7 Agricultural land

7.1 STRATEGIC CONTEXT

Plan Melbourne Strategy[41]

The eastern portion of Hepburn Shire falls within the peri-urban region of Metropolitan Melbourne and Plan Melbourne strategic directions are therefore relevant. With regard agricultural land, the Plan states that planning for peri-urban areas should:

- Define and protect areas that are strategically important to the metropolitan area and the state, for the environment, biodiversity, landscape, open space, water, **agriculture**, energy, recreation, tourism, environment, cultural heritage, infrastructure, extractive and other natural resources.
- Protect agricultural land from incompatible uses, maintain farm size, promote the continuation of farming and provide a secure long-term future for productive and sustainable agriculture.

Action 17 of the **Implementation Plan**[42] seeks to improve planning decision-making to support sustainable agriculture by identifying areas of strategic agricultural land in Melbourne's green wedges and peri-urban areas. This action, **Planning for Melbourne's Green Wedges and Agricultural Land**[43], included an assessment of agricultural land capability[44]. Land within Classes 1, 2 and 3 was considered to be indicative of land candidate for designation as Strategic Agricultural Land.

Central Highlands Regional Growth Plan

The Central Highlands seeks to support agriculture and recognises productive agricultural land, as an important source of economic wealth with considerable potential for further investment. With regard agricultural land, the Plan provides the following directions:

- Recognise the Central Highland region's regionally significant rural and agricultural assets in land use planning, including the areas of highly productive and versatile soils within Moorabool, Ballarat and Hepburn, the Bacchus Marsh Irrigation District and the Pyrenees wine region.
- Review planning schemes to recognise the need to support investment in agriculture by providing more clarity about the long-term designation of land for primary production.
- Undertake further investigations into the region's strategic agricultural land assets to ensure a consistent approach across the region.
- Identify important agricultural areas and the need to protect them in planning schemes from unplanned loss due to permanent changes of land use.

Amendment C80

The Amendment C80 Planning Panel report recommended that a minimum lot size of 40 hectares be applied to land in Area 3 of the current Farming Zone Schedule on the basis that it was incongruous with other policy objectives relating to productive agricultural land, water catchments and biodiversity values.

7.2 POLICY CONTEXT

Clause 02.04 Strategic framework identifies high and very high agricultural land (Figure 57).

Clause 02.03-5 Natural resource management

The rural areas of the municipality form part of Melbourne's hinterland. Careful planning is required to maintain rural and agricultural land uses and to prevent unrelated housing and other urban development negatively impacting upon or reducing this resource.

The Shire's high quality agricultural land is part of a region supplying important horticulture including vegetables, vines, seeds and notably potatoes. Emerging rural industries include locally sourced produce, value added food manufacturing and related products and rural tourism.

In order to maintain the economic and social value of the municipality's rural land, the productivity and versatility of agricultural land needs protection. Landscape and environmental values also form a significant part of the value and character of rural areas.

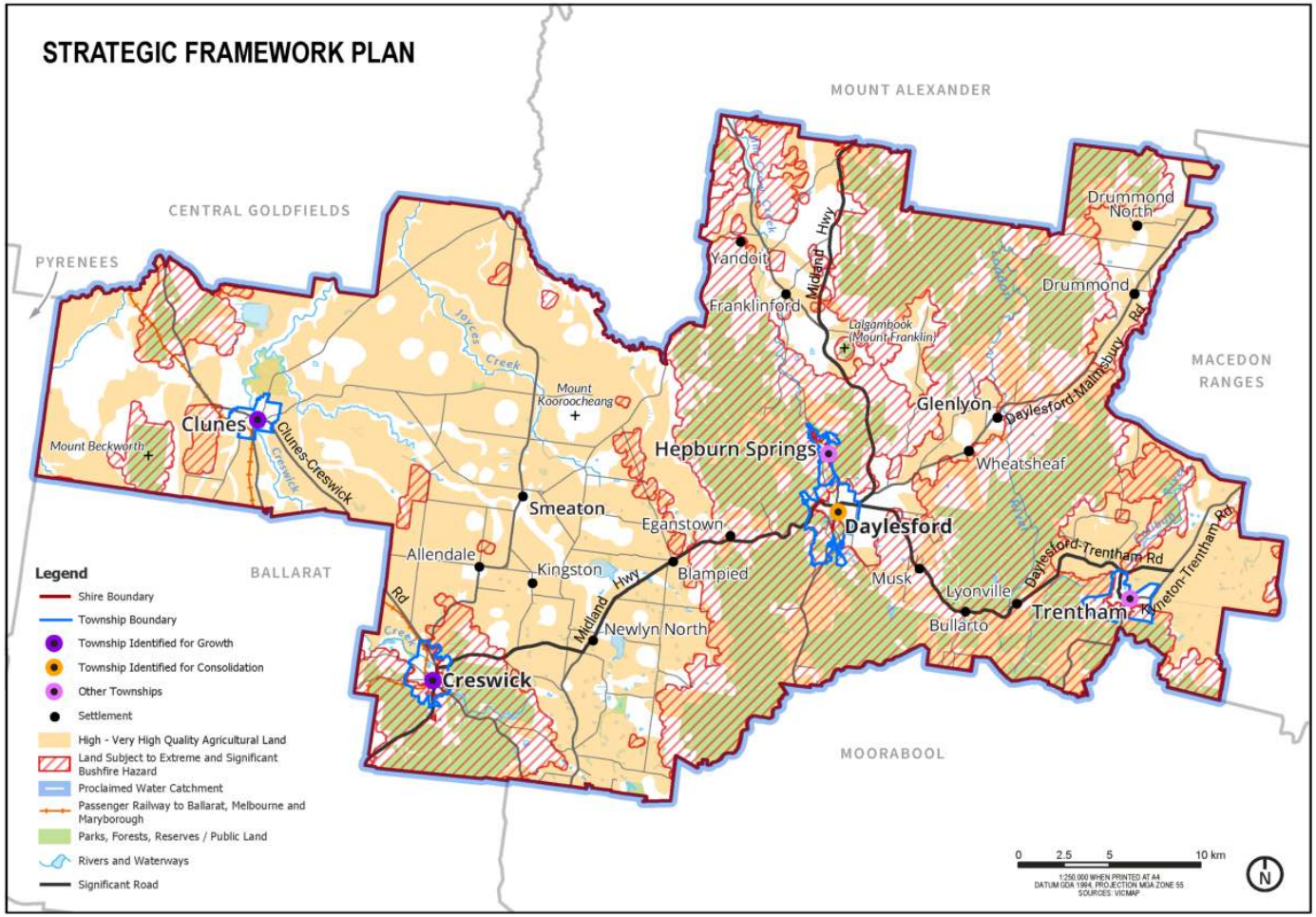
Council's strategic directions for agricultural land are to:

[41] https://planmelbourne.vic.gov.au/the-plan
[42] https://www.planmelbourne.vic.gov.au/implementation
[43] https://engage.vic.gov.au/gwal

[44] Agriculture Victoria (2018) Assessment of Agricultural Land Capability in Melbourne's Green Wedge and Peri-Urban Areas

- Protect high quality productive agricultural land for agricultural uses over the long term.
- Protect rural land for agricultural uses and compatible rural uses.
- Support the evolution of agriculture in response to improved practices and climate change.

Figure 57: Strategic Framework Plan[45]



[45] Mapping of high and very high quality agricultural land was sourced from EnPlan (2007) Strategic Assessment of Agricultural Quality of the Rural Lands in Hepburn Shire

Clause 02.03-7 Economic development notes that Hepburn Shire is a *significant agricultural region and part of Melbourne's food bowl* and fragmentation of agricultural land through unmanaged subdivision and housing in rural areas has the potential to undermine established rural uses and must be carefully planned to maintain the long-term productivity of rural land. Rural living development not associated with agricultural enterprises needs to be directed around established townships and settlements. The clause includes the following strategic direction for agricultural land:

- Maintain and protect agricultural land by avoiding fragmentation and commercial uses that may lead to loss of, or limitations for, production.

Clause 14.01-1S Protection of agricultural land

Protect the state's agricultural base by preserving productive farmland by:

- Identify areas of productive agricultural land, including land for primary production and intensive agriculture.
- Consider state, regional and local, issues and characteristics when assessing agricultural quality and productivity.
- Avoid permanent removal of productive agricultural land from the state's agricultural base without consideration of the economic importance of the land for the agricultural production and processing sectors.
- Protect productive farmland that is of strategic significance in the local or regional context. Protect productive agricultural land from unplanned loss due to permanent changes in land use. Prevent inappropriately dispersed urban activities in rural areas.
  - Protect strategically important agricultural and primary production land from incompatible uses. Limit new housing development in rural areas by:
    - Directing housing growth into existing settlements.
    - Discouraging development of isolated small lots in the rural zones from use for dwellings or other incompatible uses.
    - Encouraging consolidation of existing isolated small lots in rural zones.
  - Identify areas of productive agricultural land by consulting with the Department of Economic Development, Jobs, Transport and Resources and using available information.
  - In considering a proposal to use, subdivide or develop agricultural land, consider the:
    - Desirability and impacts of removing the land from primary production, given its agricultural productivity.
    - Impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.
    - Compatibility between the proposed or likely development and the existing use of the surrounding land.
    - The potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.
    - Land capability.
  - Avoid the subdivision of productive agricultural land from diminishing the long-term productive capacity of the land.
  - Give priority to the re-structure of inappropriate subdivisions where they exist on productive agricultural land.
  - Balance the potential off-site effects of a use or development proposal (such as degradation of soil or water quality and land salinisation) against the benefits of the proposal.

Clause 14.01-1S Protection of agricultural land seeks to protect the state's agricultural base by preserving productive farmland by:

- Identify areas of productive agricultural land, including land for primary production and intensive agriculture.
- Consider state, regional and local, issues and characteristics when assessing agricultural quality and productivity.
- Avoid permanent removal of productive agricultural land from the state's agricultural base without consideration of the economic importance of the land for the agricultural production and processing sectors.
- Protect productive farmland that is of strategic significance in the local or regional context. Protect productive agricultural land from unplanned loss due to permanent changes in land use. Prevent inappropriately dispersed urban activities in rural areas.
- Protect strategically important agricultural and primary production land from incompatible uses. Limit new housing development in rural areas by:
  - Directing housing growth into existing settlements.
  - Discouraging development of isolated small lots in the rural zones from use for dwellings or other incompatible uses.
  - Encouraging consolidation of existing isolated small lots in rural zones.

- Identify areas of productive agricultural land by consulting with the Department of Economic Development, Jobs, Transport and Resources and using available information.
- In considering a proposal to use, subdivide or develop agricultural land, consider the:
  - Desirability and impacts of removing the land from primary production, given its agricultural productivity.
  - Impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.
  - Compatibility between the proposed or likely development and the existing use of the surrounding land.
  - The potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.
  - Land capability.
- Avoid the subdivision of productive agricultural land from diminishing the long-term productive capacity of the land.
- Give priority to the re-structure of inappropriate subdivisions where they exist on productive agricultural land.
- Balance the potential off-site effects of a use or development proposal (such as degradation of soil or water quality and land salinisation) against the benefits of the proposal.

