effort has been devoted to accuracy based on information available to the project team. However EnPlan Australia Pty Ltd is not responsible for any use or interpretations of this document by other parties.

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Document clearance

This document is cleared as follows:

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EXECUTIVE SUMMARY

This Rural Land Study provides the strategic framework for the future use, development and conservation of the Shire's rural lands.

The study will be used by Council to help inform it on any proposed amendments and planning decisions for rural lands the Mount Alexander Planning Scheme. It will also provide the community with the basis for Council decision making on those matters.

The study is for private rural land and considers public land only to the extent that land use and development on private land may impact public land values (and vice versa).

The study focuses on future land use planning. It does not consider day to day rural land management issues for existing land use, such as, weed control, soil erosion control, stocking rates etc.

The study is concerned with key rural land uses of agriculture, biodiversity and landscape, rural living, cultural heritage and tourism and recreation. In terms of strategic planning the study addressed each of these major land uses in terms of understanding the existing situation, consideration of future directions and recommendations for planning policy and the application of zoning and overlays. Highlights from the study are summarised below and background and detailed recommendations can be found in the body of this study.

The main conclusions are identified below.

Agriculture

Policy

Amend the MSS to a minor extent to reinforce the importance of protecting and enhancing agriculture across the rural areas of the Shire and highlight the importance of protecting agricultural land by minimising potential for conflict through the introduction of non-agricultural land uses.

Zoning

Retain the Farming Zone across the main broadacre farming areas of the Shire with the current 40 ha minimum area for subdivision and a dwelling without the need for a permit.

Retain the Farming Zone over the Harcourt horticultural area as well as the current 40 ha minimum lot size provisions. This will assist in maintaining the primary use of land in the area for farming without creating undue expectations for other forms of land use to occur that may undermine the value of the area for primary production.

Delay any consideration of applying the Rural Activity Zone (RAZ) until the State Government has announced the outcome of its current review of rural zones to be applied in Victoria.

Biodiversity and natural landscapes

Policy

Amend the MSS to identify 'Biodiversity and Natural Landscape' as a major issue in its own right, and to emphasise the prime importance of habitat by removing the artificial and confusing distinction between 'native vegetation' and 'biodiversity'.

Rural Conservation Zone (RCZ)

Further detailed work is required to develop criteria and identify potential areas for potential application of the Rural Conservation Zone in the Shire.

Overlay (ESO)

Further work to be conducted to expand the application of the ESO for biodiversity protection and enhancement of habitat and biological connectivity.

Native Vegetation Precinct Plans

Consideration of the application of the Native Vegetation Precinct Plan as part of the requirements of any Development Plan Overlay (DPO) for future subdivisions within areas of environmental sensitivity or value and as part of the requirements of the proponent for any future proposed subdivisions for rural living.

Habitat studies

Consider a collaborative study by Council with the Department of Environment and Primary Industry (DEPI) and North Central CMA to document the habitat relationships between threatened flora and fauna and the EVCs in the Shire' as a basis for making future decisions on appropriate zoning and overlays for protection and enhancement of threatened species.

Landscape studies

Consider a scenic landscape study to inform planning policy and the potential application of other planning tools (eg: zoning and overlays) to protect and enhance the scenic values of the Shire.

Cultural heritage

Policy

Identify further policy required to underpin the contribution or role of the Shire's rural areas in promoting the major objective vision identified in the Shire's *Heritage Strategy 2012-2016* as a '*broad and inclusive vision of cultural heritage as central to the identity and well-being of Mount Alexander*'.

Rural living

Policy

Revise the MSS to include reference to Victoria's Planning Practice Note 37: *Rural Residential Development* (June 2012).

Issues critical to consideration of rural living include risks to human life from rural living settlement in areas subject to bushfire hazards, and position relative to open potable water supply catchments where unsewered development can risk water quality and potentially human health.

General

Undertake detailed assessment to develop strategic sites for future investigation for rezoning to the Rural Living Zone in recognition that emergent government policy since the preparation of the 2006 *Rural Living Strategy* and pertaining particularly to bushfire hazard and water quality in potable water supply catchments has 'changed the goal posts' for rural living development, including the rezoning of land.

Tourism

Policy

Increase recognition of tourism in the MSS in the Planning Scheme.

General

Potentials for tourism associated with rural land need to be considered in a holistic Shire-wide context and within the Stated Tourism region framework. However, any strategic study regarding tourism in Mount Alexander Shire should consider any opportunities for growing the nature-based and agricultural-based tourism opportunities, and the potential role of the planning scheme in reinforcing the tourism industry.

1 CURRENT VISION FOR THE SHIRE'S RURAL LANDS

This Chapter identifies the Council's current vision for the Shire, expressed through the Mount Alexander Council Plan and the Mount Alexander Planning Scheme.

1.1 Council Plan 2013-2017

The Council's broad vision for the future is '*a thriving community working together to create a sustainable and vibrant future'*.

The Council has identified four goals for the next four years:

- A vibrant and healthy community;
- Better community facilities;
- A thriving local economy; and
- Building sustainable communities.

The goal for "Building sustainable communities' includes a number of priorities that relate strongly to the Rural Land Study for directions for strategic planning for future land use and development. They are:

- *Lead by example in our approach to sustainability and the environment and actively respond to climate change.*
    - *Strategy – Respond to climate change by planning for increased temperatures and extreme weather events.*
- *Collaborate with the community to protect and celebrate our natural and built environment.*
    - *Strategy - Use the Planning Scheme and Council powers to bring about sustainable environmental outcomes.*
- *Utilise land use and development policies to deliver outcomes appropriate for the long term needs of our communities;*
    - *Strategy - Ensure productive agricultural land for ongoing food and fibre production.*
- *Protect and promote our built, cultural and natural heritage.*
    - *Strategy – Build a shared vision of the importance of heritage in the Shire.*

1.2 Mount Alexander Planning Scheme MSS

The Planning Scheme (Clause 21.03) provides the following current vision for future land use and development in the Shire's rural lands. The statement links economic, environmental and social values and aspirations

> *The Mount Alexander Shire's townships and rural environs engender an identifiable character which reflects the areas unique heritage, its beautiful landscapes and the quality of life.*
>
> *The Shire Council will seek to manage and sensitively develop the built and natural resources of the Shire in ways which are ecologically sustainable so as to secure an improved economic future, enhance the lifestyle quality of the community and maintain the unique heritage character.*

Clause 21.03 also identifies the following mechanisms for achieving the vision:

- **Improved decision making for land use** considering the Regional Catchment Strategy to improve the environment of the Loddon and Campaspe catchments.
- (Protecting/'enhancing) places and areas of **natural and cultural heritage**.
- **Consolidating urban growth** to maximise infrastructure and reduce environmental impacts.
- **Increasing economic development potential** of the agriculture and horticulture industries.
- **Protecting agriculture land uses** from incompatible non-agricultural based development.

- Maintaining the Shire's biodiversity

2 THE PLANNING FRAMEWORK FOR RURAL LAND.

This Chapter collates the key rural land features of the planning scheme.

All planning schemes in Victoria, including the Mount Alexander Planning Scheme contain a State Planning Policy Framework (SPPF) section, a Local Planning Policy Framework (LPPF) containing a Municipal Strategic Statement (MSS) and a Local Planning Policy (LPP) section. These provide the primary basis for Council's land use planning and planning decisions for all lands including rural areas.

- State policy is set by the Government of the day as the overarching policy framework.
- The MSS and local policy interpret State policy in local context.

Land use zones are applied to all land in the state. They control the spatial nature and relationships between land uses across the state. The suite of lands use zones able to be applied is set by the State government in the Victoria Planning Provisions (VPP). The current land use zones applied in the Shire have evolved over time and any changes to land use zoning require government approval subject to meeting the objectives of the *Planning and Environment Act* 1987. There are four land use zones applicable to rural (non-urban/township and non-public land) areas.

The VPP also contains a suite of planning around 20 Overlays which may be applied over land to regulate matters such as the siting of buildings and works, protection of views and heritage values and vegetation removal.

Decision guidelines for planning decisions are specified in the content of Planning Zone and Overlay and at Clause 65 in the Planning Scheme.

When a planning application is proposed, the responsible authority must decide whether it will produce acceptable outcomes in terms of the State Planning Policy Framework, the Local Planning Policy Framework, the purpose and decision guidelines of land use zones, and relevant overlays and any other decision guidelines in Clause 65.

The Mount Alexander Planning Scheme currently places strong emphasis on the economic and social importance of agriculture and rural living within the Shire, as the two primary land use categories on freehold rural land.

Agriculture is the primary use across most of the Shire particularly in the eastern and western portions of the Shire.

Rural living (variously mixed with agriculture) occurs primarily in the south-east corner of the Shire (north of and close to Kyneton), and across the central portions of the Shire, generally close to Castlemaine and Maldon and to other small towns on the sedimentary goldfields hills areas of lower agricultural quality.

Other uses primarily nature conservation, occur on these two main land use categories.

The planning scheme is largely silent on the current and potential role of tourism on the Shire's rural land and on climate change.

2.1 Municipal Strategic Strategy (MSS)

The **MSS** (at clause 21 in the Planning Scheme) identifies the Shire's main strategic land use planning issues. The following tabulation collates its main rural land element. These are in summary:

- Pressures for **population growth** are generated by factors such as: location in the Calder corridor; road and rail improvements (ie: reduced travel times to Bendigo and Melbourne with the upgrading of regional rail travel).
- Catering for an **ageing population**.
- Protecting **cultural and natural heritage** values with diverse natural landscapes and a rich historical heritage from the gold rush era.

- Provision of adequate settlement **infrastructure** including extended reticulated water and sewerage services.
- Improving the condition Loddon-Campaspe catchment for both the natural environment and economy of the municipality.

2.2 Local Planning Policy

Local Planning Policy (at Clause 22) identifies Council's planning policies that must link closely with the 'big picture' vision of the Municipal Strategic Statement, and with State policy. The key points in the LPP are summarised below. Many policies more-or-less replicate content identified above in the MSS. This content is important because it establishes the Shire's policy framework against which planning decisions are made. In some situations, policies may seem to be in conflict. Where this happens, the Council needs to take a reasoned decision that is in the best interests of the wider community.

Table 1: Summary of main local policies relating to rural land

Planning scheme Clause	Content (summarised)
Urban Growth (Cl. 22.12)	Ensure that urban development and agriculture are separated such that agriculture is not prejudiced or limited by urban development.
Catchment and Land Protection (Cl.22.13)	New State policy guidelines (***Planning permit applications in open, potable water supply catchment areas November 2012***) reinforce the importance of protecting water quality for public health and safety, and set the parameters that must be considered for planning decisions in such catchments.
Wildfire Management (Cl. 22.14)	Apply *Wildfire Management Overlay (WMO)* and ensure that new land use and developments do not increase fire risk and include adequate fire protection measures in part through a *Municipal Fire Prevention Plan*.
Hilltop / Ridgeline Protection (Cl. 22.15)	Protect important environmental/visual amenity areas from inappropriate development including limiting development on prominent ridges and hilltops.
Steep Land (Cl. 22.16):	Protect steep land from further unsuitable development and ensure that any development respects the natural characteristics and environmental conditions, and complies with strict site conditions.
Roadside Conservation (Cl. 22.19)	Importance of the character/conservation value of roadside vegetation is recognised for the importance of remnant stands and examples of trees/plants and for future regeneration.
Natural and Cultural Heritage (Cl. 22.20):	The planning scheme treats the Shire's natural and cultural heritage jointly in identifying them as highly valued and fundamental assets to the Shire's character and attractiveness for living investing and visiting. Preservation and maintenance are important including through the planning and development of new uses and developments
Water Supply Catchment Area (Cl. 22.21)	(Eppalock and Cairn Curran catchments). Applies the *Environmental Significance Overlay (ESO)*. Identifies the important role of catchments to human health and seeks to protect/maintain water quality and quantity catchments and reservoirs, and encourage best practice land/water management within catchments, broadly including prevention of erosion, siltation, turbidity, and nutrient loads in watercourses, drains and reservoirs. Sustainable land use needs to integrate with protection of water quantity/quality.
Excisions, construction of housing and re-subdivision of land in the farming and rural living zones. (Cl. 22.22)	Fragmentation of productive agricultural land by inappropriate subdivision is to be avoided to maintain the land's productive capacity. Mechanisms include ensuring that lots smaller than specified in the FZ Schedule are consistent with the Zone purposes, and limiting land subdivision that will be incompatible with sustainable land/resource use. Land subdivision that would excise a dwelling is to not prejudice surrounding rural productive activities.
Animal Keeping and Greyhound Training (Cl. 22.24)	While animal keeping facilities represent an important local industry, protection of residential amenity and environmental quality need protection through proper siting/design of the use and development.
Sheds and outbuildings	Sited and designed should not adversely impact on landscapes associated with important highway routes, historic areas, attractive townships and significant landscapes.
Dams in the LDRZ and RLZ (Cl. 22.31):	Water management and proper siting/design of dams is important in context of the Shire's extensive rural areas and continued development of rural living and low density residential

	areas. Dam sizes should relate to site suitability, and intended use, and the surrounding environment (eg avoid environmentally sensitive areas and minimise tree loss.

2.3 Land use Zones

Four land use zones can be applied to private land in rural Victoria. Appendix 2 provides a map of the Zones as applied across the Shire.

Farming Zone (FZ)

FZ is the most common land use zone applied to **agricultural areas** including those in Mount Alexander Shire.

The purpose of the FZ is to ensure that non-agricultural uses, particularly dwellings, do not adversely affect the use of land for agriculture. Most agricultural uses do not require a permit in the FZ, include cropping, timber production, and various livestock husbandry and keeping uses including cattle feedlots (of up to 1,000 head). Intensive animal husbandry requires approval and feed lots over 1,000 head require approval.

A permit is required in the FZ anywhere across the Shire to construct a single dwelling on lots less than 40ha and to subdivide land into lots of less than 40ha. While this can be varied in a planning scheme by amendment to the schedule to the FZ, there is no such variation in the Mount Alexander Planning Scheme.

Figure 1: Key provisions in the Schedule to the FZ as applied across the Shire.

	Land	Area/Dimensions/Distance
Minimum subdivision area	All land	40 ha
Minimum area for which no permit is required to use land for a dwelling	All land	40 ha
Maximum area for which no permit is required to use land for timber production	None specified	
Minimum setback from a boundary (metres).	Any other boundary	5m
Minimum setback from a dwelling not in the same ownership (metres).	Any dwelling not in the same ownership	100m

Source: Clause 35.07 of Mount Alexander Planning Scheme

Rural Activity Zone (RAZ)

The RAZ provides flexibility for **agriculture and some other land uses** to co-exist. Some tourism, commercial and retail uses may be considered in the zone if compatible with the agricultural, environmental and landscape qualities of the area. Agricultural uses requiring approval in the RAZ include broiler farm, cattle feedlot lots (>1,000 head), and other intensive animal husbandry. A permit is also required for a single dwelling.

The RAZ is currently not applied in Mount Alexander Shire (and many other rural municipalities).

As the State Government is currently revising the rural land use zones, and as the RAZ is not used in the Shire it is not discussed further here pending the outcome of the zone revision process.

Rural Living Zone (RLZ)

The RLZ provides for **residential use in rural areas**. It is typically applied on the outskirts of settlements or townships. While the zone provides for agricultural activities, its main emphasis is to protect residential amenity. While approval is not required to construct a single dwelling on a lot exceeding 8ha, RLZ lots in Mount Alexander Shire are often below this size, and a permit is often required for a dwelling within the zone.

The Schedule to the RLZ (Clause 35.03) specifies minimum lot sizes for subdivision, and for which no permit is required to use land for a dwelling. The minimum sizes vary between 1ha to 4 ha in the Shire (see below), in part depending on whether reticulated water is supplied.

Most agricultural uses in the RLZ require a planning permit. Uses that require approval include agriculture (other than animal keeping, apiculture, intensive animal husbandry and timber production). Intensive animal husbandry is prohibited in the RLZ.

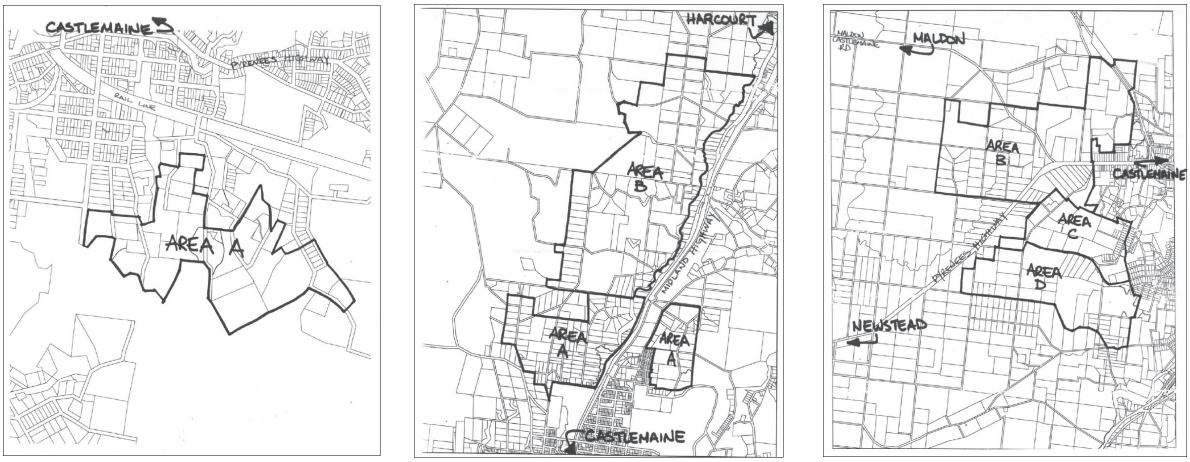
The RLZ is applied only around Castlemaine. It is not applied elsewhere in the Shire.

Table 2: Key provisions in the Schedule to the RLZ as applied in the Shire

	Land	Area/Dimensions/Distance
Minimum subdivision area	Area A on attached plan	1ha with reticulated water: 2ha without ret. water
	Area B on attached plan	2ha with reticulated water: 4ha without ret. water
	Area C on attached plan	1 ha
	Area D on attached plan	4 ha
Minimum area for which no permit is required to use land for a dwelling	Area A	2ha, or 1ha if serviced with reticulated water
	Area B	4ha, or 2ha if serviced with reticulated water
	Area C	1 ha
	Area D	4 ha

Source: Clause 35.03 of Mount Alexander Planning Scheme.

Figure 2: Rural Living Zone areas around Castlemaine.



Source: Mount Alexander Shire

Rural Conservation Zone (RCZ)

RCZ is the main zone for **rural areas of environmental significance**. Agriculture is allowed in the RCZ provided it is consistent with the environmental and landscape values of the area. Agriculture (other than animal keeping, apiculture, intensive animal husbandry and timber production) and a single dwelling require approval in the RCZ. Animal boarding and intensive animal husbandry are prohibited in the zone.

The RCZ has very limited application in the Mount Alexander Shire, at Forest Creek, Moonlight Creek/Moonlight Flat, Pennyweight Flat, Moonlight Flat and Lady's Gully.

Figure 3: Key provisions in the Schedule to the RCZ as applied in Mount Alexander Shire

	Land	Area (ha)/
Minimum subdivision area	Lady Gully Area east of Colles Road and south of Stronels Rd.	2.0ha
	All other land.	40ha

2.4 Planning overlays

While all land is subject to a land use Zone, Overlays can be applied selectively, and not all land is covered by an Overlay. Also, Overlays do not determine land use but require consideration in the development of proposals and in making planning decisions. They can require development controls where they are applied.

The following text identifies main Overlays applied to rural areas in the Mount Alexander Planning Scheme. Maps of the Overlays are provided in **Appendix 3**

Environmental Significance Overlay (ESO)

The ESO identifies areas with identified environmental values where development of land may be affected by environmental constraints, and ensures that any development is compatible with the environmental values.

The Mount Alexander Planning Scheme has seven schedules to the ESO:

- Schedule 1 – Lake Eppalock Catchment.
- Schedule 2 – Lake Cairn Curran Catchment.
- Schedule 3 – Barfold Gorge.
- Schedule 4 – Mount Alexander and surrounds.
- Schedule 5 – Watercourse protection.
- Schedule 6 – High Protection Environs.
- Schedule 7 - Calder buffer zone, remnant vegetation and wildlife corridor protection.

Significant Landscape Overlay (SLO)

The SLO is applied to identify significant landscapes and to conserve and enhance their character.

The Planning Scheme has four (4) schedules to the SLO:

- Schedule 1 - Maldon area landscape.
- Schedule 2 - Castlemaine landscape significance area.
- Schedule 3 - Scenic landscape area (approach to Maldon).
- Schedule 4 - Vaughan and Glenluce Mineral Springs Reserve.

Erosion Management Overlay (EMO)

The EMO is applied to protect areas prone to erosion, landslip or other land degradation processes, by minimising land disturbance and inappropriate development. The overlay Schedule requirements relevant to rural landholders are limited to a permit not being required for the use and development of an outbuilding of less than 120m^2.

The EMO is applied across a substantial portion of the steeper Ordovician land in the Shire (in the Ordovician LMUs discussed later in this report).

Land Subject to Inundation Overlay (LSIO)

The LSIO is primarily applied 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 (the North Central CMA).
- 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.
- Reflect any declaration under Division 4 of Part 10 of the *Water Act* 1989 where a declaration has been made.
- Protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly with Clauses 33 and 35 of the *State Environment Protection Policy (Waters of Victoria)*.
- Ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.

The schedule states that a permit is not required for the use and development of an outbuilding less than 120m^2.

Bushfire Management Overlay (Wildfire Management Overlay)

The specific purposes of the BMO/WMO are to:

- Assist to strengthen community resilience to bushfire.
- Identify areas where the bushfire hazard requires specified bushfire protection measures for subdivision and buildings and works to be implemented.
- Ensure that the location, design and construction of development consider the need to implement bushfire protection measures.
- Ensure development does not proceed unless the risk to life and property from bushfire can be reduced to an acceptable level.

The WMO is applied across much of the former goldfields areas, primarily on sedimentary and granite geology where substantial areas of bushland/forest remain. This also coincides with the areas where there is current and continuing pressure for small farm and non-farming rural living type development.

The importance of the WMO has escalated since the 2009 Black Saturday bushfires. It has resulted in stringent conditions being set for when planning permit applications are made in areas covered by the Overlay. These have significant implications for any proposals for rural living in relevant parts of the Shire. In part these include requirement for a bushfire management statement that must:

- Contain a bushfire site assessment prepared to calculate defendable space and construction requirements in accordance with Standards 6.1, 7.1 and 8.1 of Clause 52.47 (Bushfire Protection: Planning Requirements) as appropriate.
- Demonstrate the way in which an application meets the relevant objectives, standards, mandatory standards and decision guidelines set out in this clause, in a schedule to this overlay and in Clause 52.47.

Development Plan Overlay (DPO)

The Development Plan Overlay (DPO) is used where it is deemed to be beneficial to identify areas in which the form and conditions of future use and development need to be shown on a development plan before a permit can be granted to use or develop the land.

The DDO also exempts an application for permit from notice and review if a proposal generally accords with a development plan. Although this overlay has not been used in rural locations in the Shire, it has potential to manage land use, development and subdivisional activity where land use can be intensive such as irrigation areas. It can be applied, in conjunction with zoning to permit adjustments to land holdings particularly where there are multiple land ownership patterns.

Environmental Audit Overlay (EAO)

The EAO is applied to ensure that potentially contaminated land is suitable for a use which could be significantly adversely affected by any contamination.

2.5 Proposed State changes to rural zones and status of process

State Government intent

In July 2012 the State Government released proposed changes to residential, commercial, industrial and rural zones. Changes to the individual rural zones were gazetted in September 2012. The key features of the changes as identfied by the Department of Transport, Planning and Local Infrastructure are reproduced below.

Farming Zone (FZ)

- A new purpose statement promoting the retention of employment and population to support existing rural communities;
- reducing the restrictions for alterations and extensions to dwellings and farm buildings;

- removing the requirement for a mandatory *Section 173 Agreement* which restricts future subdivision after an initial subdivision is approved;
- making less uses prohibited and more uses discretionary including some accommodation, retail and commercial uses (removing the '*in conjunction with agriculture'* from a range of types of use);
- removing the prohibition on group accommodation, landscape gardening supplies, market, trade supplies, warehouse and primary and secondary schools;
- increasing the threshold for persons that can be accommodated in a bed and breakfast from six to 10 without a permit;
- removing the '*in conjunction*' conditions which restrict uses such as group accommodation, residential hotel and restaurant;
- removing other conditions which restrict uses such as group accommodation, place of assembly, store and transfer station;
- removing permit requirements for uses such as primary produce sales, rural industry and rural store.

Rural Activity Zone (RAZ)

- Reducing the restrictions for alterations and extensions to dwellings and farm buildings;
- removing the requirement for a mandatory *Section 173 Agreement* which restricts future subdivision after an initial subdivision is approved;
- removing the prohibition on backpacker's lodge, camping and caravan park, group accommodation, hotel, host farm, landscape gardening supplies, manufacturing sales, restaurant, residential hotel, trade supplies and tavern uses;
- increasing the threshold for persons that can be accommodated in a bed and breakfast from six to 10 without a permit;
- removing permit requirements for uses such as rural industry and rural store.

Rural Living Zone (RLZ)

- Removing the requirement for a mandatory *Section 173 Agreement* which restricts future subdivision;
- reducing the restrictions for alterations and extensions to dwellings and farm buildings;
- reducing the minimum lot size for subdivision and as-of-right use of a single dwelling from 8ha to 2ha;
- increasing the threshold for persons that can be accommodated in a bed and breakfast from six to 10 without a permit.

Rural Conservation Zone (RCZ)

- Reducing the restrictions for alterations and extensions to dwellings and farm buildings;
- removing the requirement for a mandatory *Section 173 Agreement* which restricts future subdivision after an initial subdivision is approved;
- making less uses prohibited and more uses discretionary including some accommodation, retail and commercial uses;
- removing the prohibition on primary and secondary schools;
- increasing the threshold for persons that can be accommodated in a bed and breakfast from six to 10 without a permit;
- removing in conjunction with conditions for uses such as group accommodation, residential hotel and restaurant;
- removing other conditions which restrict uses such as freezing and cool storage, group accommodation, residential hotel and restaurant;
- retaining the prohibition on leisure and recreation uses (other than informal outdoor recreation).

Implications to the current project of proposed changes to rural zones

As noted in the above dot points the changes to the Farming Zone make fewer uses prohibited and more uses discretionary including some accommodation, retail and commercial uses (removing the '*in conjunction with agriculture'* from a range of types of use). Also, the removal of the former objective '*to protect and enhance natural resources and the biodiversity of the area*' is a significant weakening of environmental provisions, although it is noted that the Decision Guidelines for the FZ. Require the following consideration of a range of environmental matters including the impact of the proposal on the natural physical features including biodiversity and resources of the area, including soil and water quality.

These are the main implication for potential future land use and development in the Farming Zone.

The above changes to the Farming Zone shift the flexibility for land use and development in that zone closer to the existing provisions of the Rural Activity Zone, which is not currently applied or being recommended for application in Mount Alexander Shire.

Across all rural zones the removal of the requirement for a *Section 173 Agreement* which restricts future subdivision after an initial subdivision is approved, has significant implications for the future development density in rural areas.

The changes also provide some additional flexibility for tourism proposals including accommodation and produce sales within rural zone areas.

2.6 Land capability, farming business, and lot sizes

Mount Alexander contains a diverse range of land use types including agriculture, rural living, biodiversity conservation, tourism infrastructure, and extractive industries, across the various Land types across the Shire (identified through Land Management Units (LMUs) in this document).

The considerable variation of lot sizes across the rural areas of the shire result from historic land survey and subsequent land subdivision. Over recent decades subdivision has mainly catered for hobby farm and non-production based rural living use. This has occurred mainly in the middle sections of the Shire and mainly in the sedimentary and some granite based LMUs.

The planning system generally uses default 'minimum lot sizes' for land subdivision and for housing without the need for a planning permit. The 'generic' minimum lot sizes in Planning Scheme under various land use zones are largely determined by Government policy, not by individual Councils. The 40ha minimum generally applicable to farming areas is a size that provides for retention of dominant forms of agriculture either on single or multiple lots within the same enterprise, and it provides for flexibility into the future. It is also a size that in the past has provided for purchase by local landholders to consolidate existing properties. However this has become more problematic as increased pressure for and incidence of hobby farming and rural living has escalated rural land prices, which is increasingly competing 'traditional farmers' out of the purchase market.

Does minimum lot size relate to economic farming?

Land can be used for productive use without it being economically viable productive land use.

The minimum lot or farm size to provide for 'economic' farming cannot be determined. This is because commodity prices and cost structures vary over time, and the economic circumstances and objectives of all individual farmers, individual farming families, or farming corporations vary 'across the board'. What is economic farming under one farming family may not be economic farming for another farming family.

The above matter is recognised in the Australian Taxation Office **Ruling TR 97/11** in context of whether or not land is used for a rural business. The Ruling identifies that there is no clear definition as to what is or is not a farming business. It alternatively identifies a range of criteria which it uses on a case by case basis to assess individual situations in its application of the *Income Tax Assessment Act 1997*.

For the above and other reasons, there is no basis for the planning system to determine what is an economically viable lot or farm size, and the land use planning system cannot be based on notions or definitions

of what is or is not economic farming. It is otherwise based on providing for planning '*the use, development and protection of land in Victoria in the present and long-term interests of all Victorians*[1].

Lot sizes and land capability

Lot size and land capability alone do not account for the suitability of land under the planning system for a particular use at a particular location. Various other physical, social and environmental factors are also relevant. A 16ha property for example could be either a square 400m by 400m, or a 4000m by 40m rectangle (or any other dimensions), and the suitability for a particular use on the two lots may well differ. This could for example potentially relate to either:

- options for locating on-site waste treatment infrastructure for a dwelling within accepted buffer limits to prevent off-site impacts; or
- the flexibility to locate house excavations, access tracks, and associated infrastructure at suitable locations.

Similarly one lot may be close to infrastructure and services, while another may be remotely located.

Such flexibility is likely to be more problematic on smaller rather than larger lots.

Also as all lots differ, and the application of rigid prescriptions for planning decisions can stifle innovation, and can result in diminished outcomes relative to what could otherwise be achieved.

Victorian government agencies have various guidelines based on land capability criteria and on erosion and sediment control techniques at construction and subdivision sites as a primary basis for planning and assessment of land development proposals. Example documents include following:

- EPA *Code of Practice Onsite Wastewater Management*[2]
- EPA *Temporary Environmental Protection Measures for Subdivision Construction Sites*[3]
- EPA *Environmental Guidelines for Major Construction Sites* [4]
- Coliban Water. *Policy and guidelines for planning permit applications and government planning initiatives*[5]

Such documents also provide a basis for preparing and assessing construction management plans for development proposals.