Clause 14.01-1L Protection of agricultural land seeks to protect the Shire's high quality productive agricultural land within the FZ, RCZ and RLZ from the encroachment of incompatible use and development by:

- Retain existing Farming Zone land and discourage land fragmentation from residential use and development.
- Prevent the subdivision of land for a new dwelling on rural land that does not meet the minimum subdivision area of the relevant rural zone.
- Prevent the subdivision of lots that will result in a concentration of lots smaller than the minimum subdivision size of the relevant rural zone.
- Encourage small lot agriculture and hobby farms to locate in the Rural Living Zone
- Prevent the subdivision of tenements in single ownership and encourage the consolidation of lots. Allow a dwelling on a rural lot that either:
- Meets the minimum subdivision area of the relevant rural zone. Is directly associated with a rural enterprise where:
  - Agricultural production will be maximised.
  - The land has low agricultural value.
  - There will be no loss of productive agricultural land.
  - Native vegetation will be retained and managed.
- Ensure if a new dwelling is approved that:
  - A separation distance and landscape screening are provided around the dwelling.
  - The building height, scale, setback and bulk responds positively to the landscape values, cultural heritage values and characteristics of the rural area.
  - It continues to operate in a habitable condition and meet the requirements of the Building Code of Australia.
- Minimise the adverse impacts that a new dwelling, accommodation use or subdivision may have upon water quality and quantity, native vegetation and biodiversity and the productivity and operation of agricultural land.
- Restructure inappropriate subdivisions that adversely affect productive agricultural land, biodiversity or natural hazard areas.

Clause 35.07 Farming Zone

The Farming Zone (FZ) is the main zone for rural land in the Hepburn Planning Scheme and aims to encourage retention of productive agricultural land and discourage uses that may have adverse impacts on agriculture. The FZ covers nearly 100,000ha or 67% of the total Shire area. There are two schedules to the FZ. FZ1 requires a minimum subdivision area of 40ha and a minimum area of 40 ha above which no planning permit is required for a dwelling. FZ2 requires a minimum subdivision area of 20ha and a minimum area of 20 ha above which no planning permit is required for a dwelling. The 1999 Hepburn Shire Land Use Strategy provides the strategic basis for the two FZ schedules:

> *In various areas of Hepburn Shire significantly different rural land and agricultural situations exist. To recognise this, Council should consider the application of at least two subdivision sizes. It is recommended that Council use the larger 40ha subdivision size in the predominantly grazing areas of the west of the Shire and another more flexible minimum size down to 20ha, in areas according to land capability assessment and criteria that have a greater potential for diversity of horticultural activities.*

7.3 PRODUCTIVE AGRICULTURAL LAND

Planning Practice Note 42: Applying the rural zones provides the following defines productive agricultural land generally as having one or more of the following characteristics:

- suitable soil type
- suitable climatic conditions
- suitable agricultural infrastructure, in particular irrigation and drainage systems
- a present pattern of subdivision favourable for sustainable agricultural production.

The practice notes states:

> *Productive agricultural land should be clearly identified and protected in the planning scheme. If the protection and retention of this land for agricultural production is of primary strategic importance, then it should be included in the Farming Zone.*

High quality productive agricultural land is defined at **Clause 73.01** of the Hepburn Planning Scheme as:

> *Land which is used for animal husbandry or crop raising, and is capable of continuing to sustain agricultural production, and:*
>
> - *is of prime, or very good, agricultural quality, having regard to soil type, growing season, and availability of infrastructure, and is of sufficient extent to support agricultural activities on an economically viable scale; or*
> - *has been identified through a regional, sub-regional, or local study as being of particularly good quality and strategic significance for agriculture in the regional or local context.*

LAND CAPABILITY

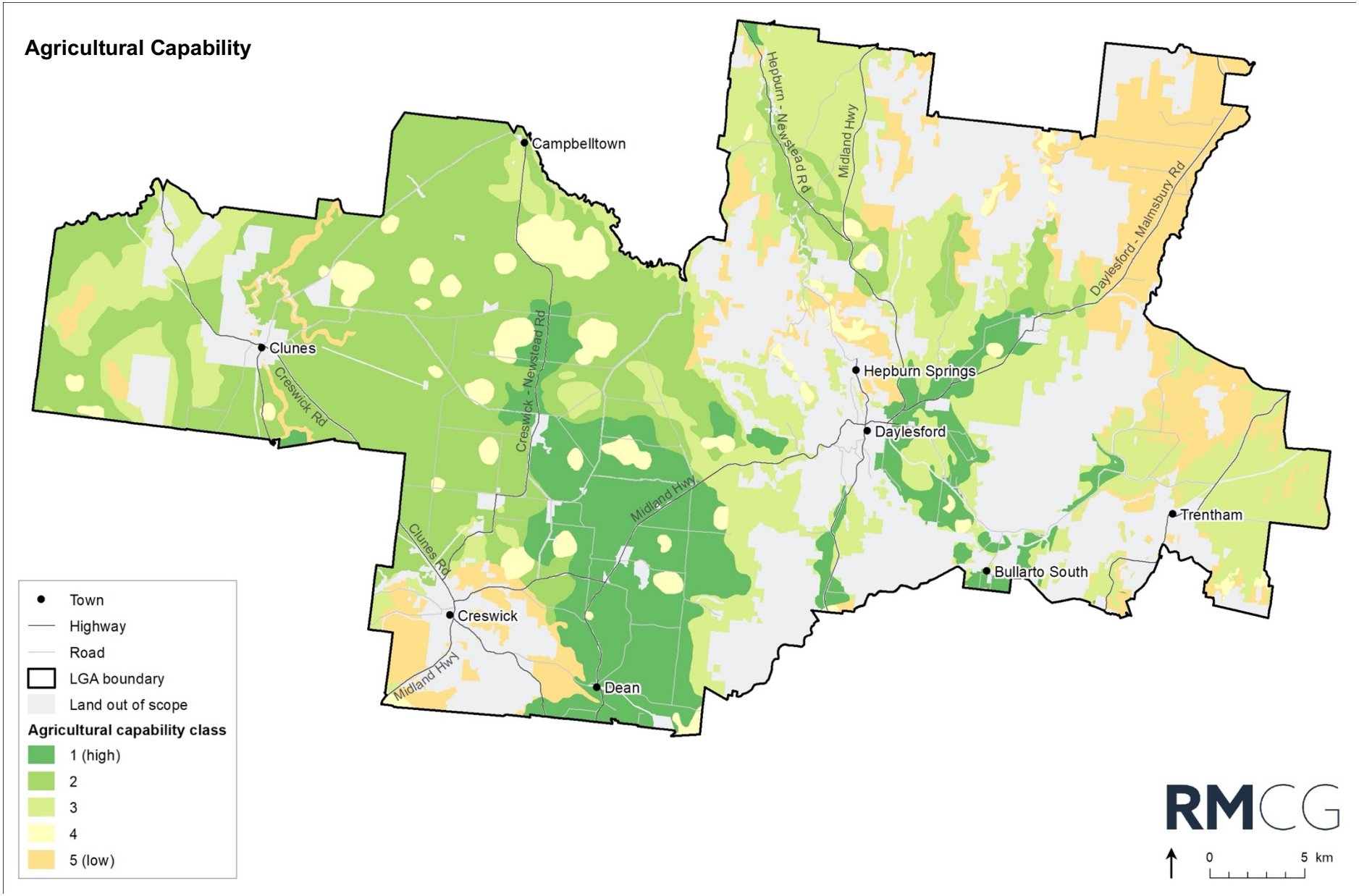
An assessment of the agricultural quality of land in Hepburn Shire was undertaken in 2007[4]. The assessment of was based on an evaluation of agricultural quality, primarily soil type and estimation of the agricultural productivity and versatility ratings of established geomorphic land units. Table 23 provides a description of each of agricultural quality class. A digital version of the agricultural quality map is not available. To enable spatial analysis of land for this project, a digital map was prepared using spatial mapping of geomorphic units and cross-referencing this with the 2007 assessment as well as soil description from land systems maps[46] (Figure 58).