What is the way forward?

It follows from the above that planning systems based on the State government's planning policy framework (the *Victoria Planning Provisions*) have used the approach of identifying 'default' minimum lot sizes in respective land use zones. Councils have limited discretionary powers to vary such sizes but can do so via Schedules to zones covering designated areas (not individual lots) where demonstrated to be strategically justified. This needs to occur through planning scheme amendments that require ministerial approval. The onus is on proponents of 'non-compliant' development proposals to substantiate their applications if subdivision or development of dwellings on smaller lots development.

The Victorian Government policies and principles on this for rural areas are contained in the clause **16.02-1 – *Rural Residential Development*** in the Victoria Planning Provisions (also cl. 16.02-1 in the Mount Alexander

[1] *Stated purpose of Victoria's Planning and Environment Act 1987.*

[2] *Code of Practice Onsite Wastewater Management, Guidelines for Environmental Management. EPA Publication number 891.3 February 2013*

[3] Guideline for Environmental Management. Doing it Right on Subdivisions. Temporary Environmental Protection Measures for Subdivision Construction Sites . EPA Publication 960. September 2004.

[4] Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites. EPA February 1996

[5] Catchment Water Quality Protection. Policy and guidelines for planning permit applications and government planning initiatives Coliban Water 15 June 2013.

Planning Scheme and in the State Government's ***Planning Practice Note 37: Rural Residential Development*** (Revised May 2012). These are discussed in Section 5.3 of this document

The principles are not based primarily on land capability considerations or whether or not 'economic farming businesses' can be conducted on 40 ha in the case of the Farming Zone, but on the State's broader policy position of resisting further unplanned fragmentation of productive farming land. Land capability for agriculture or other uses such as residential development will normally not be a limitation for rural land uses on areas of 40ha or more.

The following conclusions are drawn from the above analysis:

- The State Government has clear principles governing the subdivision and development of rural zoned land including the size of rural subdivision lots and the development of dwellings. These principles are primarily to protect the versatility of rural land to be used for agriculture/primary production (as distinct from economic farming business) by preventing unplanned fragmentation, and minimising potential for land use conflicts.
- The 40ha minimum lot size for subdivision across the Farming Zone in Mount Alexander Shire is large enough to accommodate virtually any permitted rural land use without need for consideration of land capability. It is the basis of the State policy that fragmentation of rural land into smaller lots diminishes the principles referred to in the previous point.
- While any land use may be sustainable on land with low capability for the use if design and management is adequate to overcome the capability deficiencies, relaxation of minimum lot sizes risks fragmentation and alienation of productive land, which is contrary to the State's rural planning policies.
- Land capability requires consideration on small lots where dwellings are proposed or likely to be proposed. However there is a range of reasons why it is difficult to link land suitability for a use to lot size. Better outcomes will be achieved from considering land use planning and development proposals on a case by case basis against established land capability criteria (eg: for septic waste absorption) and broader planning criteria. (eg: proximity to services and infrastructure, bushfire considerations, location within potable water supply catchments, and ecological considerations).
- A range of criteria and measures (as referred to in the above point) are and can continue to be applied, that enable proponents for proposed subdivision and developments on rural lands to consider and demonstrate sustainability in planning applications.
- Based on the above considerations it is appropriate to set minimum lot sizes that are based on reasons of land use compatibilities and avoidance of fragmentation of productive land rather than land capability criteria *per se*. The onus should then be on proponents to demonstrate that a proposal will both satisfy those broader criteria, and land capability and other considerations including boundary setbacks and buffers where applicable.

3 RURAL LANDS ANALYIS

This section analyses the geo-physical attributes of Mount Alexander Shire's rural lands.

The Shire's lands have been extensively studied. Key land resource reference documents are:

- *A Study of the Land in the Campaspe River Catchment;*
- *Land Inventory of the Loddon River Catchment: A Reconnaissance Survey;*
- *Groundwater and Salinity Processes in the Uplands of the Campaspe River Catchment;*
- *Land Capability Study of the Former Shire of Kyneton;*
- *A Land capability study of the City of Greater Bendigo, Strathfieldsaye District (i.e.: former Shire of Strathfieldsaye);*
- *Guidelines for Land Capability Assessment in Victoria;*
- *An Assessment of the Principal Non-Urban Areas - Municipality of Strathfieldsaye. A Land Capability Approach.'*

While the listed land capability studies review land in adjoining municipalities, the land types within them extends into Mount Alexander Shire.

3.1 Geology

The Shire contains four primary geological land types:

- Granites;
- Ordovician sedimentary sandstones and mudstones;
- Basalts;
- Quaternary alluvium (or stream transported material) in valley floors and on lower terraces.

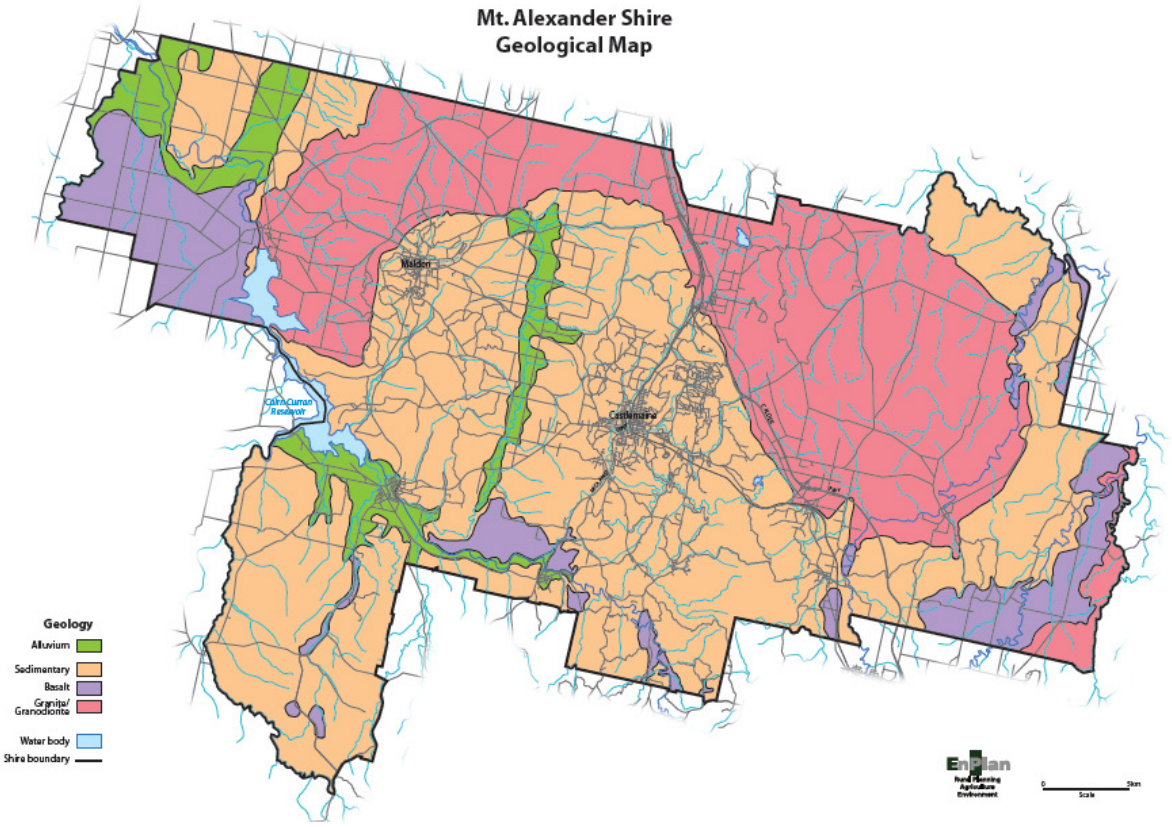
The Ordovician material has a Metamorphosed component (that has been hardened by heat and pressure) from adjacent cooling granite in past geological times.

The geology has fundamental impact on the topography, soils, native vegetation type, capability of the land for all uses, and on past and current land use and development including settlement patterns.

- The sedimentary geology of the Ordovician time period (about 500 million years ago) provided the basis for the 19th Century Central Victorian gold era. It occupies much of the central and south-west parts of the Shire, has only moderate to very low agricultural land quality, and retains most of the Shire's forested public land. The survey patterns on this land are irregular and are dominated by smaller lots. Much of the Shire's pressure for rural living development and use occurs in this land.
- The mid to upper slopes on the granite is also generally moderate to low land quality for agriculture.
- The basalt, gently undulating granite land, and alluvial land are better quality for agriculture and provide much of the Shire's agricultural production.

The geology of the Shire is shown in **Figure 4**.

Figure 4: Schematic geology map of Mount Alexander Shire.



Source: EnPlan Partners

In summary:

Sedimentary geology was deposited under marine conditions about 500 million years ago (Ordovician era). It is up to 3km deep and is widespread in the Shire. While it is visually most prominent west of the old Calder Highway, it also occurs east of the Calder Highway towards the Shire's eastern boundary, north of Kyneton (in the Macedon Ranges Shire).

- The sedimentary material is folded and tipped, and variously contains gold-bearing quartz seams in some areas as the basis to the area's gold mining history. Sedimentary land forms are also normally associated with shallow soils and rock exposure on the upper slopes and ridges with low agricultural quality. These are commonly exposed at road cuttings. Soils deepen on the lower to middle slopes and have average agricultural quality. As a consequence the upper slopes and ridges were less favoured for agriculture, and broadly the largely Box-Ironbark forest cover on those areas was retained and used for fuel and construction timbers during the gold mining era. Much retained forested land in the Shire is on the higher elevated sedimentary land often as public land.
- As the sedimentary land has low agricultural quality relative to the other land types and was associated with gold mining and associated settlement, its survey patterns are dominated by smaller irregular lots and (often) non-rectangular survey patterns. The freehold land is extensively used for rural living development on cleared, semi-cleared, and largely uncleared land parcels, particularly close to the Shire's main population centres. There is reduced pressure for such development in outlying sedimentary areas in the north south and east of the Shire.
- Capabilities for various land use and development types are broadly identified in the following tabulation.

Land Use	Capability summary	Most limiting factor(s)
Agriculture	Average (on mid to lower slopes) to Very Low (upper slopes and crests).	Low fertility hard setting soils. Shallow depth to bedrock (on mid to upper slopes and crests). Gradient on mid to upper slopes.
Farm Dams	Generally low to very low.	Shallow depth to bedrock in mid to upper slopes and crests.
Effluent disposal	Medium (lower slopes) to very low (upper slopes and crests).	Depth to bedrock. Low absorption rate of subsoils.
Building foundations	Medium (lower slopes) to very low (upper slopes and crests).	Depth to bedrock. Excavation difficulty for slabs and reticulation services.
Secondary roads	Average to very low.	Depth to bedrock, Wetness in drainage depressions due to poor sub-soil drainage.

Source: EnPlan from review of land resource literature.

Granites formed from molten material thrust upwards from deep underground around 350 million years ago. The material cooled and hardened inside the earth, prior to surface exposure from erosion of surrounding land. The hard base rock is resistant to physical decomposition. Granite land is therefore often prominent relatively high in the landscape, where upper slopes and crests characteristically feature large rounded boulders (tors) and smaller rock. The newer soils on the upper slopes and crests are coarse and porous rendering them prone to rapid drying, and of low agricultural quality and high erodability. Granite land also occurs as rolling topography used primarily for extensive sheep and cattle grazing, mainly east of the Calder Highway in the wider Sutton Grange area and also generally north of Maldon, and is used for orchard production at Harcourt, and vineyard production. Granite land is generally not suited to grain cropping due to the 'droughty' nature of the sandy topsoils. Mount Alexander and Mount Tarrengower at Maldon are the most prominent granite formations in the Shire.

- Landholdings generally remain as moderate to large farming properties, but smaller lots can predominate in intensive production areas including at Harcourt. Some rural living development occurs on the low granite range of the Sidonia Land System north of Kyneton in the far south-east of the Shire, and around Harcourt and around Maldon.
- Capabilities for various land use and development types are broadly identified in the following tabulation.

Land Use	Capability summary	Most limiting factor(s)
Agriculture	Medium (for grazing on rolling land) to Very Low (mid to upper slopes and crests).	Droughty, erodible topsoils particularly lighter sandy soils on medium to upper slopes.
Farm Dams	Generally very low.	High soil porosity/permeability in soils in mid to upper slopes. Potential surface and sub surface rock content.
Effluent disposal	Low to Very Low	Excessive absorption rated in coarse sandy soils in mid to upper slopes. Very low porosity clayey soils in lower/valley areas
Building foundations	Medium to very low (mid to upper slopes)	Slope on mid- upper slopes and crests/ridges. Potential rock presence.
Secondary roads	Medium to very low	Slope and soil erodability on mid to upper slopes. Potential rock presence and potential seepage springs

Source: EnPlan from review of land resource literature.

Metamorphic sedimentary material is sedimentary material that was heated and hardened under pressure between the igneous (granitic) and adjacent sedimentary material. The heating occurred from the adjacent cooling igneous material. It therefore occurs in narrow bands (aureoles) relatively high in the landscape around the edge of granite masses. Soils on the upper slopes and crests are generally shallow permeable stony loams, but depth and quality increases towards the lower slopes and drainage lines. The land has been mainly used for

grazing since settlement, and has been largely cleared of original vegetation in the eastern half of the Shire. The metamorphic areas have been regarded as high intake areas for local and regional watertables, and hence for mobilizing stored salts and the rise of saline water tables and associated stream salinity. Steepness is generally excessive for cropping and the land has moderate to high susceptibility to sheet erosion.

- A narrow metamorphic aureole occurs west of the Calder Highway generally between Elphinstone and Faraday. This also appears as a high ridge visible from the Highway.
- Land capabilities for various land use and development types are broadly identified in the following tabulation.

Land Use	Capability summary	Most limiting factor(s)
Agriculture	Medium	High slope limits use to grazing
Farm Dams	Very low.	High slope.
Effluent disposal	Very low.	High slope.
Building foundations	Very low.	High slope.
Secondary roads	Very low.	High cross slope. (Roads in this landform are generally constructed perpendicular to, and across ridge lines)

Source: EnPlan from review of land resource literature.

Basalts appeared from volcanic activity after the formation of the sedimentary and granitic material. Basalt flows generally occurred towards the north and overlie other material. Basalt landforms in the Shire range from broad open plains west of Cairn Curran Reservoir to some scattered remnant small elevated plateaus surrounded by steep escarpments (Guildford Plateau). Undulating basalt landforms also dominate north of Kyneton into the Shire through to the southern end of Lake Eppalock. Valleys including the Barfold Gorge are generally deeply incised through the basalt and often into the substrate material. The plains land contains varying degrees of rock cover from none through to heavy. Rock is generally prominent on the exposed sides of rises, plateaus and scarps.

- Basalt soils have low susceptibility to soil erosion but their clayey surface soils can be poorly drained and prone to extended waterlogging. They generally have relatively high agricultural quality for the Shire, and are largely cleared of original vegetation for grazing, although remnant paddock trees remain in many areas. The basalt lands are primarily used for grazing on introduced pastures, and cropping of cereals and fodder species. Landholdings generally remain large, with relatively sparse settlement, due to features including agricultural land quality and landform. The land is not commonly used for non-agricultural rural living purposes.
- Land capabilities for various land use and development types are broadly identified in the following tabulation.

Land Use	Capability summary	Most limiting factor(s)
Agriculture	Moderate	Heavy/poorly drained clayey topsoils and sub-soils (ie: prolonged wetness occurs in wide drainage depressions) causes pugging and can limit plant growth.
Farm Dams	Moderate to very low	Rock in some soil profiles. Topography may cause low storage to excavation ratio. Generally good water holding capacity in wet expansive clay soils.
Effluent disposal	Good (gentle slopes) to very low	Low/very low soil porosity in heavy or expansive clay soils.
Building foundations	Average to Very Low	Expansive clays can cause foundation movement (requires good engineering design). Prolonged wetness in drainage depressions and generally flat areas. Slope on plateau sides.
Secondary roads	Moderate to low	Potential presence of surface and subsurface

		rock. Wetness/ internal drainage likely in wide valley and low points – may be associated with expansive soils.

Source: EnPlan from review of land resource literature.

Alluvium is unconsolidated soil deposited in the valley floors and other low areas as valley terraces, from erosion of higher land. It occurs extensively in the far northwest of the Shire, and along the relatively narrow north-south Muckleford Valley in the central south of the Shire between Castlemaine and Maldon.

The land occurs as flat to very gently sloping land, with deep soil profiles (no rock to >2m). Profiles may vary resulting from different periods of deposition, and may be uniform (eg: loam to gravelly sands and gravels) or layered (loams, sands, gravelly; loams sands). Topsoils vary from sandy to dispersive hard setting clay loams. Internal soil drainage also varies depending on profile texture and permeability. Surface drainage varies with micro relief.

Capability is moderate for agriculture and the land remains favoured for cropping and grazing agriculture, and most has been fully cleared for those uses. The land generally remains in relatively large farm holdings, and in the north-west of the Shire some groundwater extraction occurs for application to the land via centre-pivot irrigators. Depending on the continued access to and extraction of groundwater for enhanced agricultural production, such land has local or regional strategic importance for retention as agricultural land.

Capability on the plains for excavation and building foundations is high and capability for urban uses is moderate to high due to favourable topography and soils. However the land type is remote from urban centres and urban development has not occurred on it. Much alluvial land is also susceptible to periodic flooding as has occurred in recent years.

Where creek terraces occur, the land type is gently undulating with similarly deep soil profiles (no rock to >2m) Capability on terraces may be low for agriculture primarily due to inundation, which limits versatility (eg: excludes cropping). Internal soil drainage and surface drainage are generally good. Surface drainage is affected by micro-relief. Capability for dams is very low. Capability for urban uses is very low due to high flood risk. The common current land use is agriculture (grazing).

- For agriculture, conservation cropping techniques and moderate stocking rates should apply to minimise soil disturbance and maximize vegetative cover to maintain and improve water penetration and soil condition. For urban purposes, this land type requires careful planning and the use of standard specifications for site preparation construction.
- On terrace areas and on broader plains areas the land may be subject to flooding urban development and cultivation are not suitable and should be avoided. Grazing pressure should retain dense pasture cover. Heavy recreational use should be avoided.
- Land capabilities for various land use and development types are broadly identified in the following tabulation.

Land Use	Capability summary	Most limiting factor(s)
Agriculture	Average to Good (enhanced by groundwater where available in north west of Shire)	Soils generally arable and good for grazing and cereals cropping. Growing season can be limited by early and late frosts. Coarser soils in some areas with low water holding capacities can also dry quickly in spring/ summer
Farm Dams	Average to low	Variable water holding capacities.
Effluent disposal	High to low depending on context	Potential for percolation to water table and contamination of groundwaters
Building foundations	Good to very good	Potential for flooding in some areas
Secondary roads	Moderate to low	Good land excavation land, but potentials for flooding in lower and valley floor or broader plains areas.

Source: EnPlan from review of land resource literature.

Land systems within geological types

Geological land types generally contain sub types called land systems and land components. In Mount Alexander Shire this applies to the basalt, granite and sedimentary land types. The land systems and components the Shire are described in the following documents available for downloading on the internet[6].

- *A Study of the Land in the Campaspe River Catchment.* Land Protection Division, Dept Conservation Forests and Lands, 1987
- *Land Inventory of the Loddon River Catchment: A Reconnaissance Survey.* Land Protection Division, Dept Conservation Forests and Lands, 1988

To suit the strategic planning needs of the current Mount Alexander Rural Land Strategy, the above land systems and components have been partially aggregated into 'Land Management Units which are identified and described below. Users of this document who wish to resource additional land information are recommended to review the abovementioned documents.

Land capability

Sustainable land use is based on the premise that the land must not be allowed to deteriorate such that it affects long term production or ability to provide for a single land use or range of land uses.

The document titled *Guidelines for Land Capability Assessment in Victoria* by the former Soil Conservation Authority (SCA) provides base information for land use planning. The guidelines provide a five-class rating system (with *Class 1* having the highest capability for the particular use) that provides a rational, objective and consistent approach to predicting land capability for a range of land uses. The approach is based on analysis of the land's physical characteristics that do not change appreciably over time, and which can be overlaid with variable economic and/or social considerations.

For any proposed use:

- Class 1 has the highest capability for the use considered, the least limitations and least hazards to the land.
- Classes 2 and 3 have successively lower capabilities, more limitations and higher hazards to the land.
- Class 4 indicates that the capability is low and the limitations and hazards to the land are such that it is marginal for the use specified.
- Class 5 indicates that under most circumstances it is unlikely that such use could be sustained even with very substantial inputs.

'Capability' and 'suitability'

The terms 'capability' and 'suitability' are often confused. In the context of land evaluation:

- *Capability* refers to the influence of the land's natural characteristics on the ability of the land to support a particular use.
- *Suitability* applies other considerations over capability such as location or access.

For example, a piece of land may have a high capability for absorbing liquid effluent, but may be too close to a waterway for the land to be suitable for that purpose.

The SCA Guidelines provide land capability rating tables for the following uses:

- *Engineering uses*: Building foundations, Shallow excavations, Secondary roads and car parks, Earthen dams,
- *Septic waste disposal*: On-site effluent disposal, Sewage lagoons, Sanitary landfill,
- *Earth resources*: Source of topsoil, Sources of sand, Sources of gravel, Sources for road fill.

[6] *http://vro.dpi.vic.gov.au/DPI/Vro/nthcenregn.nsf/pages/nthcen_landform_campaspe_river and http://vro.dpi.vic.gov.au/DPI/Vro/nthcenregn.nsf/pages/nthcen_landform_geo_loddon_land*

- *Land-based recreation*: Intensive use areas, Paths and trails, Camp sites, Motor bike trails, Golf course fairways, Playing fields
- *Grazing:* Rainfall Zone more than 750 mm pa; Rainfall Zone 500 – 625 mm pa
- *Cropping:* Intensive cropping

Land capability reports are often required to accompany planning permit applications. This report identifies and provides strategic level descriptions of *Land Management Units* (LMUs). The descriptions provide broad indications of land capability. However land varies considerably within LMUs and the descriptions in this report cannot be used to replace the need for site specific land capability assessments where required (eg for on-site absorption of treated effluent). Where such land capability reports are required, permit applicants are advised to use the services of suitably qualified and experienced practitioners, who are likely to use the above mentioned guidelines of equivalent assessment processes. In addition the EPA *Code of Practice for Septic Tanks* identifies land capability assessment standards specifically for that use. Soil testing and analysis will generally be required.

Table 3: Land Capability Classes – Generalised Definitions

Capability Class	Capability	Degree of Limitation of Hazard	Levels of Special Management* (a) attain acceptable levels of production or satisfaction from the use; (b) contain adverse effects to land and water to acceptable levels.
1	Very good	None to very low	(a) and (b) No special technology or management needed.
2	Good	Low or slight	(a) No special technology needed, and/or (b) The risk of adverse effects to land and water is low. Careful management is needed for both (a) and (b)
3	Fair	Moderate	(a) Special technology is needed, and/or (b) A moderate risk of adverse effects to land and water is always present. Careful management is essential for both (a) and (b)
4	Poor	High	(a) Highly specialised technology is required, and/or (b) A high risk of adverse effects to land and water is always present. Extensive conservation measures are required. Skilled management is essential forth both (a) and (b)
5	Very poor	Severe	The high levels of technology and management needed are unlikely to be achieved or sustained. Severe risk of adverse effects to land and/or water is always present.

Source: Guidelines for Land Capability Assessment in Victoria. SCA 1981

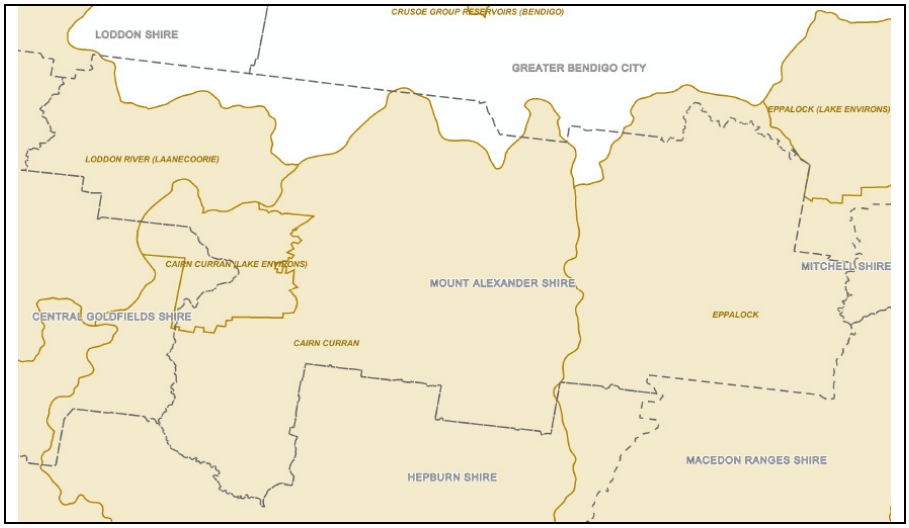
3.2 Water catchments, storage and supply

It is essential for human health, water quality and land sustainability reasons that land within catchments is appropriately planned and managed including through the assessment of planning permit applications. The State Government and regional Water Authorities have very clear legislation and public policy on this matter.

Water catchments

Around 90 per cent of Mount Alexander Shire is in *Declared Water Supply Catchments*. (Refer **Figure 5**)

Figure 5: Map showing the extensive coverage of declared special Water Supply Catchment Areas across Mount Alexander Shire and parts of adjoining municipalities.



Source: Goulburn Murray Water

State policy for planning and land use in declared special water supply catchments

Under Victoria's ***Catchment and Land Protection Act 1994***, *Declared Special Areas (Water Supply Catchments)* officially recognise designated catchments for water supply purposes. This identifies to the community, land managers and planners, the importance of maintaining water quality in the catchment for water supply purposes, generally at least in part for domestic water consumption. There are 134 officially Declared Water Supply Catchments across Victoria. These include the Eppalock and Cairn Curran Catchments.

Special Area plans can be prepared under the Act for protection of the land and water resource in the catchment through focus on specific land management issues.

Victoria's ***Guidelines for Planning Permits in Open Potable Water Supply Catchment Areas 2012*** (the Guidelines) have been adopted under section 60(1A)(g) of the ***Planning and Environment Act* 1987**, and are referenced in Victoria's State Planning Policy and hence all Planning Schemes in Victoria. Section 60(1A)(g) lists the matters that a referral authority may consider, including a specific reference to a Ministerially adopted code or guideline.

Critical elements of the policy are for considering planning permit applications include:

- Would the proposed development be connected to reticulated sewerage?
- Would the proposal result in a dwelling density over one dwelling per 40 hectares?

Where the answers to the above are negative:

- Is the minimum lot size specified in the zone for subdivision met?
- Is the relevant Water Corporation satisfied that Council has prepared, adopted and is implementing a Domestic Wastewater Management Plan (DWMP) consistent with DWMP requirements?
- Can Council be satisfied that the proposal does not present an unacceptable risk to the quality and quantity of water generated by the catchment, having regard to the land capability, assessments, land condition and management conditions of the site and the catchment?

When a planning permit application for a dwelling is made to Council within a declared or 'Special' water supply catchment area, the Council must refer the application to the relevant water corporation for consideration against 'the *Guidelines'*. For an application to be successful, the proposed dwelling must either:

- be connected to reticulated sewerage and/or
- have a dwelling density no greater than one dwelling per 40 hectares.

A proposed planning permit application must also answer yes to the matters in the following tabulation to gain approval:

- Is the minimum lot size specified in the zone for subdivision met?
- Is the water corporation satisfied that the relevant Council has prepared, adopted and is implementing a *Domestic Wastewater Management Plan* (DWMP) consistent with DWMP Requirements?
- The proposal does not present an unacceptable risk to the quality and quantity of water generated by the catchment, having regard to the land capability, assessments, land condition and management conditions of the site and the catchment.

A water corporation should support the permit application if the application is consistent with an applicable Catchment Policy. If the permit is supported by the water corporation, the local council finalises its assessment of the application and advises the applicant of the outcome.

Water storages

The largest water storages relevant to the Shire's rural lands are Cairn Curran and Eppalock Reservoirs. Both are controlled by Goulburn Murray Water. Cairn Curran is in the Shire. Lake Eppalock is outside the Shire but most of the Shire east of the old Calder Highway is within its water catchment and is covered by Schedule 3 of the Environment Significance Overlay (ESO3) in recognition of this. The ESO3 is an important element in the protection of water quality and supply quantity in the catchments.

Water authorities are obliged to identify and, where possible, mitigate risks to water quality, consistent with their responsibilities under the *Safe Drinking Water Act* 2003. The Act is aimed at protecting water quality intended for human consumption from the catchment to the tap (customer).

Lake Cairn Curran

Lake Cairn Curran on the Loddon River 22 km north-west of Castlemaine was completed in 1956. It is one several reservoirs along the Loddon River, including the Newlyn, Hepburn, Tullaroop and Laanecoorie. Most land adjoining the reservoir is private freehold land used mainly for extensive grazing, and much of the non-recreational public land foreshore is licensed for grazing (mainly sheep).

The reservoir's capacity exceeds 147,000 ML (60,000 Olympic sized swimming pools). The lake provides for water-based activities include sailing, power boating, fishing, water skiing and wind surfing. Its public land foreshore provides picnic areas, boat ramps, barbeques and tracks and trails. A 2MW hydro-electric power station generates electricity when irrigation and flood releases are occurring. In 2008 and 2009 storage levels were critically low (3% capacity in June 2010) following a decade of drought. However storage quickly recovered to capacity, and in January 2011 over 70,000ML passed over the Cairn Curran spillway in 2 weeks, to cause severe downstream impacts. By the end of February 2011, many catchments and reservoirs were at capacity. At late January 2013 the lake was 85% full.

The emerging ***Cairn Curran Land and On-Water Management Plan*** will identify and protect the values and attributes of the Cairn Curran Reservoir through a five-year action plan. The Draft plan of 2012 variously states the following[7]

Land uses in the Upper Loddon Catchment, above the Cairn Curran Reservoir have the potential to impact on water quality through contribution to diffuse pollutant loads such as nutrients and sediments. (p16)

Runoff from grazing land, forestry and intensive agriculture was highlighted during the consultation process for Plan development as key cause of water quality decline in the storage. Elevated levels of salinity in sub-catchments discharging to Cairn Curran Reservoir was also identified as a significant issue during consultation. (p16)

The storage water quality monitoring program …… has identified increasing trends in turbidity, sediments and nutrients, exceeding guideline values in recent years. Therefore, a focus on catchment management practices in the catchment upstream of the reservoir is likely to be critical in promoting water quality objectives (p16).