Table 23: Description of agricultural quality classes

Class	Description
Class 1 – very high	Agriculturally and horticulturally versatile land, with high inherent productive potential through possessing well structured deep permeable and fertile soils, a flat to undulating landscape, good drainage. High to very high productivity (e.g.: 16dse/ha+) and versatility. Land suited to a wide range of agricultural activities at high levels of productivity with standard management techniques and skills and a growing season of up to 10 months. Irrigation water is generally available to extend the season, the range of enterprises and productivity.
Class 2 - high	The few limitations to cropping and grazing production are readily overcome by available management practices. Requires a higher level of inputs to achieve the same productivity as Class one. Usually high productivity (e.g.: 13dse/ha+) and low to high versatility. Ranges from very good grazing, dairying and /or cropping country, to land of moderate productivity unsuitable for cropping. Using raised bed technology productive cropping is possible. Slope is greater, soils more variable, imperfectly to easily drained, the growing season may be up to 10 months. Where irrigation water becomes available to extend the season, range of enterprises and productivity, affected areas can be highly productive and versatile.
Class 3 – Average	Usually average to higher productivity (to 11dse/ha) and low to average versatility. Can sustain grazing and crop production. Cropping requires the use of no-till practices to prevent erosion, maintain soil structure and raised beds for drainage. Fertility levels are moderate to low, growing season is up to 9 months. With high inputs, high productivity levels may be achieved. Irrigation water is unavailable.
Class 4 – low	Low capacity to resist land disturbance such as cultivation without eroding. Capable of supporting moderate to low stocking rates and unsuited to cropping. Usually low to average productivity (6 to 8dse/ha) and low versatility. The length of growing season is up to 8 months. Slopes are moderate to steep, with shallow infertile soils, often of low permeability, which need care in their management. Fertility levels are generally low. Erosion hazard is high. Irrigation water is unavailable.
Class 5 – very low	Areas of low productive capacity with very low capability to resist disturbance without eroding. Length of growing season is less than 7 months and non-agricultural uses are recommended. Very low productivity (to 3dse/ha) and versatility. Includes land unsuited to agriculture and marginal grazing country. Constraints are steepness of slope, shallow, sandy, or rocky soils, high erosion susceptibility and/or poor drainage. Environmental stability may be best achieved through revegetation or forestry. Irrigation water is unavailable.

[46] A study of Land in the Campaspe River Catchment (1987) Conservation Forests and Lands, and A Land Inventory of the Loddon Catchment (1988) Conservation Forests and Lands