Human effluent from onsite wastewater treatment and disposal systems (e.g. septic tanks) can impact on water quality in (the) reservoir, affecting recreational and other uses of the storage. The consultation process for Plan development

[7] *Page 21* Cairn Curran Land and On-Water Management Plan. (*Draft 2012).*

identified overflows from private wastewater systems, public toilet blocks, and Welshman's Reef Caravan Park as potential causes of water quality decline. (p17)

The impact of wastewater on water quality of Cairn Curran Reservoir is an important issue with regard to new and existing development around waterways (in) the storage catchment. The impact of onsite wastewater management, including septic tanks, can affect water quality individually, particularly from systems near the storage, or as diffuse source pollution from the cumulative effects of numerous septic systems. The current ***Code of Practice – Onsite Domestic Wastewater Management*** *requires a 300 metre wastewater setback from full supply level to be applied for lots adjacent to the reservoir (p21).*

As allowed for under the guidelines, Goulburn-Murray Water will give consideration to the merit of any planning permit or scheme revision referred to it……. A water industry group co-ordinated by VicWater is currently reviewing the Department of Planning and Community Development guidelines to provide consistent guidance around the matters to be considered, including dwelling density requirements for ***Domestic Wastewater Management Plans*** *and catchment policies to protect water quality (p21).*

Community stakeholders have expressed willingness for development provided it does not affect the visual amenity, and environmental or recreational values of the reservoir and its surrounding catchment.

The Draft Plan identifies potential for future changes in land use zoning that increase development pressure in the catchment as a key issue for the reservoir.

Lake Eppalock

Lake Eppalock is 26 km east of Bendigo. It was completed in 1964 to provide upstream irrigation water along the Campaspe River, and town water to Bendigo. The Goldfields Super Pipe now also supplies water to White Swan Reservoir at Ballarat for use by Central Highlands Water. The Lake is also a main recreational destination for boating and other activities.

The ***Lake Eppalock Land and On-Water Management Plan (Draft 2012)*** mainly focuses on the Lake and its immediate surrounds. On wider matter it includes the following content.

Significant demand exists for land that offers rural lifestyle opportunities on smaller blocks. Past planning policy has resulted in significant areas of the catchment being available for small lot rural living and rural residential development.

A critical issue surrounding Lake Eppalock is development in the broader Lake Eppalock catchment. A proliferation of farm dams, septic tanks and hard surfacing for houses and roads are all issues that are impacting on water yield and quality within the lake. (p25)

The application of an Environmental Significance Overlay (ESO) (to the Eppalock Catchment) enables specific water quality objectives to be considered in applications for the development of land in the Eppalock Proclaimed Catchment. An ESO schedule of this nature exists within the Greater Bendigo, Hepburn, Macedon Ranges, Mitchell and Mount Alexander Planning Schemes. (p25)

In 2007 a Draft ***Special Area Plan*** was prepared for the City of Greater Bendigo portion of the Lake Eppalock catchment. This has not yet been extended into the Mount Alexander Shire component of the catchment.

In 1999 State agencies prepared the ***Lake Eppalock Catchment Land Capability Assessment and Planning Project. (Draft Report 1, 2)***[8]***.*** Various other preceding reports have been prepared on the Lake and its water quality dating from 1981. Also a major catchment-wide soil conservation project through the 1970s, planned managed by the former Soil Conservation Authority, focussed on improving pasture and repairing point source and gully erosion across degraded parts of the catchment. The 'Eppalock Project', greatly diminished early sedimentation and turbidity issues.

The objective of the major 1999 report was to provide information to enable land managers, prospective development applicants, and responsible authorities to make better informed decisions about land uses and development in the Eppalock catchment. It was also intended to ensure that the provisions of the various planning schemes covering the catchment (including the Mount Alexander Planning Scheme) adopted a coordinated approach to implementing water quality maintenance objectives, and to provide Councils with policies for assessing and determining approvals for land use changes and new developments, for sustainable use and management of the catchment. The two available Volumes of the (Draft) report are:

[8] *'Lake Eppalock Catchment Land Capability Assessment and Planning Project (Draft Reports 1, 2 and 3) '. Prepared by Centre for Land Protection Research and Ors. Department of Natural Resources and Environment and Agriculture Victoria 1999*

- *Volume 1: Water Quality Risks and Land Unit Descriptions*.
- *Volume 2 Strategic Planning Options.*

A Volume 3 was intended, but it is understood that the project may not have been completed. Nonetheless, the base information provided in Volumes 1 and 2 remains relevant over time and has assisted in the development of this Rural Land Study. The following are some key summary points.

- While the catchment and the Lake were considered to be relatively data poor at the time, the greatest threats to water quality have been turbidity and phosphorous, and blue green algae, with causal factors being flow regimes on inflow rivers, land management practices within the catchment and past bank erosion of the lake.
- More specifically, contributing factors were considered to include: land clearing, increasing urbanisation, domestic and industrial discharges, septic tanks, poor agricultural management, over grazing and fertiliser use, animal intensive agriculture, unclear and inadequate responsibility and accountability, and lack of strategic land use planning.
- Main threatening processes are: soil erosion, nutrient leaching, overland movement of surface solutes and recharge to saline groundwater.
- Land use competition with agriculture (in 1999) was increasing particularly for 'peri-urban' development including small farms, and was considered to be a potential expansion threat with improved transport networks.

The report identified the following cause and effect linkages between land use, key land management practice, water quality threatening processes and water quality.

Table 4: Cause and effect linkages between land use, key land management practice, water quality threatening processes and water quality in the Eppalock Catchment.

Land use	Key land management factor	Threatening process to water quality
Broadacre grazing	Loss of Vegetation cover.	Water erosion. Surface solute movement.
	Nutrient input (fertiliser application).	Nutrient leaching.
	Pasture type and grazing intensity.	Groundwater recharge.
Intensive cropping (potatoes)	Loss of Vegetation cover.	Water erosion. Surface solute movement.
	Nutrient import (fertiliser application).	Nutrient leaching.
Intensive horticulture (viticulture)	Loss of Vegetation cover.	Water erosion.
	Nutrient input (fertiliser application).	Nutrient leaching.
	Inter-row vegetation cover.	Surface solute movement.
	Irrigation type.	Groundwater recharge.
Native vegetation or forestry establishment	Loss of Vegetation cover.	Water erosion.
Native vegetation or forestry removal	Vegetation cover.	Water erosion.
	Type of replacement vegetation.	Groundwater recharge.
Septic tank effluent disposal	Density of septic tanks.	Nutrient leaching. Surface solute movement. Groundwater recharge.
Secondary gravel or urban roading	Standard of road construction and maintenance.	Water erosion.
Subdivision	Density of septic tanks.	Nutrient leaching.

		Surface solute movement. Groundwater recharge.
	Standard of road construction and maintenance.	Water erosion.
Extractive industries	Standard of erosion control measures.	Water erosion.
	Standard of salinity control measures.	Groundwater recharge.

Source: Lake Eppalock Catchment Land Capability and Assessment Project Volume 1. DNRE/DAV 1999

The report provides the following (summarised) connection assessments between main land use types and above mentioned threatening processes to water quality:

Table 5: Main potential threat to water quality from rural land use in Eppalock Catchment.

Land use	Main potential impact threat
Broadacre grazing	Able to accelerate all four threatening processes. Best management practices are available to reduce the impact of the threatening processes on water quality. Maintenance of vegetation cover, nutrient applications in balance with nutrient removal, and pasture species type are all able to ameliorate the threats to water quality.
Intensive cropping (potatoes)	Intensive cropping can accelerate all threatening processes although there are no Best management practices to reduce groundwater recharge apart from improved irrigation scheduling.
Intensive horticulture (viticulture)	Able to accelerate all for threatening processes. Best management practices are available including maintaining vegetation cover, nutrient applications in balance with nutrient removal, and irrigation type are able to ameliorate the threat to water quality.
Native vegetation or forestry establishment	The major threatening process is water erosion of their soil surfaces from machinery operations and poor vegetation cover. Significant growth of new vegetation or forest is needed to reduce the threat of nutrient leaching, surface solute movement and groundwater recharge.
Native vegetation or forestry removal	Will have the biggest impact on groundwater recharge and soil erosion in the short term. In the medium to long-term, the threat of soil erosion will depend upon the amount of vegetation cover, and the threat of groundwater recharge by the type of replacement vegetation.
Septic tank effluent disposal	Threats to water quality are nutrient leaching, surface solute movement and groundwater recharge. Septic tank density is a key land management practice to reduce the threat, assuming septic systems comply with the EPA septic tanks code of practice.
Secondary gravel or roading	Water erosion of soil on the road and road verges is the main water quality threat. Road construction and maintenance standards impact on the water quality threat.
Subdivision	Subdivision for rural allotments generally coincides with a low level of services. Effluent disposal through septic tanks and unsealed roads are characteristics of these developments. The threat to water quality is therefore the threatening processes from septic tank effluent disposal, and from secondary gravel access tracks and roading.
Extractive industries	Generally require the removal of vegetation, and their removal and stockpiling of soil. Water erosion and groundwater recharge are the primary threats to water quality.

Source: Lake Eppalock Catchment Land Capability and Assessment Project Volume 1. DNRE/DAV 1999

The ***Lake Eppalock Land and On-Water Management Plan (Draft 2012)*** mainly focuses on the Lake and its immediate surrounds. On wider matter it includes the following content.

> *Significant demand exists for land that offers rural lifestyle opportunities on smaller blocks. Past planning policy has resulted in significant areas of the catchment being available for small lot rural living and rural residential development.*
>
> *A critical issue surrounding Lake Eppalock is development in the broader Lake Eppalock catchment. A proliferation of farm dams, septic tanks and hard surfacing for houses and roads are all issues that are impacting on water yield and quality within the lake. (p25)*
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ESO schedule of this nature exists within the Greater Bendigo, Hepburn, Macedon Ranges, Mitchell and Mount Alexander Planning Schemes. (p25)

In 2007 a Draft ***Special Area Plan*** was prepared for the City of Greater Bendigo portion of the Lake Eppalock catchment. This has not yet occurred for the Mount Alexander Shire component of the catchment.

Coliban Water Catchment Policy for declared potable water supply catchments

Coliban Water's ***Policy and Guidelines for Planning Permit Applications and Government Planning Initiatives*** (June 2013) identifies that 'Potable Water Supply Catchments' are a very high priority that should play a significant role in any land use planning decisions. The policy identifies the importance of human health and designates highest importance to the protection of domestic water supplies. It is policy that all land use and development within a domestic water supply catchment must be sited and managed to ensure the protection of water quality and, therefore, human health.

Key policy statements also include the following:

- The greatest risk to public health from drinking water is contamination due to pathogenic micro-organisms, and this arises in water supply catchments from changing land use and development, including increasing densities of dwellings with on-site wastewater/septic tank treatment systems, and the intensity of agricultural, commercial, industrial and other human activity.
- Protecting water sources is a paramount risk management objective that must not be compromised in planning considerations.
- While 'robust multiple barriers' can be applied against potential contamination across the stages of water collection, storage, treatment, transfer and distribution, the most effective barrier is protecting source waters at the collection stage

Key implementation policies include the following:

Figure 6: Coliban Water policy for planning applications in open potable water supply catchments.

General catchment considerations

Dwelling density, zoning considerations

In Farming, Rural living or Rural conservation zones

- *Dwelling density within a one kilometre radius of the site must be less than one per 40 (1:40) hectares[8] – except if:*
  - *Coliban Water determines risks can be managed by the owner entering a section 173 agreement with council and us,[9] to annually inspect, test, monitor and maintain septic and wastewater treatment systems, rectify defects as soon as practicable and report results to council and us, at owner's cost*
  - *a development will not increase cumulative risk to water quality at either local or catchment level and must not establish adverse precedents for further incremental development, in terms of their intensity, size, or nearby lot and dwelling patterns.*
  - *for dwellings destroyed by natural event (e.g. bushfire), the dwelling was occupied immediately before destruction, the application is lodged within two years after destruction and the replacement dwelling satisfies the buildings and works requirements in these Guidelines.*
  - *for occupied dwellings proposed to be rebuilt after demolition, the replacement dwelling is designed for a single family and satisfies the buildings and works requirements in these Guidelines*
- *Subdivision lot area must exceed 40 hectares[10] – except if Coliban Water determines relevant risks can be managed by agreement with council and us under section 173 that no dwelling will be established*

Contamination, planning considerations

Appropriate siting and management must be adopted to minimise potential discharge of contaminated run-off or waste to, and to protect quality of, surface water and groundwater, rivers, streams and wetlands – especially in areas exposed to flooding, soil degradation, groundwater salinity or geotechnical hazards[11]

Water quality must be protected from possible contamination by urban, industrial and agricultural land uses[12]

Development must be consistent with:

- *objectives of state and local planning policy frameworks*
- *decision guidelines for local frameworks*

- *municipal strategic statements and other local planning policies.*

Septic systems, onsite domestic wastewater treatment systems

Treatment systems and associated disposal areas must be upslope at least:

- *100 metres from any stream, river or waterway*
- *300 metres from any potable supply channel*
- *300 metres from any dam or reservoir*

Septic tanks must be de-sludged every three years

Vegetation must not grow directly over effluent disposal areas[14]

Systems must comply with best practice, including AS/NZS standards.

Other considerations

Risks identified by land capability assessments must be mitigated and managed to protect water quality to an acceptable degree, especially in terms of wastewater absorption during winter and spring

Existing or proposed vegetation must be adequate to ameliorate the quality of storm runoff or seepage from on-site treatment systems

Site remediation and improvement works must ensure that runoff quality does not deteriorate when works and activities are being undertaken and following their completion.

Specific site circumstances

Subdivisions, lots

Land must be suitable for on-site disposal of septic tank effluent[16]

Owners must, under section 173, agree with council and Coliban Water, to register on title details that include the building envelope and effluent fields

For new lots:

- *land capability assessments must indicate that effluent disposal will not pose unacceptable risks to water quality*
- *occupiable areas of subdivisions must be more than 300 metres from any dam or reservoir*

For proposed house lot excisions, owners must agree under section 173 to:

- *prevent dwelling development on the parent lot or remainder of land*
- *provide evidence of the satisfactory operation of current system, install necessary septic tank and wastewater treatment systems, properly inspect, test, monitor and maintain them annually, rectify defects as soon as practicable and report results to council and us*

Boundary realignments must not then allow for construction of another dwelling, whether under permit or as-of-right

Lot design must provide for natural site features

Lot size must factor in local topography, soils, waterways and drainage.

Buildings, works

Siting must be within a building envelope as specified under a section 173 agreement with council and Coliban Water and registered on title

Vegetation buffers and fencing must protect waterway corridors, reservoir boundaries and adjacent Coliban Water land

Site slopes must be less than 20%, and soils stable and not prone to erosion.

Land use

Industrial and intensive land use activities must adopt best practice environmental management systems to protect water quality

We will object to applications in unsewered areas for piggeries, cattle feedlots and other intensive animal industries.

Second dwellings

Second dwellings must be necessary to support rural activity

Where a second dwelling is permitted, the owners must agree under section 173 to not construct any further dwellings.

Source: Coliban Water *Policy and Guidelines for Planning Permit Applications and Government Planning Initiatives* (June 2013)

Goulburn Murray Water

Goulburn Water has a Memorandum of Understanding (MOU) with Mount Alexander Shire Council that covers similar matters to the Coliban Water policy.

Water Supply [9]

Cairn Curran Reservoir is in Mount Alexander Shire and provides irrigation water upstream off the Loddon River.

Water is supplied to rural properties and towns across much of the central and southern parts of the Shire, and to Harcourt horticultural properties via the open gravity fed channel Coliban Water Supply System, which is to be progressively upgraded to a pressurised pipeline system over the next decade.

While Lake Eppalock is north of the boundary of Mount Alexander Shire with the City of Greater Bendigo, a substantial portion of its catchment covers the eastern half of Mount Alexander Shire.

Coliban Rural Water supply system[10]

The Coliban system provides gravity fed water under licence issued under Section 51 of the *Water Act* 1989. The Mount Alexander Shire component is part of the wider Coliban Rural System that provides untreated water from Malmsbury Reservoir and Lake Eppalock to approximately 1,500 rural licence holders via 550 kilometres of open concrete lined box section, and earthen channels, and pipelines through to north of Bendigo.

The initial Coliban rural supply system was created in 1877 with the construction of 65km of the Coliban Main Channel from Malmsbury Reservoir to Bendigo. It was then expanded in 1902 and 1941 with the construction of the upstream Upper Coliban and Lauriston Reservoirs respectively. Connection of Lake Eppalock to Bendigo in the 1960's greatly relieved pressure on the capacity of the system in the upper portion of the system including the Mount Alexander Shire. Despite this however the system suffered acute pressures throughout the decade of drought years from 2000 to 2010.

Its operation since construction and has sustained towns including Castlemaine and Chewton. However rural water is untreated and no quality standards apply for delivery to rural properties, unlike water from the treated urban drinking water supply. Also, rural water supplied to properties is seasonal, and supply quantity and flow rate cannot be guaranteed. Depending on supply conditions, a full allocation of water may not be available to customers, but is available in the 2012/2013 delivery season to May 2013. Some channels have been declared restricted for one or more reasons relating to: v*ery low delivery efficiency*; h*igh public risk*; u*rban encroachment*; or l*ow economic viability*. Customers on restricted channels or pipelines cannot permanently increase licence volumes, but may temporarily transfer water to and from anywhere else in the system.

A major staged upgrade of the system is to occur over the next decade or so to reduce water losses and minimise environmental impacts. Initially 65 kilometres of concrete and earthen channel servicing the Harcourt horticultural area is to be replaced by $40m fully pressurised piped water supply system scheduled for completion during 2014. This will service over 200 current Harcourt Rural customers and water licences are tradeable. The piped system is proposed to run a spur line to the vineyard area east of Faraday and the Calder Freeway along the Faraday-Sutton Grange Road.

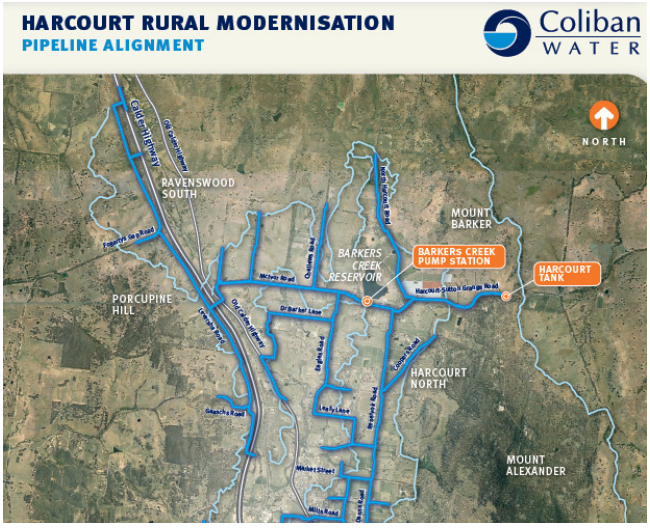
While the Harcourt supply system is supplied from the upper Campaspe River catchment by Coliban Water, it drains into the Loddon River catchment via Barkers Creek. As Goulburn Murray Water is the responsible water authority in the Loddon catchment, it also has strong interest in the Harcourt area, particularly relating to groundwater and the quality of surface water leaving the area.

[9] Content in this section is derived from the Coliban Water website and from consultation with Coliban Water
[10] Content in this section is derived from the Coliban Water website.

Figure 7: The Coliban Water supply system in Mount Alexander Shire.

Source: Coliban Water website

Figure 8: Schematic diagram of the Mount Alexander Shire section of the Coliban Water Supply System.



Source: Coliban Water

Consultation with Coliban Water has provided the following summary advice regarding the Harcourt supply area:

- The supply area has the highest licenced volume for the Coliban rural system. It has historically used approximately 1/3 of the total water used annually in the Coliban Rural System and has the second highest number of customers (approximately 230).
- The area mainly supports primary production, and Coliban Water expects this to continue.
- During the drought of the 2000's the southern supply storages were seriously depleted. The proposed modernised Harcourt system is designed for possible future connection to the Bendigo supply to improve water security to the southern region. This will be implemented when needed.
- The upgrading/pressurising of the system is primarily to provide water security to the existing supply base. It is not done in anticipation of changed land use and attraction of new /additional customers, but future additions are not necessarily excluded. Future connection by individuals would primarily be based on a full cost recovery basis.
- About one third of existing customers have decided either to opt out of the system or to continue with less water under new supply contracts.
- A number of large production growers have committed to the project at the proposed revised pricing, with expectation to continue production into the long term. To ensure that the system's viability is not compromised when licence-holders leave the system, a termination fee will be applied.
- Consolidation of properties is occurring in the supply area under the current planning regime through land acquisitions and land swapping.

Other main summary information on the wider Coliban supply system includes the following.

- The Coliban Main Channel is Coliban Water's key infrastructure asset. It is the sole supply to Castlemaine and it remains the preferred supply to Bendigo over Eppalock which is pumped and of lesser quality. Also:
  - there are no current plans to alter this system apart from ongoing maintenance of the channel.
  - the main channel also supplies some primary producers (Orchards/vineyards).
- The above point does not diminish Coliban Water's perspective on catchment protection issues for the Eppalock (or other) Declared Water Supply Catchments.
- The channel system Castlemaine (Castlemaine/Fryerstown area) is very inefficient system with a small number of customers.
- Leakage in and out of channels is a major consideration for planning application decisions, and reason for the above offset needs.
- Coliban Water has set planning offset distances from its channels for a range of developments including structures, on site wastewater treatment, excavations deeper than 600mm etc. The channel strategy requires a 20m buffer from channel banks or 25m from channel centre line.
- Setbacks for on-site wastewater treatment are directed by *EPA code of practice 891.3*, and any part of the wastewater system must be 60m (upslope) from a channel.
- Coliban Water is concerned about the potential push to expand Rural Living Zoning and rural living generally where this could increase expectations for provision of infrastructure services (eg: sewerage, water supply etc). Any expectation of Rural Living expansion should also address the potential impacts and pressures that may be placed on water supply catchments. Costs are prohibitively expensive for individuals and issues emerge from this re where the cost recovery shortfall should/can be derived from.
- Coliban Water regards the review and implementation of a council Domestic Wastewater Management Plan as being a critical rural land use process that must be addressed for future rural land use development to occur. (Domestic Waste water Management Plans are proposed for adapting the State's policy guidelines for development in open potable water supply catchments to local situations).

3.3 Bushfire

Mount Alexander Shire contains areas with high susceptibility to bushfire and much of the central Shire (in the Sedimentary Land Management Units) is covered by the Wildfire Management Overlay under the planning scheme. This carries a range of obligations on the CFA and Council in considering planning permit applications.

All landowners need to understand the implications of the Wildfire Management Overlay where applied to their property.

The Bushfire Management Overlay (also known as the Wildfire Management Overlay) under the planning scheme is applied to areas deemed to have high susceptibility to bushfire. It carries various obligations on the CFA and Council in considering planning permit applications. Adjustments to the BMO/WMO have occurred across all rural municipalities in Victoria following detailed analysis by the CFA.

All landowners are obliged to understand the implications of the Wildfire Management Overlay where it is applied to their property.

Clause 52.47 Bushfire Protection: Planning Requirements of the planning scheme is applied across Victoria, including Mount Alexander Shire where applications are made to subdivide land, construct a building or construct or carry out works under the provisions of the **Bushfire Management Overlay** at Clause 44.06 in the planning Scheme (See below). The specific purposes of cl. 52.47 are:

- to ensure that development is only permitted if the risk to life, property and community infrastructure can be reduced to an acceptable level; and
- to specify requirements for buildings, works and subdivision on land to which the Overlay applies.

The provisions of the clause contain the following:

- **Objectives** for '*Subdivision',* '*Location layout and siting*', '*Bushfire protection measures*', '*Building and defendable space*'**, '***Defendable space for industry, office and retail premises', 'Defendable space and construction for other occupied buildings', 'Defendable space location*', and '*Water supply and access'.* Content under each objective describes the '*desired outcome*' in the completed development. (A development proposal can be considered to reduce bushfire risk to an acceptable level where it demonstrates meeting these objectives.). Content under each objective category contains the following:
  - **Standards:** These contain the requirements to meet the objective. (While a standard should normally be met, if the responsible authority (Council) is satisfied that an alternative design solution will meet the objective, the alternative design solution may be considered.)
  - **Mandatory standards.** These *must* be met. (Alternative design solutions must not be considered by the responsible authority.)
  - **Decision guidelines:** These identify the matters that must be considered by the responsible authority before deciding if an application meets the objectives.

However if a schedule to the BMO/WMO in a particular planning scheme specifies a requirement for a standard different from a requirement set out in this clause, the requirement in the schedule to the BMO applies. This *does not* occur in Mount Alexander Shire.

Much of the Shire in sedimentary geology areas covered by the BMO/WMO at cl. 44 06 in the Mount Alexander Planning Scheme. The purposes of the Overlay are as follows:

- To implement State and local planning policy as expressed through the planning scheme.
- To assist to strengthen community resilience to bushfire.
- To identify areas where the bushfire hazard requires specified bushfire protection measures for subdivision and buildings and works to be implemented.
- To ensure that the location, design and construction of development consider the need to implement bushfire protection measures.
- To ensure development does not proceed unless the risk to life and property from bushfire can be reduced to an acceptable level.

Where land is covered by the BMO/WMO, a permit is required to subdivide land or (normally) to construct a building or construct or carry out works associated with a range of development types, and a range of criteria

need to be satisfied for approval to be given. This includes provision of a **bushfire management statement**: that must:

- contain a bushfire site assessment prepared to calculate defendable space and construction requirements in accordance with Standards 6.1, 7.1 and 8.1 of cl. 52.47 as appropriate;
- demonstrate the way in which an application meets the relevant objectives, standards, mandatory standards and decision guidelines set out in the clause, in a schedule to the overlay, and in cl. 52.47.

All rural land owners need to be aware of the bushfire status of their land under the planning Scheme and must be familiar with any related obligations upon this.

3.4 Climate change

This section discusses potential implications of climate change in Mount Alexander Shire

Climate change is an inexact predictive 'science'. The 2008 Land and Water Australia report *Glimpsing Victoria's Future Climate* provides climate change projections for Victoria. It indicates that climate in future decades will differ from that of the past.

Temperature projections are for continued warming. Rainfall projections are more mixed but mostly indicate a drying trend, particularly during winter and spring. The combination of projected warming and less rainfall has significant implications for agriculture and stream flow.

By 2030, annual rainfall in Victoria is projected to decrease by up to 5 per cent relative to the climate of around 1990. By 2070, a decrease of 5–10 per cent is likely under a low greenhouse gas emission scenario, or a 10–20 per cent decrease under a high emission scenario. While winter and spring rainfalls are predicted to decrease, changes in summer and autumn rainfall are considered less certain. Projections show an increase in rainfall intensity and an increase in the number of dry days. This suggests that Victoria's rainfall patterns will have longer dry spells interrupted by heavier rainfall events.

By 2030, annual average temperatures over Victoria are projected to increase by at least 0.6°C, relative to the climate at 1990. By 2070, the increase may be at least 1.0°C under a low emission scenario, and at least 2.5°C under a high emission scenario.

Along with the increase in mean temperatures, an increase in the frequency of very hot days and nights is likely. Projections indicate that by 2030 Victoria will experience a few more days per year above 35°C than now, and about twice as many by 2070 under a high emission scenario. Conversely, the frequency of frosts and very cold days and nights is likely to decline.

The combination of projected warming and less rainfall has adverse implications for run-off and water storage. By 2030, stream flow into Victorian dams is projected to decline by 7–35 per cent relative to historical average flows.

In summary, this drying and warming scenario will induce a range of influences on agriculture, including the following:

- Declining productivity due to increased drought and bushfires.
- Crop yields benefiting from warmer conditions and higher carbon dioxide levels, but vulnerable to reduced rainfall.
- Reduced water availability
- Greater exposure of stock and crops to heat-related stress and disease
- Earlier ripening and reduced grape quality
- Less winter chilling for fruit and nuts
- Southern migration of some pests
- A potential increase in the distribution and abundance of some exotic weeds.

These climate change-induced influences on agriculture are likely to create a greater demand for agricultural land and agricultural production in cooler, higher rainfall regions in the state. Most of the above influences

appear as adverse influences. While there may also be consequent benefits to agriculture from climate change, these are not identified in the above-mentioned climate change report.

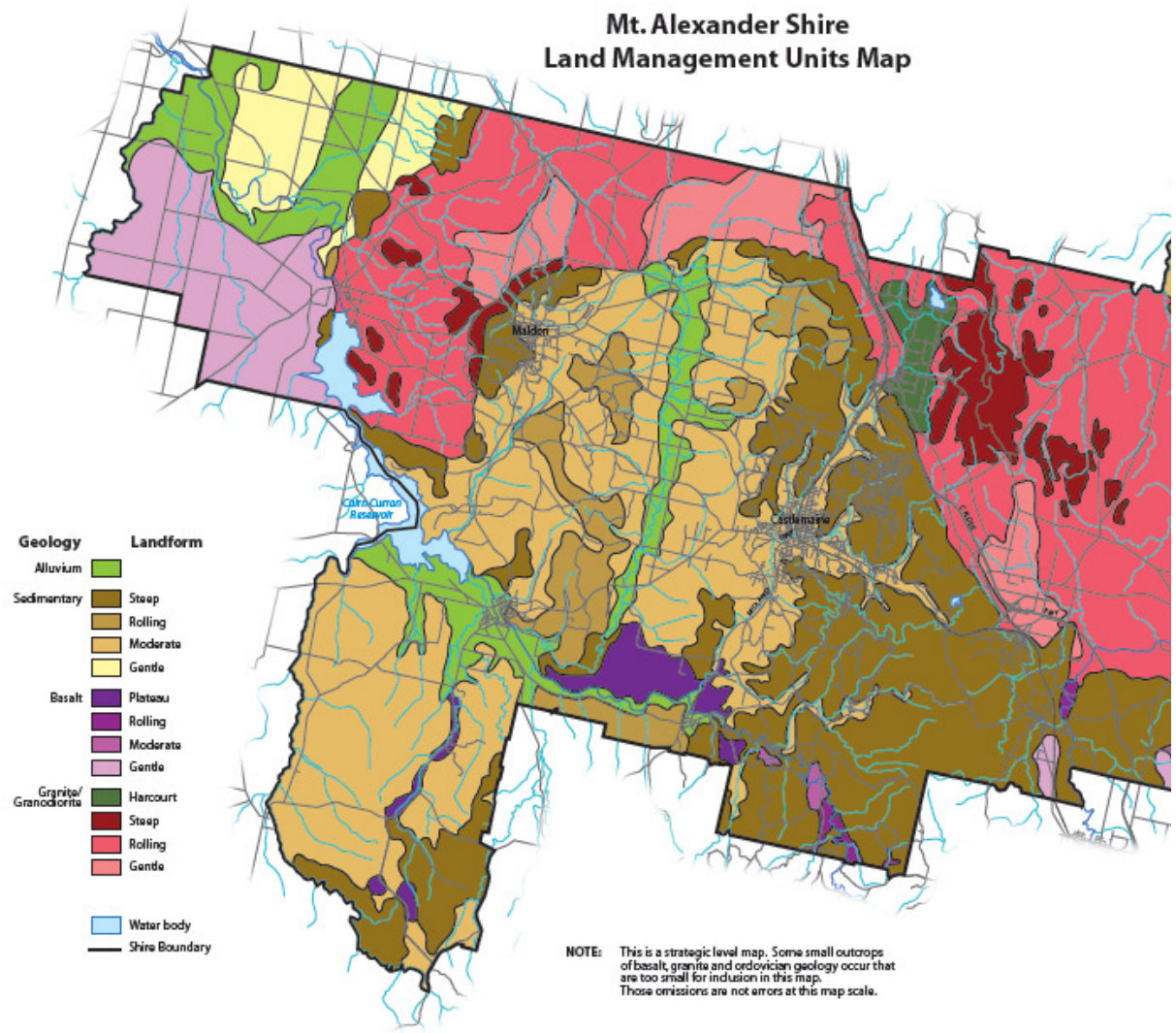
4 LAND MANAGEMENT UNITS

The Shire can be divided into 'Land Management Units' (LMUs) based on geology and topography. These are land areas within which the land has geological and physical/sustainability attributes that are common to the extent that supports common broad land uses, to generally the same level of land performance. This provides a 'first principles' base for discussing and characterising the land across the Shire, including its capabilities for a range of rural and urban uses. They are intended to provide Councillors, planners and other users with an indicative context understanding of areas where planning proposals are being considered.

Figure 9 identifies the 13 LMUs developed by EnPlan from interpretation of the extensive range of literature on the Shires land resources and from site inspections. Agricultural land quality in the LMUs has been refined from this information and is presented in **Figure 24** in Section 5.1.

The map is accompanied by tabulated LMU character descriptions. These provide a strategic overview (a snapshot) of the Shire's lands. There will be land within all mapped LMUs that does not neatly align with the character descriptions and which are too small to include in a map of this scale. It follows that **the LMU map and descriptions are not suitable for or intended to replace need for the provision of property-specific information in planning permit applications or other property-specific purposes.**

Figure 9: Land Management Units in Mount Alexander Shire



Source: Prepared by EnPlan partners from interpretation of DNRE Land Systems mapping

LMU: Alluvium – Baringhup

Figure 10: Irrigated and dryland cropping land in LMU Alluvial Baringhup in the north west of the Shire

LMU: Alluvium – Baringhup	
LMU Characteristics	In Loddon River Catchment generally between Laanecoorie Reservoir (north in Loddon Shire) and Cairn Curran Reservoir (south in Mount Alexander Shire). Flat/almost flat arable land that extends north to the Riverine Plain, primarily used for agriculture. Largely devoid of native tree canopy cover. Features large crown allotments and large holdings. Environmental assets not readily apparent. Low population density. Little current land use conflict. Largely within the Mid Loddon Groundwater Management Area (in parts of Laanecoorie-Serpentine (mid) Zone and the Moolort (southern) Zone) of the GMA. Water tables dropped by around 2m over the course of the 2000's drought but re-established during 2010 -20-12.
Land use(s) snapshot	Agriculture (Cropping / grazing: Irrigated lucerne (central pivot irrigators) sourcing groundwater from Mid Loddon Groundwater Protection Area). Proposals for broiler farming and windfarm current (but may be on adjoining basalt plain to south).
Land capability	*Agriculture*: Moderate agricultural quality (Class 3) *Non-agricultural development:* Moderate. Good for installation of services. Potential waterlogging/drainage issues. Limited landscape relief.
Main native vegetation	EVC 175 Grassy Woodland – significant patches. Little retained remnant tree canopy across farmed arable areas.
Current Planning framework	
Land Use Zones	FZ (40 ha min lot size for subdivision. 40 ha for dwellings without need for planning permit.
Overlays	ESO5 (Water Course Protection) (Applied over confines of Loddon River and Tullaroop Creek only.) EMO (To part only of northern portion of LMU) HO417, HO418, HO420, H)382 (Each applied to single lots only for farm residences and outbuildings)
Opportunities	*For agriculture*: Deep arable soils. Groundwater from the Mid Loddon Groundwater Management Area (Managed by GM Water) is a valuable resource for extraction licence-holders, mainly used for lucerne/fodder crop production under centre pivot irrigators. Flexibility is provided via permanent or temporary transfer of licences. Percentage of licenced volume used varies annually depending on annual conditions (eg: rainfall, flooding, drought). Opportunity to conduct agriculture without hindrance from competing land uses. *For non-agricultural use*: Ease of installation of underground services.
Limitations	*For agriculture*: Climate (Growing season limited by winter cold / summer dry).

	Limited biodiversity across LMU. *For non-agricultural use*: Potential prolonged wetness, and limiting internal soil drainage. Flat topography. Distance from main population centres and social/ community and infrastructure service provision. Periodic extensive flooding across the plains.
Other comments	The LMU is not within a Declared Water Supply Catchment Area (The Laanecoorie Reservoir catchment has not been Declared under provisions of the *Catchment and Land Protection Act* 1994. Active camping and park-related tourist activity associated with Cairn Curran and Laanecoorie Reservoirs has limited interface with farming on the LMU. Limited tourism infrastructure history within the alluvial agricultural plains under traditional agriculture.

LMU: Alluvium – Muckleford Valley

Figure 11: Typical view across the base of the mid section of LMU Alluvium Muckleford Valley west of Castlemaine

LMU: Alluvium – Muckleford Valley	
LMU Characteristics	Flat / almost flat largely cleared of native vegetation apart from scattered paddock trees and along Muckleford Creek, other main drainage lines, and road reserves. Variation in lot sizes (generally smaller at Muckleford (south) end of valley trending larger to the north. Limited land use conflict on alluvial LMU within Valley. Alluvial land along valley floor transitions to sedimentary land of lower agricultural quality toward the side of the valley. Extensive farming occupies both land types.
Land use snapshot	Agriculture (Primarily grazing with some cropping).
Land capability	*Agriculture*: Moderate agricultural quality (Class 3). (Flanked by Moderate sedimentary LMU land of lesser agricultural quality on the sides of the valley) *Non-agricultural development:* Moderate. Good for installation of services. Potential waterlogging/drainage issues in some areas.
Main native vegetation	Cleared paddocks. Mainly River Red Gum (E camaldulensis) along main watercourses and scattered across the narrow floodplain. Better drained terraces may carry *E. microcarpa* and *E. leucoxylon*.
Current planning framework	
Main Land Use Zones	FZ (40ha min lot size for subdivision and for dwellings without a planning permit.
Prominent Overlays	ESO5: (Watercourse protection) Covers bed and banks of Muckleford Creek. SLO1: (Maldon Landscape Area). Covers width/length of Muckleford valley. Landscape classified by National Trust broadly to protect significant tracts of bushland or trees, and encourage development that will not detract from landscape value due to siting/height/appearance. LSIO: Covers inundation areas along/adjacent to about 200m of Muckleford Creek. WMO: Mainly covers western side of Muckleford Valley from west of creekline. HO: (various) mainly for farmhouses/farm complexes, former rural churches. RO (Restructure Overlay) covers historic survey area of Muckleford township.
Opportunities	*For agricultural use*: Moderate agricultural land quality (Class 3 agricultural land). Land containing high bioregional significance adjacent to this LMU is on the mid to upper slope of the valley adjoining Moderate Sedimentary LMU mainly on east side of Muckleford valley. *For non-agricultural use*: Ease of installation of underground services. Upper to middle portions of valley are relatively close to Maldon and Castlemaine.
Limitations	*For agriculture*: Climate (Growing season limited by winter cold and potentially summer dry). *For non-agricultural use*: Large farming lots.

LMU: Alluvium – Newstead

Figure 12: Typical view across LMU Alluvium Muckleford Valley in the Newstead area

LMU: Alluvium – Newstead	
Characteristics	Flat and almost flat land with little native canopy vegetation in paddocks. Large crown allotments. Large holdings. Low population density outside of Newstead Township zone. Little current land use conflict.
Land use snapshot	Agriculture (Cropping and grazing).
Land capability	*Agriculture*: Moderate agricultural quality (Class 3) *Non-agricultural development:* Moderate. Good for installation of services. Potential waterlogging/drainage issues. Limited landscape relief.
Main native vegetation	Cleared paddocks. Mainly River Red Gum (*E. camaldulensis*) along main watercourses and scattered across the narrow floodplain. Better drained terraces may carry *E microcarpa* and *E leucoxylon*.
Current Planning framework	
Main Land Use Zones	FZ (40 ha min lot size for subdivision and for dwellings without a planning permit) (ie: outside of Township Zone).
Prominent Overlays	ESO2 (Lake Cairn Curran Catchments) To north/north west of Newstead only ESO5 (Watercourse protection). Covers Loddon River confines only. SLO1 (Maldon Landscape Area) surrounds Lake Cairn Curran to north /northwest of Newstead (Similar but lesser coverage to ESO2. WMO Minor coverage immediately south of Newstead HO (Few small areas confined to individual lots)
Opportunities	*For agriculture*: Moderate quality agricultural land quality (Class 3). For *non-agricultural use*: Flat. Land easily excavated for installation of infrastructure services.
Limitations	*For agriculture*: Climate (Growing season limited by winter cold / summer dry). Potential for prolonged wetness in some areas. *For non-agricultural use:* Absence of landscape features. Large farming lots. Poor access to community/social services and infrastructure (eg in ground reticulated services). Potential flooding in big events.

LMU: Sedimentary Steep

Figure 13: LMU Sedimentary Steep is forested with shallow stony soils. Here it sits above largely cleared land in the LMU Sedimentary Rolling.

LMU: Sedimentary Steep	
Location	Widespread in the central south of the Shire mainly north, south, east of Castlemaine and in a relatively narrow north-south band in the easy of the Shire fringing the eastern side of the LMU Rolling Granite (Sutton Grange Land System. Also in the south west of the Shire and immediately west of Maldon
LMU Characteristics	Steep sedimentary upper slopes and crests (slopes up to 40%) include the un-metamorphosed and the metamorphic aureole sediments hardened in the past by geological heat and pressure from adjacent cooling igneous/granites. Contains rock outcrop in parallel steeply dipping layers that influence the pattern of gullies and spurs. Gullies have formed in the softer sediments, with spurs/rock outcrops on more resistant sandstones. Stone/rock outcrop vary (eg: 0-20%). Much of this area is set aside as state forest. Soils are typically low fertility with low water-holding capacity. Dominant soils are shallow gradational yellowish brown soils, usually <0.5m deep, with bedrock fragments common through profile. Topsoils are loamy and frequently hydrophobic, but may be absent. Clayey A2 horizons are generally poorly structured. Metamorphosed sediments display similar stony, shallow soils; but parent material is more erosion resistant.
Land use(s) snapshot	Largely uncleared due to steep/rocky terrain, low soil fertility and low water holding capacity of the soils. Land use is largely restricted to limited timber production, apiculture and recreation. Lower slopes merging into the moderate sedimentary LMU areas are often cleared and support grazing on native pasture. Much of the unit was mined for gold or harvested for structural and fuel timbers during the gold era through to late C19th.
Land capability and hazards	*For agriculture*: Generally very low (Class 5) (due to slope and soil characteristics. *For non-agricultural use*: Very low (due to steep slopes shallow soils and rockiness, and erosion potential for access tracks etc) Shallow soils of the mid-upper slopes and crests are extremely prone to sheet erosion. Deeper soils in drainage depressions suffer readily from gully erosion. Gully depth often stabilised by bedrock/rock barriers.
Main native vegetation	EVC 20 Heathy Dry Forest – extensive cover. Range of eucalypt associations occur. • On steep, exposed upper slopes and low woodland to open forest (eg: *E. macrorhyncha, E. polyanthemos* and *E. goniocalyx*). • On gentler and more protected slopes (eg: open forest *of E. melliodora, E. goniocalyx, E. polyanthemos, E. rubida, E. obliqua* and *E. radiata)*. • In major drainage depressions: (eg: *E. ovata, E. rubida* and *E. viminalis)*.
Current Planning framework	

Land Use Zones	PCRZ (Public Land): FZ (Private Land)
Overlays	Wildfire Management Overlay (covers much of the LMU)
Opportunities	*For agriculture:* Extensive grazing only. *For non-agricultural use:* No identified opportunities, due to limitations.
Limitations	*For agriculture*: Steep slopes, shallow soils, and rockiness. *For non-agricultural use*: Steep slopes, shallow soils, rockiness, excavation difficult (eg house sites, access tracks, septic tanks etc) and installation of services (eg: power water). Fire hazard and associated generally poor access/egress from steeper and bushland areas. Much of the unit is in special water supply catchment areas.

LMU: Sedimentary Rolling

Figure 14: Typical land in LMU Sedimentary Rolling

LMU: Sedimentary Rolling	
Location	In the west of the Shire generally west of Kyneton-Redesdale Road, and in the central west of the Shire west of Muckleford valley.
LMU Characteristics	Complex of rocky (sandstone and shale) low hills and gentler, rock-free slopes and depressions. Stone/rock outcrop: 0-10% cover. Parallel rock layers outcrop on some steeper slopes (due to bands of resistant sandstones). Average slope about 15%; but range is up to ~30%. Topsoil is thin or absent, with sharp interface with medium to heavy clay subsoils (yellow clays with red brown mottling), of around 0.5m to 1.5m deep and often with buckshot/stone fragments. Subsoils are usually acidic or neutral, and overlie weathering Ordovician parent material. Soil depth is shallower with elevation up slope).
Land use(s) snapshot	Mainly cleared for grazing of native and introduced pastures. Significant areas are retained as native forest. Evidence remains of past gold mining activity (eg: pits, mullock heaps, erosion gullies). Large lots prevail in the LMU further from main settlement areas. Land use is dominated by agriculture (extensive) grazing (on private land) and forest cover (in public land areas) generally on highest land.
Land capability and hazards	Low agricultural land quality (Class 4 land) best suited to extensive grazing, or forest cover/use. Top soils generally very thin or absent particularly on upper slopes and ridges. Poor to Moderate capability for non-agricultural uses. Moderate sheet and gully erosion. High surface water runoff (tin roof country) particularly where surface vegetation cover is poor or absent Sheet erosion common, especially in cleared, steeper areas most notably in exposed cleared areas, or in re-vegetated formerly cleared areas. Gully erosion frequent in drainage depressions, and minor salting also occurs accompanied by infestations of spiny rush (*Juncus acutus*). Seepage from on-site waste treatment can be problematic close to drainage depressions (or water supply channels), and poor absorption capacity of sub soils.
Main native vegetation	EVC 20 Heathy Dry Forest – extensive cover on upper slopes. Dominant tree species in retained areas include *E.goniocalyx*, *E. microcarpa*, *E. melliodora* and, in the north, *E. sideroxylon*. Original understorey was probably heathy, with common shrubs including *Exocarpus cupressiformis, Acacia pycnantha* and *Cassinia arcuata*, *E. polyanthemos* and *E. camaldulensis* are common in major drainage depressions.
Current Planning framework	
Land Use Zones	Mainly Farming Zone (FZ).

Overlays	Substantial areas covered by Wildfire Management Overlay (WMO) including surrounding Maldon and Chewton, and extensive areas around Castlemaine. Some areas covered by ESO (Water Catchments) for Cairn Curran and Eppalock Reservoirs
Opportunities	*Agriculture*: Very limited opportunity for expanded or in some cases continued agriculture. *Non-agricultural uses* Historically favoured for rural/lifestyle living due to low value for agriculture, (and historically lower land prices than better agricultural land), undulating topography with surface site drainage. Biodiversity conservation in treed areas.
Limitations	*Agriculture* Poor soils (very thin or no topsoil), poor soil permeability (for general rainfall infiltration, and absorption of treated wastes), shallow bedrock common (difficult for excavations for building sites, and installation of underground services (eg: power, water, sewerage lines). Historically small lot sizes in central shire (close to Castlemaine Maldon Chewton, and linked to gold era) renders many undeveloped lots too small for efficient agriculture where only one or a small number of lots are held by a single owner. Potential for agriculture may be compromised by proximity of other non-agricultural uses including rural/lifestyle living (eg. farming noise, transport movements, problems for livestock from domestic animals (mainly dogs) etc) *Non-agricultural uses*: Likely to be in Wildfire Management Overlay (WMO) area. Potentially in ESO2 (Lake Cairn Curran Catchment) in west of Shire or ESO1 (Lake Eppalock Catchment (in east of Shire) and covered by 2012 State policy for development in potable water supply areas. Increasing remoteness from urban/social and infrastructure services (eg: sewerage, water) with distance from main population centres (Castlemaine, Chewton, Maldon).
Other comments	This LMU can be considered as three sub Units: **Central shire (or Castlemaine /Maldon) sub unit** (includes LMU surrounding Castlemaine, Maldon areas generally, **Southwest (**or **Eberys) sub-unit** (south of Newstead), and **Northeast (**or **Redesdale) sub-unit** (in Redesdale/Eppalock area)

LMU: Sedimentary Moderate

Figure 15: Typical land with remnant vegetation on rises in LMU Sedimentary Moderate that is common in the Shire

LMU: Sedimentary Moderate	
Location	Widespread mainly in the central part of the Shire including Castlemaine and Maldon And in the south west, generally south of Newstead.
LMU Characteristics	Similar to Sedimentary rolling but slopes generally lower (up to 20%) with potentially deeper soil profiles and less surface and profile rock.
Land use(s) snapshot	*Agriculture*: Generally extensive grazing of sheep and cattle on larger farms and commonly on smaller rural living lots. Some cereal cropping on lower/gentle slopes. *Non-agricultural uses* This LMU is historically favoured for rural/lifestyle living due to low value for agriculture, (and historically lower land prices than better agricultural land), undulating topography with surface site drainage. Biodiversity conservation in treed areas. Rural living settlement density is highest near main population centres (Castlemaine, Maldon, Chewton), but also in other areas.
Land capability and hazards	*Land capability* Low agricultural land quality (Class 4 land) best suited to extensive grazing, or forest cover/use. Some moderate (Class 3) land can occur on lower slopes but generally of areas too small for recognition in strategic level mapping. Moderate capability for non-agricultural uses on mid to lower slopes where soil profile exceeds 1 metre. Capability reduces with shallower soil (depth to rock) due to increased excavation difficulty for installation of underground utilities/services, and poor absorption capacities of the subsoils. *Hazards* Moderate sheet and gully erosion. Sheet erosion is common, especially in cleared, steeper areas most notably in cultivated or exposed cleared areas, or in re-vegetated formerly cleared areas. Gully erosion is frequent in drainage depressions, and minor salting also occurs accompanied by infestations of spiny rush (*Juncus acutus*). Seepage from on-site waste treatment can be problematic close to drainage depressions (or water supply channels), and poor absorption capacity of sub soils.
Main native vegetation	EVC 61 Box Ironbark – extensive cover *South of Newstead* EVC 61 Box Ironbark forest – extensive cover EVC 20 Heathy Dry Forest – patchy (EVC 176 and 649?) EVC 175 Grassy Woodland
Current Planning framework	
Land Use Zones	Mainly Farming Zone (FZ) but some RLZ Rural Living Zone (RLZ) west and north of

	Castlemaine.
Overlays	Substantial areas covered by Wildfire Management Overlay (WMO) including surrounding Maldon and Chewton, and extensive areas around Castlemaine
Opportunities	*Agriculture*: Limited opportunity for expansion or in some cases continued agriculture due to competition from other uses mainly rural living and associated elevation of land values to 'non-agricultural' levels. *Non-agricultural uses* Historically favoured for rural/lifestyle living due to low value for agriculture, (and historically lower land prices than better agricultural land), undulating topography with surface site drainage. Biodiversity conservation in treed areas.
Limitations	*Agriculture* Generally poor soils very thin or no topsoil particularly on mid to upper slopes. Poor soil permeability (for general rainfall infiltration, and absorption of treated effluent), shallow bedrock common particularly in mid to upper slopes (difficult for excavations for building sites, and installation of underground services (eg: power, water, sewerage lines). Historically small lot sizes in central shire (close to Castlemaine Maldon Chewton, and linked to gold era) renders many undeveloped lots too small for efficient agriculture where only one or a small number of lots are held by a single owner. Potential for agriculture may be compromised by proximity of other non-agricultural uses including rural/lifestyle living (eg. Farming noise, transport movements, problems for livestock from domestic animals (mainly dogs) etc). *Non-agricultural uses*: Many parts of the LMU are covered by the Wildfire Management Overlay (WMO). Some areas are covered by the Environment Significance Overlay (ESO2 Lake Cairn Curran Catchment) in west of Shire or ESO1 (Lake Eppalock Catchment) in east of Shire, and subject to assessment under 2012 State policy for development in potable water supply areas. Increasing remoteness from urban/social services with distance from main population centres (Castlemaine, Chewton, Maldon).

LMU: Sedimentary Gentle

Figure 16: Typical cropping land with remnant vegetation on rises and river line in LMU Sedimentary Gentle in the north west of the Shire

LMU: Sedimentary Gentle	
Location	Far north west of the Shire
Characteristics	Gently undulating (flat to very low slope) landscape of Ordovician sedimentary (sandstone, shale, slate in northwest corner of Shire) surrounded by the Baringhup alluvial LMU. About 95% of the LMU is broad crest, gentle slope, and wide based drainage depression. Rock outcrop is uncommon. The land is largely cleared of native vegetation. Original woodland was mainly *E. microcarpa*, *E. sideroxylon* and *E. leucoxylon* with *E. camaldulensis* in the drainage depressions. Soils are mainly weakly structured sandy loam to loam topsoils that are prone to compaction and surface sealing (results in high run-off and sheet and rill erosion in cultivated areas). The topsoils are sharply defined from clay subsoils. Rainfall: 400-500mm/annum average.
Land use snapshot	Exclusively agriculture (extensive cereal cropping and grazing).
Land capability and hazards	*Land capability* *Agriculture*: Moderate capability (Class 3) (consistent with that of adjacent alluvial land). Non-*agricultural use*: Moderate. Low slopes and soil depth are relatively suitable for excavation for building slabs and foundations, and for installation of underground services, but poor for subsurface absorption of treated wastes. *Hazards:* Sheet erosion (moderate); Wind erosion (low); Salting (moderate to high); Gully erosion (moderate); Compaction/ surface sealing (moderate). Minor sheet erosion and, in extreme condition wind erosion. Gully erosion occurs in drainage depressions. Salting is not common within the Shire but is common and severe on lower slopes and depressions in the same land system north of the Shire.
Main native vegetation	EVC 175 Grassy Woodland – some significant areas. Limited biodiversity across LMU
Current planning framework	
Main Land Use Zones	Farming Zone (FZ)
Prominent Overlays	LSIO (Land Subject to Inundation) along/adjacent to Loddon River
Opportunities	*For agriculture*: Historically Large lot and holding sizes. Low population density with little/no competition from competing non-agricultural land uses. Opportunity to conduct agriculture without hindrance from competing land uses. *For non-agricultural use*: Ease of excavation and installation of underground services on low slope topography with good soil depth.
Limitations	*For agriculture*: Climate (Growing season limited by winter cold/summer dry). *For non-agricultural use*: Potential prolonged wetness, and limiting internal soil drainage. Distance from urban and social/community infrastructure and services.

LMU: Basalt Plateau

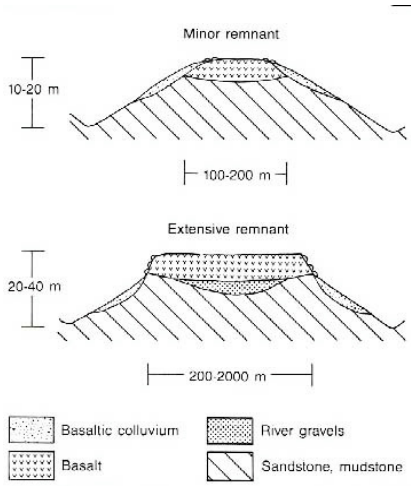


Figure 17: Schematic drawing and photograph of typical land in the LMU Basalt Plateau

LMU: Basalt Plateau	
Location	Various locations across the south of Shire.
LMU Characteristics	Mainly occurs across the south of the Shire as the Guildford Plateau, and along the Loddon River between Guildford and Glenlyon, to the south of Newstead, as dissected remnants (typically of <1km^2) of narrow lava flows. Some of the latter appear as almost interconnected hills, separated where stream incision or erosion has cut through the lava flow. They either retain flat topped features of the original lave flow or appear as small rounded hills where more severe dissection has occurred. Stone/rock outcrop varies considerably from 0-5% on gentle slopes to ~50% near scarps. The LMU includes the scarps that fringe the plateaus as these are too narrow for strategic level mapping and are best for consideration in a planning context as part of the plateau. Soils on the plateau vary due to slope, position, dissection and climate. Dominant soils are well structured loams, often with stony profiles. The scarps generally expose the basalt capping potentially 10 to 20m thick overlying other geological (commonly sedimentary) material. The plateau and scarps are generally cleared for agriculture except for isolated paddock specimens (generally *E. microcarpa* in north, and *E. melliodora* or *E. viminalis* to south.
Land use(s) snapshot	Agriculture (Grazing)
Land capability and hazards	*Agricultural land quality*: Low (Class 4). Productive soils that may be limited by prolonged wetness, or surface rock in some areas. *Erosion hazard*: Generally low. Soils are generally stable, despite minor sheet or rill erosion and some land-slipping on scarps.
Main current vegetation	Plains Grassy Woodland (EVC 55) Other Plains Grassy Woodlands in combination with other communities as mosaics and complexes.
Current Planning framework	
Land Use Zones	FZ only.
Overlays	No overlays.
Opportunities	Unfettered agricultural use.
Limitations	Small plateaus tops. Potential access limitations (Steep scarps). Wetness, Rock cover

LMU: Basalt Rolling and Basalt Moderate

Figure 18: View across LMUs Basalt Rolling and Basalt Moderate to sedimentary hills.

LMU: Basalt Rolling	
Location mainly	Isolated areas in south of Shire.
LMU Characteristics	Basalt plain and undulating land. Green Hill in the south west of the Shire is a prominent extrusion point in the LMU. Contains Campaspe River valley in south east - east of the Shire. Some areas contain/retain considerable scattered tree cover.
Land use snapshot	Agriculture. Agricultural land use is often restricted by excessive surface and subsurface rock to sheep/cattle grazing of introduced pastures. Cropping occurs on deeper arable soils with little or no rock cover (naturally or where rock clearing has occurred).
Land capability and hazards	Erosion hazard and associated soil loss over time is minimal except on the scarps (eg of Campaspe River in south east), which have a moderate susceptibility to soil loss. Areas with shallow stony gradational soils are susceptible to leaching of nutrients, and compaction is a problem on the flatter gilgaied areas
Main native vegetation	Dominant tree is scattered *E camaldulensis. E viminalis and E melliodora occur* along valleys (ie: Campaspe River valley.
Current planning framework	
Main Land Use Zones	FZ
Prominent Overlays	*ESO5 Water Catchments* (Eppalock catchment) in south east of Shire (north from Kyneton to Redesdale
Opportunities	Large lots. Large farm holdings with little interface with other uses. Good grazing land
Limitations	Rock cover, Clay based soils can remain wet for long periods.

LMU: Basalt Gentle

Figure 19: Extensive basalt plains in the LMU Basalt Gentle in the southeast of the Shire and west of Baringhup.

LMU: Basalt Gentle	
Location	Mainly in the east of the Shire along Kyneton-Redesdale Road, and in the north west.
LMU Characteristics	*North west of Shire* (northwest of Cairn Curran) West of Cairn Curran Reservoir (covers portion of the wider Moolort Plain which was considered to be largely treeless). The LMU occurs as an extensive flat to gently undulating plain (average 0-2, with surface rock mainly occurring on low basalt flow rises, or on valley scarps. Red gradational or duplex soils occur with heavier soils in low-lying areas. The native vegetation has been extensively cleared and grazing and cropping are the main land uses. Largely bare of paddock trees apart from isolated eucalypt (*E. macrocarpa*) and Casuarina (*C. luehmannii*), specimens, with some redgum (*E. camaldulensis*) in poorly drained areas. *East of Shire from South boundary to Redesdale*): Rolling/undulating basalt plain with occasional deep scarps (eg Campaspe River valley in east of Shire). Deep gilgaied soils can occur on flatter areas, with stony red gradational soils on the steeper parts. The latter soils also occupy the scarps, along with self-mulching clays. The broad depressions and alluvial valleys generally have dark clays, indicative of prolonged wetness. *E. camaldulensis* is dominant and scattered trees remain in much of the LMU in the east with *E. viminalis* and *E. melliodora* occur along the Campaspe river valley.
Land use snapshot	Predominantly grazing on introduced pastures, and cropping (cereals and fodder species) on large land titles and large holdings (relative to much of Shire). Low settlement density associated with extensive farming properties.
Land capability	Generally Moderate (Class 3) for agriculture. Moderate for non-agricultural uses. Very stable basalt clay soils, with only minor evidence of sheet erosion and topsoils compaction. Some limited saline seep areas. Capability is reduced where rock cover inhibits cultivation and excavation for construction and installation of underground services.
Main native vegetation	*West – patchy cover* EVC 259 Plains Grassy Woodland / Gilgai Wetland Mosaic EVCs Plains Woodland (EVCs 803 / 856 / 235 *East* Mainly cleared.

Current planning framework	
Land Use Zones	Farming Zone (FZ) only
Overlays	Land Subject to Inundation (LSIO) adjacent Loddon River (east side of LMU, north west of Baringhup) and Tullaroop Creek (west side) Environment Significance Overlay (ESO5) covers bed and banks of Loddon River and Tullaroop Creek in part of LMU. Significant Landscape Overlay (SLO1) around west side of Cairn Curran Reservoir.
Opportunities	Retain as unimpeded broadacre farming land. Low population density
Limitations	Subject to prolonged wetness during winter months. Rock cover sporadic (mainly on basalt flow rises). Landscape lacks features, lot sizes too large, and area too remote from urban infrastructure and social/community services to be suitable for rural/lifestyle living and other non-agricultural use.

LMU: Granite Harcourt

Figure 20: Typical orchard land in LMU Granite Harcourt with light sandy soils and showing evidence of seepage.