Figure 58: Agricultural capability

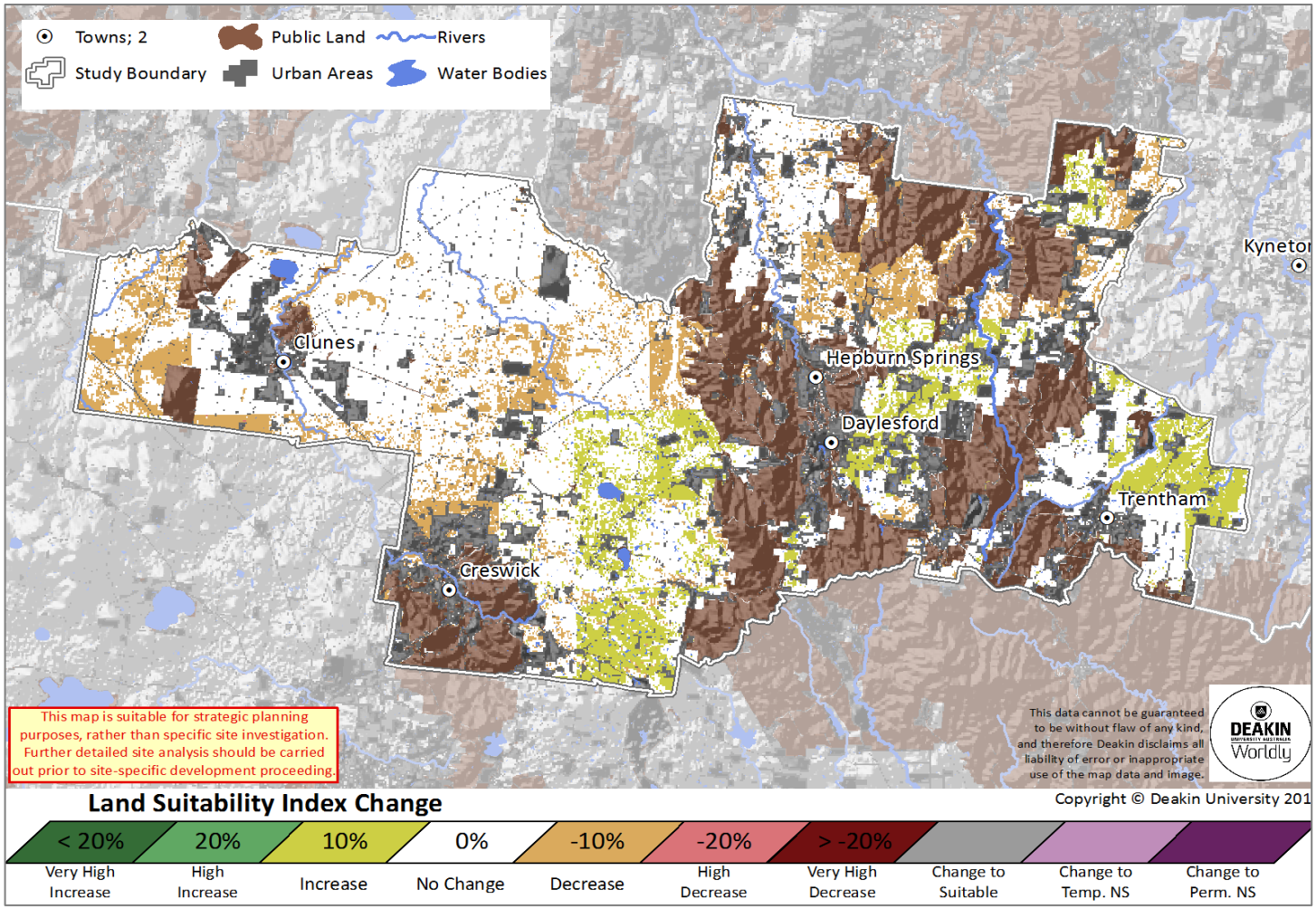


CLIMATE

The review of rural land use and the impact of the future climate on agricultural versatility by CERRF[19] provides the following summary of the Hepburn climate.

The current climate of Hepburn, based on historical climate normal 1961 – 1990), ranges from between 13°C-14°C along its northern boundaries and between 10°C-12°C along the south eastern border, south and east of Daylesford. From the baseline (historical) period, average annual mean temperature is projected to increase by 2.3ºC from 12.2ºC historically (1961 – 1990) to 14.5ºC in 2050 under a high emissions pathway. Rainfall in Hepburn could decrease from the baseline period, roughly 712mm total annual rainfall, by approximately 20mm in 2050 with a shift in seasonal variance evident by 2050 also, from February to March being the driest month. The report concluded that extensive areas of the Shire will experience no change in agricultural versatility as a result of the forecast change to the climate change, areas to the south and east will experience a 10% increase in versality, while areas to the north and west will experience a 10% decline in versatility.

Figure 59: Agricultural land versatility change (Historical climate 1961-1990 to 2050 RCP 8.5 high emissions pathway)[19]



INFRASTRUCTURE

There has been extensive groundwater development for irrigation and stock and domestic purposes. Irrigation bores are the primary source of irrigation water for potato production. Stock and domestic bores are licensed for small volumes for watering stock and for non-potable uses in the house and garden.

Irrigation bores are licensed for extraction of large volumes of water and operation requires significant capital investment, in addition to the bore construction. Water is pumped from the aquifer and the water is stored in a dam before it is used to irrigate a crop. A number of different irrigation types are used including lateral move, rain gun and centre pivot.

Most irrigation bores are found in the area between Creswick and Daylesford. There are also bores near Trentham and Musk.

The large number of stock and domestic bores are likely to be associated with livestock enterprises, small farms and lifestyle properties as they generally only provide for small volumes of water.