LMU: Granite Harcourt	
Location	Harcourt area
LMU Characteristics	Undulating to gently undulating with slopes of 2-8%. Small orcharding properties (relative to broadacre farming land in much of the Shire). Largely cleared of native vegetation for orcharding. Moderate – high rural population density. Existing irrigation infrastructure to be upgraded to pressurised pipeline (see below)
Land use(s) snapshot	Predominantly irrigated apple orcharding. Evidence of recent significant investment in orchard technology (e.g. trellising, new plantings). Some land retired from orcharding including departure of some large growers (potential consequence of high Australian Dollar, past prolonged drought and frost in recent years). Value adding infrastructure (e.g. packing sheds, coolstores). Extensive pressurised irrigation infrastructure about to replace open channels ($40m conversion). Significant land use conflict developing with pressure for subdivision for rural residential development.
Land capability and hazards	*Agriculture*: Generally Moderate (Class 3) dryland agricultural quality enhanced by irrigation where provided for. This can vary with some land being of lesser agricultural quality. Some low lying areas are subject to frost attack (eg early season frost) which reduces production. *Non-agricultural development:* Moderate to high capability, due to favourable topography and generally suitable for excavation for services installation.
Main native vegetation	Red Gum Wetland (EVCs 886 & 458) / Red gum Swamp (EVCs 292 & 333)
Current Planning framework	
Land Use Zones	FZ (40 ha min lot size for subdivision and for dwellings without need for planning permit).
Overlays	ESO5 (Watercourse protection)
Opportunities	Potential for increased agricultural production with the availability of pressurised irrigation delivery and more assured water supply. Topography suitable for a range of agricultural and non agricultural uses.
Limitations	Frost susceptibility (as above) and. Tight settlement.
Other comments	Introduction of reticulated sewerage (2001) at Harcourt has increased infill development appeal for township living and commuter appeal (to Castlemaine, Bendigo etc). Upgrading of water supply to pressurized system may increase appeal. *Harcourt After the Bypass Study* proposes possible expansion of the Harcourt urban area.

LMU: Granite Steep


Figure 21: Typical forest and grazing land in LMU Granite Steep with light sandy soils and showing evidence of seepage.

LMU: Granite Steep	
Location	Steep granite massif areas including Mount Alexander and west of Maldon, and along the southern far eastern boundary of the Shire. Contains Mount Alexander Regional Park
LMU Characteristics	Rocky upper slopes and crests (of Mount Alexander and nearby hills). Slopes generally average 25-35% with range from 5% to 60%. The rolling hills and ridges are characterised by areas of prominent granitic boulder/rock outcrops, ranging up to 80% cover on steep forested and cleared slopes. Some gentler rock-free slopes and saddles also occur. Coarse porous uniform sands dominate on upper slopes, with coarse sandy soils over clays produced by weathering on more stable gentler slopes and crests. Woodland / open forest (*E. viminalis*, with *E. oblique*) is largely retained on Mount Alexander and restricted to moister summit. *E. goniocalyx* on drier slopes.
Land use(s) snapshot	Restricted to grazing (on private land) on native or introduced pastures due to steepness and soil qualities (eg: low available water capacity; ready leaching of nutrients).
Land capability and hazards	*Agriculture*: Very Low land quality for agriculture (Class 5) Agricultural Use Restricted to very extensive grazing but preferably not used for agriculture. *Non- agricultural use*: Very Low. Difficult for excavation (eg: slabs, foundations, underground services incl. water and power, access roading, septic tank and associated distribution infrastructure. *Erosion hazard*: Fragile land in mid to upper slopes. Moderate to sheet and track erosion. Reduced by soil porosity in upper areas under average management, and where vegetation is retained vegetation but potential exists for land slips. Minor sheet erosion occurs in cleared areas. Some gully erosion occurs and can be difficult to control due to steepness and inaccessibility of drainage depressions.
Main native vegetation	*Mount Alexander Regional Park:* EVC 72 Granitic Hills Woodland / EVC 244 Granitic Hills Woodland / Rocky Outcrop Shrubland / Rocky Outcrop Herbland Mosaic *Far East:* Cleared
Current Planning framework	
Land Use Zones	FZ (private land) and PCRZ (public land)
Overlays	Main overlays are: Wildfire Management Overlay (WMO) over all unit; Environmental Significance Overlay (ESO4 *Mt Alexander and Surrounds*) over Mt Alexander area; Significant Landsacpe Overlay (SLO1 Maldon Landscape Area) over Mt Tarrengower area, and Erosion Management Overlay (EMO). (Need to check maps for specific areas).
Opportunities	*Agriculture*: No real opportunity due very low to low agricultural capability of the land *Non-agricultural use*: Suitable only for nature conservation/ forest cover.

Limitations	*Agriculture*: Very low capability, steep slopes, rock cover, light porous low fertility soils with very low water holding capacity. Subject to rapid drying. Erodible when disturbed. *Other development*: Difficult for installation of underground services, and excavations for access roading, building slabs and foundations.

LMU: Granite Rolling

Figure 22: Rolling granite landscape in the Sutton Grange area of LMU Granite Rolling showing traditional grazing land and irrigated vineyards

LMU: Granite Rolling	
Location	Widely located west of Calder Highway (Sutton Grange Metcalfe district, and across the central north portion of the Shire.
LMU Characteristics	Undulating plains to low hills (slopes 2% to 15%). Up to 10-20% rock cover on crests. Soils on crests and slopes are typically mottled duplex soils (sharp distinction between topsoils and clay subsoils. The LMU provides an attractive open woodland landscape in part due to retention of original farmland vegetation (*E. camaldulensis* dominates in drainage depressions and lower slopes. *E. goniocalyx*, *E. microcarpa* and *E. dives* dominate on upper slopes and crests. *E. melliodora* is common on the slopes).
Land use(s) snapshot	Agriculture: Extensive sheep and cattle grazing on large lots generally on large holdings. Some cropping and orcharding (Orcharding between Sutton Grange and Faraday in SW of LMU).
Land capability and hazards	Agriculture: Low (Class 4 land) Erosion has occurred historically and the duplex soils in drainage depressions are often covered by light sandy alluvium that dries rapidly in dryer months. While the sandy surface soils are susceptible to surface erosion this is not common. Gully erosion is common in drainage depressions. Minor salting occurs on lower slopes and drainage depressions particularly near the metamorphic aureole ridge to the north and east. Lateral water movement occurs above the hardpans and rock and emerges as springs on the surface after prolonged rains and during wetter periods generally. Saline seepage into drainage lines is common.
Current Planning framework	
Land Use Zones	All Farming Zone (FZ) with 40 ha minimum subdivision and for dwellings without need for a planning permit.
Overlays	ESO1 (Lake Eppalock Catchment) covers entire LMU.
Opportunities	*Agriculture:* Retention assisted by large land being held almost exclusively in large lots on large holdings. Strong grazing country.
Limitations	*Agriculture*: Versatility limited by 'droughty' surface soils. *Non-agricultural uses*: Large lot sizes.
Other comments	Vineyards at edge of LMU, adjacent to Sutton Grange – Faraday Road are at outer extent of proposed pressurized piping upgrading of Coliban Water's Harcourt scheme.

LMU: Granite Gentle

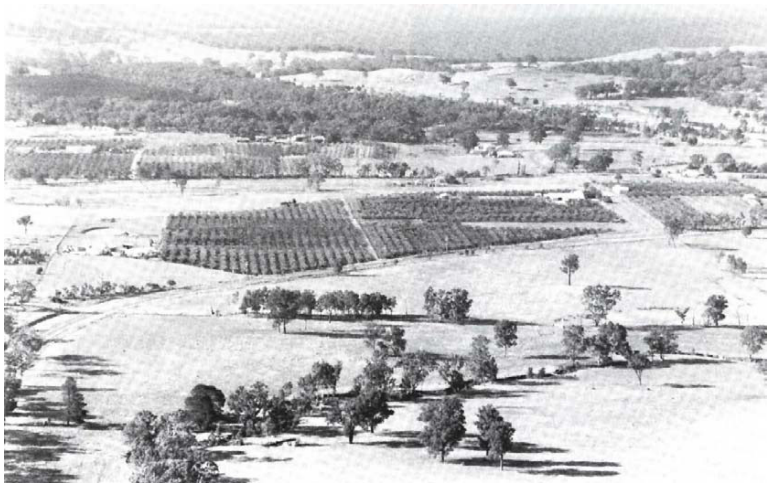


Figure 23: Aerial views of typical land in LMU Granite Gentle showing traditional grazing land and horticultural use

LMU: Granite Gentle	
Location	Areas in the far central north of the Shire and in the general Elphinstone area east of Calder Highway.
LMU Characteristics	This gently undulating LMU on granodiorite north of Elphinstone is higher elevation than the adjacent Granite Rolling LMU (Sutton Grange Land System), The land contains seeps that are caused by A feature of both land system is the occasional 'hardpans' in the soil profile and by water movement along the top of massive subsurface rock forms. Increased infiltration following clearing of native vegetation has raised water tables and mobilised salts, which have accumulated in the deeply weathered profiles. Surface soils are deep coarsely textured with low available water capacity that reduces with elevation upslope. Sub soils are mainly mottled clays (with mottling indication periods of wetness).
Land use(s) snapshot	Restricted to the grazing of sheep or cattle on native or introduced pastures with minor cropping and some orcharding where irrigation water is available.
Land capability and hazards	The land is relatively stable, but exposed sandy topsoils are subject to wind and water erosion. Gully erosion occurs in some depressions and salt seeps can occur on lower slopes and drainage depressions. Saline seeps can overlie hardpans on the lower slopes and drainage depressions.
Main native vegetation	*E. rubida* and *E. radiata* predominate on the slopes and crests. *E. camaldulens*is dominates in drainage depressions.
Current Planning framework	
Land Use Zones	FZ
Overlays	ESO1 (Lake Eppalock Catchment) covers entire LMU.
Opportunities	Continued grazing.
Limitations	Potential for increased agricultural diversity is restricted by the droughty nature of the upper soil horizons (ie: growing season reduced by rapid drying of the soil profile. Slope and rock cover and rock under surface can inhibit excavation for services installation and other engineering purposes (eg foundations, concrete slab)

5 MAJOR RURAL LAND USES

5.1 Agriculture

This section summarises key agricultural features of Mount Alexander Shire

Background

Agriculture is the main rural land use by area across most rural areas of the Shire. Current agriculture is broadly summarised by the following:

- The dominant agricultural use across most of the Shire (apart from forest areas) is broadacre grazing of cattle and sheep. It occurs wherever agriculture is practiced across the Shire. Grazing is mixed with other agricultural and non-agricultural uses to differing degrees in different parts of the Shire.
- Extensive cereal cropping occurs on large holdings on alluvial land and gentle sloping sedimentary land in the LMUs in the north-west of the Shire. Sheep grazing is the main supplement to this use.
- Irrigated horticulture (mainly apples) supported by the Coliban Irrigation System occurs on granite slopes and outwash land (ie: soil deposited from higher slopes), and valley land at Harcourt (mainly in LMU Granite Harcourt)
- Some extensive vineyards occur on granite land east of Faraday adjacent to the Faraday - Sutton Grange Road (LMU Granite Rolling). Vineyards including some small/boutique plantings also occur on granite land in the general area of Welshman's Reef / Cairn Curran Reservoir (LMU Granite Rolling).
- Grazing occurs across the lower to mid slope parts of the Shire's sedimentary land (it generally gives way to forest cover in upper slopes) (LMUs Sedimentary Rolling and Moderate). This is generally mixed with other uses including rural living, and nature conservation which increasingly dominates on the land of low agricultural quality of the mid to upper slopes and crests of these sedimentary LMUs.
- Groundwater in the Baringhup area supports spray-irrigated lucerne on the alluvial land (LMU Alluvial Baringhup).
- There is no evident sustained 'industry scale' expansion of emergent agricultural enterprise types such as deer , alpaca, goats, emu, ostrich farming or herb production that have generated some profile at various times over past decades..

Some main issues facing agriculture in the Shire include the following:

- How can farming be continued on low quality agricultural land?
- Fragmentation of agriculture associated with subdivision of rural/agricultural land for rural or lifestyle living.
- Land use conflicts: rural living/lifestyle use versus the '*right to farm*'.
- Protecting the future of agricultural land of local and regional strategic significance.
- Use of available irrigation water.
- Potential for the introduction and expansion of intensive animal production.
- Implications (positive and negative) of climate change on the future of agriculture, and the potential need for adaptability and resilience.

Apart from the following main exceptions there is little apparent pressure against agriculture for other uses including rural living.

- Land of the central goldfields areas is typically the sedimentary land around Castlemaine and Maldon (Sedimentary LMUs). In these areas agricultural land use is interspersed with and often dominated by rural living and small hobby farm development on private land and forested public land. The different land use is generally accompanied by smaller land titles and more complex survey patterns than on other land types.
- A limited low hilly area of granite land in the far south-east corner of the Shire close to and north of Kyneton (LMU Granite Rolling). This area has also been largely developed through subdivision for rural living and small area farming uses.
- Rural living development has also encroached into other areas to differing degrees mainly in 'outlying' sedimentary country, including south of Newstead (eg LMU Sedimentary Rolling).

The dominant agricultural uses have changed little over past decades, and are largely a function of land type on basalt, granite, sedimentary and alluvial geologies. The primary land types and their characteristics are identified in LMU descriptions in Section 4 of this report. The tabulations below identify current enterprise types in the Shire as identified by the Australian Bureau of Statistics (ABS) from census data.

The base agricultural statistics for Mount Alexander Shire are as follows as taken from ABS data for the 2005-06 census. These broadly confirm the following:

- Wheat, oats and barley (in that order) are the main cereal crops grown.
- Apple followed by grape production are the main horticultural types in the Shire, well ahead of others including but not limited to pears, olives, cherries, peaches, apricots and various vegetables.
- Cattle and sheep are the primary livestock types, well exceeding others including pigs, goats, and horses.

Pasture and broadacre crops

Pasture and broadacre crops	Area (ha)	Weight
Cereals for grain		
Wheat	2,993	8,763 t
Oats	1,347	3,697 t
Barley	801	2,021 t
Oilseeds		
Canola	1,208	1,778 t
Legumes for grain		
field peas	19	43 t
Hay		
cut from pasture, cereal and other crops	2,726	10,642 t
hay sold		2,960 t
silage made		2,282 t

Horticulture

Horticulture		
Nurseries, cut flowers and turf		
Nurseries	1	
cut flowers	15	
Vegetable for seed and total vegetables for human consumption		
french and runner beans	10	30,481 kg
herbs other than parsley		228 kg
Mushrooms		7,796 kg
Tomatoes		96 t
Apples		
area of orchard	342	

apples for processing		274,077 kg
apples for fresh fruit		7,678,699 kg
Pears		
Area of orchard	30	
pears for processing		45,420 kg
pears for fresh fruit		382,065 kg
Stonefruit		
apricot production		8,268 kg
cherry production		20,959 kg
nectarine production		10,461 kg
olive production		22,293 kg
peaches production		11,627 kg
plums and prunes		50,449
Grapes		
total area	225	
total production for red wine making/distillation		664 t
total production for white wine making/distillation		98 t

Livestock

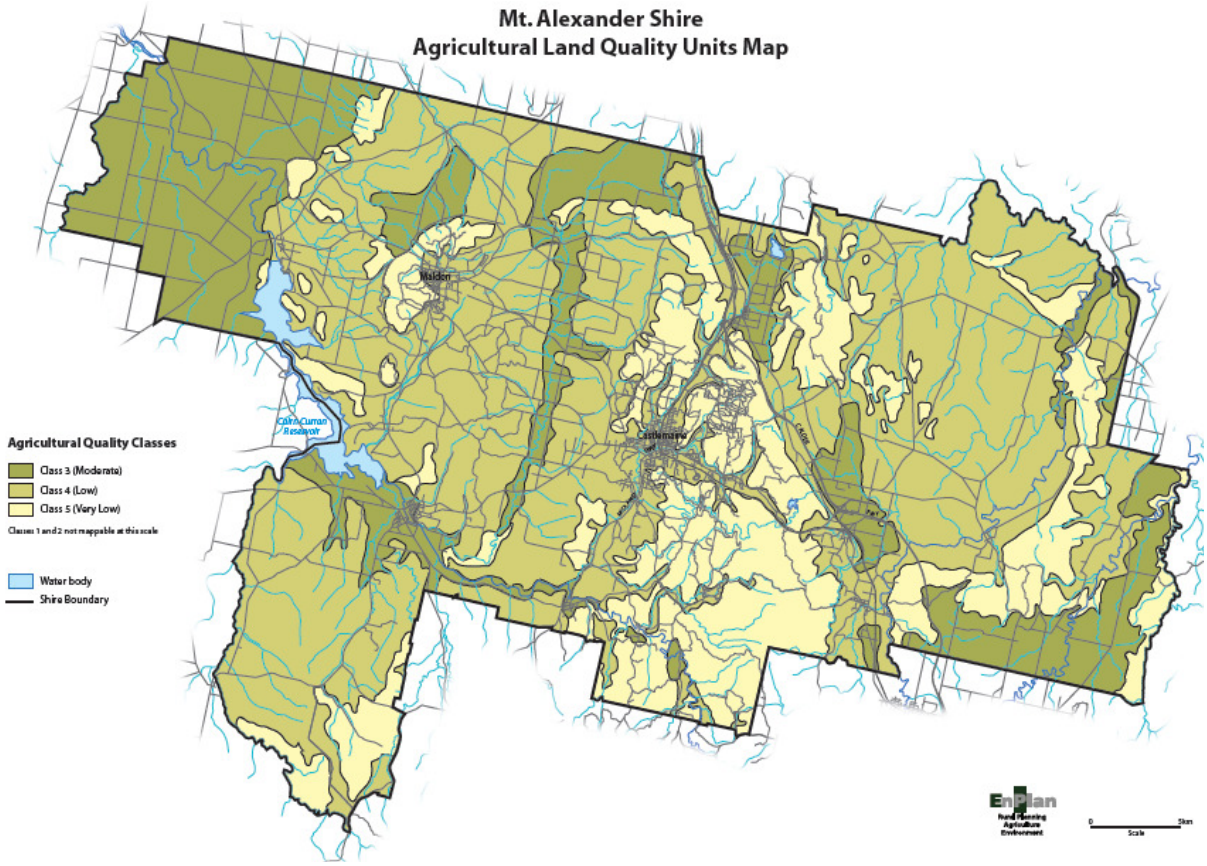
Livestock	Number	
Sheep and lambs		
total	257,429	
sales of sheep and lambs	112,105	
Cattle		
milk cattle	560	
meat cattle	11,343	
Pigs		
Total	3,598	
Sales	271	
Laying chickens		
Total	44	
eggs produced for human consumption	159 (dozen)	
Horses		
Stud	173	
other than stud	213	
Sales	46	
Goats		
total (excluding feral goats)	247	
sale of domesticated gates	209	
Beekeeping		
total hives	5,592	

Agricultural Land Quality

The Shire's Agricultural Land Quality is represented in the following map. The map is interpreted by EnPlan from the LMU map at Figure 9, and from the land resource documents identifies in Appendix 1 of this report. The quality classes are expressed on a statewide basis, not comparative within the Shire. Their descriptions are

presented in **Table 6**. The best quality agricultural land in the Shire is rated *Moderate:* the lowest quality land is rated *Very Low*.

Figure 24: Agricultural Land Quality Units Mount Alexander Shire



The map provides a strategic level indicator of agricultural land quality and cannot be used at the individual property level.

Table 6: Land quality rating descriptions for agriculture.

Land Class	Explanation
Class 1 **Very high**	**Agriculturally versatile land, with high inherent productive potential** through possessing deep permeable, friable, structurally resilient and fertile soils, a flat to gently undulating land form, and a growing season of up to 11 – 12 months either under natural rainfall or through the availability of irrigation. Suitable for intensive irrigated cropping and grazing.
Class 2 **High**	**Agriculturally versatile, but requiring a higher level of inputs to achieve the same productivity as Class 1**. Slope is greater, soils more variable, and the growing season is limited up to 9 – 10 months, or extended to 12 months if irrigation water is available. Suitable for high production extensive cropping and grazing and vines or orchards with irrigation.
Class 3 **Moderate**	**Sound grazing and moderate cropping land but limited in versatility.** Growing season can be limited to approximately 5-7 months due to dryness or wetness. With high inputs, moderate to high animal production may be achieved, and moderate cropping yields can be achieved using high inputs and minimum tillage techniques.
Class 4 **Low**	**Capable of supporting grazing under moderate to low stocking rates where clearing has occurred**. Slopes are moderate to steep, with shallow infertile soils that need care in their management. Fertility levels are generally low. Unsuited to cropping either because of limitations due to slope, drainage, lack of topsoil depth, weaker structure, low water holding capacity or presence of rock. High inputs may not be economic. Erosion hazard is high. Forest is often the best and most stable form of land use.
Class 5 **Very low**	**Land unsuited to agriculture**. Constraints may be steepness of slope, shallow, sandy, or rocky soils, high erosion susceptibility. Environmental stability may be best achieved through isolating areas and strictly controlling or eliminating agricultural land uses.

Source: Prepared by EnPlan from DNRE and DPI agricultural quality classifications.

Discussion

On the basis of inherent land characteristics, the agricultural land in the Shire varies from '*Moderate'* to '*Very Low'* quality for dryland agriculture on the statewide scale. The *moderate* quality agricultural land includes that in the Alluvial LMU, the gentle slopes of the land in the basalt, granite and the sedimentary LMUs. Access to surface and groundwater irrigation water in the Harcourt and Baringhup localities respectively increase the range of available enterprise options, and enables more intensive production. However this generally requires capital investment in infrastructure and plant and equipment, and potentially the development of different management skills. This is generally associated with higher risk. The balance of the dry land in the Shire is classed as *Low* to *Very Low* agricultural quality. This is reflected in the mixed pattern of land use dating back to the 19th Century gold rush era.

In the short to medium term future the location and type of main existing broadacre agricultural enterprises is likely to remain much the same as at present (ie: grazing and cropping). These uses have prevailed for at least 70 to 80 years. However, economic drivers are creating trends in all agricultural industries towards fewer but larger farms, employing proportionately fewer persons. In many parts of Victoria more distant from main population centres this often results in reduced rural populations where farming is the predominant local activity. However population decline in communities does not necessarily occur where other land use trends including increased rural/lifestyle living, or increased recreation and tourism activity occurs, which occurs in Mount Alexander Shire.

Water availability is a key driver of intensive agriculture. Where water of sufficient volume and quality is available and the land is suitable for irrigation then access to water transforms the versatility and production potential of the land. The Coliban supply system has been integral to sustaining the horticultural industries in the Harcourt area (LMU Granite Harcourt). The efficiency of this system will increase with the current modernisation program to pressurised piping. While the Harcourt area may be undergoing a period of transition with the recent loss of some substantial growers and diminished areas of land now used for traditional orcharding, the district remains an important horticultural production area, and it is understood that a number of larger growers in the area have committed to substantial capital investment into the water delivery system upgrade. This provides clear indication of continued confidence in the locality.

As the land at Harcourt has *Moderate* agricultural quality, associated with irrigation water it is important that ongoing horticultural production or the potential to introduce other complementary forms of intensive primary production in the district is not compromised by conflicting land uses. This could occur if non-productive rural living was to be generally permitted on small lots with guaranteed pressurised water from the Coliban system. It can reasonably be anticipated that it would be merely a matter of time before objections were registered against the noise of horticultural plant and equipment (eg: tractors, pumps, harvesting equipment, lighting, scare devices etc), the use of herbicide and pesticide sprays, the out-of-hours movement of trucks, mud or dust on roads, or operations of storage facilities and packing sheds. Conversely, objections could be expected from producers against matters such as roaming domestic animals.

Groundwater from the *Mid Loddon Groundwater Management Area* provides for centre pivot irrigation in the north-west of the Shire on alluvial land (LMU Alluvial Baringhup). While water taken and used for agriculture from this source in 2011/12 was only about 33% of the licenced volume (albeit in a wet year) and also due to extensive flooding in recent years, the use varies between years depending on environmental conditions. Regardless of the variable annual extraction, the availability of groundwater is a valuable asset that sets the GMA area in a different context than other agricultural areas without access to such water. Designation of the land covered by the GMA as a regionally significant agricultural area in Council's local policy in the planning scheme would be appropriate. This would strengthen the status of the area for protection of agriculture from other potentially incompatible uses.

Where broadacre agriculture is competing with more intensive non-agricultural uses, farmers wishing to continue farming and expand their businesses locally can be impacted on by subdivision that will fragment surrounding farmland, inflate land prices above agricultural prices, and create potential for land use conflicts that may threaten their '*right to farm'*. This is a common factor in closer settled areas of rural Victoria The above factors, often driven by demand for non-production based rural living can lead to permanent land use change and can limit the capacity of primary producers to innovate or expand their businesses locally.

The reference to protecting *"productive farm land that is of strategic significance in the local or regional context"* in the State Planning Policy section of the *Victoria Planning Provisions* (at clause 17.05-1 in the Mount

Alexander Planning Scheme) is important in rural land use planning. It infers the need to identify land of better *productivity and versatility* that has a long term and *strategic* role in the production of food and fibre. Some areas of *productive and versatile* land may be considered to be of *strategic importance* where they are associated with other resources such as irrigation infrastructure or value adding industries that provide significant economic benefit to local or regional communities.

Tourism enterprises often occur in rural farming areas generally as 'farm-stay' accommodation. The Victoria Planning Provisions that are embedded in all of Victoria's planning schemes provide for this in the Farming Zone that applies across most of Mount Alexander Shire. The VPPs limit bed numbers for such enterprises in recognition that the priority land use in the Farming Zone is primary production and that such tourism/ accommodation use is subservient to primary production in the Zone. The recent changes by the State Government to the Farming Zone has somewhat altered this position with increased discretion allowed for the introduction of non agriculture-related land use and development in response to the new objective in the zone '*to encourage the retention of employment and population to support rural communities*'.

Equestrian facilities are defined in the VPPs as a form of livestock production under the definition of agriculture, and grazing use of the land by horses differs little from traditional grazing.

The Shire has recently experienced applications for an intensive poultry operation and a windfarm. Both these uses require a planning permit (as 'Section 2' uses in the Farming Zone), and they need to satisfy the requirements of the Zone. Codes of Practice and EPA requirements apply over intensive animal production (eg: for broiler farms, intensive piggeries, and cattle feedlots) that identify buffer distances and a range of other factors that must be met to safeguard wider community values and amenity. Applications for such uses must be considered on their merits against the zone, Code of Practice and EPA requirements. However, Councils can develop local policies to encourage or discourage such developments in all or parts of their municipalities. Such action is a policy decision for Council.

More location based information on agriculture is provided in summary tabulations for the Shire's 'Land Management Units' in Section 4 of this document.

In considering the matters outlined above, the key planning principles for protecting and enhancing the Shire's agricultural production and assets are:

- Reinforce/maintain the importance of protecting and enhancing agriculture as defined in the Victoria Planning Provisions as the primary land use across the rural areas of the Shire except where other use or uses are strategically justified.
- Protect agricultural land by minimising potential for conflict through the introduction of non-agricultural land uses.
- Retain the 40 ha minimum area for subdivision and for a dwelling without the need for a permit across the main broadacre farming areas of the Shire.
- Retain the Farming Zone over the Harcourt horticultural area as well as the current 40ha minimum lot size provisions. This will assist in maintaining the primary use of land in the area for farming without creating undue expectations for other forms of land use to occur that may undermine the value of the area for primary production.
- Designate land covered by the Mid Loddon Groundwater Management Area in local policy in the planning scheme as a regionally significant agricultural area.

As identified in Section 2.6 of this document minimum lot sizes set in the Mount Alexander Shire is a default provision of the State Government. The size is set based on a range of policy considerations mainly relating to preventing the unplanned loss of productive agricultural land which is not primarily a function of agricultural land quality. The size is not based on consideration of what is an economically viable size for farming as this varies with circumstance and cannot be determined as a general standard. Land is used for productive agriculture across various agricultural land quality classes.

Recommendations

Policy

In the MSS:

- Amend *Clause 21.02 Key Issues Influencing the Shire's Future Land Use Planning and Development* to identify 'Agriculture as a heading in its own right. This would result in changing 'Environment and Agriculture' to 'Agriculture'. This is important to reinforce the importance of protecting and enhancing agriculture as defined in the Victoria Planning Provisions as the primary land use across the rural areas of the Shire. It also highlights the importance of protecting agricultural land by minimising potential for conflict through the introduction of non-agricultural land uses. This is because of the increased discretion for the application of non agriculture-related land use and development under the recent revision of the Farm Zone by the State Government.
- Amend *Clause 21.03 Municipal Vision and Framework Plan* to include the strategic maps of land capability (Land Management Units) and Agricultural Land Quality in the MSS with suitable text to explain their application in the municipal vision for agriculture.
- Designate land covered by the Mid-Loddon Groundwater Management Area in local policy in the planning scheme, as a regionally significant agricultural area.

Zoning

- In the Farming Zone retain the 40 ha minimum area for subdivision and for a dwelling without the need for a permit across the main broadacre farming areas of the Shire.
- Retain the Farming Zone over the Harcourt horticultural area including the current 40ha minimum lot size provisions.

Note: EnPlan does not identify any rationale for applying the RAZ within the Shire due to the increased discretions provided for under the newly revised Farming Zone.

5.2 Biodiversity and natural landscapes

This section summarises key biodiversity features of the Mount Alexander Shire.

Background

Native vegetation on public and private land is important for biodiversity conservation. Roadside and stream reserves are also an important biodiversity asset. The protection of native vegetation is becoming increasingly important when there are increasing pressures for higher population densities in the Shire's towns and rural areas.