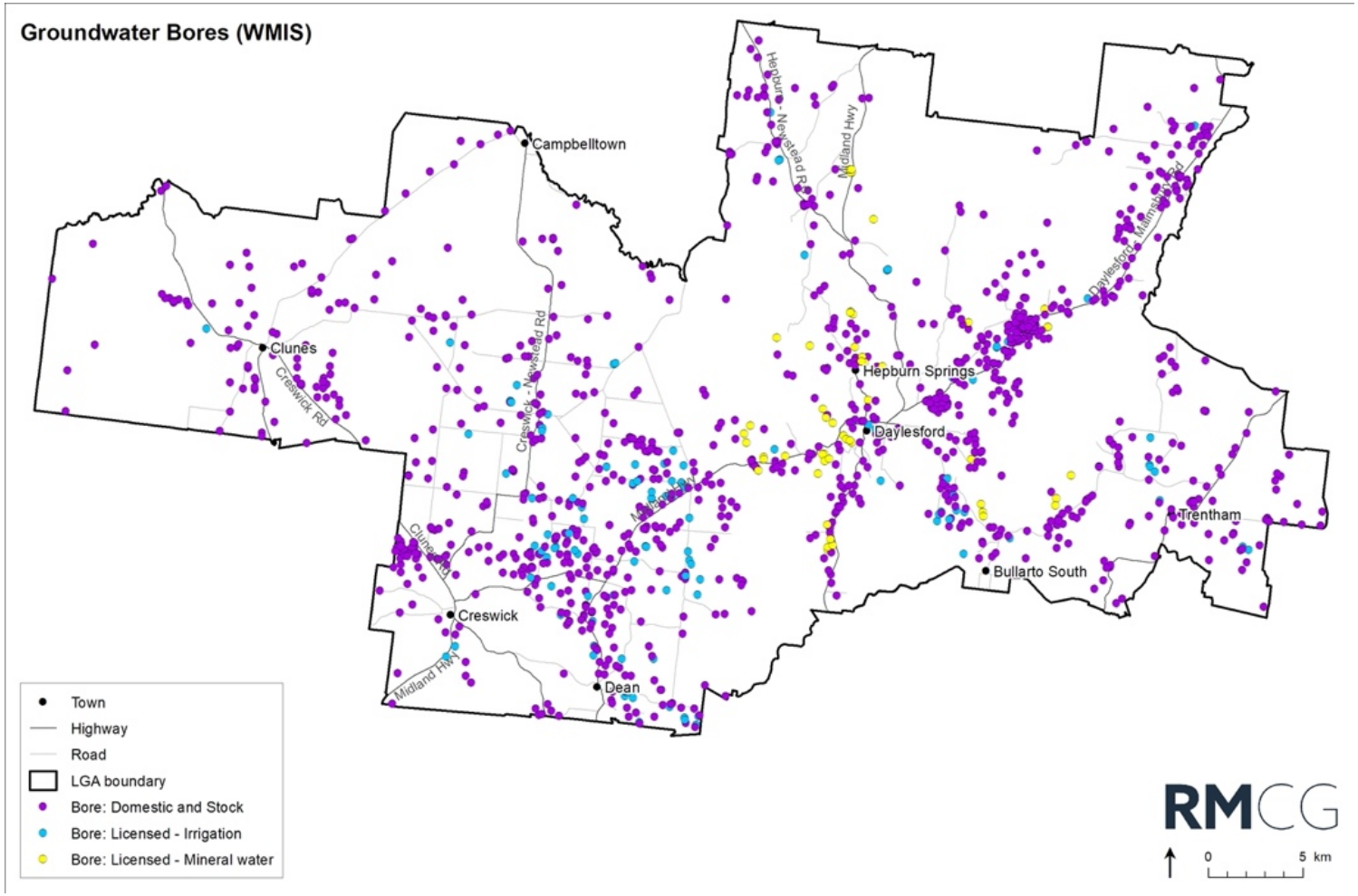


Figure 60: Groundwater bores, Hepburn[47]

[47] Data source

SUBDIVISION AND LAND HOLDINGS

Figure 61 shows the distribution of lots of various sizes in the Farming Zone across the Shire. Smaller lots (<40ha) are clustered around townships and generally in the eastern half of the Shire.

Figure 62 shows the land ownership in the Farming Zone. Land in common ownership was estimated using the rates billing address. This analysis shows that many small lots are part of larger land holdings. Land in the west of the Shire is predominantly held in larger ownerships (>100ha), while in the east land farm size is more diverse.

The agricultural capability and land ownership spatial data were analysed according to the framework in Table 24 as a '*first pass'* approach to identifying productive agricultural land. The outcome of the spatial analysis is shown in Figure 63, which also shows the location of irrigation bores. This will need to be tested with stakeholders and validated through site analysis.

Table 24: Productive agricultural land spatial analysis framework

	Agricultural capability	Ownership size
Productive agricultural land	1	>10ha
	2	>10ha
	3	>20ha
	3	>20ha
	4	>20ha
Land highly constrained for agriculture	All other land….	

Figure 61: Lot size in the Farming Zone

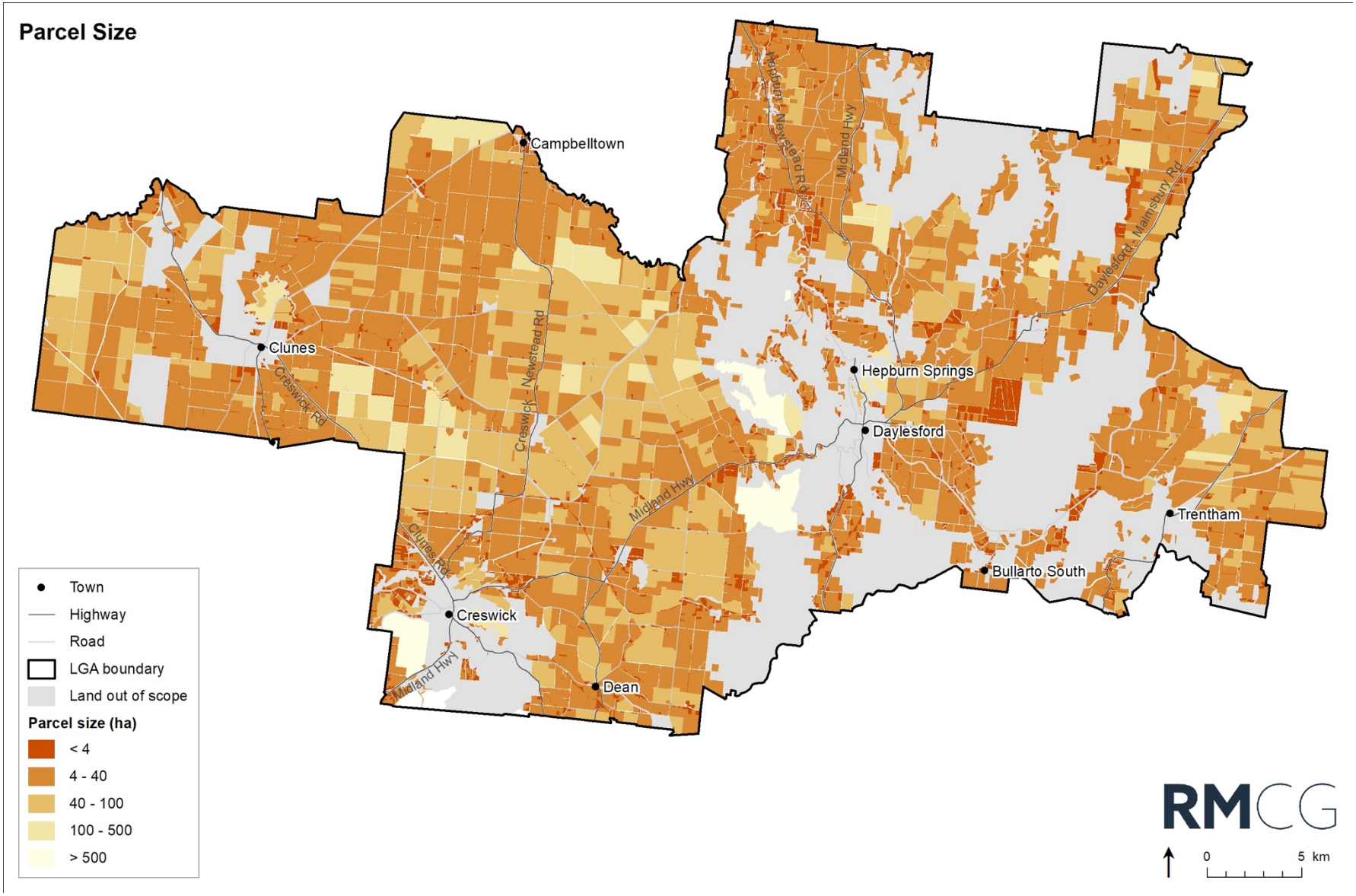


Figure 62: Farming Zone land ownership patterns

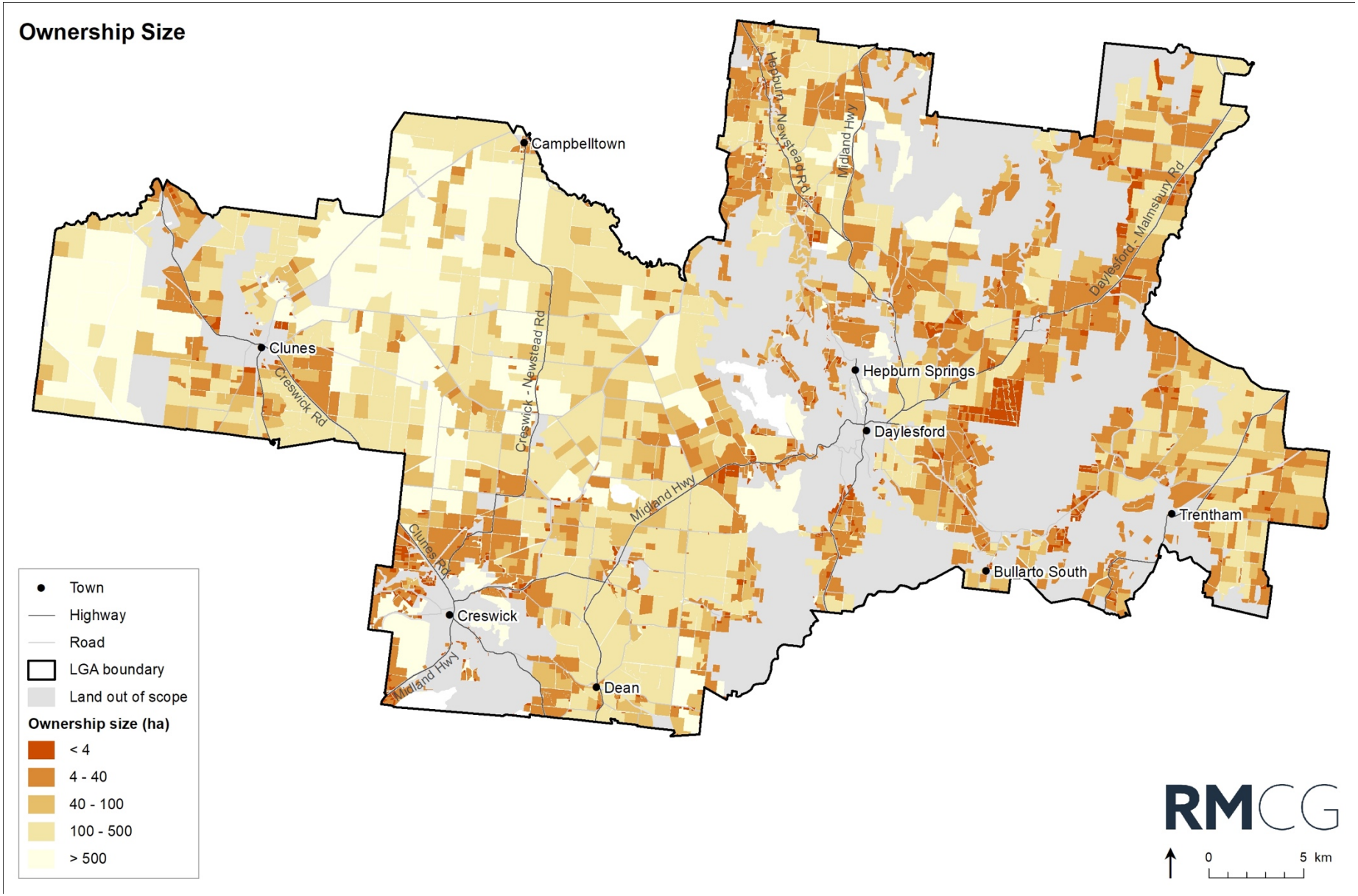
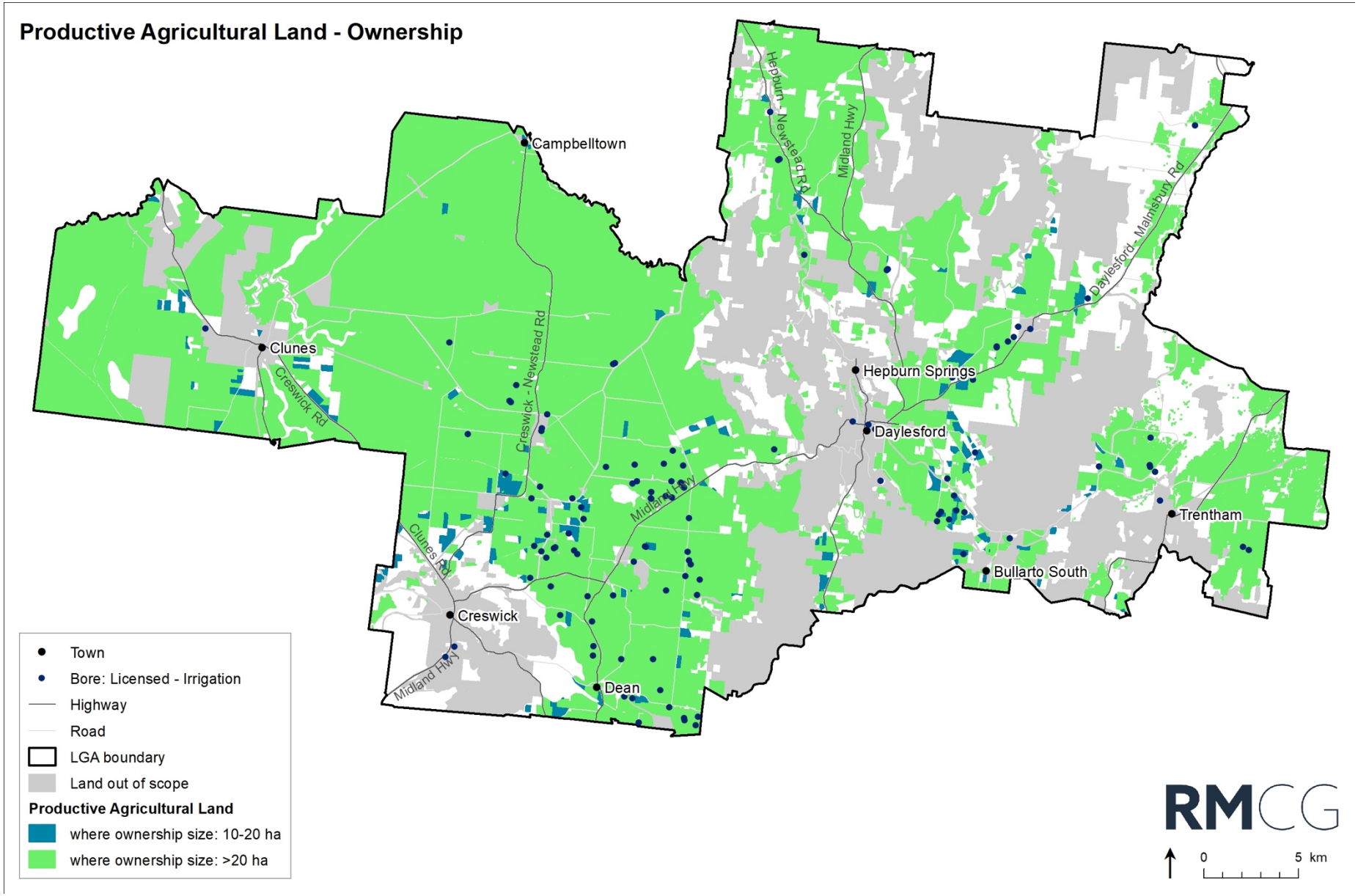