Loddon Mallee South Regional Growth Plan (draft April 2013)

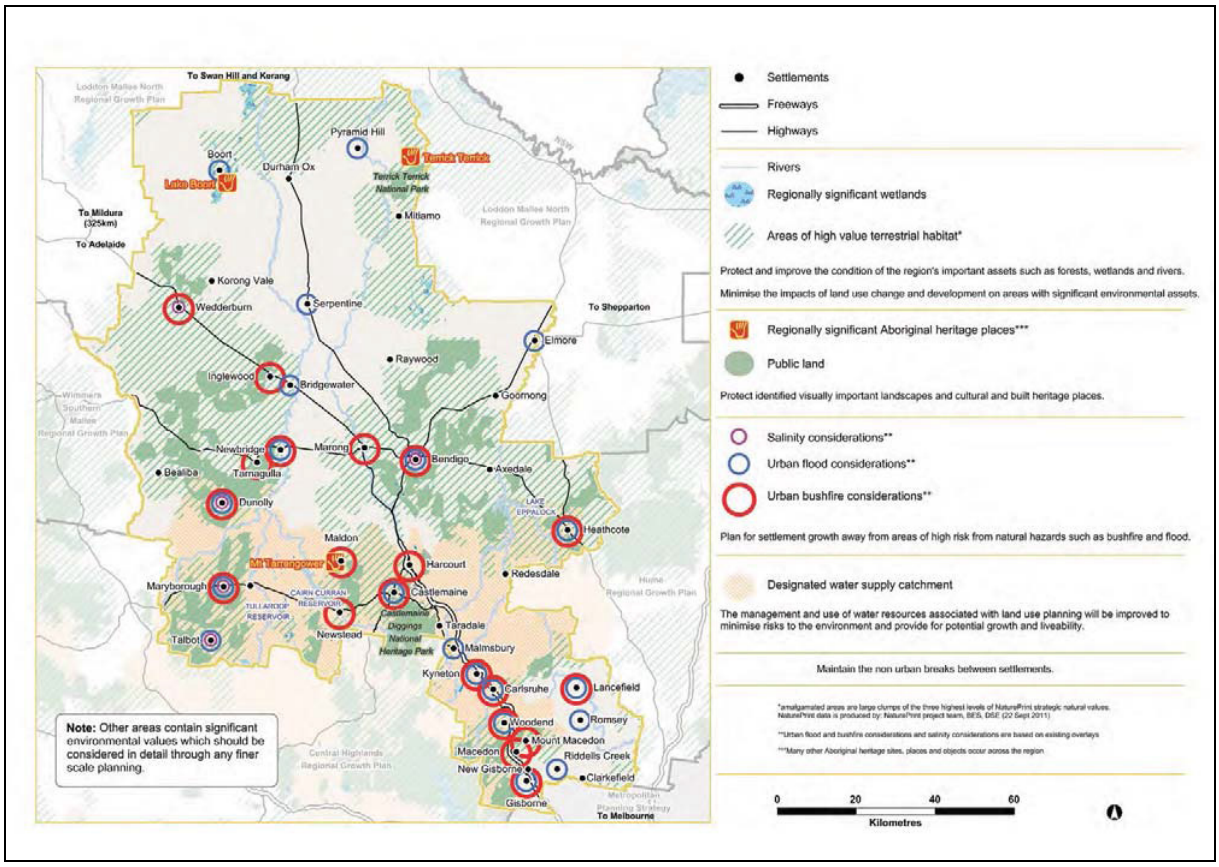
The Draft Loddon Mallee South Regional Growth Plan covers the municipalities of Loddon, Central Goldfields, Greater Bendigo, Mount Alexander and Macedon Ranges. It is being developed to provide broad direction for land use and development across the region.

The plan proposes future directions for '*Environment and heritage*'. The directions relating to biodiversity and natural landscapes are to:

- *Protect and improve the condition of the region's important environmental assets such as the forests, wetlands and rivers.*
- *Protect identified visually important landscapes.*
- *Maintain the non-urban breaks between settlements.*
- *Minimise the impacts of land use change and development on areas with significant environmental assets.*

Figure 25 provides a map of regionally significant wetlands and areas of high value terrestrial habitat from the regional growth plan. This identifies a significant area of Mount Alexander Shire as high value terrestrial habitat. It is important to note that the qualifier to the map that states that other areas may also contain significant environmental values when viewed a finer scale. This is relevant to any future land use and development that is the subject of proposed amendments to the planning scheme or planning permit applications.

Figure 25: Future environment and heritage directions



Source: Draft Loddon Mallee South Regional Growth Plan

The growth plan identifies that:

> *Aside from the region's well-known significant forested areas (such as the Box-Ironbark forests), there are also significant areas of native grasslands, often on private land.*

Biological connectivity is also a major thrust for regional biodiversity planning and the regional growth plan makes reference to the *Loddon Mallee Regional Strategic Plan Southern Region 2010* that identifies as a priority action to '……*improve connectivity of native vegetation along major corridors, ultimately linking to the Murray River'.*

The regional growth plan recognises the Regional Catchment Strategies of the North Central, Goulburn Broken and Port Phillip and Westernport Catchment Management Authorities as the primary integrated regional strategies for achieving environmental outcomes in the region. Mount Alexander Shire is covered by the *North Central Regional Catchment Strategy* and the directions of this strategy for biodiversity in the rural areas in the Shire is detailed in the next section.

North Central Regional Catchment Strategy (RCS) 2013 – 19

The RCS describes the North Central region as being:

> *……one of Australia's most highly cleared and fragmented landscapes and while development has resulted in a productive and vibrant regional economy it is now crucial to protect and rebuild biodiversity assets for the future.*

The minimum stated aspirational objective of the RCS is to maintain the current extent and condition of the remnant habitat. The RCS identifies that '*loss of habitat through clearing of native vegetation has been, and continues to be, a significant threat to biodiversity across the North Central region*. The threats that relate to

future land use planning are: clearing for agriculture, urban or other uses; and, habitat fragmentation and isolation.

In setting regional biodiversity priorities, the RCS has utilised ecological databases, expert opinion and local knowledge in combination with modelling and decision support tools. The RCS used the Department of Environment and Primary Industries (DEPI) tool Natureprint to identify and refine priority habitat areas. In relation to the Mount Alexander Shire an area designated as ''Muckleford' has been identified as a 'Priority Biodiversity Asset" (Figure 9 in the RCS Part 2, p34) and is to be the subject of an assessment using an 'Investment Framework for Environmental Resources' tool known as INFFER during the life of the RCS[11].

The RCS refers to the 'Connecting Country' project in the Mount Alexander Shire and immediate surrounds as a case study and more detail on this project is provided under the sub heading 'Connectivity' below.

Further information on biodiversity is provided in the North Central CMA 'Biodiversity Discussion Paper'.[12]

Mount Alexander Shire Council Environment Strategy (2011-2014)

The *Mount Alexander Shire Council Environment Strategy (2011-2014)* encompasses: climate change, greenhouse and energy; land and biodiversity; urban development, planning and sustainable transport; waste and resource efficiency; and water.

The strategy recognises the role of the Mount Alexander Planning Scheme in directing future land use and development to achieve sound environmental outcomes. For 'Land and Biodiversity', the environment strategy identifies the role of the planning scheme as identified in Table 7.

Table 7: Role of the planning scheme in protecting and enhancing the Shire's biodiversity values.

Direction	Objectives	2014 Target	Indicator	Actions
Using planning scheme and other powers	Ensure new development maintains or enhances biodiversity values and does not threaten areas of high conservation significance	Maintain current condition (no net loss)	Area of high conservation significance native vegetation in the Shire	Continue to ensure threatened species and significant biodiversity are protected in the Shire Planning Scheme
			Populations of key threatened species in the Shire.	Update the planning scheme and Council plans to improve habitat connectivity and biolinks for biodiversity outcomes under climate change and work with DSE on ensuring this is consistent with the State's Biodiversity Strategy

The current rural land strategy project requires spatial information to assist analysis and to inform the planning process.

Bioregions / Ecological Vegetation Communities (EVCs)

The dominant bioregion covering Mount Alexander Shire is the Goldfields Bioregion. There are relatively small areas of the Victorian Volcanic Plains and Central Highlands Bioregions in the north-west and south-east of the Shire respectively.

Goldfields Bioregion

The Mount Alexander Shire *State of Environment Report 2010* records 23 Ecological Vegetation Communities (EVCs) occurring in the Goldfields Bioregion with the predominant EVCs (as a percentage of the total areas of native vegetation in the Shire) being:

- Heathy Dry Forest ((28%)
- Box Ironbark Forest (27%)

[11] For further information on INFFER go to the website www.inffer.com.au
[12] Available at www.nccma.vic.gov.au

- Grassy Woodland (20%).

All EVCs are assigned a *Bioregional Conservation Significance* rating based on a combination of modelled degree of loss from its original area in 1750 prior to European settlement and area covered in 2005.

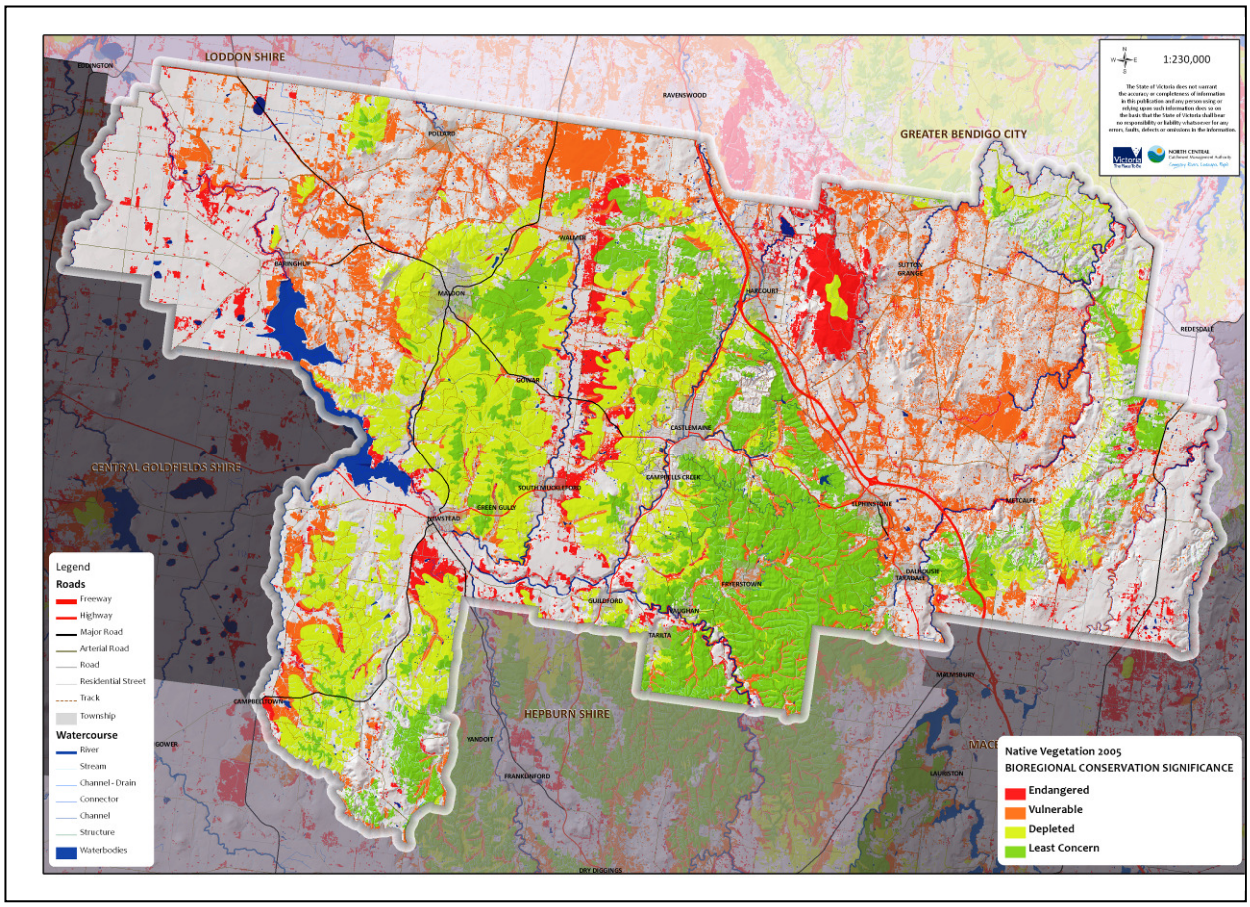
Table 8: EVCs identified in Mount Alexander Shire, and bioregional conservation status.

Ecological Vegetation Class (EVC)	1750 (Ha)	2005 (Ha)	Bioregional Conservation Status (Goldfields Bioregion)
Box Ironbark Forest or Dryland Woodlands			
Box Ironbark Forest	28,523	20,788	Depleted
Granitic Hills Woodland	2,834	1,743	Endangered
Dry Forests			
Heathy Dry Forest	26,616	21,661	Least Concern
Grassy Dry Forest	3,649	2,073	Depleted
Herb-rich Foothill Forest	173	173	Depleted
Valley Grassy Forest	7,077	3,455	Vulnerable
Lower Slopes or Hill Woodlands			
Hillcrest Herb-rich Woodland	1,333	1,078	Depleted
Hills Herb-rich Woodland	654	478	Depleted
Grassy / Alluvial Terrace Woodlands	6,139	2,562	Endangered
Grassy Woodland	45,971	15,363	Vulnerable
Scoria Cone Woodland	169	27	Endangered
Herb-rich Woodland			
Alluvial Terraces Herb-rich Woodland	288	149	Endangered
Alluvial Terraces / Creekline Grassy Woodland	6,419	2,831	Endangered
Creekline Herb-rich Woodland	35	9	Endangered
Plains Woodland			
Plains Grassy Woodland	9,450	1,156	Endangered
Plains Woodland	8,647	663	Endangered
Riverine Grassy Woodlands			
Floodplain Riparian Woodland	869	356	Endangered
Creekline Grassy Woodland	1,646	781	Endangered
Riparian Scrubs and Woodlands			
Swamp Shrub	149	12	Endangered
Swamp Riparian Woodland	35	29	Endangered
Stream Bank Shrubland	1,041	671	Endangered
Wetlands			
Wetland Formation	398	188	Endangered
Red Gum Swamp	782	319	Endangered

Source: Mount Alexander Shire State of Environment Report 2010.

The 2010 Mount Alexander SOE Report maps the Bioregional Conservational Status of the EVCs and this map is reproduced below (see **Figure 26**).

Figure 26: Bioregional Significance status of Ecological Vegetation Classes identified in Mount Alexander Shire



This map shows that the 'Endangered' EVCs are concentrated mainly along the Muckleford Valley and around Mount Alexander Regional Park, with a smaller area just south of Newstead.

- The Endangered EVCs along Muckleford Valley are identified Victoria's Resources Online (Biodiversity Interactive Map (accessed 15.05.13) as EVC 76 Grassy Woodland / Alluvial Terraces Herb-rich Mosaic.
- The area around Mount Alexander Regional Park is 'EVC 72 Granitic Hills Woodland'.

Victorian Volcanic Plains Bioregion

A small portion of the Shire in the north-west to the west of the Loddon River is in the Victorian Volcanic Plains (LMU Basalt Gentle). EVC mapping (DSE Biodiversity Interactive Map) shows that this area contains few significant stands of native vegetation This part of the Moolort Plains was once dominated by native grasslands and was largely un-timbered (Natural Newstead website). It forms part of the 'Natural Temperate Grassland of the Victorian Volcanic Plain' ecological community that is listed as 'Critically Endangered' under the *EPBC Act* 1999.

Central Highlands Bioregion

A small area in the south-east section of the Shire just east of Taradale falls into the Central Highlands Bioregion The native vegetation of this area comprises patches of Grassy Woodland and Plains Grassy Woodland (DSE Biodiversity Interactive Map).

Threatened flora species and fauna species

The Planning Scheme also identifies that the Shire contains threatened flora species and fauna species.

The *Mount Alexander State of Environment Report 2010* lists threatened flora (**Table 9**) and threatened fauna (**Table 10**). The report qualifies that some of the species are listed because of threats elsewhere in Victoria, or

their occurrence in insignificant numbers in the Shire, and as such their Statewide threat status does not necessarily indicate their status within the Shire.

Table 9: Threatened Flora identified in Mount Alexander Environment Report.

Threat category (Victorian register of Threatened Species)[13]	No. species threatened in Mount Alexander Shire	Species also listed on the Victorian Flora and Fauna Guarantee Act 19988 and the EPBC Act 1999.
Endangered	11	Southern Shepherd's Purse; Maroon Leek-orchid; Large Fruit Fireweed; Little Pink Spider Orchid; Purple Eyebright; Rough Eyebright (FFG & EPBC) Spiny Riceflower; Brittle Greenhood; Tough Scurf Pea (FFG).
Vulnerable	26	Clover Glycine (EPBC & FFG) Striped Water Milfoil; Whorled Zieria; Scented bushpea; Swamp diurus; Purple diuris; Small milkwort; Bow-lip Spider-orchid (FFG) Spiny rice-flower subspecies; Trailing hop-bush (EPBC)
Rare	29	Australian Anchor plant (FFG) Ornate Pink-fingers (EPBC)
Poorly known but likely to be in one of the above categories	9	
Not listed on VROT		Robust Greenhood; Buloke; Hairy Tails (FFG) Riverswamp Wallaby Grass (EPBC)

Source: North Central Catchment Management Authority

Table 10: Threatened Fauna identified in Mount Alexander Environment Report

Threat category [14]	No. species threatened in Mount Alexander Shire	Fauna species significant to Mount Alexander Shire
Critically endangered	3	Regent Honeyeater,
Endangered	17	Swift Parrot; Bibron's Toadlet; Golden Sun Moth
Vulnerable	21	Speckled Warbler; Diamond Firetail; Brush-tailed Phascogale; Eltham Copper butterfly
Near Threatened	19	Hooded Robin; Crested Bellbird; Brown Treecreeper; Black-chinned Honeyeater; Woodland Blind Snake

Source: North Central Catchment Management Authority

Environmental Planning and Biodiversity Conservation Act 1999 (EPBC)

The EPBC Act Protected Matters Report (accessed 16.05.13) identifies matters of national significance that relate to threatened ecological communities and species.

Five threatened ecological communities are identified as '*known*', '*likely*' or '*may occur*'.

Advice from the Shire is that two vegetation communities are known to occur in Shire that are listed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act* and hence require particular attention.

- '*Grey Box (E. macrocarpa) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia*' ecological community in Victoria (endangered). This includes the following EVCs listed for the Shire: *Plains Grassy Woodland*; *Alluvial Terraces Herb-rich Woodland* and *Grassy Woodland*.
- '*Box-gum Grassy Woodland and Derived Grassland*' communities in Victoria (critically endangered). This includes the following EVCs listed for the Shire: *Valley Grassy Forest*; *Plains Grassy Woodland*; and *Grassy Woodland*.

[13] *DSE (2005) Advisory List of Rare or Threatened Plants in Victoria.*
[14]

Threatened flora and fauna species are listed in **Table 11**.

Table 11: EPBC Act Protected Matter Report (accessed 16.05.13)

Threatened species	Common name	Threatened status	Habitat occurrence status
Birds			
Anthochaera phrygia	Regent Honeyeater	Endangered	Known
Botaurus poiciptilus	Australian Bittern	Endangered	Known
Lathamus discolor	Swift Parrot	Endangered	Likely
Leipoa ocellate	Malleefowl	Vulnerable	Likely
Pedionomus torquatus	Plains-wandered	Vulnerable	May
Rostratula australis	Australian Painted Snipe	Vulnerable	May
Fish			
Maccullochella macquariensis	Trout Cod	Endangered	May
Maccullochella peelii	Murray Cod	Vulnerable	May
Macquaria australasica		Endangered	May
Frogs			
Litoria raniformis	Growling Grass Frog (etc)	Vulnerable	Known
Insects			
Synemon plana	Golden Sun Moth	Critically endangered	Likely
Mammals			
Petrogale penicillata	Brush-tailed Rock -wallaby	Vulnerable	May
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Likely
Pseudomys fumeus	Endangered	Endangered	May
Plants			
Amphibromus fluitans	River Swamp Wallaby-grass (etc)	Vulnerable	May
Ballantinia antipoda	Southern Shepherd's Purse	Endangered	Likely
Caladenia concolor	Crimson Spider-orchid (etc)	Vulnerable	Likely
Caladenia formosa	Elegant Spider-orchid	Vulnerable	Likely
Caladenia ornata	Ornate Pink Fingers	Vulnerable	Likely
Caladenia versicolor	Candy Spider-orchid	Vulnerable	May
Dianella amoena	Matted Flax-lily	Endangered	Known
Dodonaea procumbens	Trailing Hop-bush	Vulnerable	Likely
Glycine latrobeana	Clover Glycine (etc)	Vulnerable	Likely
Pimelea spinescens subsp. spinescens	Plains Rice-flower (etc)	Critically endangered	Known
Prasophyllum frenchii	Maroon Leek-orchid (etc)	Endangered	Likely
Pterostylis valida	Robust Greenwood	Critically endangered	Likely
Senecio macrocarpus	Large-fruit Fireweed	Vulnerable	Likely
Thelymitra matthewsii	Spiral Sun-orchid	Vulnerable	May
Reptiles			
Aprasia parapulchella	Pink-tailed Worm-lizard	Vulnerable	Likely
Delma impar	Striped Legless Lizard	Vulnerable	Known
Migratory Marine Birds			
Apus pacificus	Fork-tailed Swift		Likely
Migratory Terrestrial Species			
Haliaeetus leucogaster	White-bellied Sea-eagle		Likely
Hirundapus caudacutus	White-throated Needletail		Known

Leipoa ocellata	Malleefowl	Vulnerable	Likely
Merops ornatus	Rainbow Bee-eater	May	May
Myiagra cyanoleuca	Satin Flycatcher		Known
Rhipidura rufifrons	Rufus Fantail		Known
Xanthomyza Phrygia	Regent Honeyeater	Endangered	Known
Migratory Wetlands Species			
Ardea alba	Great Egret (etc)		Known
Ardea ibis	Cattle Egret		Likely
Gallinago hardwickii	Latham's Snipe (etc)		May
Rostratula benghalensis (sensu lato)	Painted Snipe	Vulnerable	May

Connectivity

The importance of biological connectivity is increasingly recognised at National, State, Regional and Local Government levels. Corridors create the opportunity for fauna and flora species to move between the current system of nature reserves to increase the long term health of the reserves by increasing biological exchange and diversity. They also increase the resilience of flora and fauna species to climate change by being able to move in response to changing conditions.

The available opportunities for creating these biolinks are threefold:

- Road and rail reserves;
- Waterways; and
- Across private farmland.

In the Shire of Alexander various initiatives to establish connectivity are being undertaken as described below. This is not intended to be an exhaustive list of activities but rather from a strategic perspective establish the importance of this aspect of biodiversity planning for the future.

Roadside Conservation Management Plan 2012 – 2017

The Mount Alexander Shire *Roadside Conservation Management Plan 2012 – 2017* recognises the Shire's roadsides as '*arguably the most significant biodiversity asset*'. This is because the network is described as comprising a cross-section of almost all habitat types present at the time of European settlement, many of which are rare or threatened (some nationally), and because it supports most of Mount Alexander's vulnerable or threatened species. The roadsides provide habitat for significant species and assist to sustain vital ecosystem processes such as movement pathways for animals and insects.

The key objectives of the Plan are to:

- Improve conservation values and connectedness of roadsides to bushlands and adjacent farms.
- Reduce fuel for fire and increase bushfire preparedness consistent with the recommendations of Royal Commission into the Black Saturday Fires.

The Shire now rates the conservation value of 50% of roadside reserves as high, being due in part to the presence of the threatened ecological communities listed under the EPBC Act.

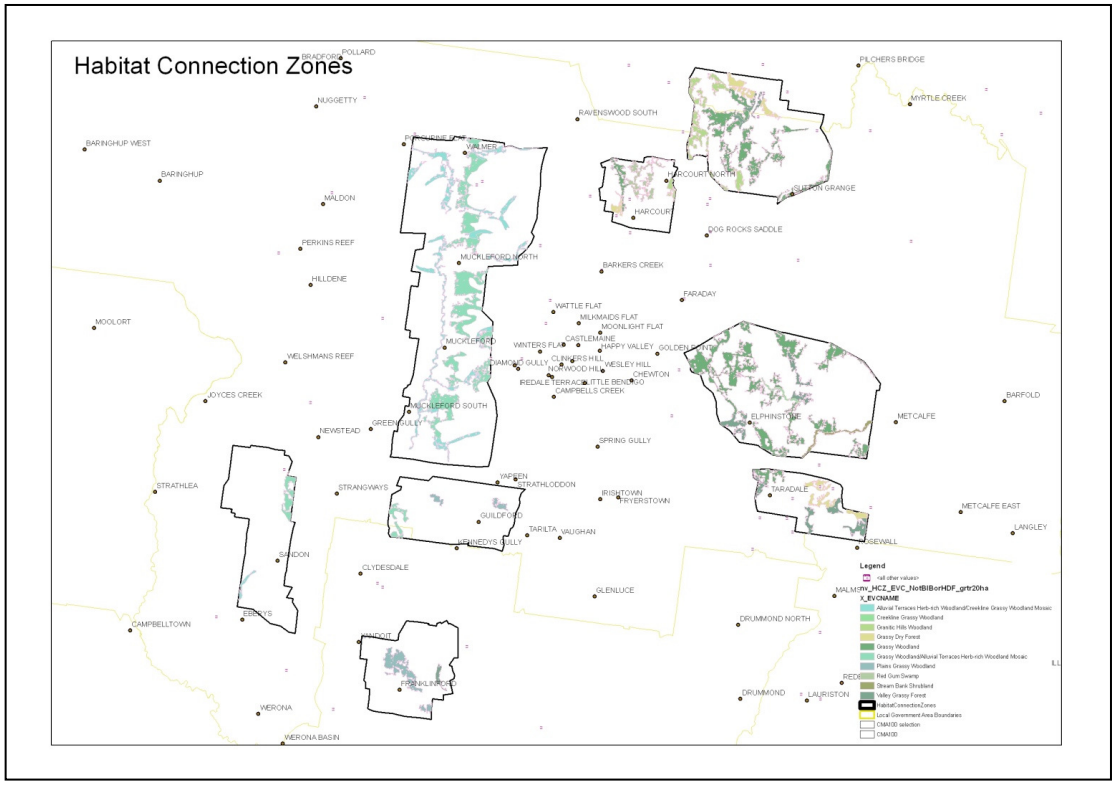
Waterways

Waterways provide natural corridors for the establishment of major biolinks. In the Shire of Alexander the Loddon River and Muckleford Creek (which runs into the Loddon River) are examples of potential regional level connectivity networks species for both in-stream biota and as wildlife corridors for terrestrial native fauna species. Both these waterways, along with a number of other designated waterways in the Shire, are covered by an Environmental Significance Overlay (ESO5) for which in general terms a planning permit is required for works within 200m from the centre point of the waterway. While the environmental objectives include the protection of flora and fauna habitats along watercourses, the main focus as indicated in the 'Decision Guidelines' is on protection and enhancement of water quality.

Community Initiatives

The community organisation 'Connecting Country' is undertaking a project called *Connecting Landscapes across the Mount Alexander Region.* The project is funded from the Australian Government's Clean Energy Future Biodiversity Fund with the aim of increasing the extent and improving the condition and connectivity of native vegetation across 1600ha of the Mount Alexander Shire and immediate surrounds. The approach is strategic aiming to increase habitat connectivity between significant remnant habitats in 8 identified connection zones. These zones are reproduced in **Figure 27**. The Mount Alexander Shire Council and Connecting Country formally signed a Memorandum of Understanding (MoU) in Match 2013 to share goals and collaboration for the project.

Figure 27: Habitat Connection Zones in Mount Alexander Shire



Source: www.connectingcountry.org.au/connecting-landscapes/

Landscape

Remnant vegetation in combination with the landforms provides the underlying aesthetic appeal of the Shire. This has implications for why people want to live in a rural environment and the pressures for rural living and the attraction of the Shire as a tourist destination.

Land Use Planning

Policy

State Planning Policy Framework (SPPF)

The key State policy relating to biodiversity is the Native Vegetation Management Framework (Clause 15.09).

Clause 52.17 Native Vegetation requires a planning permit for the removal of native vegetation in a wide range of circumstances and includes decision guidelines. The Mount Alexander Shire Planning Scheme has a Schedule to this clause that exempts some new highway construction works undertaken by VicRoads and for works undertaken for the Goldfields Superpipe on behalf of Central Highland Water.

Clause 65 Decision Guidelines requires consideration of native vegetation impacts for all applications including those not specifically triggered by a permit to remove native vegetation (e.g. subdivisions).

On the 22 May 2013 the Minister for Environment and Climate Change released reforms to Victoria's native vegetation permitted clearing regulations. These include the replacement of the Native Vegetation Management Framework.

The clauses of the planning schemes proposed to be amended are:

- 12.01 Biodiversity (State Planning Policy Framework)
- 52.16 Native Vegetation Precinct Plan
- 52.17 Native Vegetation
- 66.02 Use and development referrals.
- 81.01 Table of documents incorporated into the scheme.

These changes are comprehensive and any implications for this Rural Land Use Study will need to be reviewed in the development of the final study.

Local Planning Policy Framework

Municipal Strategic Statement (MSS)

*Clause 21.04-7 Protection of Biodiversity and Landscape identifies k*ey biodiversity issues:

- Overall continuing decline in extent and quality of native vegetation and consequent decline in native fauna and need to improve the conservation status of flora and fauna in the Shire.
- Loss of biodiversity and threatened species habitat.
- Fragmentation of habitat including that with high quality conservation significance.
- Impact of domestic animals on fauna populations and vegetation.
- Potential impact of urban development on the habitat values of the *Castlemaine Diggings National Heritage Park*.
- Protection of scenic landscapes.
- Protection of the significant natural values of the following environmentally sensitive areas (Castlemaine Diggings National Heritage Park; Barfold Gorge; Mount Alexander; Mount Tarrengower; Vaughan Springs; Muckleford Gorge; Mount Consultation; and landscapes between Elphinstone and Castlemaine.

Local Planning Policies

Existing local policies relevant to biodiversity are:

- Hilltop / Ridgeline Protection (cl. 22.15).
- Roadside Conservation (cl. 22.19)
- Natural and cultural Heritage (cl. 22.20). This largely focuses on Cultural Heritage.

The importance of the MSS and Local Planning Policy should not be underestimated as it sets the policy base for supporting future decision making by the council for planning applications and the interpretation of the intention of the planning scheme when planning matters come before the Victorian Civil and Administrative Tribunal (VCAT).

Zoning

Rural Conservation Zone (RCZ)

The Rural Conservation Zone (RCZ) is the main zone applied to environmentally significant rural areas. Its primary purpose is to conserve, protect and enhance environmental and landscape values, and to encourage the use of land consistent with those values. Typically, zoning is applied at a broad (landscape) level rather than at say individual property levels.

Currently the RCZ has very limited application in Mount Alexander Shire, at Forest Creek, Moonlight Creek/Moonlight Flat, Pennyweight Flat, Moonlight Flat and Lady's Gully.

Overlays

Environmental Significance Overlay (ESO)

The ESO identifies areas with identified environmental values where development of land may be affected by environmental constraints, and ensures that any development is compatible with the environmental values. Those ESOs directly related to biodiversity issues are:

- Schedule 3 – Barfold Gorge.
- Schedule 4 – Mount Alexander and surrounds.
- Schedule 5 – Watercourse protection.
- Schedule 6 – High Protection Environs. (roadsides)
- Schedule 7 - Calder buffer zone, remnant vegetation and wildlife corridor protection.