Figure 63: Productive agricultural land



7.4 FARMLAND OF STRATEGIC SIGNIFICANCE

Clause 14.01-1S Protection of agricultural land of the Hepburn Planning Scheme seeks to protect the state's agricultural base by preserving productive farmland and the following strategies:

- Identify areas of productive agricultural land, including land for primary production and intensive agriculture.
- Consider state, regional and local, issues and characteristics when assessing agricultural quality and productivity.
- Avoid permanent removal of productive agricultural land from the state's agricultural base without consideration of the economic importance of the land for the agricultural production and processing sectors.
- Protect productive farmland that is of strategic significance in the local or regional context.

For this study, farmland of strategic significance is defined as follows:

Table 25: Farmland of strategic significance

	Productive agricultural land
Local economic cluster	Farmland of local strategic significance
Regional economic cluster	Farmland of regional strategic significance
State economic cluster	Farmland of state strategic significance

The analysis of agricultural industries in Chapter 6 found:

- The potato industry is an industry of state significance based on the value of production, contribution to the statewide industry and the importance of the secondary processing sector.
- The livestock industry is an industry of local significance based on the value of production and contribution to the regional livestock industry.

Indicative areas of Farmland of state and local strategic significance are shown in Figure 64.

7.5 KEY FINDING

Extensive areas of Hepburn Shire is productive agricultural land based on the combination of soils, climate and land holdings. Farmland of state and local significance has been identified based on the biophysical attributes and the economic contribution of agricultural production.

Issues

Pressure to rezone land on the edges of townships described as 'poor agricultural land'.

Pressure for dwelling development.

Opportunities

A strong and economically significant agricultural sector

Potential strategy response

Use mapping of productive agricultural land and farmland of strategic significance to:

- Inform preparation of township structure plans.
- Include mapping of productive agricultural land and farmland of strategic significance in the MPF.
- Review the current application of the FZ and zone schedules.

Figure 64: Farmland of strategic significance