Significant Landscape Overlay (SLO)

The SLO is applied to identify significant landscapes and to conserve and enhance their character.

The Planning Scheme has four (4) schedules to the SLO:

- Schedule 1 - Maldon area landscape.
- Schedule 2 - Castlemaine landscape significance area.
- Schedule 3 - Scenic landscape area (approach to Maldon).
- Schedule 4 - Vaughan and Glenluce Mineral Springs Reserve.

As can be seen from the above summary of the existing planning tools being applied in the Mount Alexander Shire the main application of spatially based planning tools is the use of ESOs for flora and fauna and SLOs for natural landscapes. Issues identified from the rural study and submissions to date are:

- Consideration of a full review of the extent, and perhaps enlargement of the ESO5 along the entire course of Barkers Creek.
- Concern that building is taking place on conspicuous ridgelines and the need to re-evaluate particular ridgelines to be protected and the application of the SLO.
- Allowance for biodiversity corridors in the Sandon/Newstead area.
- Need to address spatial biodiversity connectivity priorities identified by the North Central CMA.
- The appropriate width of the ESO5 to encourage connectivity.

Native Vegetation Precinct Plans

Clause 52.16 Native Vegetation Precinct Plan (Currently not applied in the Mount Alexander Planning Scheme).

The State Government has introduced the Native *Vegetation Precinct Plan* as a planning tool to enable a more strategic and longer term approach to planning for the protection, management and removal of native vegetation where development is proposed.

Two examples of the application of the Native Vegetation Precinct Plans are:

- Huntly Township Plan Native Vegetation Precinct Plan (City of Greater Bendigo), and
- Jackass Flat Vegetation Precinct Plan (City of Greater Bendigo).

The data on Ecological Vegetation Classes and scattered remnant vegetation is the information underpinning the analysis for these native vegetation precinct plans.

Discussion

Municipal Strategic Statement (MSS)

Current local policy categories combine mix biodiversity and heritage. This confuses two major and separate planning matters. It would be preferable to identify '***Biodiversity and Natural Landscapes'***, and '***Cultural Heritage***' as separate matters. This would require consistent changes through the MSS (e.g. s Clause 21.01, 21.02 and 21.04.SS.

In addition, while *Clause 21.04-7 Protection of Biodiversity and Landscape* is comprehensive, it needs to integrate content on *'Protection of native vegetation'* with content on '*Biodiversity and habitat*'. These should not be separated, as the protection and enhancement of vegetation communities as key habitat is a large component of the needed to protect and enhance the sustainability of individual flora and fauna species.

The Ecological Vegetation Classes (EVCs) are the basic planning unit for biodiversity planning in Victoria and they provide the natural habitat essential for the long term survival of threatened flora and fauna. In this regard, the MSS should identify the need for further strategic work to identify the relationship between threatened flora and fauna and the EVCs in the Shire.

Rural Conservation Zone (RCZ)

There is potential for wider application of the RCZ, which can be an appropriate planning tool to recognise, protect and enhance areas identified as of 'Endangered' and / or 'Vulnerable' Bioregional Conservation Status or areas of high habitat value for threatened species.

Rezoning to the RCZ requires a comprehensive understanding of existing and potential land use issues, because it regulates land use. Such understanding would require analysis of the interplay between land use and environmental values.

The NCCMA *Bioregional Conservation Significance* map of the Shire identifies that the areas of '*Endangered*' significance are reasonably concentrated while the areas identified as 'Vulnerable' are widespread. Based on this analysis the potentially strongest cases for application of the RCZ would be:

- Muckleford Valley where there is an extended area of '*Endangered*' native vegetation communities at a 'landscape scale' along the hills on the eastern side of the valley and these vegetation communities are also of National Significance being listed under the EPBC Act. The extent of the application of a RCZ needs to be further considered as to whether it is confined to the eastern side of the valley or the valley as a whole given the role in connectivity.
- Areas abutting public land with a prime example being around the Mount Alexander Regional Park. Mapping data and analysis is required that would enable evaluation of the environmental significance of such areas was not available at the time of preparation of this report .

Consideration also needs to be given to analysing the relationship between the existing EVCs and the provision of habitat for threatened species. The RCZ could potentially be used where EVCs are shown to provide extensive contiguous areas of habitat for threatened species.

While the RCZ could potentially be used for protection and enhancement of landscape, the Mount Alexander Planning Scheme has alternatively applied the Significant Landscape Overlay (SLO) over areas with environmental significance.

Environment Significance Overlay (ESO)

The application of ESOs over biodiversity values in the Shire is currently limited. The Overlay is applied over wide catchment areas for water quality protection. There is significant scope for their wider use to cover areas with biodiversity values.

Issues identified from this rural study and submissions highlight the importance of connectivity for the future protection and enhancement of biodiversity values in the Shire and regionally. The ESO is a commonly applied planning tool in other places to help guide development at existing biodiversity corridors (eg stream reserves) or areas that can provide important future linkages.

The North Central CMA has mapped biodiversity connectivity priorities, and this information can be used to consider how the overlay could be better applied to support these priorities.

Planning for connectivity (biolinks) involves consideration of:

- Core areas – large and / or high quality blocks of remnant vegetation (e.g. National Parks, nature reserves, forests).
- Corridors – continuous, predominantly linear strips (e.g. waterways, roadside reserves).

- Stepping stones – series of discontinuous blocks or patches.
- Nodes – enlarged sections along corridors.

A recent example of the potential application of biolinks in an urban / rural situation is the 2012 *Werribee River Biolink Action Plan – Volumes 1 & 2.*

A strategic assessment is needed of biodiversity connectivity in the Shire both in terms of regional and local connectivity and consideration given to the nature of those biolinks. A key aspect is the appropriate width of the 'corridors' component of the biolinks. The ESO5 for example applies to an area of 200m either side of waterways, and additional review could determine if this width is adequate for terrestrial native fauna to move between core areas and nodes.

Significant Landscape Overlay (SLO)

Remnant vegetation in combination with the landforms provides the underlying aesthetic appeal of the Shire. This has implications for why people want to live in a rural environment and the pressures for rural living and the attraction of the Shire as a tourist destination.

The SLO is used in the Shire to cover 'viewsheds' at Castlemaine, Maldon and Lake Cairn Curran, and along the Muckleford valley.

Submissions have identified concern about the impact of building currently taking place on conspicuous ridgelines. To develop a strategic approach and address the issue of building on ridgelines, there is need for a scenic landscape assessment for the Shire. Such a study would look at viewsheds along roads, from lookouts and other from prominent locations.

Native Vegetation Precinct Plans

The State Government has introduced the Native *Vegetation Precinct Plan* as a planning tool (Clause 52.16) to enable a more strategic and longer term approach to planning for the protection, management and removal of native vegetation where development is proposed. The clause has not been applied in the Mount Alexander Planning Scheme. This planning tool could be most appropriate to apply to future proposals for rural living.

Two examples of the application of the Native Vegetation Precinct Plans are:

- Huntly Township Plan Native Vegetation Precinct Plan (City of Greater Bendigo), and
- Jackass Flat Vegetation Precinct Plan (City of Greater Bendigo).

The data on Ecological Vegetation Classes and scattered remnant vegetation is the information underpinning the analysis for these native vegetation precinct plans.

On a larger scale it is also the subject of a proposed planning amendment for a native vegetation precinct plan for the Leneva-Baranduda growth area in Wodonga City.

Recommendations

Policy

Amend the MSS to:

- Amend *Clause 21.02 Overview of the Mount Alexander Shire* to identify Biodiversity and Natural Landscapes as a heading in its own right. This would result in changing 'Cultural and Natural Heritage' to Cultural Heritage' and creating a new key issue of 'Biodiversity and Natural Landscape'.
- Amend *Clause 21.04-7 - Protection of Biodiversity and Landscape* to recognise native vegetation as an integral part of 'Biodiversity *and habitat'* and separate out and relocate all references to 'heritage' to Clause 21.04-5 – Built and Cultural Heritage. Consideration should also be given to creating a separate sub clause for catchment objectives and strategies.

Zoning

- Further detailed work is required to develop the criteria and identify potential areas for the application of the RCZ in the Shire.

Overlays

- Conduct further work to expand the application of the ESO for biodiversity protection and enhancement.
- Conduct further work on the existing ESO5 to highlight the importance of biological connectivity as an environmental objective, including review of the appropriate width for achieving biolink objectives.

Native Vegetation Precinct Plans

- Council consider the application of the Native Vegetation Precinct Plan as part of the requirements of any Development Plan Overlay (DPO) for future subdivisions within areas of environmental sensitivity or value.
- Council consider the application of the Native Vegetation Precinct Plan as part of the requirements of the proponent for any future proposed subdivisions for rural living.

Habitat studies

- Council work in collaboration with the Department of Environment and Primary Industry (DEPI) and North Central CMA in further strategic work to document the habitat relationships between threatened flora and fauna and the EVCs in the Shire' as a basis for making future decisions on appropriate application of zoning and overlays for protection and enhancement of threatened species.

Landscape studies

- Consideration be given to a scenic landscape study to inform both planning policy and the potential application of other planning tools (e.g. zoning and overlays) to protect and enhance the scenic values of the Shire.

5.3 Rural Living

This section summarises key matters relating to rural living use in Mount Alexander Shire.

Background

'Rural living' is a form of rural residential development and activity where land is in a rural setting and used and developed for dwellings that are not primarily associated with agriculture. While some agriculture may occur, it will be ancillary to the use for a dwelling. The agriculture is likely to be carried on for 'lifestyle' reasons and is unlikely to provide a significant source of household income.

The Mount Alexander Planning Scheme recognises rural living as a land use that requires careful planning and management. The Shire's rural areas contain many small and scattered rural lots that either have been developed for rural residential purposes, or remain undeveloped. While this partially occurs within the Rural Living Zone, it also occurs extensively in the Farming Zone.

Rural living development can be associated with environmental, social and economic benefits and costs, and conflicts are common within Victoria between agricultural and rural living land uses. This can occur for example, if rural living residents in farming areas expect a level of amenity that is inconsistent with the effects from activities associated with agricultural production. Conversely agricultural operators can for example be impacted upon by roaming domestic pets, particularly dogs.

Because its function is primarily residential, rural living development requires access to most normal services and infrastructure provided in urban settlements. Typically it also generates urban residential amenity expectations.

Land use zones intended to provide for residential use in rural areas or at town perimeters are:

- *Rural Living Zone (RLZ).* This is a 'rural' zone. It normally applies to lot sizes around 8ha (20 acres), although schedules to the zone in a planning scheme can vary lot sizes depending on location and the nature of the land involved. It provides opportunity for some rural uses to occur.

- *Low Density Residential Zone (LDRZ)*. This is a 'residential' zone comprised of lots above 0.4 ha (1 acre) used for residential purposes.

Much 'rural living' has historically occurred in the Farming Zone in the Mount Alexander Shire. This is mainly but not exclusively in the central goldfields areas on sedimentary geology where land titles are generally relatively small for rural areas. Rural living is also common in some granite areas, for example in the south east of the Shire (Source: *2010 Mount Alexander Residential Demand and Supply Analysis*).

The Mount Alexander Planning Scheme applies 40ha as the minimum subdivision area in the Farming Zone and the minimum area across the Shire for which a dwelling can be built without requiring a planning permit. The 40ha lot size is the default position in the Victoria Planning Provisions, set by the State Government, and it is applied in the Farming Zone across much of Victoria.

The 40ha provision does not exclude dwelling development and subdivision of land on and into smaller lots but it does place the onus on permit applicants to demonstrate through their planning applications that a proposed dwelling is necessary to support agriculture, and that proposed subdivision of lots smaller that 40ha will be used primarily for agriculture. This is to minimise potential for land use conflicts in the Farming Zone where agriculture is the priority land use. Any proposals for rezoning to the Rural Living Zone are also required to be strategically justified against the importance of ensuring such land use and development is appropriately located, safe from hazards such as bushfire threat, and does not represent a threat to water quality in open potable water supply catchments.

Many rural lots in the FZ in the shire are smaller than 40ha, and are used for non-production based rural living. Many of these sit within '*Special Water Supply Catchment Areas'* proclaimed under the *Catchment and Land Protection Act* 1994. These existing small rural lots contribute substantially to the Shires local small lot land supply, but also pose significant land use planning and management issues. For example, from 1996 to 2006, 72% of new housing in the Shire's FZ land was on properties under 20 ha, and 30% was on properties under 4ha[15].

The prevalence of the availability of these dispersed small rural lots reduces the opportunity for other perhaps more appropriate land from being considered for potential rezoning to rural living because of impacts on demand and supply of land.

The RLZ can be applied in various ways, including in clustered low density 'estates', across broader areas of scattered lifestyle development on existing lots, and on the fringes of urban centres. However as previously identified rural residential use is also common in the FZ in Mount Alexander Shire.

The Mount Alexander Planning Scheme currently includes seven areas around Castlemaine zoned for Rural Living which with minimum lot size for subdivision individually linked to the availability of reticulated water supply.

State Government's rural living policy

The ability to obtain approval for new dwellings on small rural lots for rural residential purposes where they are either isolated or within or close to vegetated bushland areas now faces increasing difficulties. Similar difficulties are apparent for any proposals to rezone land for rural living purposes. This is due to heightened policy concerns relating to bushfire risk, position within water supply catchments, impact on biodiversity values, and the State government's clear policy to protect productive agricultural land from non-strategic or potentially conflicting uses.

State planning policy (including **Clause 16.02-1 – *Rural Residential Development*** in the Planning Scheme), and guidelines articulated in ***Planning Practice Note 37: Rural Residential Development*** (Revised May 2012) provide strategic planning direction for rural living land use including where and how it should be located and developed. The Council's 2006 *Mount Alexander Rural Living Strategy* also contains useful principles, processes and criteria in considering the selection of areas for rural residential (rural living) land use and development and what type and form of such development is to be approved.

The objective of policy clause 16.02-1 is:

- *To identify land suitable for rural living and rural residential development.*

The policy then outlines the following strategies to support the above objective:

- *Manage development in rural areas to protect agriculture and avoid inappropriate rural residential development.*

[15] *Source: Change and Continuity in Per-urban Australia, Peri-Urban Case Study: Bendigo Corridor, 2007*

- *Reduce the proportion of new housing development provided in rural areas and encourage the consolidation in existing settlements where investment in physical and community infrastructure and services has already been made.*
- *Demonstrate need and identify locations for rural residential development through a housing and settlement strategy.*
- *Ensure planning for rural living avoids or significantly reduces adverse economic, social and environmental impacts by:*
    - *Maintaining the long-term sustainable use and management of existing natural resource attributes in activities including agricultural production, water, mineral and energy resources.*
    - *Protecting existing landscape values and environmental qualities such as water quality, native vegetation, biodiversity and habitat.*
    - *Minimising or avoiding property servicing costs carried by local and State governments.*
    - *Discouraging development of isolated small lots in rural zones from use for rural living or other incompatible uses.*
    - *Encouraging consolidation of existing isolated small lots in rural zones.*
    - *Maintaining an adequate buffer distance between rural residential development and intensive animal husbandry.*
- *Ensure land is not zoned for rural living or rural residential development if it will encroach on high quality productive agricultural land or adversely impact on waterways or other natural resources.*
- *Ensure land is only be zoned for rural living or rural residential development where it:*
    - *Is located close to existing towns and urban centres, but not in areas that will be required for fully serviced urban development.*
    - *Can be supplied with electricity and water and good quality road access.*

The above policy is supported by the State government's 2012 ***Planning Practice Note PN37 Rural Residential Development*** which provides guidance over planning for, or assessing proposals for rural residential use and development. The Practice Note makes the following key points for planning across Victoria:

- While living in rural areas is a popular and legitimate lifestyle choice it can have significantly higher environmental, social and economic costs than those of standard residential development, and demand for costly or inefficient community services or infrastructure should not be generated.
- Planning schemes should provide reasonable opportunities for rural residential development, in providing for housing diversity and choice, and be planned to relate to, or be supported by, existing urban development. However,
    - The protection of natural resources is a State Planning Policy and is fundamentally important to local and State economies.
    - Rural residential development is inappropriate on land suitable and required for present or future residential use at normal urban density.
    - Land use conflicts between agricultural activities and the amenity expectations of rural residential dwellers should be minimised.
    - Significant impacts to primary production or to the environmental or cultural values of a rural area should be avoided such that finite and valuable natural land resources should not be lost.
    - The local environment and landscape should be capable of absorbing the more intensive use and development of rural land without causing significant or irreversible harm to its values or to the new use and development.
    - The cost of providing services to rural living land developments must be at the developer's cost.

The key guideline requirements in the Practice Note are summarised in **Table 12**.

Table 12: Summary of key overarching guideline requirements for rural residential proposals in Victoria's *Planning Practice Note PN37 Rural Residential Development*.

Broad questions to be addressed in sequence for rural residential proposals

Strategic matters for Council and proponents' attention / determination

- **Strategy**: Is rural residential development consistent with the overall strategic planning of the municipality (including the need to protect agricultural land and natural resources, and the encouragement of urban consolidation?
- **Housing need**: How much rural residential development is required to provide appropriate housing diversity and choice to meet housing needs?
- **Location**: Where should new rural residential development occur?
- **Subdivision and design**: Is the new rural residential development subdivided and designed in an attractive setting offering high amenity and efficient infrastructure?

Rural residential development is not appropriate on land that:

- is productive agricultural land [16]
- is in a special water supply catchment area under the *Catchment and Land Protection Act* 1994
- has identified potential to be used for commercial forestry
- has identified potential for mineral and stone production
- has potential for wind energy development as identified in the Victorian Wind Atlas.

Site and context description

The following analysis is required where relevant in applications for proposals for rural living development (ie: subdivisions for rural living).

- Topography of the land (including ridgelines, landscape, geography, slope gradients and erosion areas)
- Soil capability (ie: for operation of on-site waste treatment/absorption)
- Vegetation (ecological vegetation class), quality (habitat hectare assessment) and location,
- Any significant environmental features including habitat corridors, threatened species, wetlands, watercourses, fire or flood prone and saline areas
- Drainage lines and dams; land liable to inundation by floodwaters
- Weather conditions including wind patterns
- Views
- Road access
- Available infrastructure including power, water and telecommunications
- Existing buildings and works
- Adjoining land uses and neighbouring buildings and works
- Any other matter relevant to the site and its environment.

Source: Planning Practice Note PN37 Rural Residential Development

Rezoning proposals require Ministerial approval and are not just a matter for Council Decision. An Independent Planning Panel is generally required to be established to provide advice to the Council and then to the Minister if Council supports the proposal.

Bushfire and rural living development

State planning policy at clause 13.05-1 – Bushfire Planning Strategies and Principles in the Mount Alexander Planning Scheme now requires that planning:

> *Prioritise the protection of human life over other policy considerations in planning and decision-making in areas at risk from bushfire.*

Many rural living lots in the RLZ and the FZ in Mount Alexander Shire are covered by the Bushfire/Wildfire Management Overlay (BMO/WMO) at clause 44.06 of the Mount Alexander Planning Scheme. The Overlay introduces various safety requirements for development over such land. The Overlay also seeks:

> *To ensure development does not proceed unless the risk to life and property from bushfire can be reduced to an acceptable level.*

[16] Productive agricultural land has one or more of the following characteristics: i) a present pattern of subdivision favourable for sustainable agricultural production; 2) can be used for a variety of agricultural pursuits; 3) suitable soil type; 4) suitable climatic conditions; 5) suitable water supply; 6) suitable agricultural infrastructure, in particular irrigation and drainage systems.

Issues such as tenure and infrastructure may change to support agricultural use in the future.

This policy therefore has strong implications for future rural living proposals in Mount Alexander Shire where much current rural living development has occurred in undulating to hilly bushland areas in the central sedimentary land of the Shire.

Water and rural living development

In late 2012, the State Government introduced new planning policy governing residential development in potable water supply catchment areas (refer to Section 5.3) which cover about 90% of the Shire. There are also valued biodiversity assets on lots used for rural living that are subject to Victoria's native vegetation management and conservation legislation and policies.

As a consequence of the above matters, the drivers of constraints for rural living now in part relate to human safety (particularly following the 2009 'Black Saturday' bushfires) and environmental impacts as well as increasing costs for servicing by Council and infrastructure agencies. Constraints also include controlling the loss of land available for productive agriculture, and the threat of land use conflict between agricultural activity and rural residential lifestyle properties, and the need for care and protection of biodiversity.

Mount Alexander Rural Living Strategy 2006

The Shire's 2006 *Rural Living Strategy* was an attempt by Council to provide strategic guidance at a local level by refining state policy matters. It developed the following key principles for rural living development:

- Discouraging the use of old crown allotments for rural living purposes.
- Preparation of environmental management plans for new dwellings in the rural zones and proposals should demonstrate a "net environmental gain" involving a range of land management actions.

The strategy established a planning direction which basically proposed the RLZ as the appropriate zone for rural living purposes in areas close to urban settlements, and not supporting continued development of existing small lots within the Farming Zone for rural residential or lifestyle property development. The Strategy identified seven areas around Castlemaine for investigation into suitability for potential rural living rezoning via application of the above principles.

However, recommendations for the nominated sites are now considered out-dated and inappropriate given the chain of events and changes to policy that have occurred since 2006, and particularly relating to water supply protection, bushfire safety, and biodiversity management. The strategy's encouragement for rural living development in areas with extensive vegetation cover (which generally couples with poor agricultural land quality), or directly adjoining such areas, is now problematic. This direction is now complicated by the apparent conflict between this and heightened concern relating to fire hazard and water quality risk.

Other matters

RLZ rezoning suggestions

Other locations have been suggested from community consultations for potential rezoning to RLZ. These in part include land in the Harcourt and Muckleford Valley areas and other locations. These areas have been proposed by individual landowners on the basis that use of their land for farming activity is becoming un-sustainable or un-profitable, or that demand for land use change is occurring to ease of access to Melbourne or Bendigo.

Some of the areas proposed also contain some of the better quality agricultural land in the Shire. Harcourt also has access to water and has a strong history of orchard development. Main growers in the area have also recently committed to considerable infrastructure expenditure for production, in the upgrading of the Harcourt water supply system. The Muckleford Valley contains productive alluvial soils along the valley and its fringes on the side the valley contain valuable native vegetation communities that are listed as endangered and depleted.

Despite the closeness of these areas to existing rural residential development and in the case of Muckleford to existing RLZ areas, the both Harcourt and Muckleford Valley contain important agricultural assets within the Shire. The loss of these areas to rural residential development would result in lost opportunity for the potential for agricultural diversity to continue and be supported under the planning scheme. Some of these areas are also close to extensive areas of native vegetation which present a threat from bushfire hazards. Consequently any consideration of bushfire planning requirements relating to defendable space and bushfire attack levels may make satisfying the state planning policy to protect human life as a priority difficult to achieve.

The case for rezoning to rural living

The Bushfire Royal Commission proposed that planning policies and controls should be amended to give priority to protecting human life and to ensure that development does not occur in areas where either the bushfire risk or the environmental cost of ensuring the safety of residents is too high.

Also, as identified above it is now considered potentially dangerous to permit rural lifestyle development unless appropriate 'defendable space' can be achieved and maintained. The ability to create defendable space may also be difficult because of environmental values associated with remnant native vegetation and potential for difficulties its removal.

In contrast, rezoning of existing cleared land, particularly farming land may also face challenges because of the value and importance of maintaining farming land under the FZ. The primary and predominant land use within Mount Alexander Shire remains farming. The planning scheme seeks to protect farming and the prevention of land use conflict from non-agricultural land uses.

It follows from the above discussion that while the principles of the 2006 *Rural Living Strategy* continue to remain relevant any consideration of specific area for rezoning to the RLZ will need to address assessment of bushfire hazard, water quality, land capability and vegetation issues, with water quality being a primary consideration matter for proposals in open potable water supply catchment areas.

Future zoning has potential to consider sites that are located close to existing RLZ areas. Rezoning of sites located distant from existing rural residential development are not considered appropriate due to either bushfire hazard risk, impacts on native vegetation or isolation from urban and social and community infrastructure and services.

To address matters discussed in this section, a detailed assessment is needed of the suitability for rural living development under the RLZ around settlements such as (but not limited to) Castlemaine, Maldon, Newstead, Baringhup or some of the Calder Highway townships. Such work is beyond the strategic context of the current study.

Council also requires clear principles and a process for considering any landholder generated proposals for rezoning to the RLZ. These currently need to be in accordance with guidelines contained within ***Planning Practice Note 37: Rural Residential Development*** of June 2012 which has been discussed above.

Recommendations

Policy

Revise the MSS to:

- Amend Clause 21.04-1 – Management or Urban Growth under Strategies – How do we achieve it? Under Settlement the third dot point reference to Ministerial Direction No. 6 should be amended to refer to Victoria's Planning Practice Note 37: *Rural Residential Development* (June 2012).
- Amend Clause 21.04-4 – Rural Living under Issues an additional sub-heading dealing with hazards should be included with reference to risks to human life from rural living settlement in areas subject to bushfire hazards and within open potable water supply catchments where unsewered development may risk water quality and potentially human health. Similarly, under Objectives and Strategies an additional objective and strategy should be included referring to the need to discourage development in areas of bushfire risk where defendable space cannot be provided or in areas within open potable water supply catchments where development is unsewered.

General Recommendations

- Further detailed work occur to develop additional sites for future investigation for rezoning to the Rural Living Zone in recognition that emergent government policy since the preparation of the 2006 *Rural Living Strategy* and pertaining particularly to bushfire hazard and water quality in potable water supply catchments has 'changed the goal posts' for rural living development, including the rezoning of land).
- It is recommended that the guidelines and principles provided under the *Planning Practice Note 37*: *Rural Residential Development* (June 2012); the Mount Alexander Shire *Rural Living Strategy* (2006) and the state and local planning policy frameworks under the Mount Alexander Planning Scheme provide an appropriate framework through which areas, sites and proposals for potential for rezoning to the Rural Living Zone may be considered and assessed. These guidelines and principles remain relevant but need to be considered in conjunction with the requirements of both the Ministerial Guidelines for *Planning*

Permit Applications in Open, Potable Water Supply Catchments for development within open potable water supply catchments (including local water authority guidelines such as the *Coliban Water Catchment Water Quality Protection Policy and Guidelines for Planning Permit Applications and Government Planning Initiatives* May 2012) and the Planning Practice Note 64 – *Local Planning for Bushfire Protection* dated November 2011 which assists in identifying the extent of risk from bushfire and requirements relevant for establishing appropriate defendable space if rural living development is to be proposed.

- The onus for justifying proposals for rezoning or development of land for rural residential development rest with the proponent, against the guidelines and principles referred to in the above recommendation.

5.4 Cultural Heritage

This section summarises key cultural heritage features of the Mount Alexander Shire

Background

Mount Alexander Shire has a rich indigenous and non-indigenous cultural history that extends across its rural and urban areas. The latter particularly extends from the gold era. Much has and can be written on this.

The Municipal Strategic Statement (MSS) identifies the *Castlemaine Diggings National Heritage Park* as a cultural landscape of national heritage significance. The Heritage Park is listed on the *Victorian Heritage Register* and the *National Heritage List*. The MSS also identifies a number of cultural landscapes.

The planning scheme applies a Heritage Overlay to an extensive range of specific sites of State and local significance.

Discussion

Heritage encompasses indigenous and non-indigenous cultural history. The Heritage Overlay (HO) in the Victoria Planning Provisions (VPO) and the Mount Alexander Planning Scheme addresses non-indigenous heritage. Indigenous cultural heritage is now addressed under separate legislation linked to the planning system under the *Aboriginal Heritage Act* 2006 and its regulations.

Aboriginal Cultural Heritage

The *Aboriginal Heritage Act* 2006 and its regulations require the preparation of a Cultural Heritage Management Plan (CHMP) if all or part of a proposed activity (land use development) is a listed high impact activity that may result in significant ground disturbance. The same also applies if all or part of the activity area is in an area of cultural heritage sensitivity, which has not been subjected to significant ground disturbance. In Mount Alexander Shire many areas of cultural heritage sensitivity are associated with waterways and park areas and are mapped by Aboriginal Affairs Victoria (AAV). High impact activities include developments such as multiple-dwelling developments and subdivisions (more than 3 lots), extractive industry, timber production and dams, which are listed in the regulations.

The Act requires that a CHMP is prepared and approved by a Registered Aboriginal Party (RAP), where triggered, prior to a planning permit being able to be granted by Council. Accordingly, Aboriginal cultural heritage matters are well managed via the CHMP process and no changes to either land use zoning or overlays are considered necessary to the planning scheme to reflect the presence of Aboriginal cultural heritage.

Non-indigenous Cultural Heritage

The Mount Alexander Planning Scheme contains a local planning policy at Clause 22.20 specifically dealing with natural and cultural heritage. Also, for non-indigenous or European cultural heritage, the planning scheme uses the Heritage Overlay (HO) which is often reinforced by the Victorian Heritage Register. While heritage sites are usually scattered, site specific locations mainly in urban areas, many sites are also found in the Shire's rural areas, generally in a scattered site-specific distribution.

Application of the HO is usually predicated by a heritage study having been conducted and adopted by Council. Where sites are identified under the HO and where development may affect these sites, a planning permit will usually be triggered allowing matters of impact and siting and design issues to be considered. As a result, it is considered this level of control is currently sufficient to ensure that heritage in rural areas are well managed.

Generally, it is considered that heritage sites and use of rural lands for agricultural activity are generally compatible.

It is considered that further adjustments to this policy are not considered necessary to deal with cultural heritage within the rural areas of the Shire.

Issues

Main heritage issues relevant to the Shire's rural lands include:

- The adequacy of the MSS in identifying policy required to underpin the contribution or role of the Shire's rural areas in promoting the major objective vision identified in the Shire's *Heritage Strategy 2012-2016* as a '*broad and inclusive vision of cultural heritage as central to the identity and well-being of Mount Alexander*'.
- Ongoing identification of heritage places in rural lands.

Recommendations

Policy

- Review the adequacy of the MSS in identifying policy required to underpin the contribution or role of the Shire's rural areas in promoting the major objective vision identified in the Shire's *Heritage Strategy 2012-2016* as a '*broad and inclusive vision of cultural heritage as central to the identity and well-being of Mount Alexander*'.

5.5 Tourism and recreation

This section identifies main tourism and recreation features of Mount Alexander Shire.

Background

Mount Alexander Shire has very active drive-based tourism around the themes of:

- shopping at the wide range of specialty shops Castlemaine and Maldon;
- food (including dining, local produce and wineries and cideries);
- the arts (including galleries, studios, tours, music and theatre).

Activities associated with the above themes (eg: accommodation) have varying connections to the Shire's rural areas. There are significant recreational activities particularly associated with public land.

The State Government's *Regional Tourism Action Plan 2009 – 2012* recognises the goldfields as Victoria's premier heritage region. It states that the region needs to continue to leverage off its strengths in culture, history and heritage to maximise future tourism activity while highlighting more contemporary offerings available in the region. A major relevant tourism issue for strategic land use planning in the Shire's rural areas is that of 'investment and infrastructure' and the future development of boutique accommodation associated with heritage, culture, arts and food and wine products.

The Victorian Competition and Efficiency Commission's 2011 report on *Unlocking Victorian Tourism – An Inquiry into Victoria's Tourism Industry* identified that land-use planning may affect tourism activities such as accommodation, food service, retail, recreational activities and facilities, and other activities that provide jointly for residents and visitors. The report noted perceptions about the restrictive nature of the Farm Zone (FZ) and the Rural Conservation Zone (RCZ) since the introduction of those new rural zones in 2004. The Victorian Government's response to the VCCEC's final report primarily supported its recommendations for land use planning. These were that the:

- Victorian Government to revise its objectives for tourism development and incorporate them into the State Planning Policy Framework.

- Victorian Government implement a strategic approach to land use planning for tourism including addressing tourism issues in developing regional land use plans.
- Encourage a consistent approach to administering the new zones:
- Support in part to providing more flexibility for tourism investment in the Farming (FZ), Rural Conservation (RCZ) and Green Wedge (GWZ) Zones. (The Green Wedge Zone is an outer Melbourne metropolitan land use zone).

The Planning Scheme

Rural based land use for tourism and recreation in Mount Alexander Shire includes a range of facilities for accommodation, and support for tourist and recreational activities. The land uses in the current planning scheme that can support these needs are listed below with Section 1 being 'as of right' and Section 2 subject to a planning permit. The definition of each of the land use terms is provided in a separate table.

Table 13: Table of '*Permit not required*' and '*Permit required*' rural tourism-related land uses in Victoria.

Land Use	Rural Conservation Zone	Farming Zone	Rural Activity Zone	RLZ
Section 1 – Permit not required				
Bed and breakfast	●	●	●	●
Informal outdoor recreation	●	●	●	●
Primary produce sales		●	●	
Section 2 – Permit required				
Backpackers lodge			♦	
Camping and caravan park		♦	♦	
Community market	♦	♦	♦	♦
Group accommodation	♦	♦		
Host farm	♦	♦		
Hotel				♦
Leisure and recreation (other than Informal outdoor recreation and Motor racing track)		♦	♦	♦
Pleasure boat facility	♦			
Primary produce sales	♦			♦
Residential hotel	♦	♦	♦	
Restaurant	♦	♦	♦	♦
Tavern			♦	♦
Winery		♦		

Explanation:
• designates land uses that are permitted within the designated Zone without need for a planning permit, although limitations (eg: number of beds) may apply.
♦ designates land uses that are permitted within the designated Zone subject to the need for a planning permit (and hence permit conditions) from the responsible authority.

Table 14: Planning Scheme definitions for relevant land uses in rural areas.

Land Use Term	Definition
Backpackers lodge	No discrete definition but included in 'Residential Building' which is: 'Land used to accommodate persons, but does not include camping and caravan park, corrective institution, dependent person's unit, dwelling, group accommodation, host farm, residential village or retirement village.'
Informal outdoor recreation	Land open to the public and used by non-paying persons for leisure or recreation, such as a cycle track, picnic or barbecue area, playground, and walking or jogging track
Camping and caravan park	Land used to allow accommodation in caravans, cabins, tents, or the like
Community market	No specific definition but included under 'Market' which is: Land used to sell goods, including foodstuffs, from stalls.'
Group accommodation	Land, in one ownership, containing a number of dwellings used to accommodate persons away from their normal place of residence.
Host farm	A farm used to provide accommodation for persons, away from their normal place of residence, to experience farm living.
Hotel	Land used to sell liquor for consumption on and off the premises. It may include accommodation, food for consumption on the premises, entertainment, dancing, amusement machines, and gambling
Leisure and recreation (other than Informal outdoor recreation and Motor racing track)	Land used for leisure, recreation, or sport. Includes: Major sports and recreation facility. Minor sports and recreation facility.
Pleasure boat facility	Land used to provide facilities for boats operated primarily for pleasure or recreation, including boats operated commercially for pleasure or recreation. Including: Boat launching facility. Marina
Primary produce sales	Land used to sell unprocessed primary produce, grown on the land or adjacent land
Residential hotel	Land, in one ownership, containing a number of dwellings, used to provide permanent accommodation and which includes communal, recreation, or medical facilities for residents of the village.
Restaurant	Land used to prepare and sell food and drink, for consumption on the premises. It may include: a) entertainment and dancing; and b) the supply of liquor other than in association with the serving of meals, provided that tables and chairs are set out for at least 75% of patrons present on the premises at any one time. It does not include the sale of packaged liquor
Tavern	Land used to sell liquor for consumption on the premises. It may include accommodation, food for consumption on the premises, entertainment, dancing, amusement machines, and gambling.

Source: Mount Alexander Planning Scheme

Changes to rural zones and implications for tourism.

The State Government changes for the rural zones, discussed earlier in the report could have implications for tourism. This includes the following:

- *Farming Zone:* An increase in size of a bed and breakfast facility from 6 to 10 persons, allowance for as-of-right sale of primary produce from individual properties, and new uses subject to a planning permit including accommodation such as camping, caravan parks, group accommodations and host farms.
- *Rural Conservation Zone:* Including in Section 2 uses (i.e.: Permit required) uses of: accommodation relevant to tourism, leisure and recreation and markets and any other use not in Sections 1 and 3.

- *Rural Living Zone:* Increasing the size of a bed and breakfast facility from 6 to 10 persons.

Issues for tourism and recreation

Two important tourism issues for strategic planning are:

- The current limited vision and policy directions in the MSS for the Shire's for tourism and recreation.
- The role of strategic directions for future tourism and recreational land use and development for in the Shire's rural areas.

Discussion

The State Government has yet to respond to the Victorian Competition and Efficiency Commission's 2011 report on *Unlocking Victorian Tourism – An Inquiry into Victoria's Tourism Industry* final report for land use planning to revise its objectives for tourism development for introduction into the State Planning Policy Framework to implement a strategic land use planning approach for tourism issues in developing regional land use plans.

The Mount Alexander Planning Scheme currently contains only brief acknowledgement of tourism and recreation in the Municipal Strategic Statement. To address this deficiency there is a need to enlarge on matters such as:

- How important is tourism and recreation is for the rural areas of the Shire and what are and would be the main focus areas?
- What are the main tourism and recreation opportunities in the rural areas, and what facilities and infrastructure are required?

Submissions have highlighted the importance of Lake Cairn Curran and the Loddon River, water pursuits, boating, cycling, horse riding, fishing, camping, and farm stays.

There is a need for a review of rural tourism opportunities and it would seem appropriate that this should be integrated with the tourism strategy for the Shire as a whole as there are many synergies between the urban and rural experiences in the Shire for the visitor. The shire is rich in tourism opportunities through its scenic attraction to the city visitor, agri-tourism (e.g. wineries and boutique accommodation) and nature-based recreation activities.

The State Government has recently proposed changes to the rural zones that would provide more flexibility for tourism investment tourism activities. The report of the Ministerial Advisory Committee was scheduled for February 2013. No announcements have occurred at the time of production of this report. This is required for relevant recommendations to be made from the current project.

Recommendation

Policy

Consider increased recognition of tourism in the MSS.

General

It is difficult to make a definitive recommendation for rural tourism as the rural areas need to be considered in the terms of the Shire as a whole. In addition, the development of tourism needs to take place in regional and statewide context. However, regarding Mount Alexander Shire, any strategic study would need to address questions such as:

- What are the opportunities for growing the nature-based and agri-tourism opportunities in the Shire?
- What are the main tourism potentials within the future 15 to 20 year policy/planning timeframe?
- What is the role of the planning scheme?
- Within the defined role for the Planning Scheme, does the Scheme provide adequately for tourism in the local and wider regional context, and in context of evolving community interests?

- What are the potential opportunities and threats to other main rural land uses and values in the farming zone (eg: to agriculture and the environment) of a broadened or stronger tourism policy in the Shire?

6 RECOMMENDATIONS

6.1 Agriculture

Policy

In the MSS:

- Amend *Clause 21.02 Key Issues Influencing the Shire's Future Land Use Planning and Development* to identify 'Agriculture' as a heading in its own right. This would result in changing '*Environment and Agriculture'* to '*Agriculture*'. This could be used to reinforce the importance of protecting and enhancing agriculture as defined in the *Victoria Planning Provisions,* as the primary land use across the rural areas of the Shire and highlight the importance of protecting agricultural land by minimising potential for conflict through the introduction of non-agricultural land uses.
- Amend *Clause 21.03 Municipal Vision and Framework Plan* to include the strategic maps and descriptions of Land Management Units, and Agricultural Land Quality in the MSS with suitable text to explain their application in the municipal vision for agriculture.
- Designate land covered by the *Mid Loddon Groundwater Management Area* in local policy in the planning scheme as a '*regionally significant*' agricultural area.

Zoning

- In the *Farming Zone* retain the 40 ha minimum area for subdivision and for a dwelling without the need for a permit across the main broadacre farming areas of the Shire.
- Retain the *Farming Zone* over the Harcourt horticultural area including the current 40 ha minimum lot size provisions.

6.2 Biodiversity and natural landscapes

Policy

Amend the MSS to:

- Amend *Clause 21.02 Overview of the Mount Alexander Shire* to identify Biodiversity and Natural Landscapes as a heading in its own right. This would result in changing 'Cultural and Natural Heritage' to Cultural Heritage' and creating a new key issue of 'Biodiversity and Natural Landscape'.
- Amend *Clause 21.04-7 - Protection of Biodiversity and Landscape* to recognise native vegetation as an integral part of 'Biodiversity *and habitat'* and separate out and relocate all references to 'heritage' to Clause 21.04-5 – Built and Cultural Heritage. Consideration should also be given to creating a separate sub clause for catchment objectives and strategies.

Rural Conservation Zone (RCZ)

- Further detailed work to be done to develop the criteria and identify potential areas for the application of the RCZ in the Shire.

Environment Significance Overlay (ESO)

- Conduct further work to expand the application of the ESO for biodiversity protection and enhancement.
- Conduct further work on the existing ESO5 to highlight the importance of biological connectivity as an environmental objective, including review of appropriate width for the biolink objectives.

Native Vegetation Precinct Plans

- Council consider the application of the *Native Vegetation Precinct Plan* as part of the requirements of any Development Plan Overlay (DPO) for future subdivisions within areas of environmental sensitivity or value.
- Council consider the application of the *Native Vegetation Precinct Plan* as part of the requirements of the proponent for any future proposed subdivisions for rural living in the rural areas .

Habitat studies

- Council work in collaboration with the Department of Environment and Primary Industry (DEPI) and North Central CMA in further strategic work to document the habitat relationships between threatened flora and fauna and the EVCs in the Shire' as a basis for making future decisions on appropriate application of zoning and overlays for protection and enhancement of threatened species.

Landscape studies

- Consideration be given to a scenic landscape study to inform both planning policy and the potential application of other planning tools (e.g. zoning and overlays) to protect and enhance the scenic values of the Shire.

6.3 Cultural heritage

Policy

- Review the adequacy of the MSS in identifying policy required to underpin the contribution or role of the Shire's rural areas in promoting the major objective vision identified in the Shire's *Heritage Strategy 2012-2016* as a '*broad and inclusive vision of cultural heritage as central to the identity and well-being of Mount Alexander*'.

6.4 Rural living

Policy

Revise the MSS to:

- Amend Clause 21.04-1 – Management or Urban Growth under Strategies – How do we achieve it? Under Settlement the third dot point reference to Ministerial Direction No. 6 should be amended to refer to Victoria's Planning Practice Note 37: *Rural Residential Development* (June 2012).
- Amend Clause 21.04-4 – Rural Living under Issues an additional sub-heading dealing with hazards should be included with reference to risks to human life from rural living settlement in areas subject to bushfire hazards and within open potable water supply catchments where unsewered development may risk water quality and potentially human health. Similarly, under Objectives and Strategies an additional objective and strategy should be included referring to the need to discourage development in areas of bushfire risk where defendable space cannot be provided or in areas within open potable water supply catchments where development is unsewered.

General

- Further detailed work be done by Council to develop additional sites for future investigation for rezoning to the Rural Living Zone in order to offset the loss of sites currently identified in the 2006 *Rural Living Strategy* for potential rezoning to rural Living and taking into account with such work the rural residential development guidelines, 2006 Mount Alexander Rural Living Strategy principles as well as bushfire hazards and water supply catchment issues.
- It is recommended that the guidelines and principles provided under the *Planning Practice Note 37*: *Rural Residential Development* (June 2012); the Mount Alexander Shire *Rural Living Strategy* (2006) and the state and local planning policy frameworks under the Mount Alexander Planning Scheme provide an

appropriate framework through which areas, sites and proposals for potential for rezoning to the Rural Living Zone may be considered and assessed. These guidelines and principles remain relevant but need to be considered in conjunction with the requirements of both the Ministerial Guidelines for *Planning Permit Applications in Open, Potable Water Supply Catchments* for development within open potable water supply catchments (including local water authority guidelines such as the *Coliban Water Catchment Water Quality Protection Policy and Guidelines for Planning Permit Applications and Government Planning Initiatives* May 2012) and the Planning Practice Note 64 – *Local Planning for Bushfire Protection* dated November 2011 which assists in identifying the extent of risk from bushfire and requirements relevant for establishing appropriate defendable space if rural living development is to be proposed.

6.5 Tourism

Policy

Consider increased recognition of tourism in the MSS.

General

It is difficult to make a definitive recommendation for rural tourism as the rural areas need to be considered in the terms of the Shire as a whole. In addition, the development of tourism needs to take place in regional and statewide context. However, in terms of the Shire any strategic study would need to address questions such as:

- What are the opportunities for growing the nature-based and agri-tourism opportunities in the Shire?
- What is the role of the planning scheme?

APPENDICES

Appendix 1: Reference list

The following documents have been reviewed in conducting this project. Not all have been directly quoted in this document. Other documents and other content on relevant internet sites have also been considered.

Planning documents

State

- *Victoria Planning Provisions*

Mount Alexander Shire

- *Mount Alexander Planning Scheme*
- *Mount Alexander Planning Scheme Amendment C69 Explanatory Report*.
- *Review of the Mount Alexander Planning Scheme - Stage 1 Final Report*. Prepared for Mount Alexander Shire Council by Centrum Town Planning. July 2010

Mount Alexander Council reports / strategies / management plans

- *Mount Alexander Economic Development Strategy: Presentation at Community Consultation Forum* February 2013
- *Mount Alexander Roadside Management Plan 2011-2017 (*Adopted by Council 11 September 2012)
- *Mount Alexander Shire Environmental Strategy 2011 - 2014*
- *Residential Land Demand and Supply Analysis*. Prepared for Mount Alexander Shire by Philip DeAraugo Integrated Strategic Urban Planning. September 2010

Land Systems and land capability and related studies

- *A Study of the Land in the Campaspe River Catchment*. Land Protection Division, Dept Conservation Forests and Lands, 1987
- *A Land capability study of the City of Greater Bendigo, Strathfieldsaye District*. Technical Report No. 20 Centre for Land Protection Research.
- *An Assessment of the Principal Non-Urban Areas - Municipality of Strathfieldsaye. A Land Capability Approach*
- *Groundwater and Salinity Processes in the Uplands of the Campaspe River Catchment*. Technical Report No.6. Centre for Land Protection Research. 1993
- *Guidelines for Land Capability Assessment in Victoria*. Soil Conservation Authority. January 1981
- *Lake Eppalock Catchment Land Capability Assessment and Planning Project* (Draft Reports 1, 2 and 3) '. Centre for Land Protection Research. DNRE and Agriculture Victoria 1999
- *Land Capability Study of the Former Shire of Kyneton*. Technical Report No. 28 Centre for Land Protection Research. March 1996
- *Land Inventory of the Loddon River Catchment: A Reconnaissance Survey.* Land Protection Division, Dept Conservation Forests and Lands, 1988

Groundwater

- *Mid-Loddon Groundwater Management Area. Local Management Rules. Annual Reports 2010, 2011, 2012*. Goulburn Murray Water 2012.

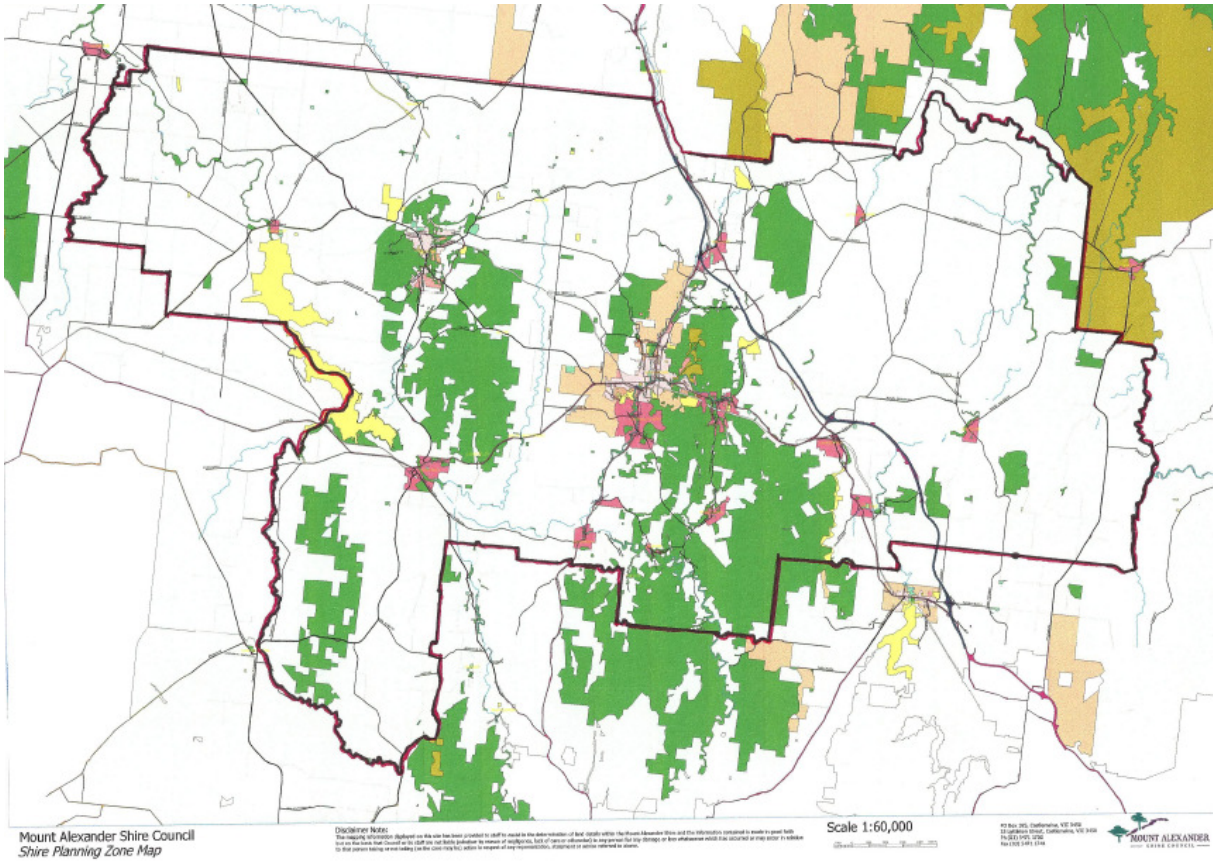
Other plans, strategies, guidelines and reports

- *Cairn Curran Land and On-Water Management Plan*. 2012
- *Cairn Curran Reservoir Public Reserve Masterplan*. Goulburn Water 2012

- *Draft Regional Catchment Strategy 2012 - 2018 North Central CMA* -
- *Glimpsing Victoria's Future Climate*. Land and Water Australia 2008
- *Goulburn Murray Water Fact Sheets and hydrograph publications* (Various on GWMW website) from mid 2000s to 2012
- *Guidelines for Environmental Management: Code of Practice - Onsite Wastewater Management* (December 2008). EPA,
- *Lake Eppalock Land and On-Water Management Plan* (Draft 2012)
- *Living Together in Rural Victoria: What to Expect*: DPI Victoria

Appendix 2: Mount Alexander Shire Land Use Zones map

Land Use Zones



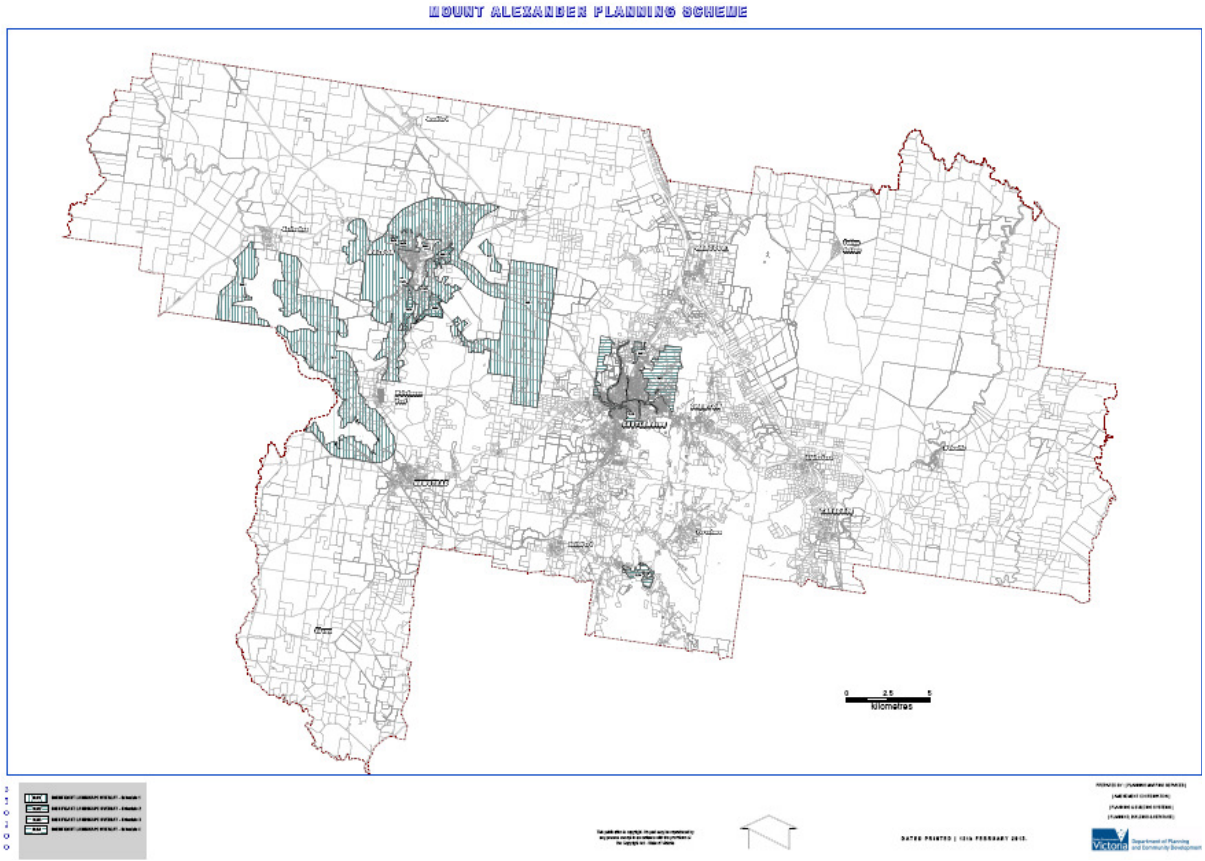
Key

Farming Zone	Rural Living Zone	Low Density Residential Zone	Rural Conservation Zone	Public Conservation and Resources Zone

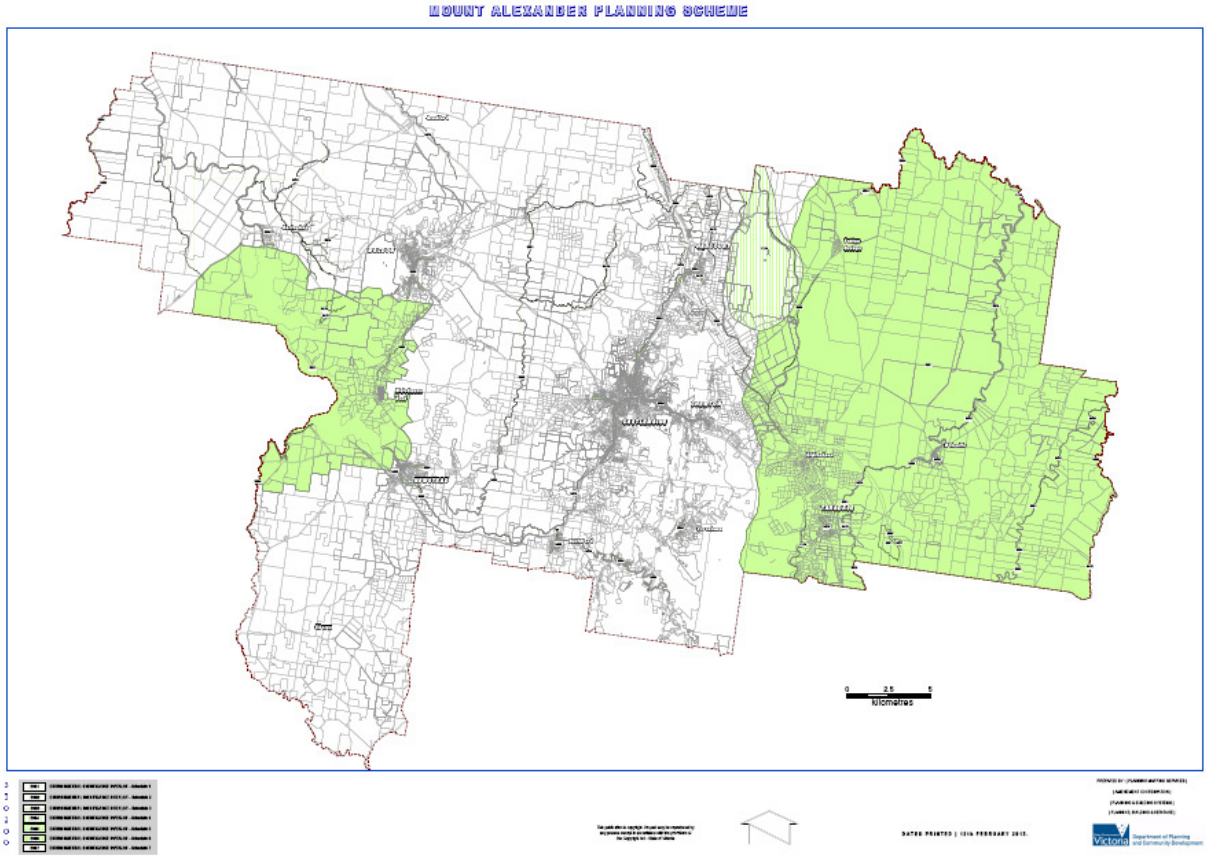
Water body

Appendix 3: Planning Scheme Overlay maps

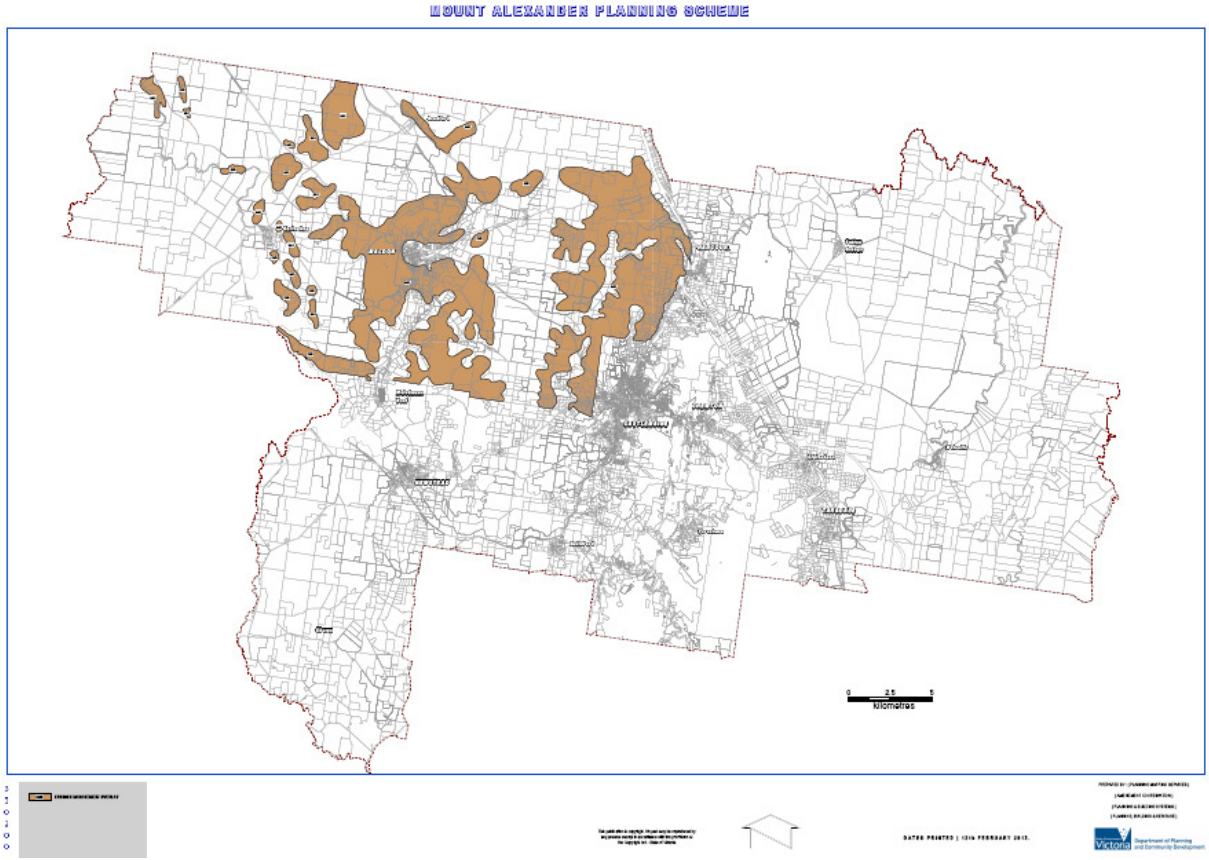
Significant Landscapes Overlay



Environmental Significance Overlays – Water Catchments



Erosion Management Overlay



Wildfire Management Overlay